American Spine Registry

A partnership between

American Association of Neurological Surgeons
American Academy of Orthopaedic Surgeons

Data Operations for the American Spine Registry

A collaboration between AANS and AAOS to improve quality and outcomes in spine care

Steven D. Glassman, M.D.

Medical Director, Norton Leatherman Spine Center

Co-Chair, American Spine Registry

Tawanda Chipata, MHA

System Director, Clinical Information Analysis

Norton Healthcare Louisville, KY

James Bud Morris

Senior Clinical Information Analyst

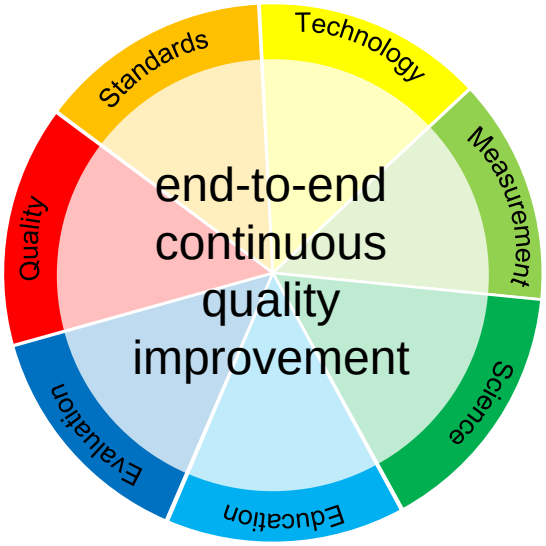
Norton Healthcare Louisville, KY

ASR

NORTON LEATHERMAN SPINE CENTER

American Spine Registry

AANS/AAOS Shared Quality Vision



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

ASR

Spine Data Is Complicated

- ✓ Variability in Diagnosis and Diagnostic Coding
- ✓ Variability in Procedure Selection and Coding
- ✓ Multi-stage Procedures
- ✓ Multiple Surgeons in a Single Procedure
- ✓ Complex Implant Constructs

Spine Data Is Complicated

Critical role of Patient Reported Outcomes

- ✓ Office-based Patient Interface
- ✓ Not typically EMR-linked
- ✓ Multiple Collection Strategies
- ✓ Multiple Clinic Locations

Spine Data Is Complicated

Importance of Longitudinal Data

- ✓ 1-year for clinical improvement
- ✓ 2-year f/u standard for fusion?
- ✓ Adjacent Level Risk

American Spine Registry

The ASR platform offers the potential to meet these challenges

- Automated Data Feed
- Medicare Integration
- Multiple PROMs Solutions

ASR

American Spine Registry

ASR is a work in progress:

Areas of Strong Early Achievement

- Engagement with Regulators and Payers
- Buy-in from major Health Systems
- Capability to collect granular data at scale

ASR

American Spine Registry

ASR is a work in progress:

Challenges of Spine Registry Development

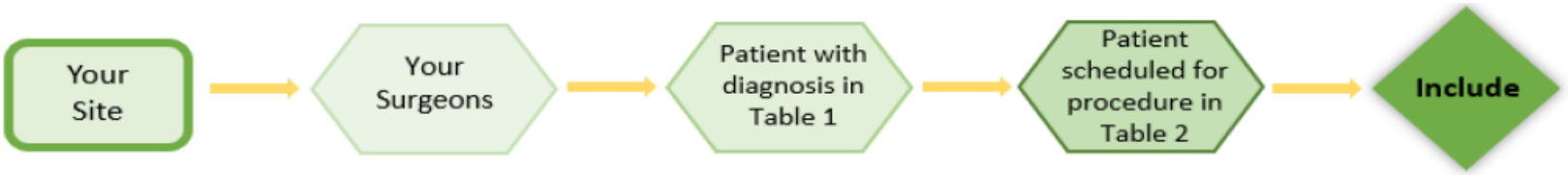
- Complexity of Spine Data at all levels
- Need for focused IT involvement to build data feed

ASR Enrollment Criteria

All Eligible Cases Included

American Spine Registry Diagnosis Inclusion Criteria	
Any patients presenting to your clinical setting with *one of the following*	
Cervical Spine	**Coding**
Spondylosis	M47.xx
Spondylolysis	M43.0 - M43.09
Spinal Stenosis	M48.0 - M48.08
Degenerative Disc Disease	M50.xx
Myelopathy	G99.2
Radiculopathy	M54.1 - M54.8
Kyphosis	M40.xx

American Spine Registry Procedural Inclusion Criteria	
Any patients presenting to your clinical setting for *one of the following procedures* to	
Cervical Spine	**Coding**
Odontoidectomy	22319, 22548
Discectomy	63077-63078
Laminectomy	63001-63017, 63020, 63045-63048
Laminoplasty	63050-63051
Corpectomy	63081, 63082
Foraminotomy	63047-63052
Fusion	22532-22534, 22548, 22551-22552, 22555-22556, 22558,22585, 22590-22595, 22600-22614, 22630-22631, 22800-22804, 22808-22812
Arthroplasty	22856, 22857
Removal of Instrumentation	22850, 22852, 22855



ASR

ASR Clinical Data Elements

Two Modules Available: Cervical & Lumbar

Demographics

Patient

- Name (Last, First)
- Date of Birth
- Social Security Number
- Diagnosis (ICD-10)*
- Gender
- Race/Ethnicity
- Comorbidities (ICD-10)
- COVID-19 as prior diagnosis
- Height + Weight/Body Mass Index

Site of Service

- Name and Address (TIN/NPI)

Surgeon

- Name (NPI)

Procedure

- Type (ICD-10, CPT)*
- Date of Surgery
- Spinal Approach
- ***Implants and Grafts (manufacturer/lot#, UDI)***
- Length of Stay
- American Society of Anesthesiologists Score
- Anticoagulation

Post-Operative/Complications

- Operative and Post-operative Complications
- Secondary Surgical Procedures

**Vanguard sites utilize an operative form for additional procedural & diagnosis detail*

ASR

ASR PRO Data Elements

Patient-reported Outcomes*

Recommended

- PROMIS-10 Global ***or*** VR-12
- PROMIS Physical Function ***or***
- Oswestry Disability Index (ODI) 2.1/Neck Disability Index (NDI)
- Numeric Rating Scale (NRS)

Additional Options Accepted

- PROMIS CAT, PROMIS-29
- PROMIS Emotional Distress – Depression
- PROMIS Emotional Distress – Anxiety
- PROMIS Pain Interference
- EQ-5D

**Sites can utilize their existing PROMs collection mechanism or utilize ASR's no cost PROM tool*

ASR

American Spine Registry

A partnership between
American Association of Neurological Surgeons
American Academy of Orthopaedic Surgeons

9400 West Higgins Road
Rosemont, IL 60018-4975

847-292-0530 | ASR@aaos.org
www.AmericanSpineRegistry.org

Primary Symptoms (Check ALL that apply)	
Back Pain ☐	Cauda equina ☐
Leg Pain ☐ Right ☐ Left ☐ Both	Motor weakness ☐ Right ☐ Left ☐ Both
Neurogenic Claudication ☐	

Neural Compression (Check ALL that apply)		
None ☐	Foraminal ☐ Right ☐ Left ☐ Both	
Central ☐	Lateral recess ☐ Right ☐ Left ☐ Both	
Recurrent compression ☐	Far Lateral ☐ Right ☐ Left ☐ Both	

Structural Pathology (Check ALL that apply)		
None ☐	Pseudarthrosis ☐	Kyphosis / Flatback ☐
Disc Herniation ☐	Scoliosis ☐	Fracture ☐
Stenosis ☐	Adjacent Segment ☐	Tumor ☐
Disc space collapse ☐	Spondylolisthesis/Instability ☐	Infection ☐

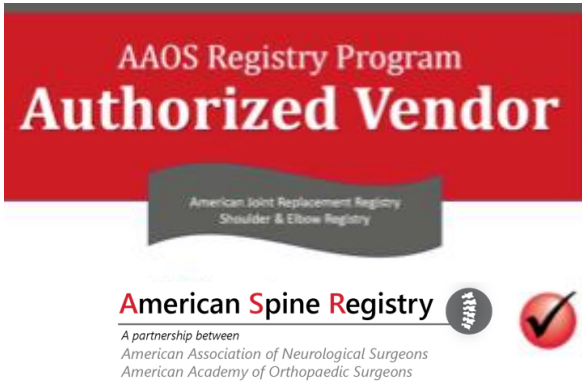
Approach	Anterior/Oblique ☐	Transpsoas ☐	Posterior ☐	
Minimally Invasive	Tubular ☐	Endoscopic ☐	Mini-Open ☐	Percutaneous screw ☐
Supplemental Technique	Microscope	Navigated ☐	Robotic ☐	
This is part of a multi-stage procedure ☐				

Level	Decompression	Implants	Fusion	Revision Status
L1	Corpectomy ☐	Screw ☐		
L1-L2	Foraminotomy ☐ Laminectomy ☐ Discectomy ☐	Cage ☐ Plate ☐ Other ☐, sp	PLF ☐ TLIF ☐ ALIF ☐ LLIF ☐ Facet/Lamina ☐	Revision Decompression ☐ Revision Instrumentation ☐ Revision Fusion ☐
L2	Corpectomy ☐	Screw ☐		
L2-L3	Foraminotomy ☐ Laminectomy ☐ Discectomy ☐	Cage ☐ Plate ☐ Other ☐, sp	PLF ☐ TLIF ☐ ALIF ☐ LLIF ☐ Facet/Lamina ☐	Revision Decompression ☐ Revision Instrumentation ☐ Revision Fusion ☐
L3	Corpectomy ☐	Screw ☐		
L3-L4	Foraminotomy ☐ Laminectomy ☐ Discectomy ☐	Cage ☐ Plate ☐ Other ☐, sp	PLF ☐ TLIF ☐ ALIF ☐ LLIF ☐ Facet/Lamina ☐	Revision Decompression ☐ Revision Instrumentation ☐ Revision Fusion ☐
L4	Corpectomy ☐	Screw ☐		
L4-L5	Foraminotomy ☐ Laminectomy ☐ Discectomy ☐	Cage ☐ Plate ☐ Other ☐, sp	PLF ☐ TLIF ☐ ALIF ☐ LLIF ☐ Facet/Lamina ☐	Revision Decompression ☐ Revision Instrumentation ☐ Revision Fusion ☐
L5	Corpectomy ☐	Screw ☐		
L5-S1	Foraminotomy ☐ Laminectomy ☐ Discectomy ☐	Cage ☐ Plate ☐ Other ☐, sp	PLF ☐ TLIF ☐ ALIF ☐ LLIF ☐ Facet/Lamina ☐	Revision Decompression ☐ Revision Instrumentation ☐ Revision Fusion ☐
S1	Corpectomy ☐	Screw ☐		
Pelvis	S2AI ☐	Iliac Bolts ☐		Revision Instrumentation ☐ Revision Fusion ☐

Graft Material	Iliac Crest ☐ Cancellous Allograft ☐ BMP ☐	Local autograft ☐ Structural Allograft ☐ Stem cells ☐	Bone Marrow Aspirate ☐ DBM ☐ Other ☐, specify
Neuromonitoring	None ☐ EMG ☐ MEP ☐ SSEP ☐		
Complications	None ☐ Neurologic ☐	Durotomy ☐ Other ☐, specify	Implant-related ☐

ASR Operative Forms

- Optional operative forms used to capture information found in the brief op notes in discrete form
- Completed by the circulating nurse or surgeon during closure to populate op note and registry needs
- Being updated to populate as a smartform that contributes data to multiple areas
- Data will inform coding, valuation and advocacy in spine care by providing more detail than currently captured via CPT / ICD coding



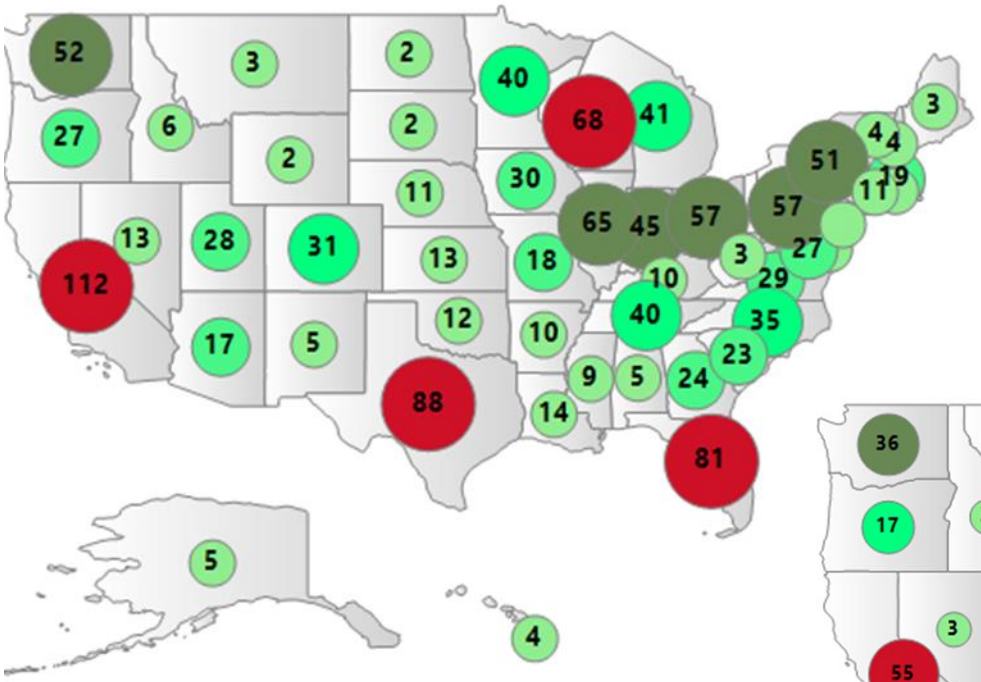
Simplify Data Collection

- ASR has partnered with over 45 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

ASR

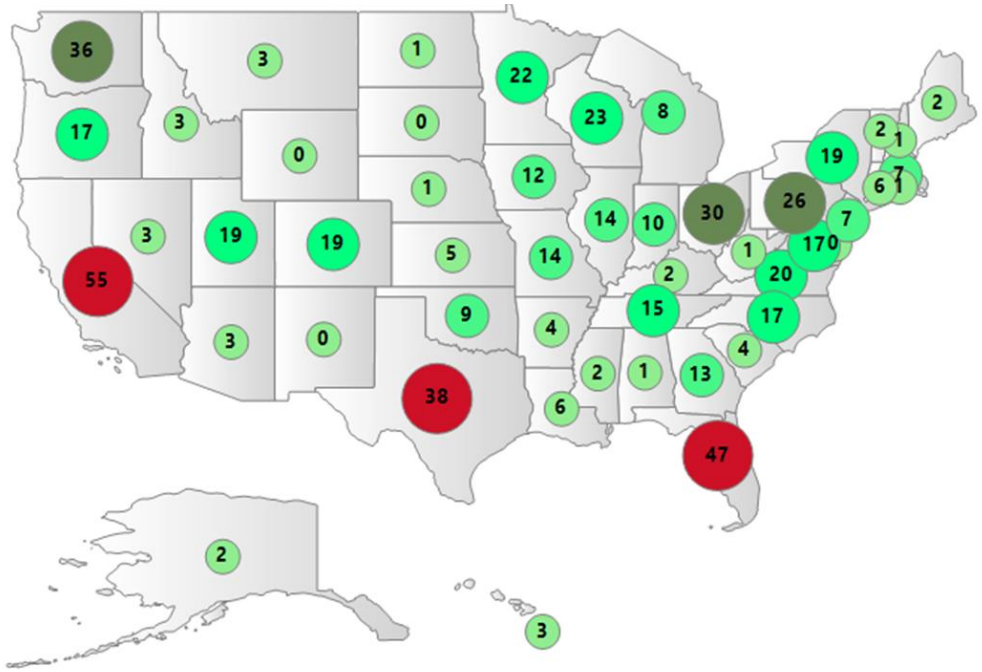
Existing Registry Platform Participation

Subscribing Sites by State



Over 1,390 participating sites contracted and 11,090+ registered surgeons across all 50 states. Linked PRO data from sites with over 93,708 completed assessments.

Submitting Sites by State



941+ sites have submitted representing 9,232+ surgeons and 1,777,625 procedures. Capturing over 30% of all US TJA volume annually.

ASR

Key IT Build Variables

Existing Elements

- Existing AAOS registry platform data feed
- Primary EMR platform (coding resources)
- Secondary data feeds (billing data)
- Adaptation to local EMR modifications

ASR

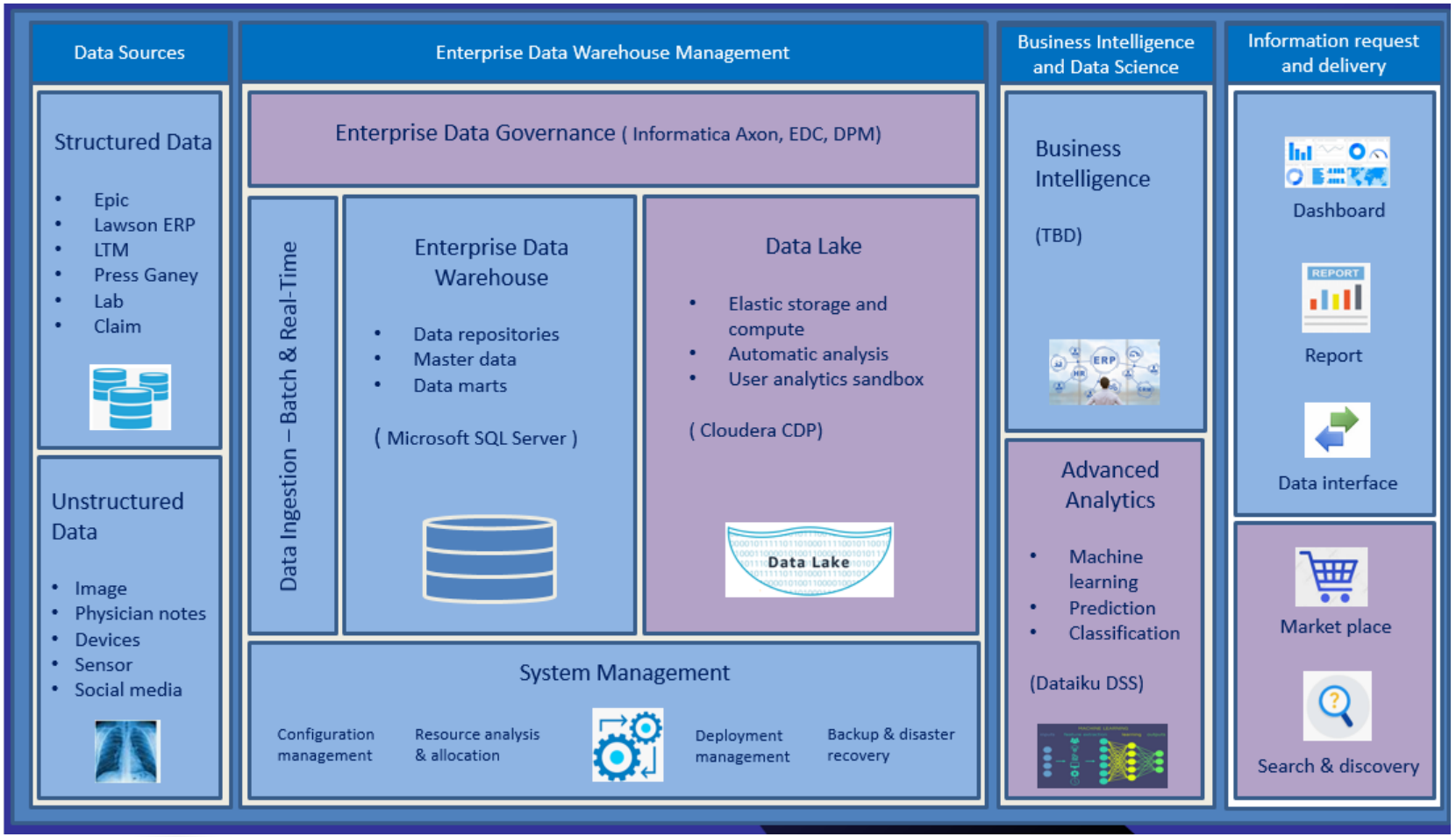
Key IT Build Variables

Optional Elements

- Integration of PROMs data
- Internal Retention of PROMs data
- Integration of Smart-form data

Norton Healthcare ASR Data Strategy

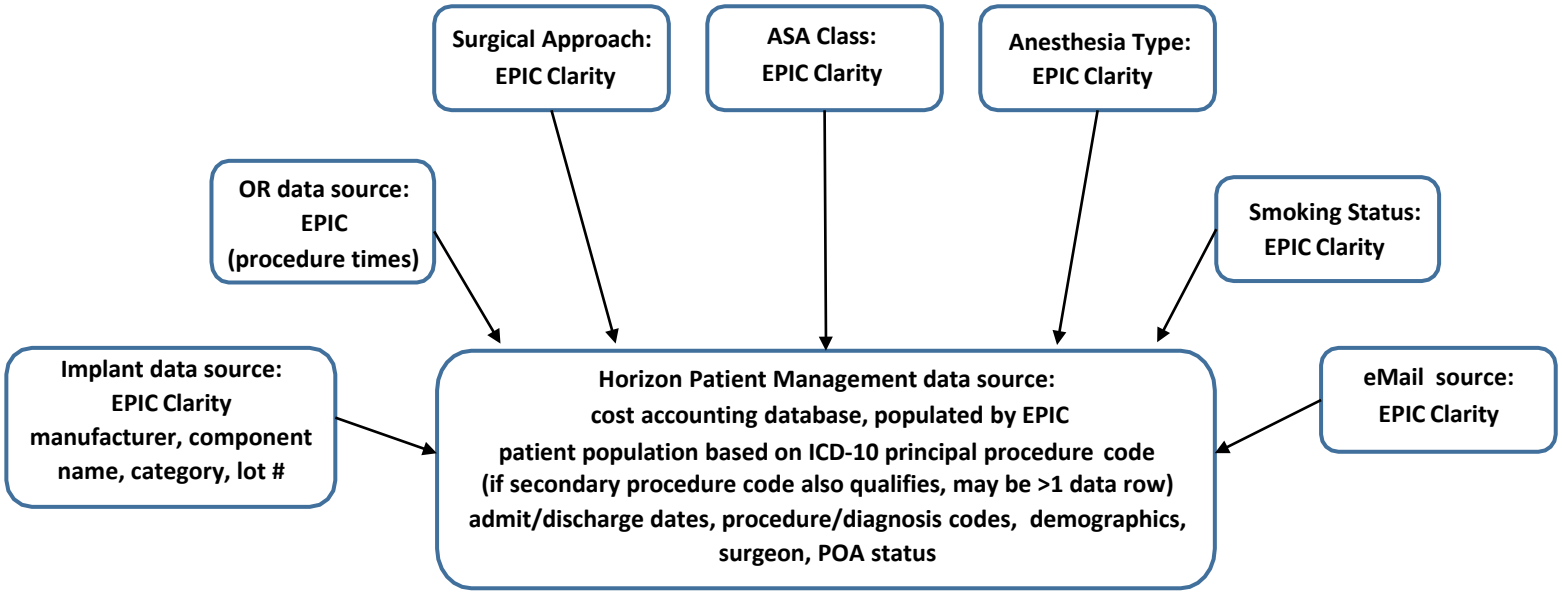
Modern Data Warehouse Architecture



ASR

Norton Healthcare ASR Data Strategy

ASR procedure file processing and uploading process



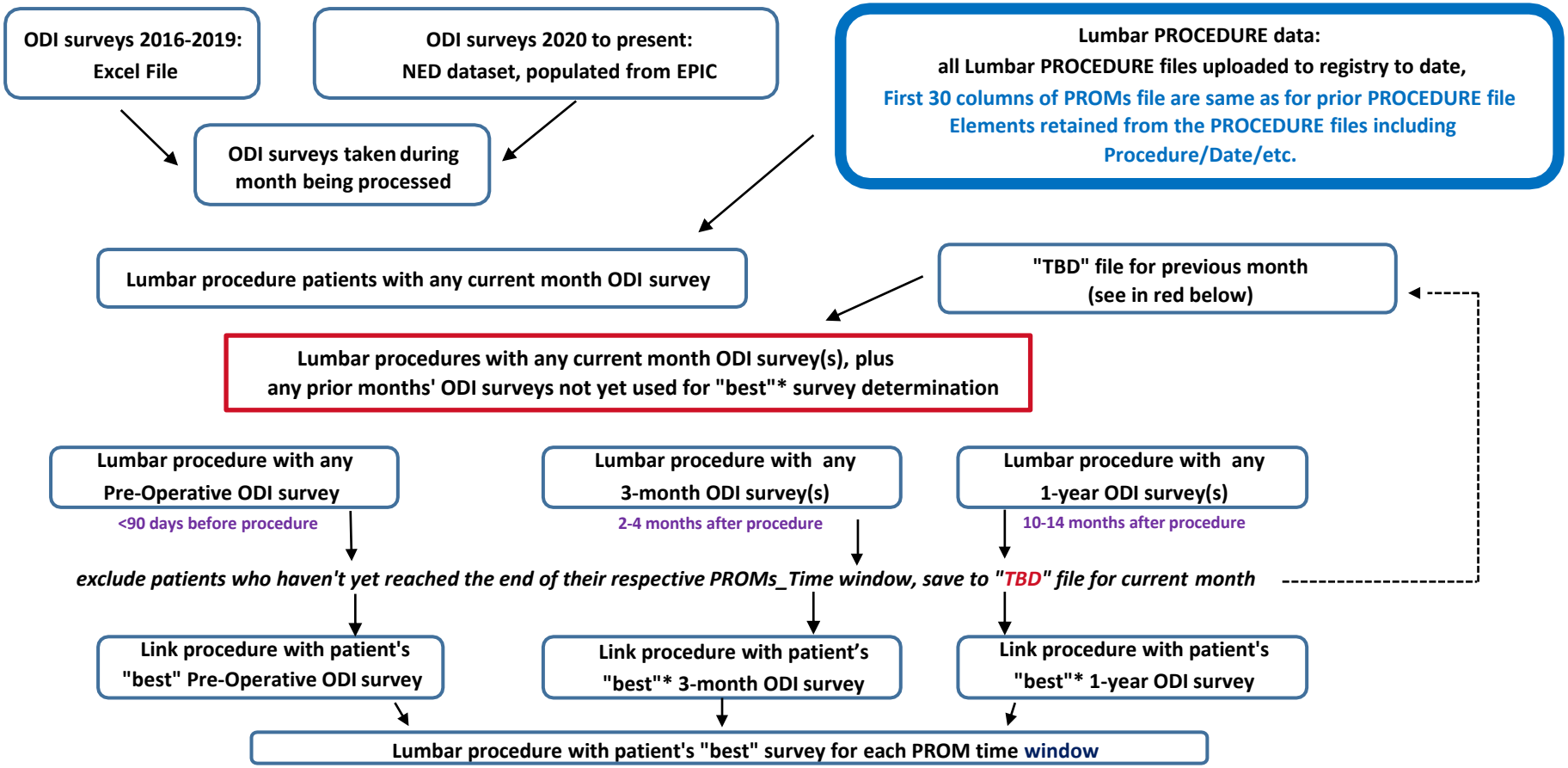
Data audit includes: invalid heights, weights
admit/procedure/discharge dates and times not in proper order

Process timing: monthly files are uploaded shortly after the beginning of a month

ASR

Norton Healthcare ASR Data Strategy

ASR PROMs file processing and uploading process



Process timing: monthly PROMs file is uploaded on or about the 15th of the month
(e.g., PROMs file with Jan ODI surveys (plus stragglers) is uploaded about Mar 15th, Feb about April 15th, etc.)

ASR

IT Build Solutions

- Options for data accrual – Billing vs. EMR
- Available code in SAS vs. SQL code
- EMR customization regardless of template

Estimated IT Build Resources

Senior Clinical Information Analyst / Data Architect

- Primary AAOS platform build – 240 hrs
- ASR procedure build – 26 hrs
- ASR PROMs file build – 86 hrs

Estimated IT Build Resources

IT build including validity work and internal data retention

Senior Clinical Information Analyst / Data Architect

- Monthly Procedural data upload – 2 hrs
- Monthly PROMs upload – 2 hrs
- Data feed infrastructure maintenance – 2 hrs

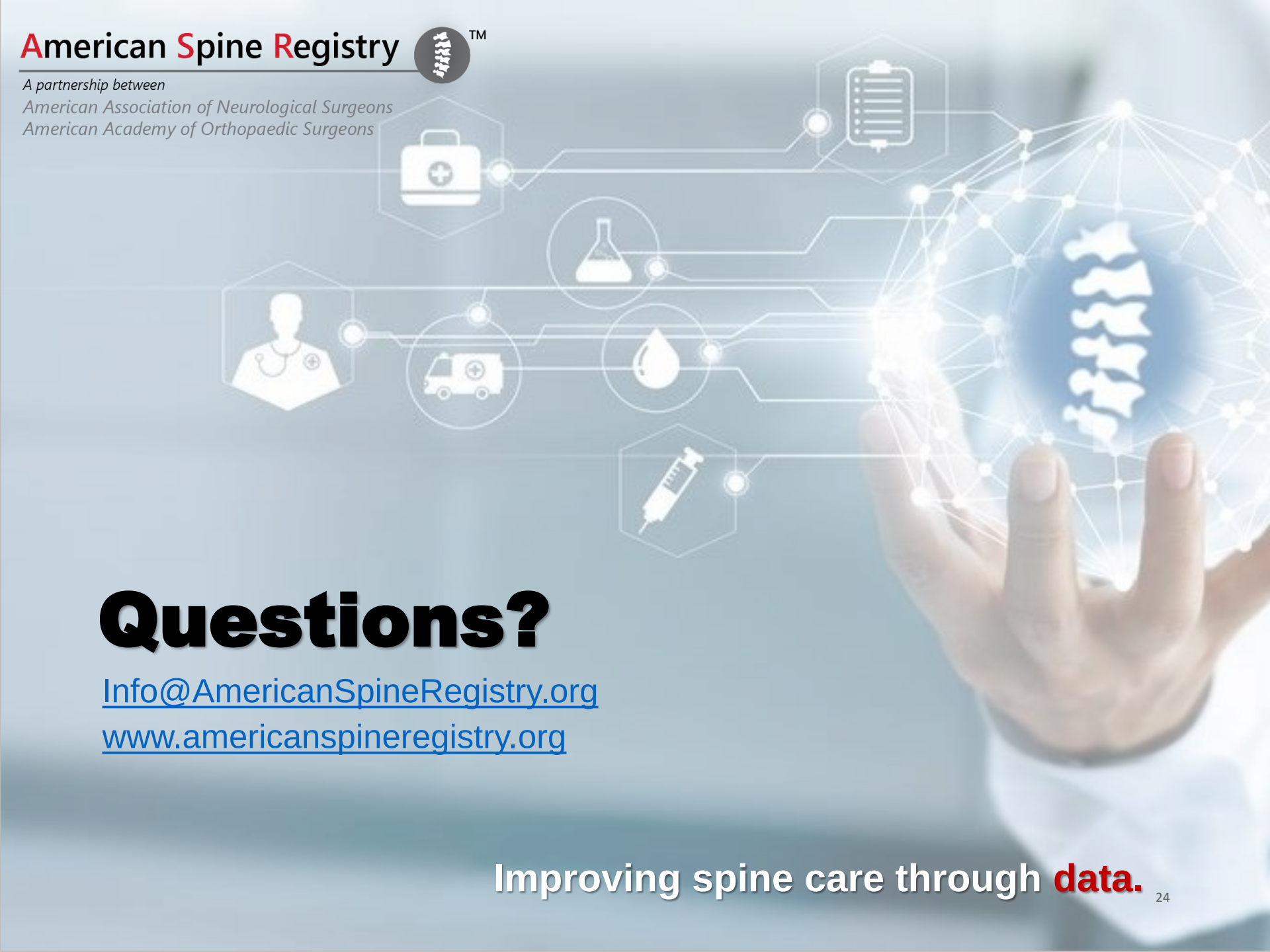
ASR

American Spine Registry™

A partnership between

American Association of Neurological Surgeons

American Academy of Orthopaedic Surgeons



Questions?

Info@AmericanSpineRegistry.org

www.americanspineregistry.org

Improving spine care through data.

Contact the American Spine Registry

General: Info@AmericanSpineRegistry.org

Technical Support: Support@AmericanSpineRegistry.org

Contracts, Invoicing, & Onboarding: Engagement@AmericanSpineRegistry.org

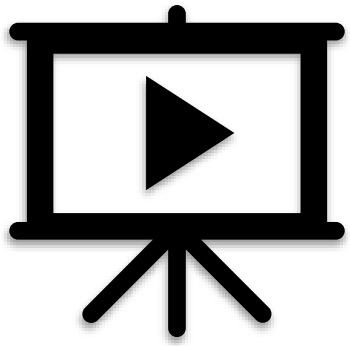
Custom Analytics: Analytics@AmericanSpineRegistry.org

Phone: (847) 292-0530

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

ASR

Webinar Recordings



- Recordings and slide decks from past webinars can be found on this page of the AAOS website.
- If you would like to view a recording of a webinar held before October 2020, please visit learn.aaos.org.

ASR

American Spine Registry™

A partnership between

American Association of Neurological Surgeons

American Academy of Orthopaedic Surgeons

Thank You

Info@AmericanSpineRegistry.org

www.americanspineregistry.org

Improving spine care through data.