Registry Overview

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Introductions
Presenters

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Registry Engagement Associate
Registry Program
Overview
Quality Vision

Registries

- component of a larger quality vision
- provide data to inform AAOS guidelines and test performance measures
- provide feedback to providers to continuously improve their practice and healthcare outcomes
- allow AAOS to define what quality means in a value-based system
- reduce the reporting burdens on physicians
- help inform gaps in knowledge or areas for further education

“If you can’t measure it, you can’t improve it” ~ Drucker
At the Core of Academy Strategy

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

- The American Joint Replacement Registry (AJRR) was re-integrated into AAOS
- The Registry Oversight Committee (ROC) was created
- Additional staff hired and physician leadership groups created
- Shoulder & Elbow Registry developed
- Strategy for building a scalable and sustainable Registry Program developed
- Revamp of data specifications and problem-solving for improved data capture within AJRR including release of revised specification
AAOS Family of Registries

AAOS Board of Directors

Registry Oversight Committee

Future Registry
Shoulder & Elbow Registry (SER)
American Joint Replacement Registry (AJRR)
Musculoskeletal Tumor (MsT) Registry Pilot
Future Registry

Shoulder Arthroplasty
Rotator Cuff Repair (2019)
Elbow Arthroplasty (2019)
Hip Arthroplasty
Knee Arthroplasty
Orthopaedic Oncology
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>
</tr>
</thead>
<tbody>
<tr>
<td>HIP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</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>
</tr>
<tr>
<td>KNEE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>1,617</td>
<td>64,552</td>
<td>39.9</td>
<td>1-522</td>
<td>182</td>
</tr>
<tr>
<td>Revision</td>
<td>1,045</td>
<td>6,143</td>
<td>5.9</td>
<td>1-103</td>
<td>308</td>
</tr>
</tbody>
</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**

**Figure 13: Participating PRO Institutions**

- APH Test Hospital 1: 0.4% 0.1% 0.1%
- APH Test Hospital 2: 21.1% 0% 19.2%
- APH Test Hospital 3: 0% 0% 0%
- APH Test Hospital 4: 19.1% 7.1% 16.1%

**Stats**

- 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 Sizes Implanted</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>
</tr>
<tr>
<td>28mm</td>
<td>1,049 (9.6)</td>
<td>2,902 (13.2)</td>
<td>5,752 (13.7)</td>
</tr>
<tr>
<td>32mm</td>
<td>3,112 (28.5)</td>
<td>6,025 (27.4)</td>
<td>10,790 (25.7)</td>
</tr>
<tr>
<td>36mm</td>
<td>4,890 (44.8)</td>
<td>9,828 (44.7)</td>
<td>19,607 (46.7)</td>
</tr>
<tr>
<td>40mm</td>
<td>808 (7.4)</td>
<td>1,165 (5.3)</td>
<td>2,225 (5.3)</td>
</tr>
<tr>
<td>&gt;40mm</td>
<td>515 (4.7)</td>
<td>1,363 (6.2)</td>
<td>2,435 (5.8)</td>
</tr>
<tr>
<td>Total</td>
<td>10,911</td>
<td>21,987</td>
<td>41,985</td>
</tr>
</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 (33.0%)
- Other: n=4,599 (5.4%)
- 733.42: Avascular necrosis: n=3,104 (3.0%)
- 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)**

- n=117: Dislocation of prosthetic joint (12.6%)
- n=116: Infection and inflammatory reaction due to removal joint prosthesis (12.0%)
- n=107: Post-prosthetic failure around prosthetic joint (11.9%)
- n=95: Other mechanical complications of prosthetic joint replacement (10.5%)
- n=87: Osteoarthrosis, not specified, whether primary or secondary, joint region and thigh (9.8%)
- n=53: Mechanical loosening of prosthetic joint (5.9%)
Data Collection
Shoulder Arthroplasty Module 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

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**First module around Shoulder Arthroplasty launched October 24, 2018**

**Future modules around Rotator Cuff Repair and Elbow Arthroplasty in 2019**
Patient-Reported Outcomes

**Supported PROMs for SER**

**Functional**
- PROMIS-10 Global
- VR-12

**Anatomical**
- SANE
- ASES

- We collect only these four
- Sites are not required to submit but at least one is recommended
- Submission can be done manually or automatically with our online kiosk
Data Specification & Dictionary

2018 AAOS Shoulder & Elbow Registry - Shoulder Arthroplasty
Data File Submission Layouts & Information
Version 1 - October 2018

Summary
This document is a file format and data field specification guide for submitting to the American Academy of Orthopaedic Surgeons (AAOS) Shoulder & Elbow Registry (SER) - Shoulder Arthroplasty.

Data Submission Tab Descriptions

Change Control
Summary of all changes since original version, listed by date.

Procedure Layout
This is the core data file submitted to AAOS SER by participating healthcare institutions.

PostOp Layout
File submission format for patients that have been readmitted within 90-days of actual procedure date.

PROMs Layout
Pre-Operative and Post-Operative survey patient reported outcome (PRO) responses.

Replacement Trigger Codes
Acceptable ICD-10 PCS codes for Shoulder Arthroplasty & Proximal Fracture Surgical procedures as related to the specific patient row being submitted. There can be up to 10 submitted.

Revision Trigger Codes
Acceptable ICD-10 PCS codes for revision procedures relating to Shoulder Arthroplasty & Proximal Fracture Surgical procedures as related to the specific patient row being submitted. There can be up to 10 submitted.

Supplement Trigger Codes
Acceptable ICD-10 PCS codes for revision of the Acetabular Liner as related to the specific patient row being submitted. For shoulder revision, appropriate removal code (see ICD-10 Removal code) and subsequent supplement code may be reported. For example: Liner Exchange in Revision Shoulder Arthroplasty. There can be up to 10 submitted.

CPT Trigger Codes
Acceptable CPT codes for all Shoulder Arthroplasty procedures as related to the specific patient row being submitted. There can be up to 10 submitted.

Dx - Shoulder Codes
Common ICD-10-CM Diagnosis codes for shoulder. The Registry will accept any valid patient primary and secondary diagnosis codes. There can be up to 10 submitted.
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 programs like MIPS, MOC, CME, TJC
Onboarding
## SIX STAGES TO SUCCESSFUL SUBMISSION

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
<th>Stage 5</th>
<th>Stage 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome &amp; Kick-Off</td>
<td>Account Setup</td>
<td>Build &amp; Validate Extract</td>
<td>Test File</td>
<td>Live Data</td>
<td>Transition to Ongoing Support</td>
</tr>
</tbody>
</table>

### Deliverables:

**Stage 1**
- Welcome & Kick-Off
- Deliverables:
  - 1.1 Participant Profile Updates
  - 1.2 Onboarding Resource Assignment
  - 1.3 Welcome Communication
  - 1.4 Registry Program & Participant Kick-Off
  - 1.5 Participant Onboarding Workbook

**Stage 2**
- Account Setup
- Deliverables:
  - 2.1 Participant Account Setup
    - Key Contacts
    - Surgeon Information
    - SFTP/HTTPS

**Stage 3**
- Build & Validate Extract
- Deliverables:
  - 3.1 Participant Documentation Review
  - 3.2 Participant Extract File Requirements Preparation
    - Source System Identification / Mapping
    - Q&A
  - 3.3 Participant builds extract file
  - 3.4 Participant validates extract file against source system
  - 3.5 Participant Automates File Transfer

**Stage 4**
- Test File
- Deliverables:
  - 4.1 Test File Call / Questions Response
  - 4.2 Test File Round 1
  - 4.3 Test File Round 2
  - 4.4 Test File Final Certification

**Stage 5**
- Live Data
- Deliverables:
  - 5.1 Participant Final Production Set-Up
  - 5.2 Live Data Submission [FIRST FILE]
  - 5.3 Live Data Submission Confirmation

**Stage 6**
- Transition to Ongoing Support
- Deliverables:
  - 6.1 Subscriber Training & Access – Authorized User
  - 6.2 Subscriber Training & Access – PRO Platform
  - 6.3 Support Process & Marketing Resources Review

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*Shoulder & Elbow Registry*
*Improving Orthopaedic Care Through Data*
Data Submission Options

Upload File

Please provide a valid excel file to preregister patients and cases in bulk.

Institution*

Select one

Drag Files Here
Excel File (.xlsx or .xl)

UPLOAD FILE
Submission Best Practices

• You can monitor data submission uploads and errors by logging into RegistryInsights™

• On Homepage: Latest file Upload
  - Indicates when the last file was uploaded
  - Number of cases submitted
  - Number of cases with issues
  - Option to correct & resubmit

• Most participants submit monthly but we encourage submitting at least every 90 days

• We can work with your site’s technology team or vendor to set-up automated submissions
Getting Started
Contracting

• Master Participation Agreement
  • Simple 2-page appendix for current AJRR participants
• Business Associate/Data Usage Agreement
• Security Assessment
Participation Fee Structure

- Single institution, 1-year licensing fee $3,500
- $750 1x configuration fee
- Discounts are available
- Includes
  - Unlimited access to RegistryInsights™ dashboards and reports
  - PRO Platform – can administer surveys
  - Ongoing support
  - Inclusion in User Group Network (Unet)
Thank you!

“RegistryInsights Surgeon Dashboards 101”
Date: 2/13/2019
Time: Noon CST

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Commonly Asked Questions

Data Submission
- What is the format of data to be uploaded?
- How often should a site submit?
- Are all data elements required?
- If a site is utilizing a 3rd party to collect data, is it necessary to collect the same data twice?

Participation and Fees
- How much does it cost to participate?
- Are fees for each Registry separate?

PROMS
- What Patient-Reported Outcomes are collected? Are all mandatory?
- At what intervals are PROMS collected?
- Can a site choose which PROM to use?
- How are PROMs submitted?