From little things big things grow...

Juliette Proctor
On behalf of the Steering Committee, Arthroplasty Clinical Outcomes Registry NSW
ANZONA Conference, 13th Nov 2015
Acknowledgements

Steering Committee
• Ian Harris, Samuel Macdessi, Rob Molnar, Justine Naylor, Juliette Proctor, Richard Walker, Rami Sorial

Site Coordinators
• Susan Dietsch, Jarka Janotka, Juliette Proctor, Chris Saliba, Jennifer Smith, Andy Wong,

Registry Staff
• Shirley Cross, Michelle Jones, Tim Churches

Organisational Partners
• WORC, MCSU and SWSCS UNSW, IIAMR, SWSLHD, SESLHD, NBMLHD, SLHD, MNCLHD
Background and Context

- International, local
- Joint replacement registries
- Patient reported outcomes
Aims

To establish routine, standardised measurement and reporting of patient-reported outcomes after hip and knee arthroplasty in Australia.

Make information available to patients, surgeons, and hospital departments to inform future decision-making to improve future outcomes of hip and knee arthroplasty.
First steps...

- Steering Committee
- Governance structure
- Minimum dataset
- Data collection, storage and dissemination protocols
- Ethics
- Reporting – annual, six monthly, ad hoc
- Audit and validation studies
Data Collection

<table>
<thead>
<tr>
<th>Hospital:</th>
<th>State / Territory:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date data collection commenced:</td>
<td></td>
</tr>
</tbody>
</table>

1. Demographic Information (label if available)

<table>
<thead>
<tr>
<th>Name</th>
<th>Street Address</th>
<th>Suburb and Postcode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth</td>
<td>Sex</td>
<td>Hospital MRN</td>
</tr>
<tr>
<td>__ / __ / ___</td>
<td>o Male o Female</td>
<td></td>
</tr>
<tr>
<td>Telephone Numbers(s)</td>
<td>Height measured (m)</td>
<td>Weight measured (kg)</td>
</tr>
<tr>
<td>Email Address:</td>
<td>Other Contact Person:</td>
<td></td>
</tr>
<tr>
<td>Name/Relationship/TelephoneNumber</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Health Insurance for Surgery

- o Public hospital insurance
- o Private health insurance
- o Self funded
- o Other third party payer
- o Workers’ compensation insurance
- o Other compensation payer
- o DVA
- o Other
- o Unknown

Preferred Language

- How well do you speak English? (tick only one)
- Very well
- Well
- Not very well
- Not at all

In what language do you prefer your medical care? (English Other (please specify))

Highest Year of School Completed

- o Year 12
- o Year 11
- o Year 10
- o Year 9
- o Year 8 or below
- o No schooling
- o Unknown

Highest Non-School Qualification

- o Trade Certificate
- o Advanced Diploma/Diploma
- o Graduate Diploma/Graduate Certificate
- o Bachelor Degree
- o Postgraduate Degree
- o None
- o Unknown

2. Expectations after Surgery

Level of Pain 6-months after Surgery

- What are your expectations of your knee/hip pain six months after your surgery?
  - o No pain
  - o Slight pain
  - o Moderate pain
  - o Severe pain

Functional Ability 6-months after Surgery

- What are your expectations of your functional ability six months after your surgery?
  - o No limitation
  - o Some limitation
  - o Moderate limitation
  - o Severe limitation

3. Medical History

Previous hip or knee replacement – please tick all that apply to you

- o Only right hip
- o Only left hip
- o Both hips
- o I have never had any hip replaced before

- o Only right knee
- o Only left knee
- o Both knees
- o I have never had any knee replaced before

Low back problems or other lower limb joint problems

- o I have low back problems that interfere with my mobility
- o I do not have low back problems

- o I have other joint problems in my leg(s) that interfere with my mobility
- o I do not have other joint problems

PLEASE CONTINUE THIS SECTION OVER THE PAGE...

Thank you. Section 4 below is to be completed by hospital staff.

4. Surgical and Acute Admission Details

<table>
<thead>
<tr>
<th>Date of Admission</th>
<th>Date of Surgery</th>
<th>ASA Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ / __ / _______</td>
<td>__ / __ / _______</td>
<td>01 02 03 04 05</td>
</tr>
</tbody>
</table>

Joint to be Replaced during Index Admission

- o Right hip
- o Left hip
- o Both hips

- o Right knee
- o Left knee
- o Both knees

Surgery Type and Reason

- o Primary joint replacement
  - o OA
  - o RA
  - o DOD
  - o Other inflammatory arthritis
  - o Osteonecrosis/AVN
  - o Tumour
  - o Other (specify)

- o Revision joint replacement
  - o Loosening
  - o Lysis
  - o Dislocation
  - o Impant breakage
  - o Infection
  - o Fracture

  - o Other (specify)

ICU / HDU Admission

- o Yes, admitted to a high care bed
- o No
- o Planned admission
- o Unplanned admission
- o Not admitted to a high care bed

Blood Transfusion

- o No
- o Yes
- o Donor
- o Autologous
- o Number of units:

Complications During Index Admission

- o Yes (select from the list below as apply)
  - o Urinary tract infection
  - o Bladder retention
  - o CVS (stroke, MI, arrhythmia)
  - o Delirium
  - o Dislocation
  - o DVT
  - o Fracture
  - o Respiratory infection
  - o Surgical Site Infection (SSI)
  - o Other (specify)

Discharge Destination

- o Usual residence / residence of relative/friend
- o Inpatient rehabilitation (same hospital)
- o Inpatient rehabilitation (other hospital)
- o Hostel (if not usual place of residence)
- o Nursing home (if not usual place of residence)
- o Another acute hospital
- o Other (specify)

Site Coordinator Checklist

- Participant Information Sheet provided? o Yes o No
- Oxford Score completed and attached o Yes o No
- Has the participant opted out? o Yes o No
- EQ5D/EQVAS completed and attached o Yes o No
Outcome Reporting

ACORN
Arthroplasty Clinical Outcomes Registry

2014 ANNUAL REPORT

ARTHROPLASTY CLINICAL OUTCOMES REGISTRY

1 JANUARY 2014 TO 31 DECEMBER 2014
Growth in ACORN data collection
Age distribution, Joint Replacements, July 2012 to June 2015

<table>
<thead>
<tr>
<th>Joint replaced</th>
<th>Sex</th>
<th>Mean age</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; percentile</th>
<th>95&lt;sup&gt;th&lt;/sup&gt; percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip</td>
<td>Male</td>
<td>65.2</td>
<td>45.3</td>
<td>82.1</td>
</tr>
<tr>
<td>Hip</td>
<td>Female</td>
<td>68.2</td>
<td>48.9</td>
<td>83.7</td>
</tr>
<tr>
<td>Knee</td>
<td>Male</td>
<td>68.8</td>
<td>52.2</td>
<td>82.8</td>
</tr>
<tr>
<td>knee</td>
<td>Female</td>
<td>68.9</td>
<td>52.9</td>
<td>83.1</td>
</tr>
</tbody>
</table>
# BMI distribution, Joint Replacements, July 2012 to June 2015

<table>
<thead>
<tr>
<th>Joint replaced</th>
<th>Sex</th>
<th>Mean BMI</th>
<th>5&lt;sup&gt;th&lt;/sup&gt; percentile</th>
<th>95&lt;sup&gt;th&lt;/sup&gt; percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip</td>
<td>Male</td>
<td>30.3</td>
<td>22.2</td>
<td>40.0</td>
</tr>
<tr>
<td>Hip</td>
<td>Female</td>
<td>29.9</td>
<td>20.2</td>
<td>42.2</td>
</tr>
<tr>
<td>Knee</td>
<td>Male</td>
<td>32.1</td>
<td>24.0</td>
<td>43.6</td>
</tr>
<tr>
<td>Knee</td>
<td>Female</td>
<td>33.8</td>
<td>23.5</td>
<td>47.7</td>
</tr>
</tbody>
</table>
Discharge destination
July 2014 to June 2015
Pre-op expectation of pain at 6 mths post-op
July 2012 to June 2015
Pre-op expectation of function at 6 mths post-op
July 2012 to June 2015
6 months post-op rating of satisfaction by the patient, July 2012 to June 2015

- In Hip joint:
  - Excellent: 500
  - Very Good: 250
  - Good: 250
  - Fair: 100
  - Poor: 50

- In Knee joint:
  - Excellent: 1500
  - Very Good: 750
  - Good: 750
  - Fair: 325
  - Poor: 162.5

Count vs. Proportion of satisfaction levels across Hip and Knee joints.
6 months post-op rating of success by the patient, July 2012 to June 2015
Distribution of Oxford hip scores pre-op versus post-op, July 2012 to June 2015
Distribution of Oxford knee scores pre-op versus post-op, July 2012 to June 2015
Hospital Reporting

Table 3.1.5a: Primary Hip Replacement: OHS Preoperative Scores

<table>
<thead>
<tr>
<th>Preoperative Oxford Hip Score</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital A</td>
<td>85</td>
<td>15</td>
<td>7.7</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>All Other Hospitals</td>
<td>92</td>
<td>14</td>
<td>7.8</td>
<td>0</td>
<td>35</td>
</tr>
</tbody>
</table>

Table 3.1.5b: Primary Hip Replacement: OHS Postoperative Scores

<table>
<thead>
<tr>
<th>Postoperative Oxford Hip Score</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital A</td>
<td>56</td>
<td>42</td>
<td>7.1</td>
<td>15</td>
<td>48</td>
</tr>
<tr>
<td>All Other Hospitals</td>
<td>94</td>
<td>40</td>
<td>7.6</td>
<td>13</td>
<td>48</td>
</tr>
</tbody>
</table>

Figure 3.1: Oxford Hip Score Change
Hospital Reporting

Table 3.2.5a: Primary Knee Replacement: OKS Preoperative Scores

<table>
<thead>
<tr>
<th>Preoperative Oxford Knee Score</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital A</td>
<td>190</td>
<td>19</td>
<td>8.4</td>
<td>4</td>
<td>47</td>
</tr>
<tr>
<td>All Other Hospitals</td>
<td>257</td>
<td>16</td>
<td>7.6</td>
<td>3</td>
<td>39</td>
</tr>
</tbody>
</table>

Table 3.2.5b: Primary Knee Replacement: OKS Postoperative Scores

<table>
<thead>
<tr>
<th>Postoperative Oxford Knee Score</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital A</td>
<td>157</td>
<td>39</td>
<td>8.0</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>All Other Hospitals</td>
<td>219</td>
<td>37</td>
<td>8.9</td>
<td>7</td>
<td>48</td>
</tr>
</tbody>
</table>

Figure 3.3: Oxford Knee Score Change

OKS Pre-Post (95% CI)
Hospital Reporting

EQ-VAS Hip Pre-Post (95% CI)

Mean Score (perceived health today)

All Other

Hospital X

EQ-VAS Hip Pre

EQ-VAS Hip Post

EQ-VAS Hip Pre

EQ-VAS Hip Post
Next steps...

• Achieve stable funding
• Utilise data to improve knowledge
• Improve data collection processes (get rid of paper wherever possible)
• Roll out to new hospitals
• Create value so ACORN becomes a “must do”
• Enhanced half yearly and annual reporting