

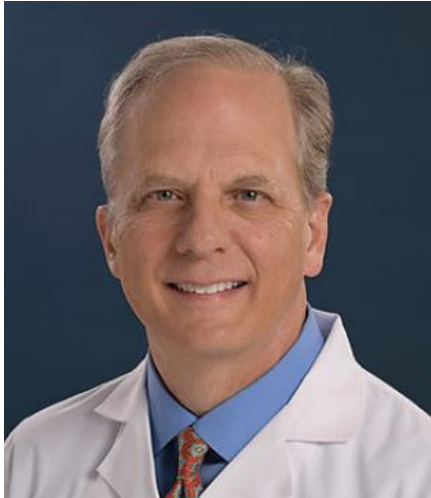
AAOS FTR POWERED BY PATIENTIQ

With St. Luke's University Health Network

October 30, 2024



SPEAKERS



Dr. Douglas W. Lundy, MD, MBA, FAAOS
St Luke's University Health Network
FTR Steering Committee



Matthew Gitelis
Founder, CEO
PatientIQ

AGENDA

1. St. Luke's: Leading the Future of Registry Participation

- Overview of the AAOS Fracture & Trauma Registry
- St. Luke's Challenges in Traditional Data Collection
- PatientIQ & St. Luke's Partnership

2. FTR Powered by PatientIQ: Transforming Data Collection

- Automating Data Collection with PatientIQ
- Smart Strategies to Boost Compliance

3. Registry Participation Impact: Results that Matter

- Value for Providers and Patients
- Future Vision for the FTR

4. Questions & Answers

INTRODUCTION



FRACTURE & TRAUMA REGISTRY

Mission:

- The purpose of the FTR is to **improve care and outcomes** for patients with fractures and traumatic injuries through the collection, analysis, and dissemination of high-quality data.
- This registry aims to support best practices, enhance patient safety, and foster research into injury patterns, treatment outcomes, and quality improvement in orthopaedic trauma care.

Strategy:

- We will **improve orthopaedic trauma care quality** by establishing a comprehensive, centralized record of injury, treatment, and outcome data.
- The FTR will serve as a research-grade resource for investigating injury patterns, procedural outcomes, risk factors, and functional recovery.
- FTR data will provide insights that support clinical decision-making and quality initiatives in trauma care, while facilitating maximum participation through streamlined data entry and integration with clinical workflows.



FRACTURE & TRAUMA REGISTRY



ESTABLISHED IN 2021, PUBLIC LAUNCH IN 2022

- **35+ sites actively contracted**
- **19,000+ procedures**

5 MODULES

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

FTR STEERING COMMITTEE

Michael J. Gardner, MD, FAAOS – Chair

- **Stanford University**

Jaimo Ahn, MD, PhD, FAAOS

- **Emory University**

Kyle J. Jeray, MD, FAAOS

- **Prisma Health**

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- **St. Luke's University Health Network**

Saam Morshed, MD, PhD, MPH, FAAOS

- **University of California, San Francisco**

William T. Obrebsky, MD, MPH, FAAOS

- **Vanderbilt Ortho Institute**

Steven A. Olson, MD, FAAOS

- **Duke Hospital**

Heather A. Vallier, MD, FAAOS

- **Case Western Reserve University**

DATA COLLECTED BY THE FTR

Patient	Fracture and Trauma Details	Procedure	Comorbidities and Complications	Patient-Reported Outcomes
<ul style="list-style-type: none">• Name (Last, First)• Date of Birth• Social Security Number• Diagnosis (ICD-10)• Gender• Race/Ethnicity• Residential Setting• Ambulatory Status• Pre-operative Modified Frailty Index (MFI-5)• Delirium Score	<ul style="list-style-type: none">• Fracture Type• Fracture Group• Fixation Type• Fracture Status• Fracture Stability• Fracture Location-specific Treatments• Articular Impaction Details• Injury Mechanism• Injury to Reduction Time• Injury to Surgery Time• Anesthesia Type	<ul style="list-style-type: none">• Type (ICD-10, CPT)• Date of Surgery• Injury Data• Regional Block• Osteoporosis Screening• Calcium/Vitamin D Supplementation• Implants and Grafts	<ul style="list-style-type: none">• Comorbidities (ICD-10)• Height + Weight/Body Mass Index• Length of Stay• American Society of Anesthesiologists Score• Charlson Comorbidity Index (CCI)• Operative and Post-operative Complications• COVID-19 as a prior diagnosis	<ul style="list-style-type: none">• PROMIS-10 Global or VR-12• PROMIS Physical Function• Anatomic-specific PROMs for each module• Also Accepted:<ul style="list-style-type: none">• PROMIS-29• PROMIS Anxiety• PROMIS Depression• PROMIS Pain Interference• PROMIS-CAT (only accepting summary scores)

CLINICIAN-ENTERED ENHANCED DATA SUBMISSION

The overall quality, accuracy, and completeness of Registry data will be enhanced by capturing a broader array of advanced clinical information through clinician-entered elements.

Enriched Data Set

Comprehensive and detailed datasets support more robust analyses, leading to better-informed decision-making, research outcomes, and quality improvement initiatives

Accuracy

Clinician-entered data is often more accurate and reflective of the actual patient encounter. Clinicians can verify and validate the information they input, ensuring data accuracy and integrity.

Completeness

Help fill gaps and ensure that all pertinent clinical details are documented in real-time, minimizing the risk of data gaps or omissions that could compromise the completeness of the dataset.

ENHANCED DATA ELEMENTS

Ankle	Anesthesia Type	1-6 (1=General; 2=Spinal; 3=Epidural; 4=Nerve block: Femoral/Sciatic/Adductor/etc; 5=Monitored Anesthesia Care (MAC), 6=Not reported or NR). NOTE: A comma separation may be used if there is more than one technique administered (e.g., "1, 2" for general, spinal).	Distal Radius	Anesthesia Type	1-4 (1=General; 2=Nerve Block: Interscalene 3=Monitored Anesthesia Care (MAC); 4=No NOTE: A comma separation may be used if one technique administered (e.g., "1, 2" for	Distal Femur	Anesthesia Type	1-6 (1=General; 2=Spinal; 3=Epidural; 4=Nerve block: Femoral/Sciatic/Adductor/etc; 5=Monitored Anesthesia Care (MAC), 6=Not reported or NR). NOTE: A comma separation may be used if there is more than one technique administered (e.g., "1, 2" for general spinal).
Ankle	Associated Articular Impaction	1-3 (1=Yes; 2=No; 3=Not Reported or NR)	Distal Radius	Fracture Type	1-4 (1=Extraarticular Fracture (2R3A), 2=Par (2R3B), 3=Complete Articular Fracture (2R3 NR)	Distal Femur	Fracture Type	1-5 (1=Extraarticular Fracture (33A), 2=Partial Articular Fracture (33B), 3=Complete Articular Fracture (33C), 4= Periprosthetic, 5=Not Reported or NR)
Ankle	Injury Type	1-6 (1=Lateral Fracture; 2=Posterior Fracture Fracture, 4=Syndesmotic Injury, 5=Medial De Reported) NOTE: a comma separation may be used if more than one	Distal Radius	Fracture Status	1-3 (1=Open; 2=Closed; 3=Not reported or NR)	Distal Femur	Fixation Type	1-6 (1=Lateral Locking Plate, 2=Retrograde Nail, 3=Nail Plate Combination, 4=Dual Plates, 5=Distal Femur Replacement (DFR), 6=Not Reported or NR)
Ankle	Fixation Type	1-9 (1=Lateral Treatment, 2=Lateral Adjunct Malleolus Treatment, 4=Medial Treatment Fixation, 6=Other Treatment, 7=Ankle Arthr 8=Adjunct Treatment, 9=Not Reported or NR)	Distal Radius	Pre-Op Closed Reduction	1-3 (1=Yes; 2=No; 3=Not reported or NR)	Distal Femur	Bone Defect	1-3 (1=Yes; 2=No; 3=Not reported or NR)
Ankle	Ankle Dislocation	1-3(1=Subluxation; 2=Dislocation; 3=Not Re	Distal Radius	Angulation Type	1-3 (1=Dorsal; 2=Volar; 3=Not reported or NR)	Distal Femur	Bone Cement	1-3 (1=Yes; 2=No; 3=Not reported or NR)
Ankle	Fracture Open/Close Status	1-3(1=Open; 2=Closed; 3=Not Reported or NR)	Distal Radius	Shear Type	1-3 (1=Dorsal; 2=Volar; 3=Not reported or NR)	Distal Femur	Modified 5-Item Frailty Index C	Total; 0-5, Not reported or NR
Ankle	Closed Reduction	1-3 (1=Yes; 2=No; 3=Not Reported or NR)	Distal Radius	Scaphoid Fracture	1-3 (1=Yes; 2=N			
Ankle	Staged from External Fixation	1-3 (1=Yes; 2=No; 3=Not Reported or NR)	Distal Radius	Ipsilateral Ulnar Fracture	1-5 (1=None; 2=	Proximal Humerus	Anesthesia Type	1-4 (1=General; 2=Nerve Block: Interscalene/Axillary/etc; 3=Monitored Anesthesia Care (MAC); 4=Not reported or NR). NOTE: a comma separation may be used if there is more than one technique administered (e.g., "1, 2" for general with nerve block).
Ankle	Modified 5-Item Frailty Index	Total; 0-5, Not reported or NR	Distal Radius	TFCC Repair	1-3 (1=Yes; 2=N	Proximal Humerus	Fracture Type	1-4 (1=Extraarticular, unifocal, 2-part fracture (11A), 2=Extraarticular, bifocal, 3-part fracture (11B), 3=Articular or 4-part fracture (11C), 4=Not Reported or NR)
			Distal Radius	DRUJ Stabilization	1-5 (1=Splint, 2= Reported)	Proximal Humerus	GH Dislocation	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Hip	Anesthesia Type	1-7 (1=General Plexus/Psoas/ Femoral/Sciatic/ Adductor/etc; 2=Monitored Anesthesia Care (MAC) ; 7=Not reported or NR); PLEASE NOTE: a comma separation may be used if there is more than one technique administered (e.g., "1, 4").	Distal Radius	Modified 5-Item Frailty Index C	Total; 0-5, Not	Proximal Humerus	Full RCT	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Hip	Surgical Approach	1-5 (1=Anterior (any type); 2=Lateral (any type); 3=Posterior (any type); 4=Other; 5=Not Reported or NR)				Proximal Humerus	Shoulder Osteoarthritis	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Hip	Surgical Technique	1-4 (1=Hemiarthroplasty; 2=Total Joint Arthroplasty; 3=Fixation; 4= Not Reported or NR)				Proximal Humerus	Inflammatory Arthritis	1-3 (1=Yes; 2=No; 3=Not Reported or NR)
Hip	Fracture Type	1-4 (1=Intertrochanteric Fracture (31A); 2=Femoral Neck Fracture (31B); 3=Subtrochanteric Fracture, 4=Not Reported)				Proximal Humerus	Surgical Approach	1-5 (1=Deltpectoral; 2=Deltoid Split/Anterolateral; 3=Percutaneous; 4=other; 5=Not reported or NR)
Hip	Fracture Stability	1-3 (1=Stable; 2=Unstable; 3=Not Reported)				Proximal Humerus	Surgical Technique	1-6 (1=Hemiarthroplasty; 2=Reverse Shoulder Arthroplasty; 3=IM Nailing; 4=Locked Plating; 5=Percutaneous Pin Fixation; 6= Not Reported or NR)
Hip	Modified 5-Item Frailty Index C	Total; 0-5, Not reported or NR				Proximal Humerus	Modified 5-Item Frailty Index C	Total; 0-5, Not reported or NR

ST. LUKE'S CHALLENGES

St. Luke's was motivated to participate in FTR, but experienced challenges with manual participation



IT burden to extract procedure and patient-reported outcome data

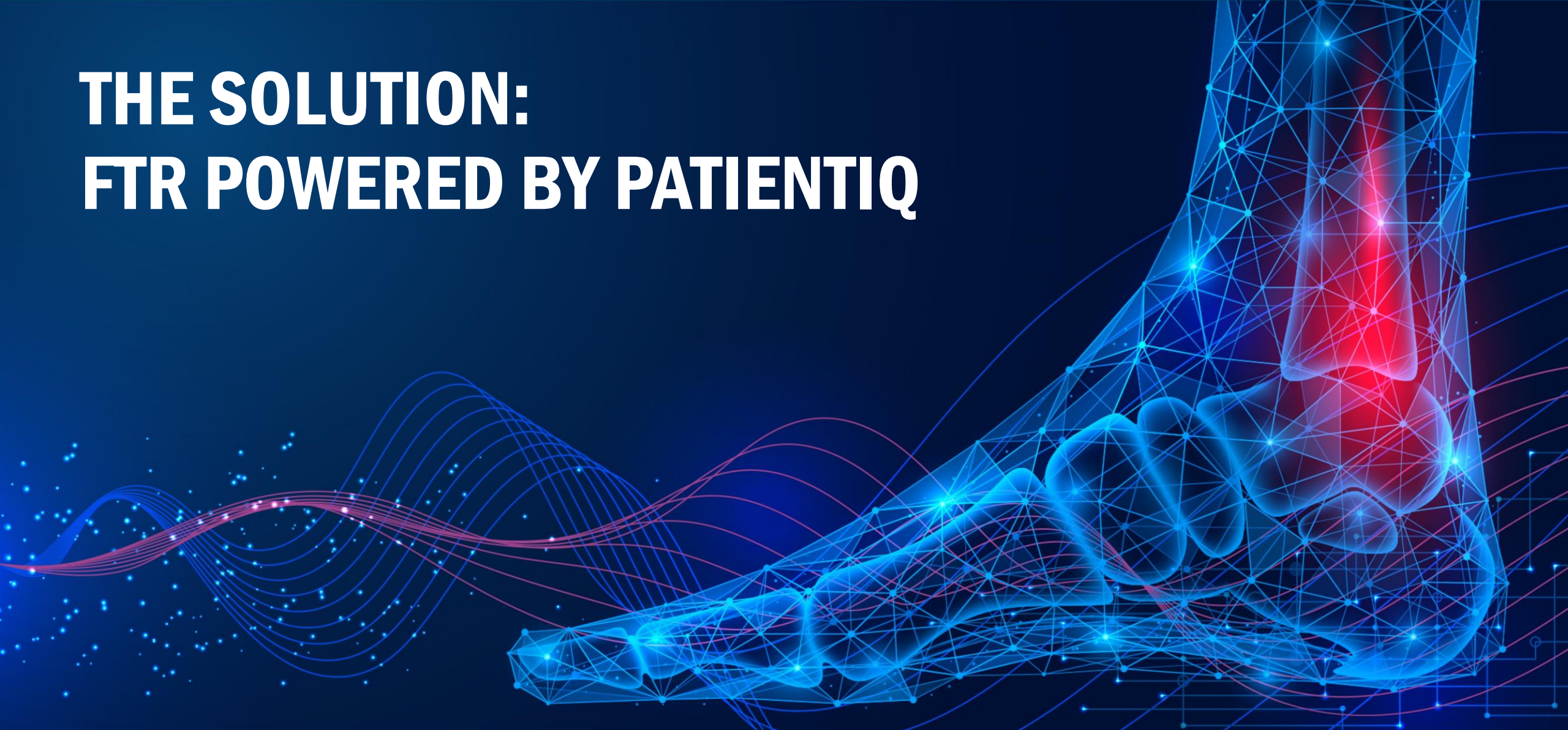


Manual workflows to extract, aggregate, format and submit data each month



Lack of structured data available in the EHR for registry-specific use cases

THE SOLUTION: FTR POWERED BY PATIENTIQ



PATIENTIQ INTRODUCTION



Healthcare software company that supports institutions in collecting and analyzing patient outcome data



The cloud-based PatientIQ platform translates patient-provided data into insights that support:

- Quality improvement
- Clinical research
- Regulatory reporting



Building the largest network of healthcare providers, researchers, and industry partners collaborating to improve patient outcomes

Fast facts:

- Founded in 2016
- Headquartered in Chicago, IL
- 9M+ patients enrolled
- 700+ healthcare organizations

OUTCOMES DATA COLLECTED ACROSS OUR NETWORK

Health Systems*



Specialty Practices*



700+ Healthcare Organizations

5,000+ Sites of Care

9M+ Patients Enrolled

1M+ PROMs Collected Monthly

* Only select sites shown



FTR POWERED BY PATIENTIQ

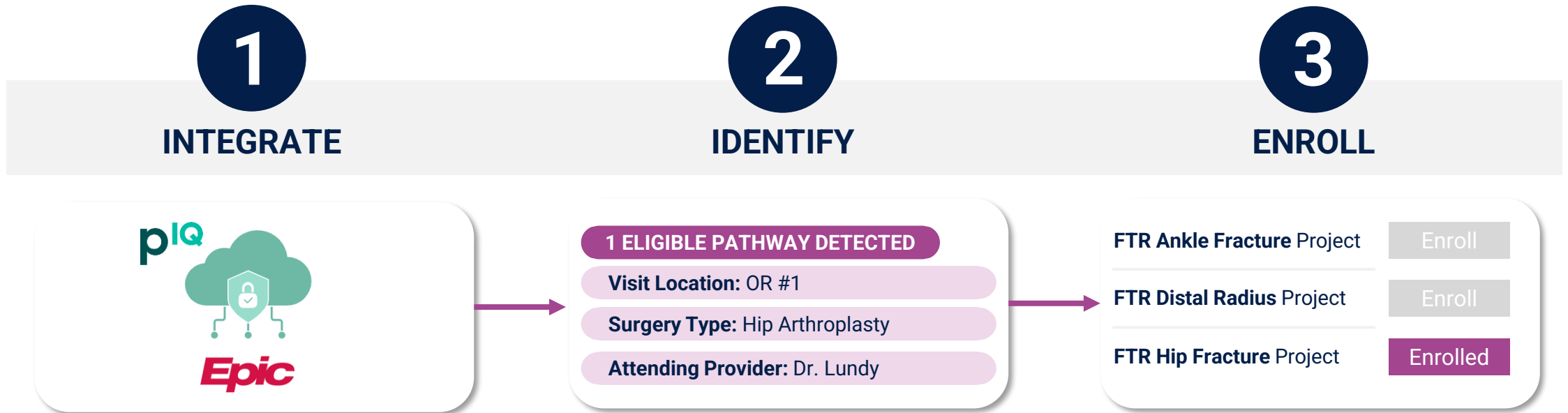


To reduce the burden on St. Luke's clinical and IT teams, PatientIQ:

1. Automates collection of all procedure and patient-reported outcomes data
2. Embeds forms in Epic to collect clinician-entered, advanced data
3. Aggregates and translates data to meet registry specifications
4. Submits data to AAOS monthly

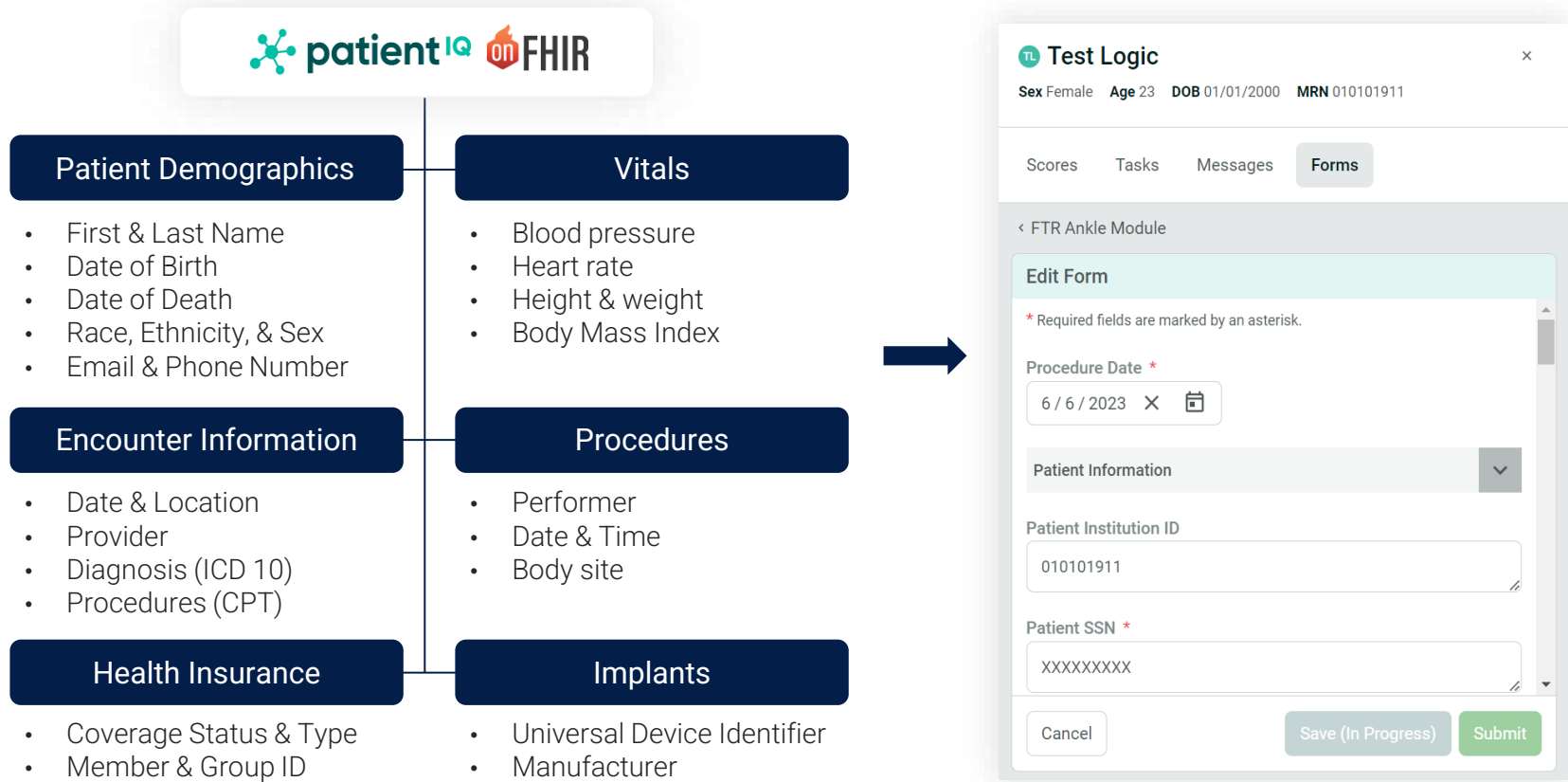
AUTOMATED PATIENT ENROLLMENT

St. Luke's patients are auto-enrolled into the appropriate FTR project when a visit is scheduled



AUTOMATED PROCEDURE DATA COLLECTION

FTR forms are embedded directly in Epic and auto-populated with all data required for submission



ENHANCED DATA COLLECTION

The screenshot shows the Epic EMR interface for a patient named Abby Anesthesia. The 'Forms' tab is selected, displaying the 'FTR Distal Femur Module' form. The form includes the following fields:

- Anesthesia Type:** General, Spinal, Epidural, Nerve block (Femoral/Sciatic/Adductor/etc), Monitored Anesthesia Care (MAC), Not Reported.
- Fracture Type:** A dropdown menu with a link to 'Click here to see Diagram of Fracture Group'.
- Fixation Type:** A dropdown menu.
- Bone Defect:** Yes/No radio buttons.

Buttons for 'Cancel', 'Save (In Progress)', and 'Submit' are located at the bottom of the form.

Forms Populated Directly in Epic

St. Luke's residents populate forms with enhanced data at the point of care, including:

- Fracture Type
- Fixation Type
- Surgical Approach

REPORTING TO BOOST COMPLIANCE

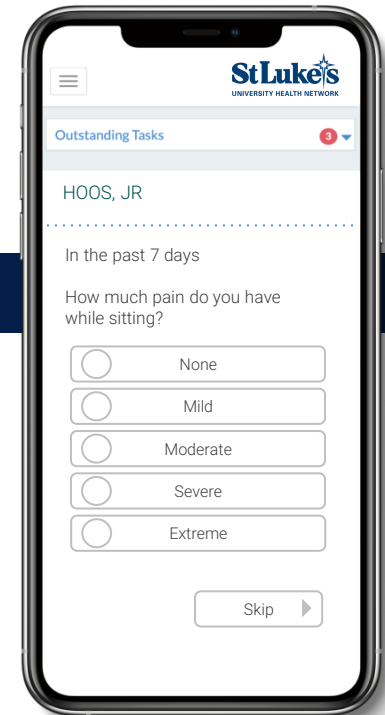
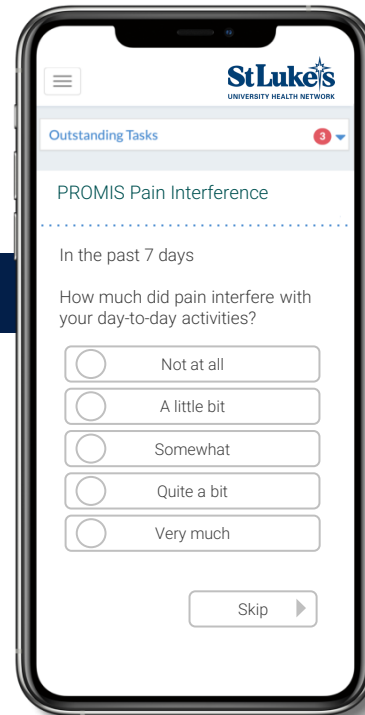
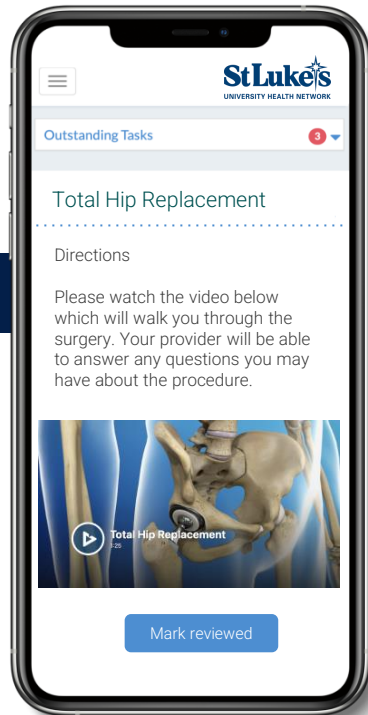
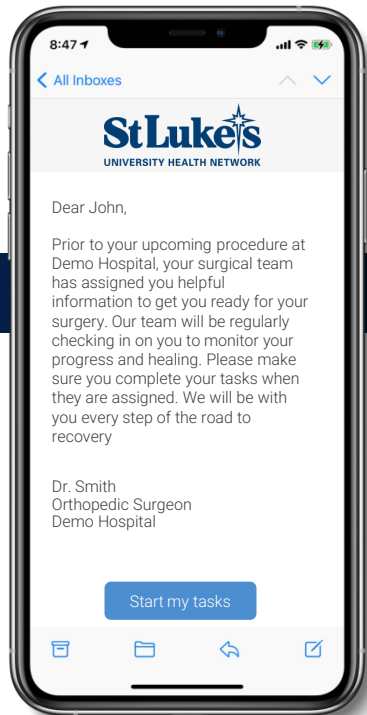
The screenshot shows the patientIQ interface for FTR Compliance. It includes filters for Project ID (5 selections) and Surgery Date (Previous 7 Days). The table below lists 10 non-compliant entries with their respective hospital names and NPIs.

Compliance Status	Transmission Status	Module	Hospital_ASC_Name	Hospital_ASC_NPI
Not Compliant	-	Ankle Fracture	St Lukes Warren Hospital	1760488266
Not Compliant	-	Ankle Fracture	St Lukes Anderson Hospital	1497050470
Not Compliant	-	Ankle Fracture	St Lukes Upper Bucks Hospital	1669405072
Not Compliant	-	Ankle Fracture	St Lukes Anderson Hospital	1497050470
Not Compliant	-	Ankle Fracture	St. Luke's University Health Network	1306252259
Not Compliant	-	Ankle Fracture	St Lukes Upper Bucks Hospital	1669405072
Not Compliant	-	Distal Radius Fracture	St Lukes Bethlehem Hospital	1013933175
Not Compliant	-	Distal Radius Fracture	St Lukes Bethlehem Hospital	1013933175
Not Compliant	-	Distal Radius Fracture	St Lukes Allentown Hospital	1548293954
Not Compliant	-	Distal Radius Fracture	St Lukes Bethlehem Hospital	1013933175

Weekly Compliance Reports
St. Luke's receives automated reports with a list of forms missing enhanced data.

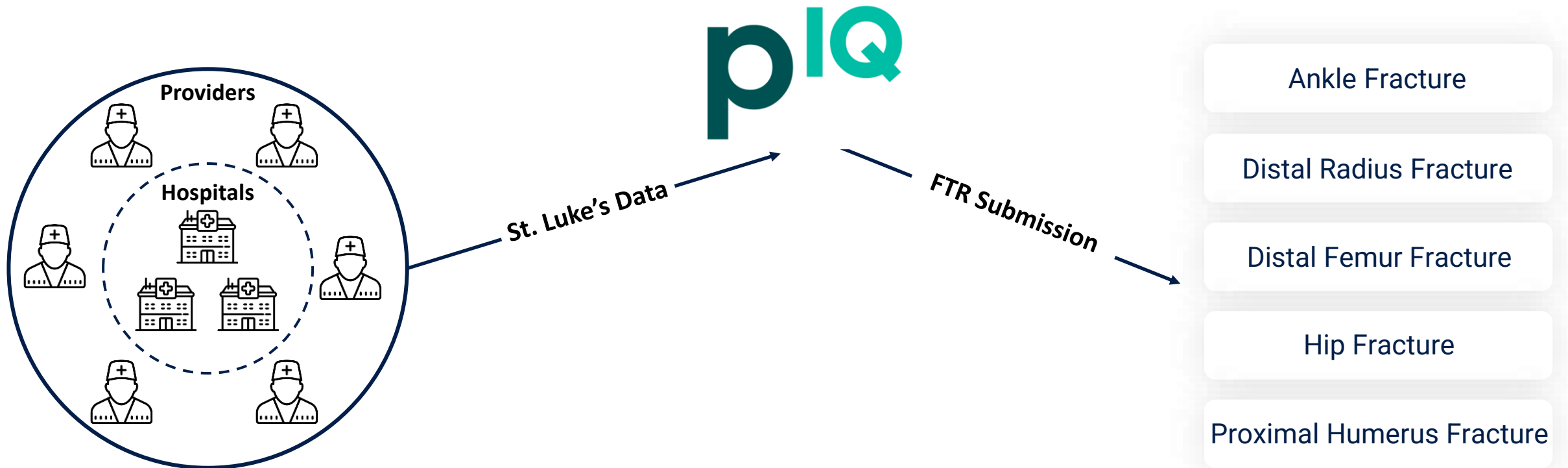
AUTOMATED PRO DATA COLLECTION

Patients receive automated engagements to collect patient-reported outcomes data



AUTOMATED SUBMISSION TO FTR

PatientIQ aggregates, validates, formats and submits all St. Luke's data to FTR monthly



VALUE OF REGISTRY PARTICIPATION



WHY EARLY PARTICIPATION MATTERS



Early adoption allows you to shape the development and standards of the registry



Influences clinical guidelines and quality measures based on real-world data



Positions your site as a leader in orthopaedic trauma care and quality improvement

BENEFITS OF EHR INTEGRATION AT ST. LUKE'S

Automated Data Submission

Simplified process reduce administrative burden for monthly data submissions.

Point-of-Care Data Capture

Integrated into workflow, taking less than 30 seconds to populate FTR forms with value-add data elements.

No Additional Staffing Needed

The EHR integrated approach fits seamlessly into current operations, alleviating the need for FTEs.

Valuable Contribution to the Orthopaedic Community

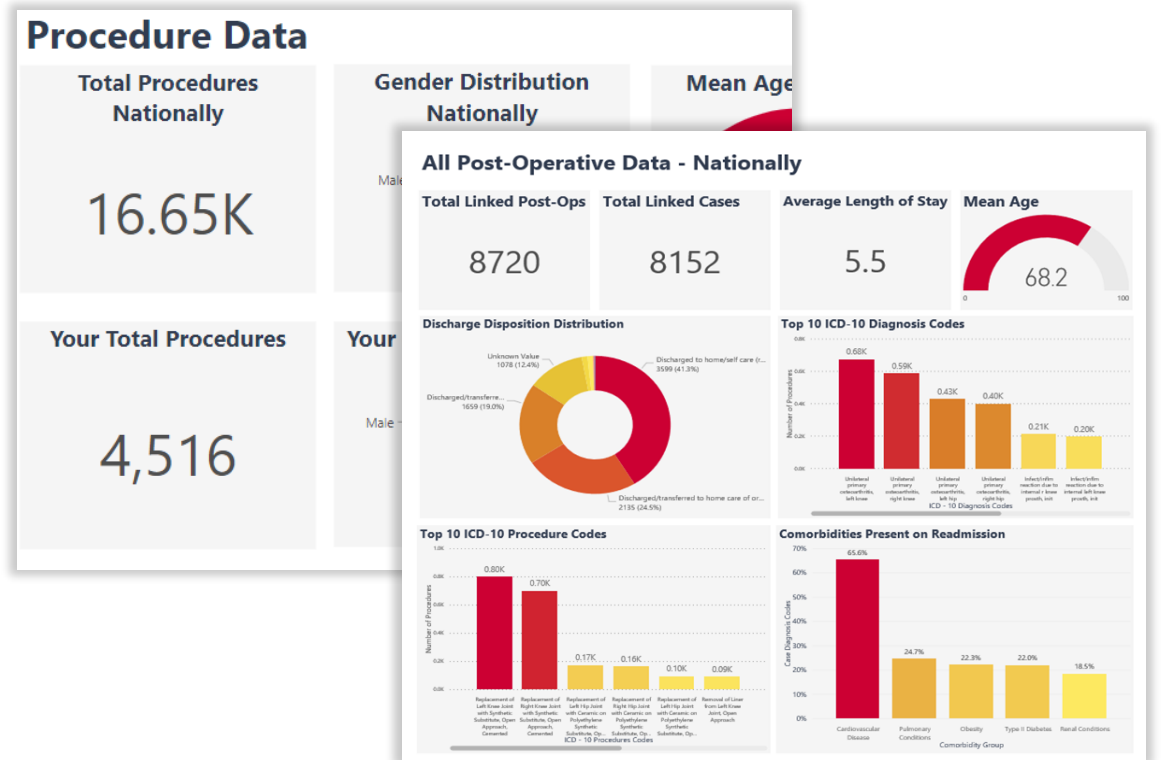
Participation allows providers to advance trauma care standards while still focusing on patient-centered outcomes.

Streamlined Workflow

Allows providers to focus on patient care, not paperwork.

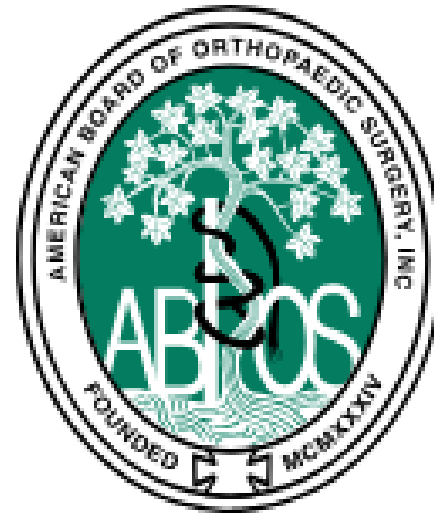
VALUE FOR OUR INSTITUTION

- **Drive Quality Improvement:** Identify care gaps and improve safety protocols
- **Benchmark Performance:** Compare outcomes with national benchmarks
- **Reputation as a Quality Leader:** Participation highlights a commitment to excellence
- **Prepare for Future Standards:** Align with evolving quality verification requirements



VALUE FOR OUR SURGEONS

- **Support Clinical Decision-Making:** Real-time data supports evidence-based care
- **Professional Growth:** Participation opens doors for research and quality initiatives
- **Shape the Future:** Influence orthopaedic trauma care standards by contributing data
- **Commitment to Quality:** Demonstrates dedication to continuous improvement



As part of its wide variety of data reuse initiatives, the AAOS Registry Program provides surgeons the opportunity to earn up to 10 self-assessment examination (SAE) credits for the American Board of Orthopaedic Surgery (ABOS) Maintenance of Certification (MOC) Part II.

VALUE FOR OUR PATIENTS

- **Personalized Treatment Plans:** Data helps tailor care based on real-world results
- **Timely Interventions:** Quicker response to complications based on data insights
- **Clear Recovery Expectations:** Patients receive better information on what to expect
- **Evidence-Based Care:** Ensures consistent, high-quality treatment for all patients

Fracture & Trauma Registry

FTR Program Overview
Trauma such as high impact falls, car collisions, or sports injuries are the most common cause leading to fractures (broken bones). Other factors can include overuse of specific muscles putting strain on a bone resulting in stress fractures and weakening of bones due to old age or osteoporosis.

Recognizing the critical importance of optimizing care for this patient population, the AAOS, with support from the Orthopaedic Trauma Association (OTA), launched the Fracture & Trauma Registry (FTR) as the fifth in a series of anatomical, evidence-based registries in 2020. The FTR consists of five diagnosis-based modules processing case data on fractures of the hip, distal radius, ankle, distal femur, and proximal humerus. In addition to the core elements collected on patient information, the FTR captures data on fracture type, procedure details, post-operative data, and patient-reported outcomes for future analytics.

"We are very excited about the newest addition to the AAOS Registry portfolio, the Fracture & Trauma Registry (FTR). Early on, we knew that we needed to capture as many clinically meaningful conditions as possible to improve the quality of care for our patient populations. Patients are paramount to everything we do, and we take seriously our lifelong pursuit of optimal patient care for all those suffering from a traumatic orthopaedic event. I'm optimistic that this patient finding supplement can help move us in this direction. By providing valuable insights for you, your family members, and loved ones to understand these conditions, we can improve the patient-doctor relationship and shared decision-making. As you read through, I hope you will find value in our shared learnings through the newest AAOS Fracture & Trauma Registry."

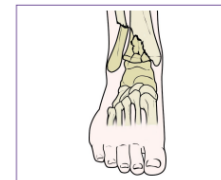
—Michael J. Gardner, MD, FAOS, Steering Committee Chair, Fracture & Trauma Registry

FTR Program Modules

■ Ankle Fracture Module:

Made up of three bones, the shin bone (tibia), the smaller bone of the lower leg (fibula), and a small foot bone (Talus), the ankle is a large joint between the leg and foot. The ankle joint allows movement of the foot, thus, an ankle fracture (aka broken ankle) can disrupt the ease of performing certain daily activities, or more severely, impede one's ability to walk for months. Depending on the type of fracture, treatment can range from simply requiring a cast to different surgical options, which may include the use of screws, plates, rods, or different wiring techniques.

Information collected by the Registry includes data on dislocation type (whether the broken bones are displaced or still in their appropriate position), details on open or closed fractures (if the skin is punctured as a result of the break), injury mechanism (how the injury occurred), and whether the bone can be restored without cutting the skin. Additional details on the surgical intervention and treatment outcomes are also reported.



AAOS Patient Facing Registry Report

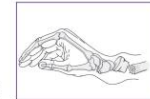
Femur Fracture Module:

also known as the thigh bone, reaches from hip to distal part of the bone refers to the lower end of the where the bone flares out. The distal femur makes part of the knee joint, and the end of the femur is cartilage to protect the bone when bending and rig the leg. Distal femur fractures can occur based / of risk factors. Elderly adults are more prone to actures due to weakened bones. Conditions like is, playing high-impact sports, or being involved in sn are all causes of distal femur fractures.



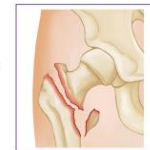
Radius Fracture Module:

is comprises two bones, the radius and the ulna remains stationary while the radius rotates following the palm of the hand to face up or down. stures can affect one's ability to rotate their arm, limiting movements like turning a doorknob and screwdriver, as well as bending or straightening the elbow. A distal radius fracture, better known as nit, happens when the area of the radius near the distal end breaks. This type of break can occur due an outstretched or flexed hand.



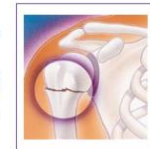
Fracture Module:

it is made up of the thigh bone (femur) and like the shoulder joint, the hip joint can also be as a "ball-and-socket" joint. The rounded top of femoral head) sits inside a socket in the pelvis. Hip fractures, a common injury among patients occur when there is a break in the upper portion of (thighbone). With most hip fractures, you will to stand, bear weight, or move the upper part of knee.



Proximal Humerus Fracture Module:

er joint is referred to as a "ball-and-socket" joint up of the humerus (upper arm bone), the scapula (blade), and the clavicle (collar bone). The top, or Humerus sits inside the socket (glenoid) of the shoulder blade. The opposite end of the humerus meets two bones of the forearm, the radius, and the ulna, and helps form the elbow joint. A proximal humerus fracture involves the top portion, or head, of the humerus and most often results from a fall onto an outstretched arm. This is typically seen in older patients following a fall, especially those with osteoporosis or low bone density.



AAOS Patient Facing Registry Report

12

FUTURE VISION FOR THE FTR



Expanding Participation and Data Utilization



Becoming the Gold Standard for Orthopaedic Trauma Quality Improvement



Driving Evidence-Based Practice and Research



Enhancing Patient-Centered Care

GETTING STARTED

- Contact the AAOS Registry Engagement team (registryengagement@aaos.org)
- Schedule an introductory meeting with AAOS & PatientIQ
- Kick off implementation & EHR integration
- PatientIQ sets up platform and begins submitting data to FTR

QUESTIONS?

