

# AN ELECTRONIC PATIENT-REPORTED OUTCOME MEASURES SYSTEM IN UK CHIROPRACTIC PRACTICES: A FEASIBILITY STUDY OF ROUTINE COLLECTION OF OUTCOMES AND COSTS



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## ABSTRACT

**Objective:** The purpose of this study was to test the feasibility of collecting valid and widely used health outcomes, including information concerning cost of care, using a Web-based patient-driven patient-reported outcome measure (PROM) collection process within a cohort of UK chiropractic practices.

**Methods:** A Web-based PROM system (Care Response) was used. Patients with low back and neck pain were recruited from a group of chiropractic practices located in the United Kingdom. Information collected included demographic data, generic and condition-specific PROMs at the initial consultation and 90 days later, patient-reported experience measures, and additional health seeking to estimate costs of care.

**Results:** A group of 33 clinics provided information from a total of 1895 patients who completed baseline questionnaires with 844 (45%) completing the measures at 90-day follow-up. Subsequent outcomes suggest that more than 70% of patients improved over the course of treatment regardless of the outcome used. Using the baseline as a virtual counterfactual with respect to follow-up, we calculated quality-adjusted life years and the cost thereof resulting in a mean quality-adjusted life years gained of 0.8 with an average cost of £895 per quality-adjusted life year.

**Conclusion:** Routine collection of PROMs, including information about cost, is feasible and can be achieved using an online system within a clinical practice environment. We describe a Web-based collection system and discuss the choice of measures leading to a comprehensive understanding of outcomes and costs in routine practice. (*J Manipulative Physiol Ther* 2016;39:31-41)

**Key Indexing Terms:** *Patient Outcome Assessment; Quality-Adjusted Life Years; Chiropractic; Electronic Health Records*

Measuring health is important, and drivers concerning the legitimacy of health care interventions in the context of outcomes and cost have changed considerably over the last 2 decades. One of these changes

is the monitoring of clinical performance by the use of patient-reported outcomes (PROs) using a diverse range of patient-reported outcome measures (PROMs). The notion of collecting patients' opinions about the services they receive and the influence that these data may have on health care policy has gathered momentum. The collection of PROMs has become more common within routine clinical care settings and increasingly so as part of national health care provision.<sup>1-3</sup> In the UK, the government white paper *Equity and Excellence: Liberating the NHS* highlighted the importance of health outcomes and preceded a fundamental shift by the UK government in how health care was evaluated. This movement shifted the process from targets (eg, waiting times and bed availability) to improvement in clinical outcomes, particularly as self-reported by patients.<sup>4</sup>

Black<sup>5</sup> cites the routine collection of PROs as an opportunity to drive changes in delivery and organization of

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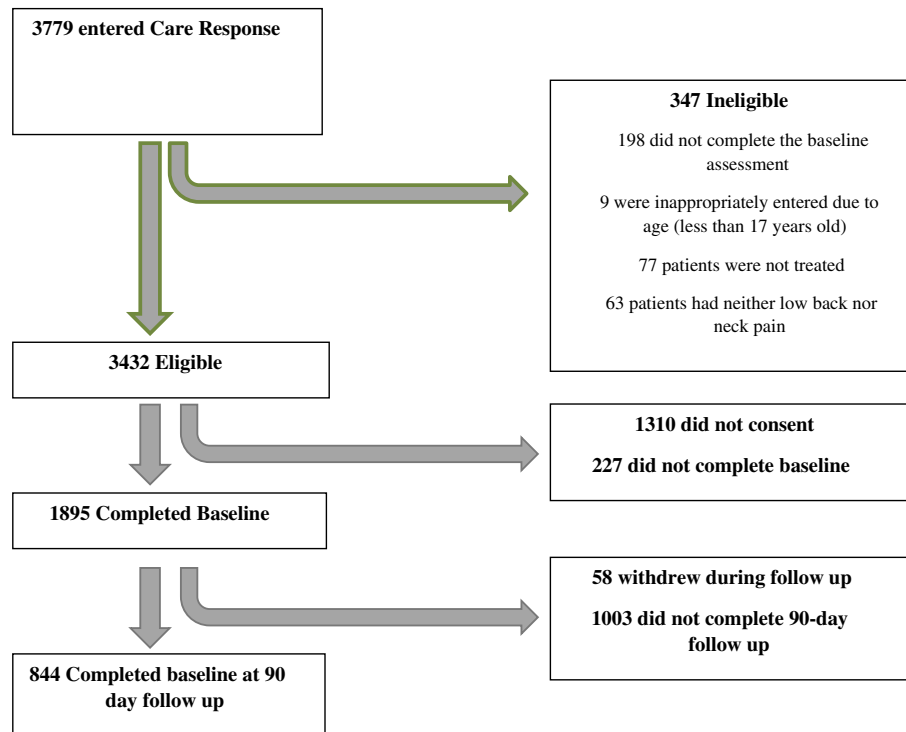
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**Fig 1.** Flow of participant through the study.

health care and suggests a number of key strategies for successful future implementation. He suggests that these changes include the need to encourage adoption of new data collection technologies and the imperative to make use of the opportunity that PROMs present to develop value-based care in which health services are driven by health outcomes per amount of money spent.

In the United States, such “value for money” models are represented increasingly by value-based purchasing, whose advocates argue could provide better health, better care, and lower costs.<sup>6</sup> Some suggest such approaches as potentially transforming health care delivery.<sup>5</sup> A key requirement of this approach includes concise core sets of patient-centered measures that encompass health gains, health care, and cost metrics and that these are collected routinely within the health care setting.

To evidence a role within the environment of mainstream health care, routine and widespread collection of outcomes and cost is increasingly seen as a professional imperative. In this context and given the huge impact of musculoskeletal (MSK) conditions on both society<sup>7</sup> and health care budgets, professions involved in the delivery of MSK care have a potential role to play in providing data that documents and describes robust and reliable influence on patients in clinical practice.<sup>8</sup>

Despite the availability of MSK PROMs and generic health care measures that could allow direct comparison with outcomes achieved with other health conditions, the routine collection of these important data is still in its infancy. In the

chiropractic profession, although there are a number of clinical trials<sup>9-12</sup> that have addressed cost-effectiveness of care, there is little information linking costs and outcomes in large cohorts, which more readily represent routine clinical practice.<sup>13</sup>

This study explored the implementation of a Web-based patient-driven PROM collection process and the collection of a range of valid and widely used health outcomes, including information concerning cost of care within a cohort of UK chiropractic. We sought to provide guidance as to how PROMs and cost data might routinely be gathered and reported and a rationale for the widespread and routine use of PROMs collection within the MSK care environment and, in particular, the chiropractic profession.

## METHODS

### Study Design

The study design was a prospective, single-cohort, multicenter observational study. The Anglo-European College of Chiropractic Ethics Subcommittee approved the study.

### Participating Clinics

Clinics were recruited from the British Chiropractic Association membership in the UK. Recruitment was achieved through the use of articles and flyers included in regular British Chiropractic Association publications and at the association’s conference in March 2013. This included attendance by 2 of

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