

Guest editorial

Spinal disorders, quality-based healthcare and spinal registers

In this issue of *Acta Orthopaedica* 2 articles (Clement et al. 2015, van Hooff et al. 2015) represent waymarks on a road towards a conception of universal value-based healthcare for spine. This goal is expected to be a convergence of the interests of patients, payers, politicians and clinicians. The articles are focused on the painful lumbar spine, which represent the top ranking chronic healthcare complaint (Vos et al. 2012). Clinicians' interest in quality dates back to Florence Nightingale in the Crimea. For patients it goes back to time immemorial. For economists it has become an issue in the last 2 decades. All politicians should be interested in this topic, and this is kindled by public dissatisfaction and the rising costs of healthcare.

ICHOM (International Consortium of Health Outcomes Measurement, www.ichom.org/) is an organisation recently founded by the Institute for Strategy and Competitiveness at Harvard Business School, the Boston Consulting Group, and the Karolinska Institute to enable the shift towards value-based health care. The concept of value-based health care has been described by Michael Porter, a co-founder of ICHOM, as the only strategy that will fix health care (Porter and Lee 2013). The central point of his work is the need to look at outcomes and cost together in driving clinical improvement and policy.

Health registers play a central role in the measurement of outcomes and thereby enable the shift towards a value-based system: the Swedish Knee Arthroplasty Register (start 1975) (www.knee.se) and the Swedish Hip Arthroplasty Register (start 1979) (www.shpr.se), being the first and most notable in the musculoskeletal world. In 2012 ICHOM identified 4 areas of healthcare to define international standard sets of outcome measures. One of these was low back pain, and one output of this process is the paper by Clement et al. (2015). There have been earlier attempts to identify optimum outcome measures for research (Deyo et al. 1998, 2014), but this is the first to search for an international consensus on quality measures for use in daily clinical practice. ICHOM is in the process of extending this exercise, which involves a defined methodology, to many other areas of healthcare: it has now completed 12 'standard sets' (of outcome measures), and plans to have 50 completed by 2017.

Since the establishment of the Swedish Spine Register (SweSpine, www.swespine.se) in 1992, spine registers have sprung up in other countries. The systematic review by van Hooff et al. (2015) is a first attempt to see if these registers are influencing quality. Whilst the case remains unproven, they are able to cite a number of examples where it would appear

that a register has altered behaviour and improved quality. I do not doubt that, as this movement evolves, so we shall see better evidence of impact. This can only be good from the patient perspective, but Registers do not yet to have the capacity to answer the universal question as to which doctor is likely to deliver an individual the optimum health care. The register should be able to confirm whether a given provider is an outlier nationally (and if ICHOM is successful) internationally. The ambitions of ICHOM are much grander: it is their intention that health care systems should reimburse providers on the basis of quality rather than quantity. This is beginning to happen in Sweden, but I believe it will be some time before such systems evolve in other healthcare economies. There are early signs of this movement developing in my country.

There is devil in the detail. Table 3 in van Hooff et al. gives a detailed list of recommendations for enhancing spine registers. Register models can only work with patient involvement and particularly the completion of follow-up questionnaires has to be high. Van Hooff et al. recommend 60 to 80% compliance. The reported completion rate from the National British Spine Register is only 20%. Subtle 'sticks and carrots' need to be developed to encourage patient completion. It means the forms have to be a short and clear. More qualitative research is needed to explore these issues. Consideration may be needed to offering adequate reimbursement for the time and trouble of completing outcome measures (Williams et al. 2014).

The outcome measures themselves require care and attention. Most have evolved since the 1970s. Some like EQ-5D, are managed by committees. Others like ODI, are managed by their original authors. Others, such as NRS pain, are essentially orphans since their original description by Huskisson in the 1970's (Huskisson 1974, Scott and Huskisson 1976, 1979). ICHOM has a duty to ensure that the measures they recommended are looked after and not subjected to alterations. It is vital that they are translated accurately by a standard protocol. ODI, for example, recommended as part of the ICHOM low back pain outcome set, is now licenced to the MAPI Trust in Lyon, which has pioneered good practice in this regard (www.proqolid.org/instruments/oswestry_disability_index_odi). ICHOM should consider sponsoring orphan instruments (perhaps at MAPI) such as NRS to ensure that they are delivered in as consistent a way as possible.

It must be noted that there are problems with registers and the interpretation of their data. Most are owned and managed by clinicians. So long as this model is transparent, it prob-

ably keeps the data safer from meddling than it would be in the hands of governments, who also serve as purchasers. Registers need funding, which also generates problems of long term viability and conflicts of interest (van Hooff et al. 2015). Properly defining criteria of success and failure is an important challenge. The Swedish Knee and Hip Registers and its various international descendants have used revision rates as an important criterion of failure. When this is applied to the knee register, unicompartmental knee replacements are shown to have higher revision rates than total knee replacement, arguably not because they actually fail more frequently, but, because surgeons are more ready and willing to revise a unicompartmental knee replacement than a total knee replacement (Goodfellow et al. 2010). Unsurprisingly this view is disputed by the directors of knee registers (Robertsson et al. 2011), but some complex issues of quality and cost are involved here. I see a parallel situation in the use of interspinous spacers to treat spinal stenosis. 2 RCT's have shown similar outcomes between spacers and conventional decompressive surgery but with higher revision rates in the spacer group (Moojen et al. 2013, Stromqvist et al. 2013). Both these examples are significant because the initial implant cost is high, but they do reflect the important point that defining outcome metrics is potentially treacherous. This matters in many ways, but particularly when reimbursement depends on it. Rigorous metrics defined based on established methodologies, arguably such as those presented in the ICHOM standard set, should present an answer to this challenge.

Those registers that use mortality as an outcome, such as cardiac surgery, may make cardiac surgeons more risk averse so that they avoid high-risk patients (Westaby et al. 2015a, b). Statistical variation becomes a major problem when these results are distilled down to individual surgeon data. This has provoked problems previously in the US and currently in the UK where SSMD (Surgeon Specific Mortality Data) has recently become mandated. Discussion on this continues (Bridgewater 2015, Gottlieb 2015, MacFie 2015, Westaby et al. 2015a, b).

The quality movement in healthcare needs the strong support of everyone involved. We need the education and involvement of our public and politicians to make this happen. As van Hooff et al. spell out, registers are important, and need good methodology and design, with care and attention to deliver quality data. How these data are interpreted and presented will need continual scrutiny and innovation as their importance in the health economy increases.

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Conflict of interest

I am coauthor of the van Hooff et al. paper, and I am a copyright holder of Oswestry Disability Index

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