Shoulder and Elbow Registry (SER) Webinar

June 28th 2019
Presenters

Kristina Finney, MPH
Director of Registries & Data Science

Kristine Sizemore, MPH
Registry Engagement Associate
Registry Effort Goals

✓ Collect unique clinical information demonstrating real-world practice
✓ Enable performance measurement by physicians for physicians
✓ Facilitate national registry-driven quality improvement programs
✓ Support novel scientific research
Registry Program Highlights

- AJRR was re-integrated into AAOS, the Shoulder & Elbow Registry (SER) & Musculoskeletal Tumor Registry (MsT) Pilot were developed and launched

- Obtained *access to Medicare claims* data for linkage

- Selected for National Eval System for health Technology Coordinating Center (NESTcc) grant to participate in *feasibility pilot for data linkage from private payers*

- Launched *Registry Analytics Institute* to foster further dissemination of Registry Program data in literature, conferences, and across trainees

- Continued investment in *technical infrastructure* to optimize user and multi-stakeholder experience
  - Development of *PROM dashboards*, data *access directly to AAOS surgeons*, and increased value of Registry Insights™

- Developed partnerships with *ABOS, Joint Commission, CMMI* for use of data in *MOC, COE, MIPS, and more*
Shoulder & Elbow Steering Registry Committee

• Gerald R. Williams Jr., MD – Chair
• Joaquin Sanchez-Sotelo, MD
• Ronald A. Navarro, MD
• John E. Kuhn, MD
• Stephen F. Brockmeier, MD – AOSSM Representative
• Patrick St. Pierre, MD – AANA Representative
• Grant E. Garrigues, MD – ASES Representative
• Mark Baratz – ASSH Representative
Shoulder & Elbow Registry Data Elements

**Procedural**

**Patient**
- Name (Last, First)
- Date of Birth
- Social Security Number
- Diagnosis (ICD-10)
- Gender
- Race/Ethnicity
- Payer Status

**Hospital/Practice**
- Name and Address

**Surgeon**
- Name (National Provider Identifier)

**Procedure**
- Type (ICD-10)
- Date of Surgery
- Laterality
- Implants

**Post-op/Comorbidities**
- Comorbidities (ICD-10)
- Height + Weight/Body Mass Index
- Length of Stay
- American Society of Anesthesiologists Score
- Operative and Post-operative Complications

**Patient-reported Outcomes**
- PROMIS-10 Global
- VR-12
- SANE
- ASES

Three active modules:
- Shoulder Arthroplasty Module
- Elbow Arthroplasty Module
- Rotator Cuff Repair
Integration of Medicare Data

Obtained access to Medicare claims data (2012-2018 for all patients represented in Registry with Medicare records, ~700k patient)

Participants have access to custom reports that compare their site to the national Annual Report analyses, inclusive of survivorship curves
2018 AJRR Annual Report

• Now available online with two digital supplements
• Includes data on over 1.1 million procedures from 2012-2017
• Integration of Medicare data
• Includes 54 implant survivorship curves

Fifth AJRR Annual Report on Hip and Knee Arthroplasty Data
Why Do Sites Participate?

• Compare your practice to **national performance benchmarks**

• Access to on-demand practice specific **quality reports and dashboards**

• Facilitate tracking and monitoring of **longitudinal patient outcomes**

• Facilitate site, practice-specific, **payer-incentivized performance improvement** programs such as Blue Distinction and COE

• Qualify for **national distinction programs** such as the Joint Commission Advanced Certification in Hip or Knee Replacement or AAAHC

• Use for reporting to **quality improvement programs** such as MIPS & MOC

• Early access to **surveillance alerts** for poorly performing implants

• Improve the **value of care** delivered to patients
Three ways to access data

RegistryInsights™ Dashboards

Registry Analytics Institute (RAI)

Custom Reports
Site admins & Surgeons have accounts where they are able to:

- see their procedural, post-operative and PROM data
- compare themselves to national benchmarks
- request custom reports
- opt to submit data for quality initiatives (e.g. MOC, QPP)
**Data Insights for Orthopaedics**

**Detail Surgeon Activities and Case Numbers**

Table 1: 2014 Average Procedural Volume for Participating Surgeons (N=2,247)

<table>
<thead>
<tr>
<th></th>
<th>Total Surgeons</th>
<th>Total Procedures</th>
<th>Per Surgeon Average</th>
<th>Range</th>
<th>Number of Surgeons Who Submitted Only One Procedure</th>
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</thead>
<tbody>
<tr>
<td>HIP</td>
<td>1,822</td>
<td>42,249</td>
<td>23.2</td>
<td>1-317</td>
<td>295</td>
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<tr>
<td>Revision</td>
<td>757</td>
<td>4,624</td>
<td>6.1</td>
<td>1-76</td>
<td>229</td>
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</table>

**Provide Distribution of Procedures**

Figure 12: Distribution of Procedures (N=211,721)

- **Primary Knee** n=118,460 (56.0%)
- **Primary Hip** n=73,837 (34.9%)
- **Revision Knee** n=10,420 (4.9%)
- **Revision Hip** n=8,257 (3.9%)
- **Hip Resurfacing** n=747 (0.4%)

**Track Patient Reported Outcomes**

- Quick Links
  - Participating PRO Institutions
  - Registry Total Procedures: 242,69 K
  - Your Total Assessments: 58

**Characterize US Implant Usage Patterns**

Table 2: Frequency and Percentage of Femoral Head Sizes implanted by Year (N=74,833)

<table>
<thead>
<tr>
<th>Head Size</th>
<th>2012 n (%)</th>
<th>2013 n (%)</th>
<th>2014 n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;28mm</td>
<td>537 (4.9%)</td>
<td>704 (3.2%)</td>
<td>1,176 (2.8%)</td>
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<tr>
<td>28mm</td>
<td>1,049 (9.6%)</td>
<td>2,902 (13.2%)</td>
<td>5,752 (13.7%)</td>
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<tr>
<td>32mm</td>
<td>3,112 (28.5%)</td>
<td>6,025 (27.4%)</td>
<td>10,790 (25.7%)</td>
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<tr>
<td>36mm</td>
<td>4,890 (44.8%)</td>
<td>9,828 (44.7%)</td>
<td>19,607 (46.7%)</td>
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<tr>
<td>40mm</td>
<td>808 (7.4%)</td>
<td>1,165 (5.3%)</td>
<td>2,225 (5.3%)</td>
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<tr>
<td>&gt;40mm</td>
<td>515 (4.7%)</td>
<td>1,363 (6.2%)</td>
<td>2,435 (5.8%)</td>
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<tr>
<td>Total</td>
<td>10,911</td>
<td>21,987</td>
<td>41,985</td>
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</tbody>
</table>

Excludes hemiarthroplasty

**Show Top Reasons for TJA Procedures**

Figure 14: ICD-9 Diagnosis Codes for All Hip Arthroplasty Procedures (N=74,584)

- 715: Osteoarthritis n=18,477 (78.4%)
- 820: Fracture of neck of femur n=7,947 (33.7%)
- Other n=4,509 (5.4%)
- 733.42: Avascular necrosis n=2,504 (2.8%)
- 996: Complications n=1,467 (2.0%)
- 714: Rheumatoid arthritis n=180 (0.2%)

Other codes include those in categories 716, 719, 733, 736, 715. See Appendix D for complete list of diagnosis codes included in each category.

**Characterize Causes of Early Revision**

Figure 27: Most Frequently Reported ICD-9 Diagnosis Codes for Hip Revisions (<3 Months to Revision)

- 715: Osteoarthritis n=137 (11.4%)
- 733: Avascular necrosis n=116 (10.0%)
- 733.4: Hip fracture n=107 (9.3%)
- 714: Rheumatoid arthritis n=95 (8.1%)
- 716: Other mechanical complication n=93 (8.0%)
- 716.42: Dislocation of hip n=89 (7.6%)
- 733.5: Pelvis fracture n=89 (7.6%)
- 737.2: Other mechanical complication n=88 (7.6%)
- 716.6: Mechanical loosening of hip n=88 (7.6%)

AAOS
AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS
Registry Program
Improving Orthopaedic Care Through Data
### Patient Reported Outcomes Reports

#### Assessment Summary

<table>
<thead>
<tr>
<th>ACCOUNT ID</th>
<th>HOSPITAL/ASC ID</th>
<th>PATIENT ID</th>
<th>PATIENT LAST NAME</th>
<th>PATIENT FIRST NAME</th>
<th>PATIENT DATE OF BIRTH</th>
<th>PATIENT EMAIL ADDRESS</th>
<th>PATIENT PHONE TYPE</th>
<th>PATIENT PHONE NUMBER</th>
<th>PROCEDURE</th>
<th>LATERALITY</th>
<th>PLANNED SURGERY DATE</th>
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<td>Left</td>
<td>1/24/2019</td>
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<td>1/20/2019</td>
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</table>

This form allows AJRR users to pre-register patients prior to surgery for pre-operative, patient-reported outcome measures (PROMs) data collection. Once the form has been submitted, a patient pre-operative case will be added to the Registry. The pre-registration process permits users to collect PROMs from patients via the AJRR platform through the patient kiosk or through manual entry of a patient’s PROMs responses into the platform if collected by paper or clinician/surgeon administration.
The goal of the AAOS Registry Analytics Institute is to provide a **resource to the scientific community** to further understand and improve orthopaedic and musculoskeletal care by making data available to examine outcomes related to orthopaedics.

**Launched February 2019**

https://www.aaos.org/Quality/Registry_Programs/AAOS_Registry_Analytics_Institute/
Registry Analytics Institute

• Process for external data requests

• Review cycle managed by the Research Projects Subcommittee

• Selected awardees receive statistical support, data analyses, and potential monetary support

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Opens</th>
<th>Preliminary Application Due Date</th>
<th>Preliminary Review By RPS</th>
<th>Final Application Due Date</th>
<th>Final Review by Full Data Committee</th>
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<td>Cycle 3</td>
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<td>December 2, 2019</td>
<td>January 10, 2020</td>
<td>February 28, 2020</td>
<td>April 17, 2020</td>
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Custom Reports

Custom reports created by our analytics team to help understand and package your site data in an actionable format.

Custom reports can include site specific metrics and shape continuous improvements to the canned dashboards provided.

Aggregated Reports and national benchmarks for every metric across all data submitted including procedural, post-operative and PROMs data can be provided at your site level.
Getting Started

1. Contract with AAOS

2. Accounts are set-up
   • Site administrator
   • Data submission
   • Surgeon users
   • PROM administrators

3. Data Submission
   • Technical set-up
   • Test data submission
   • Live data submission

4. Use of data
   • Dashboards
   • Canned reports
   • Custom reporting
Submission Best Practices

- Most participants submit monthly, active submission is at least every 90 days
- Ask your site’s IT about setting up automated reports
- You can monitor data submission uploads and address errors by logging into RegistryInsights™
- To learn more about correcting cases with issues, follow the instructions in the How-To Guide: Fix Rejected Data in Uploaded Files to AJRR
Registry Authorized Vendor Program

- We’ve partnered with technology vendors to help with a seamless data submission process
- Re-use data that already exists in your medical record, practice management and PRO systems
- Direct data submission and management can be handled by your technology provider
Re-use of Registry Data

- Calculate national performance benchmarks
- Access to on-demand practice specific quality reports and dashboards to compare locally, regionally, and nationally
- Track and monitor outcomes with longitudinal patient information
- Reduce complications and revision rates across sites
- Support quality initiatives and participation in payer incentivized QI
- Improve data to support orthopaedic care and best practices
- Allow for re-use of data towards the Joint Commission Advanced Certification, AAAHC, MIPS, MOC, and more
Questions?

Registryinfo@aaos.org

www.aaos.org/registries