Overview

Mako Robotic-Arm Assisted Surgery enables surgeons to have a more predictable surgical experience and can offer you a leadership advantage in our evolving healthcare environment. The Mako System offers three unique steps: enhanced planning, dynamic joint balancing, and haptic guidance. In the Partial Knee and Total Hip applications, this system has been shown to facilitate more accurate positioning to plan\textsuperscript{8,10} and has shown enhanced patient reported outcomes.\textsuperscript{11,12,13}

Enhanced Planning

Patient-specific pre-operative plan enables more accurate implant positioning to plan.\textsuperscript{3,4,5,6,7,8,9,10,11,14,15}

Dynamic joint balancing

Surgeon-controlled intra-operative adjustments can be made to optimize implant placement.\textsuperscript{4,6,7,15}

Haptic guidance

Making healthcare better together, with Mako Total Knee.

In a separate study it was found that the average 90-day Medicare EOC costs were $2,391 less for Mako Total Knee patients compared to manual total knee arthroplasty patients ($18,568 vs. $20,960; p<.0001). Index facility costs was $640 less for Mako Total Knee patients compared to manual ($12,384 vs. $13,024; p=.0001). Mako Total Knee was associated with a length of stay reduction of 0.7 days (p<0.0001). Mako Total Knee patients were discharged to skilled nursing facility less frequently (12.52% vs. 21.70%; p<0.0001) and home with health aid (56.65% vs. 46.67%; p<0.0001) or self-care (27.55% vs. 23.62%; p=0.0566) more frequently. Mako Total Knee patients had a 90-day readmission reduction of 33% (p=.0423).\textsuperscript{18}

<table>
<thead>
<tr>
<th>Discharge status</th>
<th>% mTKA</th>
<th>% rTKA</th>
<th>% difference</th>
<th>Statistically significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharged/transferred to HHC home care</td>
<td>46.67%</td>
<td>56.60%</td>
<td>21.39%</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Discharged to home self-care</td>
<td>23.62%</td>
<td>27.55%</td>
<td>16.64%</td>
<td>p=0.0566</td>
</tr>
<tr>
<td>Discharged/transferred to SNF</td>
<td>21.70%</td>
<td>12.92%</td>
<td>-41.27%</td>
<td>p=0.0001</td>
</tr>
</tbody>
</table>

Mako Total Knee patients had overall lower average 90-day episode of care cost compared to manual total knee arthroplasty. Cost savings were driven by:\textsuperscript{18}

- Reduced index facility costs
- Lower LOS
- Discharge destinations
- Decreased readmissions

<table>
<thead>
<tr>
<th>Average costs</th>
<th>rTKA</th>
<th>mTKA</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index facility costs</td>
<td>$12,384</td>
<td>$13,024</td>
<td>0.0001</td>
</tr>
<tr>
<td>Total 90-day EOC</td>
<td>$18,568</td>
<td>$20,960</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Demographics are driving joint replacement demand

Anticipated 673% increase in total knee procedures and 174% increase in primary total hip procedures by 2030.20

Aging population

Between 2015 and 2035 the population over 65 is projected to increase by 62%, driving demand for total joint replacement.21

Rising obesity rates

U.S. population is projected to continue to get heavier. By 2030, over 50% of the population is projected to be obese.22

Options for younger patients

Rising demand for PKA is expected among younger patients who seek restored function and a quicker return to work. PKA typically requires less rehabilitation, results in fewer post-operative complications, and may offer patients improved knee function and quality of life.23

References:


6. Jerabek SA; Carroll KM; Marrott JD; Maydan DJ; Padgett DE. Accuracy of Cup Positioning and Achieving Desired Hip Length and Offset Following Robotic THA. 14th Annual CAOS Meeting, June 18-21, 2014, Milan, Italy.

7. Reusch JL; Gipp GD; Carroll KM; Jerabek SA; Maydan SA; Padgett DE. Acetabular Component Cup Placement Using a Bipolarly Guided Robotic Technology in Total Hip Arthroplasty. 16th EPROF Congress, May 28-30, 2015, Prague, Czech Republic.


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