

Fracture & Trauma Registry

Expanding Data Collection Across
Musculoskeletal Care

www.aaos.org/registries

AMGEN[®]

Bone Health

Amgen is an industry sponsor for FTR

Speaker Introduction

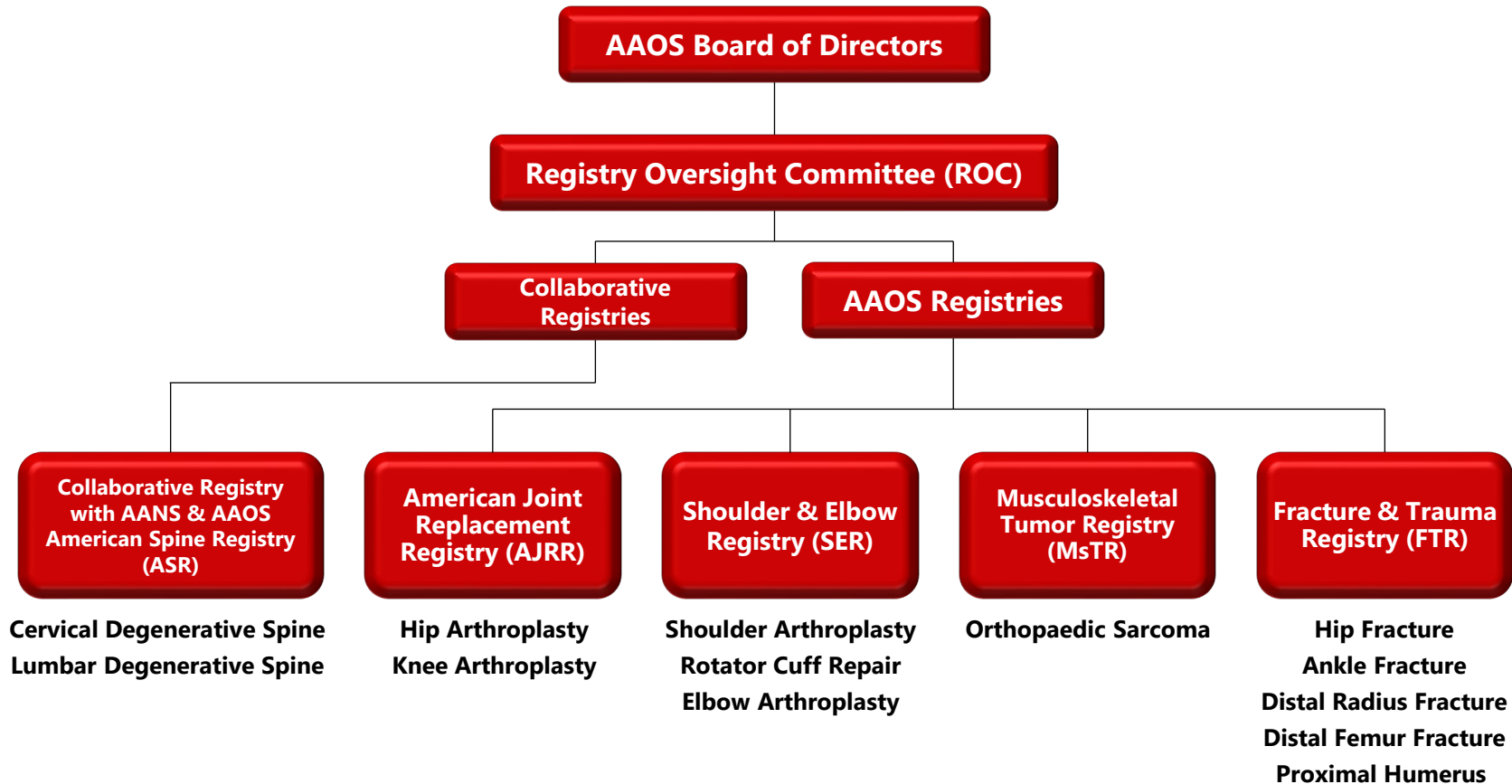
Steven A. Olson, MD

Golder-Jones Distinguished Professor
Department of Orthopaedic Surgery
Division Chief - Orthopaedic Trauma
Duke University Health System
Durham, NC USA

Agenda

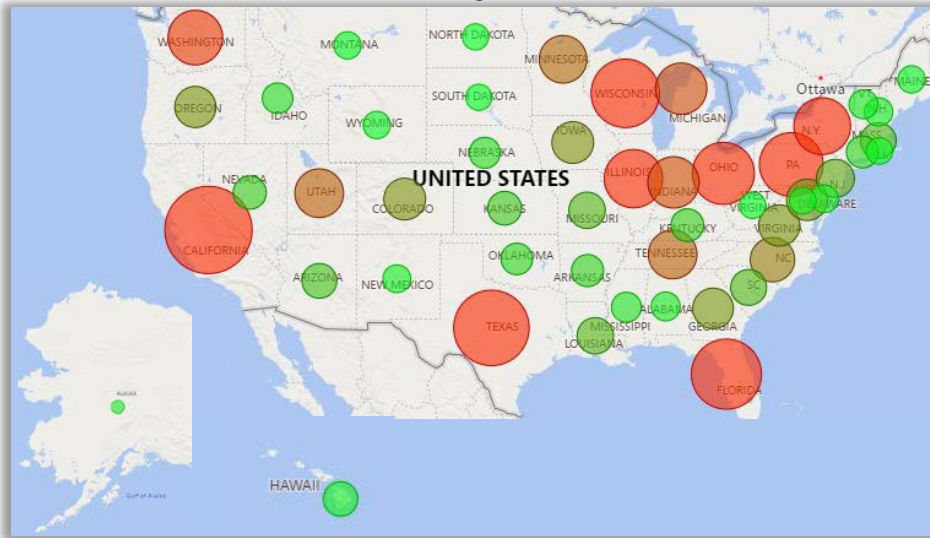
- **AAOS Registry Program Overview**
- Introduction to the Fracture and Trauma Registry (FTR)
- Module-Specific Elements
- AJRR & SER Crossover
- Data Reuse Opportunities
- Steps to Participate
- Q&A

AAOS Family of Registries



Registry Participation

Sites by State



Five registries with over **1,400 participating sites** contracted and 14,000 registered surgeons across all 50 states.

The AJRR has been shown to be representative of national trends and contains data representing over 2,700,000 procedures.



Agenda

- AAOs Registry Program Overview
- **Introduction to the Fracture and Trauma Registry (FTR)**
- Module-Specific Data
 - AJRR & SER Crossover
- Data Reuse Opportunities
- Steps to Participate
- Q&A

Fracture & Trauma Registry Modules

Data Elements Summary

- Procedural
- Comorbidities & Complications
- Patient-reported Outcomes
- Bone Health Assessment
- Functional Assessment

Hip Fracture

Distal Radius Fracture

Ankle Fracture

Distal Femur Fracture

Proximal Humerus Fracture

FTR Steering Committee

- **Michael J. Gardner, MD, FAAOS – Chair**
Stanford University Surgery
- **Jaimo Ahn, MD, PhD, FAAOS**
University of Michigan
- **Kyle J. Jeray, MD, FAAOS**
Prisma Health
- **Douglas W. Lundy, MD, MBA, FAAOS**
Resurgens Orthopaedics
- **Saam Morshed, MD, FAAOS**
University of California, San Francisco
- **William T. Obrebsky, MD, MPH, FAAOS**
Vanderbilt Ortho Institute
- **Steven A. Olson, MD, FAAOS**
Duke Hospital South
- **Heather A. Vallier, MD, FAAOS**
MetroHealth Medical Center
- **Philip R. Wolinsky, MD, FAAOS** University of California at Davis Medical Center



Hand Lead – David Bozentka, MD
Ankle Lead – Ken Hunt, MD
SER Lead – Grant Garrigues, MD

FTR Mission & Vision

Mission: To improve orthopaedic fracture care through the collection, analysis, reporting and research on traumatic fractures of the pelvis and extremities.

Vision: To be a National Registry that empowers quality improvement and research for orthopaedic trauma of the pelvis and extremities in order to optimize patient care.

Registry Data Collection: Core Data Elements

These *Core Data Elements* are collected across all AAOS and Collaborative Registries.

Procedure

Patient

- Name (Last, First), Date of Birth, SSN
- Diagnosis (ICD-10, CPT)
- Gender
- Race/Ethnicity
- Height + Weight/Body Mass Index
- Payer Status

Site of Service

- Name and Address (TIN/NPI)

Surgeon

- Name (NPI)

Procedure

- Type (ICD-10, CPT)
- Date of Surgery
- Implants (Manufacturer, Lot #)
- Anesthesia Type

Procedure, continued

- Length of Stay
- American Society of Anesthesiologists Score
- Charlson Comorbidity Index (CCI)

Comorbidities & Complications

- Comorbidities (ICD-10)
- COVID-19 as prior diagnosis
- Height + Weight/Body Mass Index
- Length of Stay
- American Society of Anesthesiologists Score
- Charlson Comorbidity Index (CCI)
- Operative and Post-operative Complications

FTR Common Data Elements

In addition to the **Core Data Elements**,
FTR also collects the following:

Procedure

Patient

- Injury Date
- Regional Block
- Osteoporosis Screening
- Calcium/Vitamin D Supplementation
- Residential Setting
- Ambulatory Status
- Delirium Score
- Implants and Grafts

Fracture

- Fracture Type
- Fracture Classification

The Fracture & Trauma Registry includes the following modules:

- **Hip Fracture**
- **Distal Femur Fracture**
- **Proximal Humerus Fracture**
- **Distal Radius Fracture**
- **Ankle Fracture**

FTR PROMs by Module

Hip Fracture	Proximal Humerus Fracture	Distal Femur Fracture	Distal Radius Fracture	Ankle Fracture
PROMIS-10 <i>or</i> VR-12	PROMIS-10 <i>or</i> VR-12	PROMIS-10 <i>or</i> VR-12	PROMIS-10 <i>or</i> VR-12	PROMIS-10 <i>or</i> VR-12
PROMIS Physical Function	PROMIS Physical Function	PROMIS Physical Function	PROMIS Physical Function	PROMIS Physical Function
HOOS, Jr	ASES and SANE	KOOS, Jr	DASH <i>or</i> QuickDASH	PROMIS Pain Interference
<i>Also Accepts:</i> HOOS, PROMIS-29, PROMIS-CAT*, PROMIS Anxiety, PROMIS Depression, PROMIS Pain Interference	<i>Also Accepts:</i> PROMIS-29, PROMIS-CAT*, PROMIS Anxiety, PROMIS Depression, PROMIS Pain Interference	<i>Also Accepts:</i> KOOS, PROMIS-29, PROMIS-CAT*, PROMIS Anxiety, PROMIS Depression, PROMIS Pain Interference	<i>Also Accepts:</i> PROMIS-29, PROMIS-CAT*, PROMIS Anxiety, PROMIS Depression, PROMIS Pain Interference	<i>Also Accepts:</i> FAAM, FAOS, PROMIS-29, PROMIS-CAT*, PROMIS Anxiety, PROMIS Depression

Additionally accepted PROMs may be used in combination with, or in place of, the above recommended PROMs

FTR PROMs Intervals

Collection Interval	Definition
Pre-injury, 1 Month (SR)	Within 30 days prior to the injury
Post-operative, 6 Weeks (SR)	+/- 2 weeks
Post-operative, 3 Months (SR)	+/- 60 days
Post-operative, 6 months (O)	+/- 30 days
Post-operative, 12 month (O)	+/- 60 days

Note: SR = Strongly Recommend, O = Optional

Agenda

- AAOOS Registry Program Overview
- Introduction to the Fracture and Trauma Registry (FTR)
- **Module-Specific Data**
 - **AJRR & SER Crossover**
- Data Reuse Opportunities
- Steps to Participate
- Q&A

Module-Specific Elements

Distal Radius Fracture

Procedural Fracture

- Fracture Status
- Pre-operative Closed Reduction
- Angulation Type
- Shear Type
- Presence of Scaphoid Fracture
- Presence of Ipsilateral Ulnar Fracture

Procedure

- Fixation Type
- ORIF Fixation
- Pre-ORIF with Staged External Fixation
- TFCC Repair
- Distal Radioulnar Joint Stabilization

Post Operative / Complications

- Range of Motion
- Grip Strength

Module-Specific Elements

Ankle Fracture

Procedural

Fracture

- Dislocation Type
- Open/Closed
- Injury Mechanism
- Pre-operative Closed Reduction

Procedure

- External Fixation
- Syndesmotic Fixation
- Lateral, Posterior Malleolus, Medial Treatment
- Adjunct Treatments
- Associated Articular Impaction Details
- Stress Evaluation Method and Findings

Distal Femur Fracture

Procedural

Fracture

- Presence of Bone Defect

Procedure

- Use of Bone Cement
- Planned Return to OR

FTR & AJRR Crossover

- Key difference is the triggering inclusion
 - AJRR is triggered by procedure codes
 - FTR is triggered by fracture diagnosis codes accompanied by a CPT/ICD-10 Procedure Code
- 183 common data elements
- AJRR contains 19 data element fields not in FTR that related to
 - Knee surgical technique
 - TJC elements
 - Other measure-related data elements
- FTR Hip Fracture Module contains the following 14 recommended or optional data fields in addition to the common core elements

FTR Hip Fracture Module-Specific Elements

Pat_Residence	Recommended Required	1-4 (1=Independent; 2=Assisted Living; 3=Skilled Nursing Facility (SNF); 4=Not Reported)
Pat_AmbulatoryStatus	Recommended Required	1-5 (1=Independent; 2=Cane; 3=Walker; 4=Non-ambulatory; 5=Not Reported)
Delirium_Score	Recommended Required	1-5 (1=Acute Onset and Fluctuating Course; 2=Inattention; 3=Disorganized Thinking; 4=Altered Level of Consciousness; 5=Not Reported) NOTE: A comma separation may be used if there is more than one technique administered (e.g., "1, 2" for general spinal).
MFI_5	Recommended Required	Total; 0-5, Not reported or NR
INJURYDT	Recommended Required	MM/DD/YYYY

FTR Hip Fracture Module-Specific Elements

SurgicalTechnique	Optional Data	1-4 (1=Hemiarthroplasty; 2=Total Joint Arthroplasty; 3=Fixation; 4=Not Reported or NR)
FixationType	Conditional Data	1-6 (1=ORIF; 2=External Fixation; 3=CR/pinning; 4=Not reported or NR; 5=IM Nail; 6=Screw-sideplate) NOTE: a comma separation may be used if there is more than one technique administered (e.g., "1, 2").
FractureType	Recommended Required	1-4 (1=Femoral Neck Fracture; 2=Intertrochanteric Fracture; 3=Subtrochanteric Fracture; 4=Not Reported)
FractureClassification	Optional Data	1-3 (1=AO; 2=OTA; 3=Not Reported)
FractureStability	Optional Data	1-3 (1=Stable; 2=Unstable; 3=Not Reported)

FTR Hip Fracture Module-Specific Elements

RegionalBlock	Conditional Data	1-5 (1=No, 2=Pre-op, 3=Intra-op; 4=Post-op, 5=Not Reported)
OsteoporosisScreening	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported)
DXA_Scan	Optional Data	1-2 (1=Yes; 2=No; 3=Not Reported)
Ca_VitD	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported)

FTR & AJRR Common Data Elements

PROMs

Recommended in FTR and available in AJRR

- PROMIS-10
- VR-12
- PROMIS Physical Function
- HOOS, Jr.
- *Both Registries Also Accept:*
 - HOOS,
 - PROMIS-29,
 - PROMIS-CAT*,
 - PROMIS Anxiety,
 - PROMIS Depression,
 - PROMIS Pain Interference

FTR & SER Crossover

- Inclusion Criteria
 - SER is triggered by procedure codes
 - Proximal humerus is triggered by fracture diagnosis codes accompanied by a CPT/ICD-10 Procedure Code
- 183 common data elements
- SER contains 4 data element fields not in FTR that relate to
 - Shoulder surgical approach and technique
 - Patient-specific instrumentation
- FTR Proximal Humerus Fracture Module contains the following 17 recommended or optional data fields in addition to the common core elements

FTR Proximal Humerus Fracture Module-Specific Elements

Pat_Residence	Recommended Required	1-4 (1=Independent; 2=Assisted Living; 3=Skilled Nursing Facility (SNF); 4=Not Reported)
Pat_AmbulatoryStatus	Recommended Required	1-5 (1=Independent; 2=Cane; 3=Walker; 4=Non-ambulatory; 5=Not Reported)
Delirium_Score	Recommended Required	1-5 (1=Acute Onset and Fluctuating Course; 2=Inattention; 3=Disorganized Thinking; 4=Altered Level of Consciousness; 5=Not Reported) NOTE: A comma separation may be used if there is more than one technique administered (e.g., "1, 2" for general spinal).
PreOp_Imaging	Optional Data	1-4 (1=CT Scan, 2=MRI, 3=Not obtained, 4=Not Reported or NR)
INJURYDT	Recommended Required	MM/DD/YYYY

FTR Proximal Humerus Fracture Module-Specific Elements

SurgicalApproach	Recommended Required	1-5 (1=Deltopectoral; 2=Deltoid Split/Anterolateral; 3=Percutaneous; 4=other; 5=Not reported or NR)
SurgicalTechnique	Optional Data	1-7 (1=Hemiarthroplasty; 2=Total Shoulder Arthroplasty; 3=Reverse Shoulder Arthroplasty; 4=IM Nailing; 5=Lock Plating; 6=Percutaneous Pin Fixation; 7= Not Reported or NR)
FractureType	Recommended Required	1-7 (1=Anatomical neck fracture; 2=surgical neck fracture, 3=Geater tuberosity fracture; 4=Lesser tuberosity fracture; 5=Displaced fracture; 6=Nondisplaced; 7=Not Reported or NR) NOTE: a comma separation may be used if to indicate more than one (e.g., "1, 6" for nondisplaced anatomical neck fracture).
FractureClassification	Optional Data	1-3 (1=NEER, 2=AO, 3=OTA, 4=Not reported or NR)

FTR Proximal Humerus Fracture Module-Specific Elements

GH_Dislocation	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Full_RCT	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Shld_Osteoarthritis	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Inflammatory_arthritis	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported or NR)

FTR Proximal Humerus Module-Specific Elements

RegionalBlock	Conditional Data	1-5 (1=No, 2=Pre-op, 3=Intra-op; 4=Post-op, 5=Not Reported)
OsteoporosisScreening	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported)
DXA_Scan	Optional Data	1-2 (1=Yes; 2=No; 3=Not Reported)
Ca_VitD	Optional Data	1-3 (1=Yes; 2=No; 3=Not Reported)

FTR & SER Common Data Elements

PROMs

Recommended in FTR and available in SER

- PROMIS-10
- VR-12
- PROMIS Physical Function
- ASES and SANE
- *Both Registries Also Accept:*
 - PROMIS-29
 - PROMIS-CAT*
 - PROMIS Anxiety
 - PROMIS Depression
 - PROMIS Pain Interference

**Accepting summary scores only*

Why Participate?

Delivering Value for AAOS Fracture & Trauma Surgeons



Compare your practice to **national performance benchmarks**



Access to on-demand surgeon specific **reports and dashboards**



Monitor longitudinal patient outcomes (**Medicare data**)



Attain certification credits for **ABOS MOC**



Facilitate site, practice-specific, **payer-incentivized performance improvement** programs such as Aetna IOQ & Blue Distinction



Use for reporting to **quality improvement programs** such as the QPP Merit-based Incentive Payment System (MIPS)



Inform orthopaedic practice & contribute to **orthopaedic advocacy**



Improve the **value of care** delivered to Patients

Qualified Clinical Data Registry

- AAOS maintains a QCDR designation
 - Specialty society driven participation in the Quality Payment Program (QPP) Merit-incentive Based Payment System (MIPS)
- Benefits of QCDR participation:
 - Qualify for MIPS Promoting Interoperability (PI) and Improvement Activities
 - Performance feedback available via the RegistryInsights® dashboards
 - Assistance with MIPS quality measure data submission

Integration of Medicare Data



- Access to **Medicare claims** linked by full identifiers for longitudinal tracking
- Follow outcomes of Registry patients occurring at non-Registry participating institutions
- 2012-2020 Medicare data for all patients represented in Registry
 - Inpatient claims (148 data elements)
 - Outpatient claims (122 data elements)

IRB Information

- The AAOS registry program is a **quality improvement registry** which is exempt from IRB review under federal rule
- All data elements are retrospectively collected from data documented during the provision of care
- We maintain a centralized IRB protocol with WCG IRB services (previously Western IRB) to confirm a waiver of patient consent
 - Even if new clinical workflows are created (PROMs surveys), the data we capture does not require patient consent

Steps to Participation

Steps to a Successful Start

Contract & Welcome

- Execute contract
- Schedule a welcome call to identify your site's key contacts and roles with the Registry

Data Collection & File Build

- Walk through file development and file build
- File submission (SFTP/HTTPS) account creation

Test File Submission

- Two rounds of test file submissions

Live File Submission

- Final production set up and first live data submission

RegistryInsights® Walkthrough

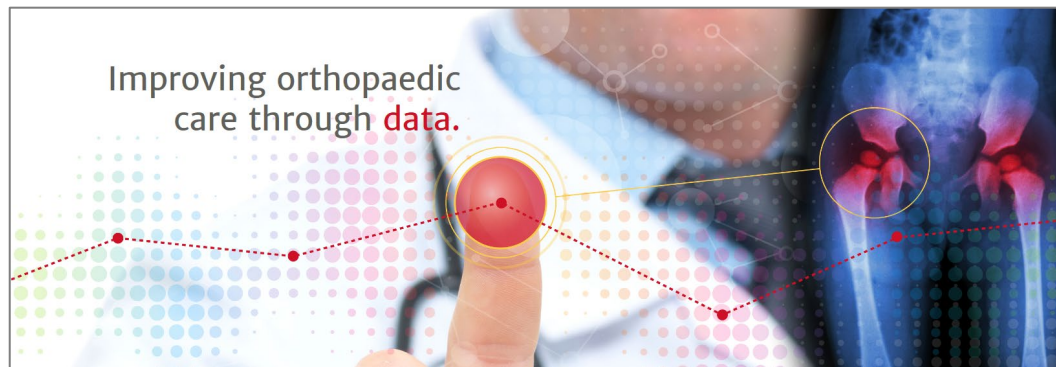
- Once data has been submitted, sites will have a walkthrough with staff to review dashboards, reports, PROMs, and other platform functionality

Authorized Vendor Program



Decrease Data Collection Burden

- AAOS has partnered with technology vendors to facilitate the data submission process
- Re-use data that already exists in medical record, practice management and PRO systems
- Direct data submission and management can be handled by a technology provider with sites able to fix rejected files



Questions?

RegistryInfo@aaos.org

www.aaos.org/registries/ser

Contact the AAOS Registry Program

General: RegistryInfo@aaos.org

Technical Support: RegistrySupport@aaos.org

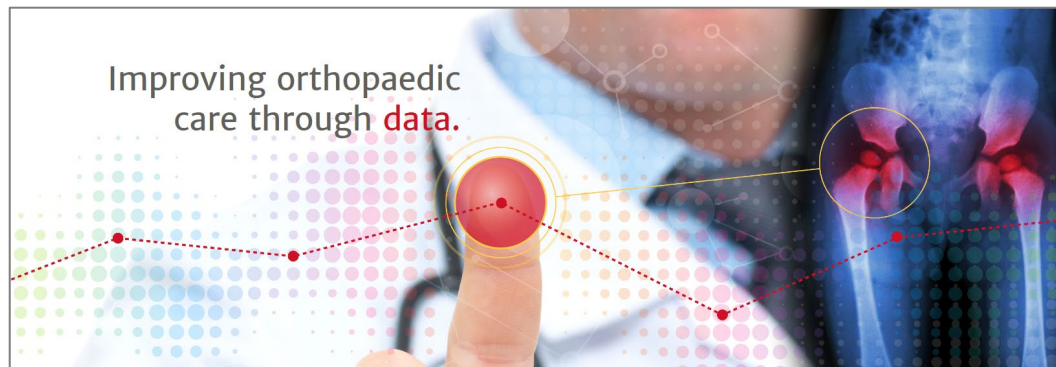
Contracts, Invoicing, & Onboarding: RegistryEngagement@aaos.org

Custom Analytics: RegistryAnalytics@aaos.org

Registry Analytics Institute: RegistryAnalyticsInstitute@aaos.org

Phone: (847) 292-0530

Business Hours: Monday through Friday, 8 a.m. to 4 p.m. Central Time



Thank You!

RegistryInfo@aaos.org

www.aaos.org/registries/ser