SHOULDER REPLACEMENT
Figure S1    Proportion of Shoulder Replacement
Total Shoulder Replacement
Figure ST1 & Table ST1  Primary Total Shoulder Replacement by Class

<table>
<thead>
<tr>
<th>Shoulder Class</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Resurfacing</td>
<td>235</td>
<td>0.4</td>
</tr>
<tr>
<td>Total Stemmed</td>
<td>14872</td>
<td>27.6</td>
</tr>
<tr>
<td>Total Reverse</td>
<td>35980</td>
<td>66.9</td>
</tr>
<tr>
<td>Total Mid Head</td>
<td>2728</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>53815</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Total mid head shoulder replacement has a lower rate of revision compared to:
- total stemmed
- total reverse (0-3 months)

Total reverse:
- has a higher rate of revision than total stemmed (0-3 months)
- has a lower rate of revision than total stemmed (3 months+)
Total Stemmed Shoulder Replacement
<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>N Revised</th>
<th>N Total</th>
<th>1 Yr</th>
<th>3 Yrs</th>
<th>5 Yrs</th>
<th>7 Yrs</th>
<th>10 Yrs</th>
<th>14 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteoarthritis</td>
<td>591</td>
<td>7850</td>
<td>2.9 (2.5, 3.3)</td>
<td>5.8 (5.3, 6.4)</td>
<td>7.2 (6.6, 7.8)</td>
<td>8.6 (7.9, 9.4)</td>
<td>11.7 (10.7, 12.9)</td>
<td></td>
</tr>
<tr>
<td>Osteonecrosis</td>
<td>13</td>
<td>150</td>
<td>4.3 (1.9, 9.3)</td>
<td>7.6 (4.1, 13.7)</td>
<td>11.4 (6.7, 19.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>8</td>
<td>116</td>
<td>0.9 (0.1, 6.3)</td>
<td>3.0 (1.0, 9.0)</td>
<td>4.3 (1.6, 11.1)</td>
<td>6.0 (2.5, 14.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fracture</td>
<td>10</td>
<td>72</td>
<td>7.2 (3.1, 16.5)</td>
<td>14.9 (8.3, 26.0)</td>
<td>14.9 (8.3, 26.0)</td>
<td>14.9 (8.3, 26.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotator Cuff Arthropathy</td>
<td>9</td>
<td>57</td>
<td>7.4 (2.8, 18.4)</td>
<td>14.1 (7.0, 27.6)</td>
<td>17.3 (8.9, 32.2)</td>
<td>17.3 (8.9, 32.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Inflammatory Arthritis</td>
<td>4</td>
<td>45</td>
<td>4.7 (1.2, 17.3)</td>
<td>4.7 (1.2, 17.3)</td>
<td>7.7 (2.5, 22.3)</td>
<td>7.7 (2.5, 22.3)</td>
<td>16.1 (5.2, 43.7)</td>
<td></td>
</tr>
<tr>
<td>Other (3)</td>
<td>5</td>
<td>34</td>
<td>6.3 (1.6, 23.0)</td>
<td>15.1 (5.8, 36.0)</td>
<td>21.1 (9.0, 45.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>640</strong></td>
<td><strong>8324</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Only primary diagnoses with over 30 procedures have been listed
Restricted to modern prostheses
Figure ST7 Cumulative Incidence Revision Diagnosis of Primary Total Stemmed Shoulder Replacement

Rotator cuff insufficiency is the most common reason for revision.

Note: Restricted to modern prostheses
Figure ST6  Cumulative Percent Revision of Primary Total Stemmed Shoulder Replacement by Primary Diagnosis

No statistical difference

Note: Only primary diagnoses with over 70 procedures have been listed
Restricted to modern prostheses
Patients aged <55 years have a significantly higher rate of revision compared to patients aged 65-74 years and ≥75 years.
There is no difference in the rate of revision between males and females.

Note: Restricted to modern prostheses
BMI is not a risk factor for revision.
Cementless fixation has a higher rate of revision compared to the other types of fixation.
Reverse Shoulder Replacement
### Table ST46
Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Primary Diagnosis

<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>N Revised</th>
<th>N Total</th>
<th>1 Yr</th>
<th>3 Yrs</th>
<th>5 Yrs</th>
<th>7 Yrs</th>
<th>10 Yrs</th>
<th>14 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteoarthritis</td>
<td>488</td>
<td>14926</td>
<td>2.1 (1.9, 2.3)</td>
<td>3.2 (2.9, 3.5)</td>
<td>3.7 (3.4, 4.1)</td>
<td>4.5 (4.0, 5.0)</td>
<td>5.8 (5.0, 6.6)</td>
<td></td>
</tr>
<tr>
<td>Rotator Cuff Arthropathy</td>
<td>438</td>
<td>12239</td>
<td>2.4 (2.1, 2.7)</td>
<td>3.6 (3.3, 4.0)</td>
<td>4.5 (4.0, 5.0)</td>
<td>4.8 (4.3, 5.4)</td>
<td>6.2 (5.2, 7.3)</td>
<td></td>
</tr>
<tr>
<td>Fracture</td>
<td>212</td>
<td>5171</td>
<td>3.1 (2.6, 3.6)</td>
<td>4.2 (3.7, 4.8)</td>
<td>4.8 (4.2, 5.6)</td>
<td>5.2 (4.5, 6.1)</td>
<td>5.9 (4.9, 7.2)</td>
<td></td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>31</td>
<td>591</td>
<td>3.1 (1.9, 4.9)</td>
<td>5.4 (3.6, 7.8)</td>
<td>6.6 (4.5, 9.6)</td>
<td>7.3 (5.0, 10.7)</td>
<td>7.3 (5.0, 10.7)</td>
<td></td>
</tr>
<tr>
<td>Osteonecrosis</td>
<td>16</td>
<td>392</td>
<td>1.6 (0.7, 3.5)</td>
<td>4.4 (2.5, 7.6)</td>
<td>6.5 (3.9, 10.9)</td>
<td>6.5 (3.9, 10.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instability</td>
<td>23</td>
<td>348</td>
<td>4.2 (2.5, 7.0)</td>
<td>5.8 (3.7, 9.1)</td>
<td>7.1 (4.6, 11.1)</td>
<td>8.2 (5.2, 12.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (3)</td>
<td>30</td>
<td>350</td>
<td>4.2 (2.5, 7.1)</td>
<td>10.0 (6.6, 15.0)</td>
<td>11.9 (7.9, 17.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1238</strong></td>
<td><strong>34017</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Only primary diagnoses with over 300 procedures have been listed
Restricted to modern prostheses
Osteoarthritis has a lower rate of revision compared to:
- Fracture (0-3 months)
- Rheumatoid arthritis
- Instability

Note: Only primary diagnoses with over 300 procedures have been listed
Restricted to modern prostheses
Instability/dislocation is the most common reason for revision.

Note: Restricted to modern prostheses
Reverse Shoulder Replacement

Primary Diagnosis Osteoarthritis
Patients aged 55-64 years and 65-74 years have a higher rate of revision compared to patients aged ≥75 years.

Only used in small numbers in patients aged <55 years.

Note: Restricted to modern prostheses.
Males have a higher rate of revision compared to females.

Note: Restricted to modern prostheses
Males have a higher rate of revision for instability/dislocation and infection.
BMI is not a risk factor for revision.
Reverse Shoulder Replacement

Primary Diagnosis Rotator Cuff Arthropathy
Figure ST42  Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Age (Rotator Cuff Arthropathy)

Age is not a risk factor for revision.

Note: Restricted to modern prostheses
Males have a higher rate of revision compared to females.

Note: Restricted to modern prostheses.
Males have a higher rate of revision for infection and instability/dislocation.
Pre-obese patients have a lower risk of revision compared to patients with a normal BMI.
Reverse Shoulder Replacement

Primary Diagnosis Fracture
Patients aged $\geq 75$ years have a lower rate of revision compared to the other age groups.

Note: Restricted to modern prostheses
Figure ST56 Cumulative Percent Revision of Primary Total Reverse Shoulder Replacement by Gender (Fracture)

Males have a higher rate of revision than females for the first 3 months.

Note: Restricted to modern protheses
Figure ST57  Cumulative Incidence Revision Diagnosis of Primary Total Reverse Shoulder Replacement by Gender (Fracture)

Males have a higher rate of revision for instability/dislocation.

Note: Restricted to modern prostheses
Partial Shoulder Replacement
Primary Partial Shoulder Replacement by Class

Hemi Stemmed and hemi resurfacing are the most common classes of partial shoulder.
Figure SP2  Cumulative Percent Revision of Primary Partial Shoulder Replacement by Class (All Diagnoses)

10 year CPR:
17.4% Hemi Resurfacing
11.9% Hemi Stemmed
Partial Shoulder Replacement

Hemi Resurfacing
Patients aged <55 years have a higher rate of revision compared to patients aged:
- ≥75 years (2.5-3.5 years and after 4 years)
- 65-74 years (after 1.5 years)
Females have a higher rate of revision compared to males.
Figure SPS3  Cumulative Incidence Revision Diagnosis of Primary Hemi Resurfacing Shoulder Replacement (All Diagnoses)
Partial Shoulder Replacement

Hemi Stemmed
The rate of revision is lower for patients aged ≥75 years compared to:
- patients <55 years (after 2.5 years)
- 55-64 years.
No difference between patients aged ≥75 years and 65-74 years.
Gender is not a risk factor for revision.
The rate of revision is lower for patients aged ≥75 years compared to all other age groups.
Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Gender (Primary Diagnosis Fracture)

Females have a higher rate of revision compared to males.
Figure SP5  Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis

Fracture has a higher rate of revision than osteoarthritis for the first 6 months only.

Note: Only primary diagnoses with over 1,000 procedures have been listed
Figure SP4  Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis
Figure SPS8  Cumulative Incidence Revision Diagnosis of Primary Hemi Stemmed Shoulder Replacement by Primary Diagnosis

Rotator cuff insufficiency more frequent

Glenoid erosion more frequent
Figure SPS12  Cumulative Percent Revision of Primary Hemi Stemmed Shoulder Replacement by Stem Type and Humeral Fixation (Primary Diagnosis Fracture)

Cemented non-fracture stems have the lowest rate of revision.