



Joint Approach

The newsletter of the National Joint Registry

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8th Annual Report: Record levels of data and consent rates

The 8th NJR Annual Report – launched on 15 September at the British Orthopaedic Association Congress in Dublin – recorded its largest-ever number of data submissions in 2010/11 (179,450) and the highest-ever patient consent rates, with some 88.6% of patients consenting to having their information recorded on the registry.

The NJR is the largest database of its kind in the world and now includes some 1.1 million records covering hip, knee and ankle joint replacement procedures in England and Wales, carried out since 2003 (and as of 1 April 2011 for ankle procedures).

“Everyone associated with the NJR was excited to celebrate one million procedures having been recorded with us,” comments NJR Steering Committee Chair Laurel Powers-Freeling in the report’s introduction. “We also recorded the highest-ever percentage of records submitted with both patient consent and patient NHS number, thus increasing the percentage of ‘linkable’ records for overall analysis to a new high of 83.4%.”

For ‘At a glance’ highlights of the report and specific analysis, see pages two and three. To download the full report go to www.njrcentre.org.uk.



Average male knee replacement patient now obese

The average man requiring knee replacement surgery is now obese according to the latest NJR Annual Report.

In the year to 31 December 2010, a total of 81,979 primary knee replacement (PKR) procedures were recorded on the registry – a 5.7% rise from 77,545 in 2009.

For the first time in 2010, the average male having knee replacement procedures was classed as obese on the

BMI scale, with a rating of 30.03. Women moved into the 30+ ‘obese’ bracket of the scale in 2007 and this year the average female PKR patient had a BMI of 31.15.

Elsewhere, the NJR uses the ASA physical status classification system of assessing the fitness of patients before surgery, which rates patients from P1 (fit and healthy) to P5 (expected to die within 24 hours with or without surgery). Just 12% of knee patients included in this year’s report were defined as P1, down from 13% last year. The ratio has been falling steadily since the 2003 report, where 31% of primary knee replacement procedures were carried out on P1 patients.

At a glance: key findings from the 2010/11 NJR Annual Report

General

- 2010/11 saw the National Joint Registry of England and Wales – the largest resource of its kind in the world – pass the one million-record mark. The NJR now contains data from more than 1.1m hip, knee and ankle replacement procedures
- 2010/11 saw the largest number of single-year submissions ever – 179,450 patient records were added to the registry
- Highest-ever rates of patient consent (patients agreeing to have their details recorded on the registry) – 88.6%
- Ankle data added to hip and knee results for the first time

Hip replacement procedures

- In 2010, there were 76,759 hip replacement procedures recorded on the NJR, representing a 6% increase compared with the same reporting period last year
- Hip replacement patient demographics in terms of age and gender distribution have not changed substantially since 2003 (when the registry began reporting data). In 2010, 31% of patients were 75 years of age and above, 35% between the ages of 65 and 74, 23% between the ages of 55 and 64 and 12% below the age of 55
- In 2010, the ASA distribution (the measure of how fit and healthy a patient is, used in analysis of NJR data) for hip replacement patients was similar to the previous year with 16% being regarded as fit and healthy prior to surgery (17% in 2009). However, there continues to be an overall decrease in patients regarded as being fit and healthy prior to surgery, (ASA grade 1)
- The average body mass index (BMI) for hip replacement patients has increased to 28.5, compared with 27.3 in 2004. It would appear that NHS hospitals are dealing with less fit patients, with 20% being ASA grade 3 or 4, compared with 7% in independent hospitals, 14% in NHS treatment centres and 6% in ISTCs. This data suggests that the average recipient of a hip or knee prosthesis has become less fit and more clinically obese during the eight years that the NJR has been recording data

Knee replacement procedures

- The number of knee replacement procedures recorded on the NJR during 2010 was 81,979, which represents an increase of 5.7% compared with 2009
- The ASA grades for knee replacement patients indicate that less fit patients were treated in NHS hospitals with approximately 19% being ASA grade 3 or 4, compared with 8% in independent hospitals, 13% in NHS treatment centres and 8% in ISTCs
- Average BMI for knee replacement patients has increased to 30.6 in 2010 from 29.3 in 2004. Patient BMI is higher in knee procedures compared with hip procedures.
- For the first time in 2010, the average male having knee replacement procedures was classed as obese on the BMI scale, with a rating of 30.03. Women moved into the 30+ 'obese' bracket of the scale in 2007 and this year the average female PKR patient had a BMI of 31.15

Ankle replacement procedures

- The NJR started to collect total ankle replacement primary and revision procedures on 1st April 2010. In total 358 primary and 24 revision procedures were submitted during the nine months covered by this year's report
- For primary procedures (when a device is fitted for the first time), 56% of the patients were male. The average age of an ankle replacement patient was 66.8 years and had an average BMI of 29.9



Outcomes after joint replacement: Hips

The 8th Annual NJR Report found that overall revision rates for hip replacement procedures were low: only 1.1% of primary hip replacements had been revised by one year after primary surgery, rising to 2.3% by year three, 3.5% by year five, and 4.7% by year seven. However, there was substantial variation in revision rates according to prosthesis type. The lowest rates were associated with cemented prostheses (3% at seven years) although rates for the hybrid (3.8% at seven years) and uncemented (4.6% at seven years) groups were not exceptionally different. Much higher rates were associated with resurfacing procedures (11.8% at seven years) and stemmed metal-on-metal bearing surfaces (13.6% at seven years). There appears to be a sharp increase in the risk of revision at around six years after primary surgery for the metal-on-metal group, although more data is needed to confirm this finding.

There was also variation in revision rates according to the characteristics of patients. Multi-variable analysis indicates that for patients aged under 60, there was little difference in revision rates between the cemented, uncemented and hybrid groups. However, for patients



aged 70 or over, cemented prostheses were associated with the lowest revision rates. Adjusted revision rates for the resurfacing and stemmed metal-on-metal groups remained significantly above those of other groups indicating that the higher revision rates cannot simply be explained by the patients being younger on average and more typically male. Revision rates tended to be slightly lower for women than for men in the cemented, uncemented and hybrid groups, but were significantly higher for women in the resurfacing and metal-on-metal groups.

Outcomes after joint replacement: knees

Regarding knee replacement procedures, the Annual Report found that overall, again revision rates were low: only 0.7% of primary knee replacements had been revised by one year after primary surgery rising to 2.7% by year three, 3.9% by year five, and 4.9% by year seven. However, there was substantial variation in revision rates according to prosthesis type with the lowest rates associated with cemented prostheses (3.8% at seven years). There was no significant difference between the uncemented and hybrid groups and revision rates

for these prostheses were only slightly higher than for cemented prostheses (4.8% at seven years). In contrast, revision rates for patello-femoral and unicondylar procedures were considerably higher at 20.4% and 16.6% respectively by seven years after primary surgery.

For total knee replacements, posterior cruciate-retaining implants had lower revision rates than posterior cruciate-stabilised implants (3.7% compared with 4.3% at seven years). These revision rates were lower again for posterior cruciate-retaining implants with fixed bearings compared with posterior cruciate-retaining implants with mobile bearings (3.4% versus 5.0% at seven years). Overall, the lowest revision rates for knee replacements were associated with a posterior cruciate-retaining, fixed bearing cemented prosthesis (3.4% at seven years).

In terms of patient characteristics, there were no significant differences between men and women in terms of the risk of revision. However, revision rates for those aged under 60 were much higher than for older age groups for all prosthesis types (for example, the seven-year revision rate for those aged under 60 with a cemented knee replacement was 7.5% compared with 2.6% of those aged 70 or over). Unicondylar revision rates remained much higher than for other prosthesis types regardless of age group with the highest revision rates for those aged under 60 (22.9% had been revised by seven years).



Looking ahead to 2011/12

The last 12 months have seen a huge amount of development at the NJR, with a number of landmark projects launched – including the Supplier Feedback resource, research strategy, various sub-groups and an ambitious patient and public engagement programme.

Here we round-up the major objectives for the NJR as a whole, and then take the opportunity to look at the annual programme of In-Depth Studies the registry commissions in response to results garnered in the Annual Report.

NJR objectives for 2011/12

- The NJR has already started a large-scale study to follow up patients and report the outcomes of a hip and knee survey in England. This will extend the capture of PROMs work undertaken through the Department of Health national programme to include patient input at years one, three and five after joint replacement surgery
- The NJR is scheduled to launch data collection for new joints, to include initial collections of shoulder and elbow joint data later in 2011
- The registry will launch the NJR Management Feedback system, which will provide information directly to senior hospital management to support effective local clinical governance; this will build on further development of NJR 'outlier' monitoring and improved reporting mechanisms to Trusts
- The NJR will pursue a programme of greater international collaboration with worldwide registries to both share our work and benefit from the work of other registries, thus building on the success of recent NJR participation in European and international conferences



In-Depth Studies for 2011/12

- Metal-on-metal bearings – this study follows the recall of DePuy's ASR device in 2010 and this in-depth analysis of metal-on-metal bearings will include resurfacing, large head metal-on-metal total hip replacement (THR) and large head metal-on-metal THR with XL head and resurfacing socket. To include sub-analysis of different types of implants and fixation modalities
- Femoral head size – a study of the trend to use increasing femoral head size and outcomes in terms of revision overall and revision for dislocation. Depending on the quality of coding in Hospital Episode Statistics (HES), this study may address incidence of dislocation requiring manipulation under anaesthetic
- Thromboprophylaxis – following on from the 2010/11 study which examined hips, this analysis will look at prophylactic agents to reduce the incidence of thromboembolic complications in knee replacement surgery including an assessment of adverse events including infection, minor and major bleeding complications, readmission, re-operation, revision and death
- Re-revisions – The NJR Annual Report only analyses primary and revision-based data. This study will look at the effect of subsequent re-revision of the first-time revisions, with particular focus on outcome, the reason for the first-time revision and the reason for subsequent revision

BOA session provides platform for debate

This year's Annual Report is set to launch on Thursday 15 September at the BOA Congress in Dublin in a session for up to 200 delegates entitled 'NJR 8th Annual Report: Integrating the Register into Clinical Practice'.

The 90-minute session will begin with surgeon members of the NJR Steering Committee highlighting the clinical results of the 2010/11 study, and then an accompanying debate.

The second part of the session will give a number of guest speakers an opportunity to constructively challenge some of the report's findings. "We will be looking to set the scene as to what the register is telling us and examine how some clinical practice may be divergent from the evidence from the register," comments Mr Martyn Porter, NJR Editorial Board Chair. "This will be an exciting debate and put the NJR in its true context."

If you would like contribute to *Joint Approach* or have suggestions about subjects you would like to see in future issues, please contact the editorial team via communications@hqjp.org.uk. All NJR information and documents are available on the NJR website or to receive copies by post, contact the NJR Helpline (number below). If you have any non-Joint Approach queries, please contact us via: The NJR Centre, Peoplebuilding 2, Peoplebuilding Estate, Maylands Avenue, Hemel Hempstead HP2 4NW.
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