Bridging the Musculoskeletal Measurement Gap

Benjamin M Ellis, MB BS MSc MPH MRCP, Senior Clinical Policy Adviser, Arthritis Research UK
Contributors: Ray Fitzpatrick, Dr Jonathan C Hill, Andrew Price

Painful musculoskeletal conditions are a leading cause of lost quality of life, work absence, and health and social care costs. Each year, the NHS in England spends over £5bn supporting and treating people living with these conditions. An ageing population, combined with rising levels of obesity and physical inactivity, is likely to dramatically increase the number of people whose lives are affected. As health services globally strive to achieve more with less, the relentless quest for better value demands that outcomes are measured, reported and improved at every opportunity.

Benjamin Ellis

The health burden for people with painful musculoskeletal conditions, such as arthritis and back pain, cannot be summarised with biomarkers or imaging. Patient reported outcome measures (PROMs), however, are well suited to this purpose. In many ways, musculoskeletal health care has led the way in measuring patient reported outcomes. In England, for example, Oxford Hip and Knee scores are routinely collected before and after joint replacement surgery and the data made available for academic, clinical and business analysis.

However the majority of people receiving care for musculoskeletal conditions are not treated in secondary care and do not undergo surgery. Large numbers of people with a wide range of musculoskeletal problems attend their GP surgery, community physiotherapy or rheumatology outpatient departments. Here too, measurement is needed to monitor health outcomes and thereby support quality improvement. In this context, it may not be practical to use a separate patient-reported outcome measure for each different condition that is seen. Moreover, whereas PROMs for surgery have been before-after tools, people with long-term musculoskeletal conditions, which typically fluctuate in their impact over the short as well as the long term, need ways to monitor their health longitudinally over extended time periods.

In July 2012, Arthritis Research UK hosted a musculoskeletal health community workshop, including representation from the British Orthopaedic Association, the British Society for Rheumatology, the Chartered Society of Physiotherapy and Royal College of General Practitioners as well as people with arthritis from the Birmingham Arthritis Resource Centre and patient representative charities such as Arthritis Care and the National Rheumatoid Arthritis Society. The decision by Arthritis Research UK to develop the Arthritis Research UK MusculoSkeletal Health Questionnaire (MSK-HQ) prompted this discussion within the musculoskeletal community. Representatives were asked to consider how many different measures might be required to capture the musculoskeletal health of the diverse range of conditions seen in a typical clinic. A consensus emerged that despite disease activity measures being by nature disease specific, many of the symptoms that patients with musculoskeletal conditions share are common between diseases. Symptoms such as pain, stiffness and fatigue, along with health domains such as pain interference with work/daily routine, are arguably of prime concern and common to those affected by musculoskeletal conditions. A combination of these could therefore best capture the impact of a musculoskeletal condition on an individual's health. Another important point that emerged from the discussions was the notion that rather than being seen as yet another uni-dimensional outcome measure, evaluating the effect of a single intervention, the MSK-HQ should aim to be a broad multi-dimensional health status measure that captures and summarises the extent of symptoms and impact on common health domains over time.

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The initial work to develop the candidate MSK-HQ instrument was led by Dr Jonathan Hill working with a team at the Arthritis Research UK Primary Care Unit at Keele University, and Professor Ray Fitzpatrick and Professor Andy Price at the University of Oxford. The aim was to identify the health domains that matter to patients with musculoskeletal conditions and design a valid, reliable and relatively brief tool that could be used by people with a wide range of musculoskeletal conditions to report their own health at various steps along diverse treatment pathways. Although the MSK-HQ may be used alongside other scores, it was designed to produce meaningful data if used independently. Following an extensive literature review to derive a list of musculoskeletal health constructs, the list was refined and prioritised through successive qualitative interviews, patient focus groups and patient and stakeholder workshops. The candidate MSK-HQ that emerged included fourteen questions alongside a further item quantifying physical activity (Figure 1).

The second phase of the work began in the spring of 2014. Led by Professor Andy Price and Professor Ray Fitzpatrick at the University of Oxford and supported by joint funding from NHS England and Arthritis Research UK, this phase will examine how the MSK-HQ can be used in practice while at the same time further understanding its psychometric properties. Three clinical settings will be investigated at a number of sites across England: people referred for orthopaedic surgery, individuals receiving treatment from community physiotherapy, and those attending rheumatology outpatient clinics with early inflammatory arthritis, including rheumatoid arthritis. A fourth arm of the pilot will employ qualitative methods to understand how managerial and commissioning decisions are affected by the availability of outcomes data from collection of the MSK-HQ. The results from phase two are due towards the end of 2015.

To date, PROMs have largely been used as summative measures, collected before and after a specific procedure to measure health gain attributable to the intervention. The MSK-HQ will have a role in this, with achievement in particular domains helping to guide quality improvement. In many long-term conditions, such as diabetes or asthma, measurement is also used to guide treatment. This too is part of the vision for the MSK-HQ. By capturing an overall rating of a person's musculoskeletal health at any given time, the MSK-HQ enables patients and their clinicians to monitor progress over time and response to treatment. Considering individual components of the score, such as sleep quality or mood can allow particular aspects of musculoskeletal health to be addressed, ensuring a holistic approach to patient needs. As more people with long-term musculoskeletal conditions engage in an annual care planning process, the MSK-HQ may play an important role in supporting people to report their symptoms to their clinical team.

Measurement of health status matters, because clinical data change behaviour for patients, clinicians, managers and policymakers. The routine and systematic use of outcome measures such as the MSK-HQ throughout musculoskeletal health services has the potential to empower patients, support clinical decision making, drive forward quality improvement and ensure that the best services are rewarded for their achievements. Accountability in the English NHS is through the various outcomes frameworks, through the Outcomes Indicator Set for clinical commissioning groups and the NHS Outcomes Framework nationally. Currently, though outcomes of hip and knee surgery are included, there are substantial gaps which could be filled. The current phase of work on the MSK-HQ aims to see whether the MSK-HQ can address this measurement gap to provide data that the musculoskeletal community so desperately needs. Increasingly, services will be rewarded on the health benefits they deliver, as well as the activity they do. As with all measurement, there is always a risk of unintended consequences. But the potential reward is great.

Benjamin Ellis is a consultant rheumatologist at Imperial College Healthcare, working part time as senior clinical policy adviser at Arthritis Research UK. In 2008, he undertook a two-year secondment to work as clinical advisor to the Chief Medical Officer, and subsequently completed his master of public health degree at John's Hopkins. His interests include promoting a public health approach to musculoskeletal health, improving the extent and quality of musculoskeletal health data and developing systems to support self-management for people with long-term conditions.

FIGURE 1 - Examples of health domains and symptoms included in the Arthritis Research UK MusculoSkeletal Health Questionnaire (MSK-HQ).

- Pain/stiffness
- Walking ability
- Washing/dressing
- Physical activity
- Interference with work or daily routine
- Interference with social activities and hobbies
- Independence
- Sleep
- Fatigue

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