

CASE REPORT

Patient-reported outcome measures (PROMs): enhancing decision making and follow-up

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SUMMARY

A case presentation of patient undergoing elective total knee replacement. Patient-reported outcome measures prospectively collected electronically pre and postoperatively allowed real-time review, aiding follow-up and reducing the need for clinical, face-to-face follow-up.

BACKGROUND

The National Patient-Reported Outcome Measures (PROMs) Programme (NPP), under way in the UK since April 2009, is used for four procedures, including total knee arthroplasty. However, the published data from this have very limited clinical benefit to an individual surgeon or patient. Nationally, data are aggregated and provide an 'average' outcome. Currently, NPP data in orthopaedics are only collected for total hip or total knee replacement (TKR) and publicly displayed for a particular hospital, only providing information as to average health gain and whether the department is a national outlier.¹ The collection of this information is via pen-and-paper questionnaires completed by the patient on clinic visits or posted to their home address. These are then returned and manually entered onto a database—at some expense and with variable compliance rates. This provides a very narrow benefit to the individual patient or surgeon. A web-based system allows prospective collection of electronic PROMs data and can be instantaneously accessed and analysed by the general practitioner (GP), surgeon or patient. Such systems provide closer patient follow-up and at a reduced cost with increased patient compliance.^{2,3}

CASE PRESENTATION

This case presented with an insidious onset of left knee pain, X-ray films revealed knee osteoarthritis and the patient was referred on to secondary care for consideration of TKR. The patient registered on www.myclinicaloutcomes.com and consented to share the PROM scores with her GP and hospital consultant. The Oxford Knee Score (OKS) measures pain and function on a scale of 0–48 (bad to good) and the howRU generic score measures well being from 0 to 12.^{4,5} Over a 6-month period the patient and clinical team saw the knee score decreased from 28/48 to 12/48 with a howRU score of 9/12.

INVESTIGATIONS

Plain radiograph: left knee tricompartmental osteoarthritis.

TREATMENT

The knee score enabled a more in-depth discussion with the expected recovery curve following knee replacement visible on the surgeon's website (www.danhwilliams.com). Surgery went ahead without complication in October 2012.

OUTCOME AND FOLLOW-UP

Rehabilitation from knee replacement is challenging. Six weeks postoperatively the patient's OKS had risen to 30/48 with a howRU 10/12. The patient was reassured by the clinical assessment and improvement in her PROM score, aware from the recovery curve that the knee would further improve slowly over the following 12 months. Ongoing web-based PROM scores completed at home showed an improving trend as expected. All proceeded well until in July 2015 (30 months postsurgery) when the knee score dropped to 36/48 (figures 1 and 2). She was contacted and returned for clinical review; the lower knee score being secondary to an exacerbation of long-term sciatic pain. Subsequent knee scores improved as the sciatic pain resolved. Routine clinical follow-up was arranged, according to national guidelines, at 7 years after her surgery.

DISCUSSION

National PROM data take months to be published and are hospital rather than surgeon specific. In this case, the electronic PROMs were assessed in real time and enabled close follow-up. The change in scores led to an early review followed by a period of stability minimising the need for clinic attendance. The overall gain in pain and function score was maintained at 29 points at 51 months; compared with an average NPP gain of between 15 and 16 points at 6 months following knee replacement.

National Health Services PROM data have been used to alter surgical technique and implant choice in knee replacement surgery.⁶ However, it does not provide surgeon-specific feedback, requires paper questionnaires to be produced, completed, returned and then manually entered onto a database. This leads to a significant delay in publication of the data. Electronically collected PROMs enable real-time assessment and provide



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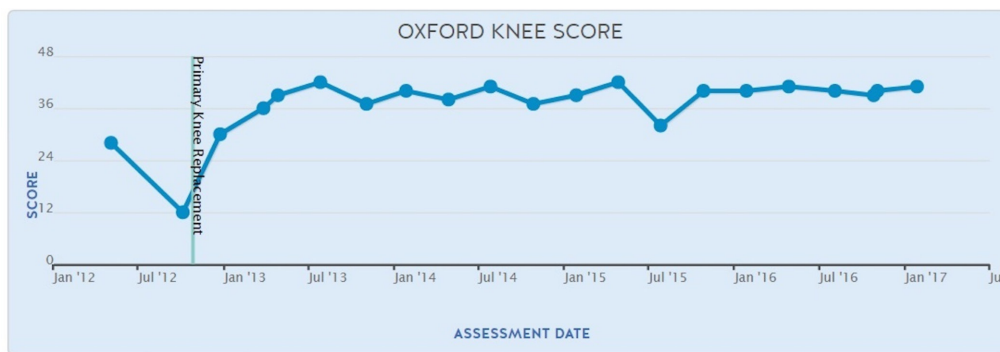


Figure 1 Oxford Knee Score.

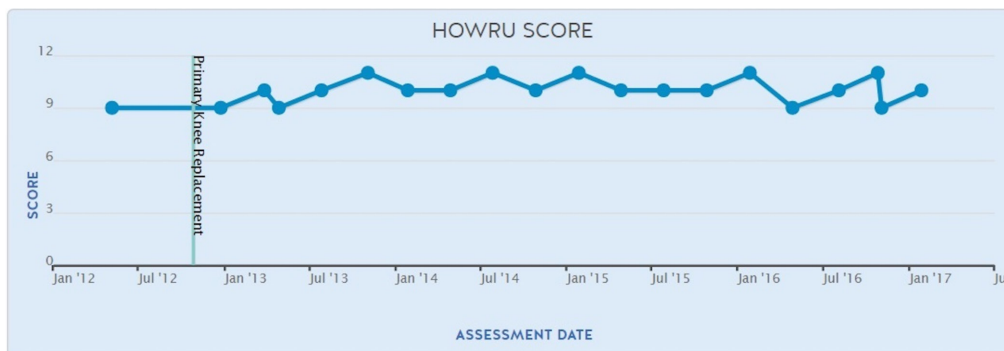


Figure 2 howRU score.

patient-specific closer follow-up. These give more benefits to patients, clinicians and commissioners especially as compliance with electronic PROMs has been demonstrated in up to 94% of patients.⁷

Learning points

- ▶ National patient-reported outcome measures (PROMs) data are of limited clinical benefit—web-based PROMs potentially provide greater clinical utility to both patients and clinicians.
- ▶ Real-time access to data allows clinicians to act on unexpected change in pain and function PROM scores.
- ▶ Patients using PROMs can potentially reduce the healthcare burden of routine postoperative follow-up.

Contributors DHW: operative surgeon, planning of intervention, follow-up of patients, design of case study, writing up of article. RW: design of study, collection, analysis of data, interpretation of data, writing up of article. ATG: design of study, collection and analysis of data, interpretation of data, writing up of article, collection of patient consent, submission of article.

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