



American  
Association of  
Neurological  
Surgeons



NREF



NPA

JNS

# NeuroPoint Alliance

April 20, 2023



NEUROPOINT  
ALLIANCE

# Introduction – Mohamad Bydon, M.D.



Incoming Chair, NeuroPoint Alliance (NPA)

Registry Organization for the American Association of Neurological Surgeons



Incoming AANS member on the American Spine Registry (ASR) Executive Committee



Soon to be past Co-Chair, American Spine Registry (ASR) Data Operations Committee



Former participation in QOD committees and Tumor Registry workgroup



Charles B. and Ann L. Johnson Professor of Neurosurgery  
Professor of Neurosurgery, Orthopedics, and Health Services Research







# THANK YOU

Involvement and support of the NERVES community has been instrumental to the successes we've seen in NPA

# NeuroPoint Alliance Registries Now

- 4 Active registry programs

Registry	Sites	Patients	Procedures/ Treatments
 <b>American Spine Registry</b> <small>A partnership between American Association of Neurological Surgeons American Academy of Orthopaedic Surgeons</small>	328	159,173	194,990
 <b>NVQI-QOD</b>	41	18,444	17,310
 <b>QOD TUMOR</b>	12	3,315	3,315
 <b>STEREOTACTIC RADIOSURGERY</b>	23	5,272	8,831

- 1 recently closed program for Deep Brain Stimulation in Parkinson's Disease (RAD-PD) after tremendous engagement from participating sites

# Focus on our Key Stakeholders

Improve the quality, safety, and effectiveness of Neurosurgical care through outcomes science to drive improvement, deliver tools, and engage key stakeholders in clinical data registries and related projects.



Patients



Neurosurgical Practice



Practices and Hospitals



Neurosurgeons and Clinicians



Government Legislative and Regulatory Bodies

# Delivering Optimal Care Options



## Patients

- Provide tools for surgeons guiding patients on risks, benefits, and procedures
- Drive insights on devices and procedures to inform optimal care plans
- Deliver tools to support patient access to care options



## Neurosurgical Practice

- Ensure neurosurgical specialty is defining neurosurgical quality
- Provide the tools and data to inform advocacy and education
- Advance evidence of efficacy in the face of changing reimbursement policies and paradigms

# Supporting Clinic and Clinician Administration



## Practices and Hospitals

- Deliver tools to implement quality improvement programs and initiatives
- Advance recognition through national payor and accreditation distinction programs
- Satisfy public reporting and reimbursement requirements



## Neurosurgeons and Clinicians

- Provide national quality benchmarking and quality improvement tools
- Ensure research opportunities advancing scientific gaps in care
- Satisfy continuous certification requirements with ABNS

# Informing Constructive Policy

## Government Legislative and Regulatory Bodies



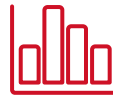
- Produce scientific approaches to inform medical device regulation and efficiency
- Highlight the value of various neurosurgical treatments
- Inform stakeholders on the societal impact of neurosurgical diseases
- Ensure neurosurgical expertise informs legislation and regulations to optimize access to optimal care for patients



# Registry Data Uses



On-demand practice and surgeon specific dashboards



Comparison to national performance benchmarks



Monitor longitudinal patient outcomes



ABNS Continuous Certification credit



Resource for device surveillance and monitoring implant failures



Publish research on national quality dynamics of patient care delivery



Qualify for national distinction programs (Aetna, Blue Distinction, TJC)



Tool for quality improvement programs (MIPS & BPCI-A)



Integration of data sources including CMS data and clinical trials



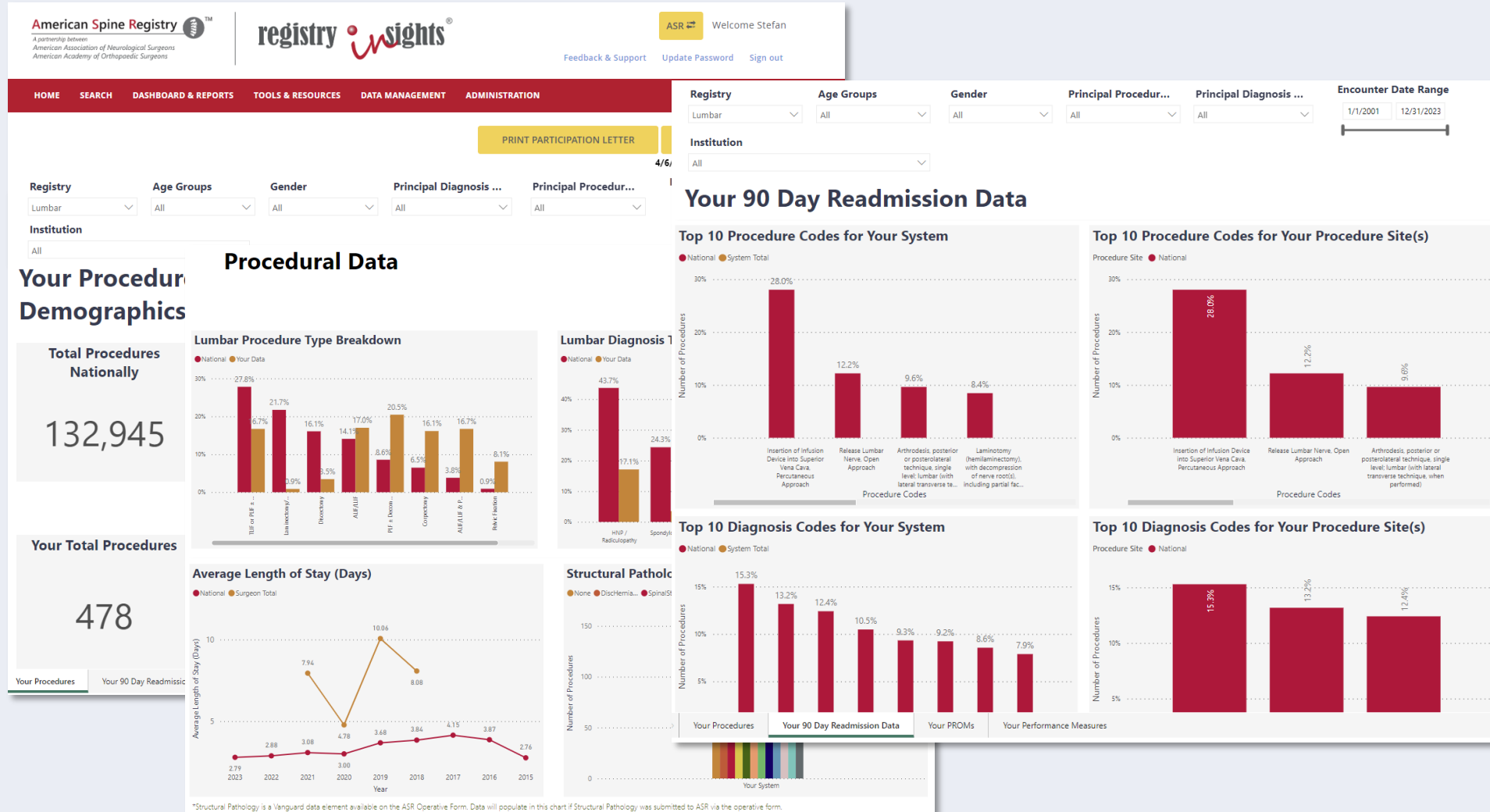
Improve the value of care delivered to patients

# Delivering Quality Improvement Tools

Multiple projects dedicated to improving utility of registry submitted site data

# American Spine Registry (ASR)

- Added multiple filters and updated dashboard data and functionality



The dashboard features a navigation bar with options: HOME, SEARCH, DASHBOARD & REPORTS, TOOLS & RESOURCES, DATA MANAGEMENT, and ADMINISTRATION. A user profile for 'Stefan' is visible in the top right.

**Filters:** Registry (Lumbar), Age Groups (All), Gender (All), Principal Procedure (All), Principal Diagnosis (All), Encounter Date Range (1/1/2001 to 12/31/2023).

**Key Metrics:**

- Total Procedures Nationally:** 132,945
- Your Total Procedures:** 478

**Procedural Data:**

- Lumbar Procedure Type Breakdown:**

Procedure Type	National	Your Data
Tumor Resection	27.8%	6.7%
Laminectomy	21.7%	2.9%
Discectomy	16.1%	4.5%
AIM (IF)	14.1%	8.8%
PEP & Fusion	20.5%	16.1%
Corpectomy	6.5%	3.8%
AIM (IF & P)	16.7%	0.9%
Rekt Fusion	8.1%	-
- Lumbar Diagnosis Breakdown:**

Diagnosis	National	Your Data
HNP / Radiolopathy	43.7%	17.1%
Spondyl	24.3%	-

**90 Day Readmission Data:**

- Top 10 Procedure Codes for Your System:**

Procedure Code	Percentage
Insertion of Infusion Device into Superior Vena Cava, Percutaneous Approach	28.0%
Release Lumbar Nerve, Open Approach	12.2%
Arthrodesis, posterior or posterolateral technique, single level lumbar (with lateral transverse ta...	9.6%
Laminectomy, with decompression of nerve roots, including partial fac...	8.4%
- Top 10 Procedure Codes for Your Procedure Site(s):**

Procedure Code	Percentage
Insertion of Infusion Device into Superior Vena Cava, Percutaneous Approach	28.0%
Release Lumbar Nerve, Open Approach	12.2%
Arthrodesis, posterior or posterolateral technique, single level lumbar (with lateral transverse technique, when performed)	9.6%
- Top 10 Diagnosis Codes for Your System:**

Diagnosis Code	Percentage
HNP / Radiolopathy	15.3%
Spondyl	13.2%
Other	12.4%
Other	10.5%
Other	9.3%
Other	9.2%
Other	8.6%
Other	7.9%
- Top 10 Diagnosis Codes for Your Procedure Site(s):**

Diagnosis Code	Percentage
HNP / Radiolopathy	15.3%
Spondyl	13.2%
Other	12.4%

**Average Length of Stay (Days):**

Year	National	Surgeon Total
2023	2.79	-
2022	2.88	-
2021	3.08	7.94
2020	3.00	4.78
2019	3.68	10.06
2018	3.84	8.08
2017	4.18	-
2016	3.87	-
2015	2.76	-

**Structural Pathology:**

Pathology	Percentage
None	15.3%
Dischermia	13.2%
Spinal Stenosis	12.4%
Other	10.5%
Other	9.3%
Other	9.2%
Other	8.6%
Other	7.9%

**Footer:** \*Structural Pathology is a Vanguard data element available on the ASR Operative Form. Data will populate in this chart if Structural Pathology was submitted to ASR via the operative form.

NPAA

# ASR Epic Smart Form Development

Lead by Dr. Oren Gottfried and the Duke IT team

Available to sites using Epic Version Nov 2021 via Epic Turbocharger package



# ASR Specification Updates

- Updated data specifications lead but the NPA's Practice Based Learning Network leadership feedback
- Reviewed and approved with the ASR Data Operations Committee
- An example of the valuable cooperation and support of members of this community
- Working with our AAOS colleagues to make available in the next version of the registry specifications
- We appreciate the continued support as we address site challenges and think it's critically important for NPA to work with the NERVES community

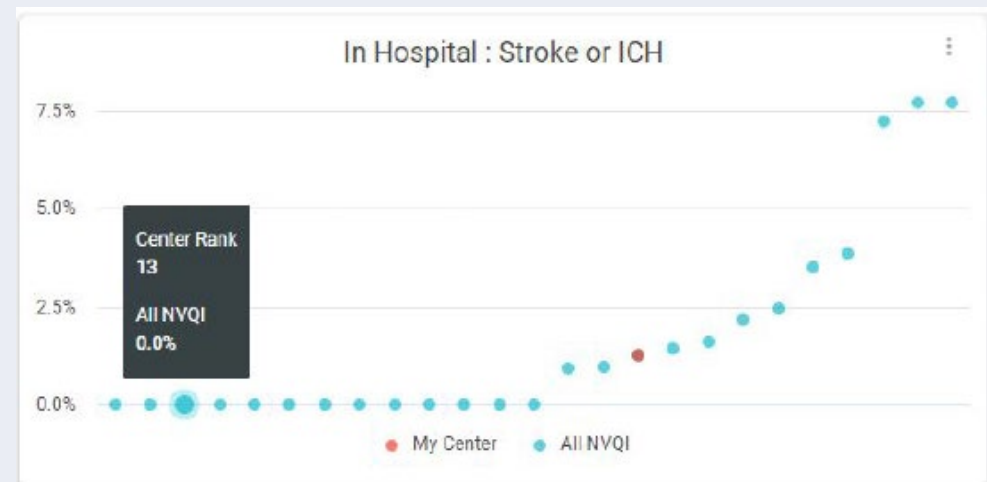
# NVQI-QOD Data Reporting



- Cerebral Aneurysm module launched participant dashboards fall of 2022

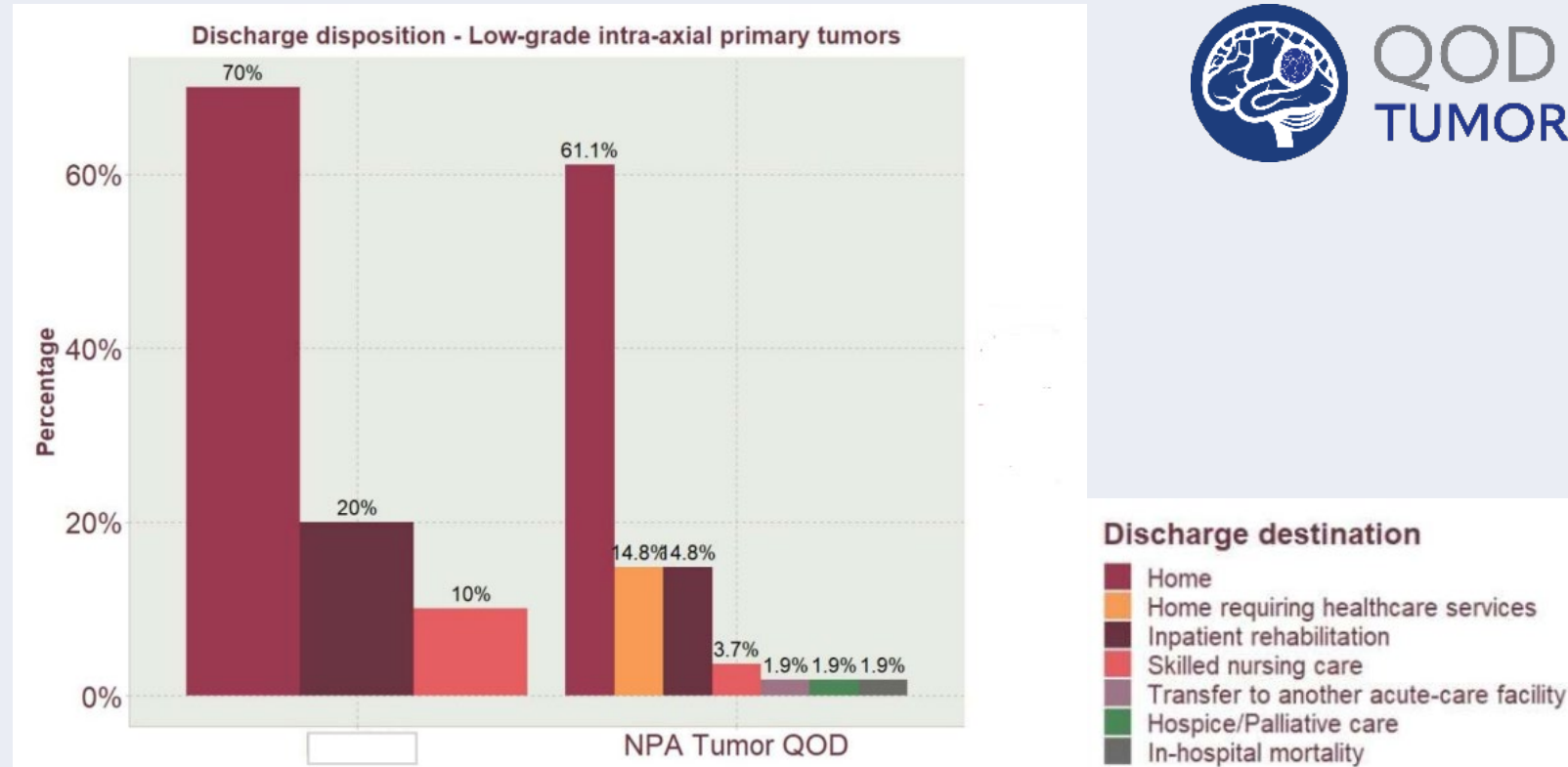
Presentation			
		My Center	All NVQI-QOD
Aneurysm	Aneurysm < 5mm	33.3% (2/6)	NA (<3 centers)
	Ruptured	36.7% (11/30)	NA (<3 centers)
	Anterior Circulation	89.2% (33/37)	NA (<3 centers)
Hunt Hess Grade (Ruptured)	Grade I,II	88.9% (8/9)	NA (<3 centers)
	Grade III	11.1% (1/9)	NA (<3 centers)
	Grade IV,V	0.0% (0/9)	NA (<3 centers)

- Stroke module dashboard expected in May
- Research requests have ramped up with multiple in process

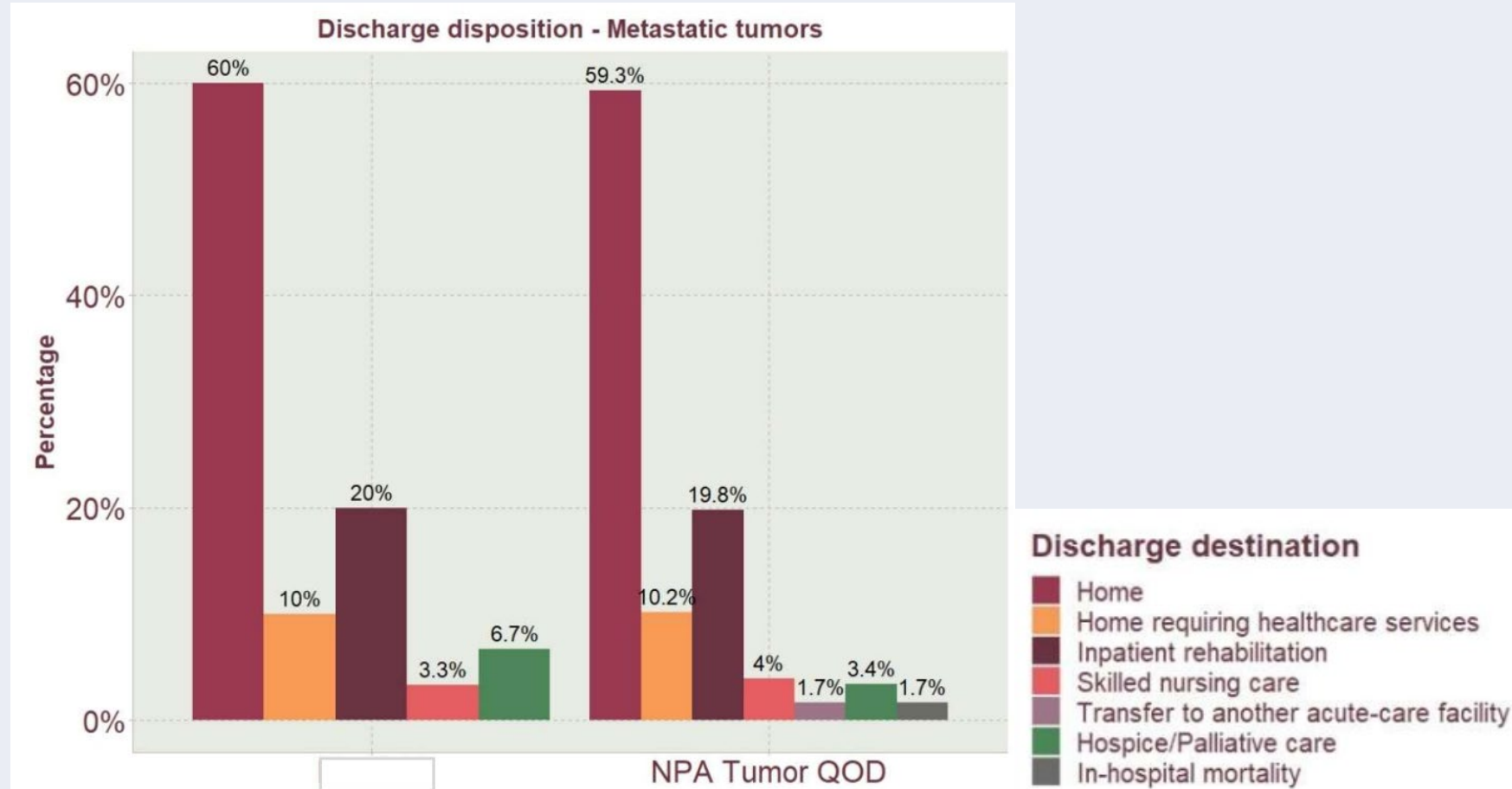


# Tumor Registry Reports Published

Developed with Mayo Clinic and Practice Based Learning Network input for participating sites



# Tumor Registry Report

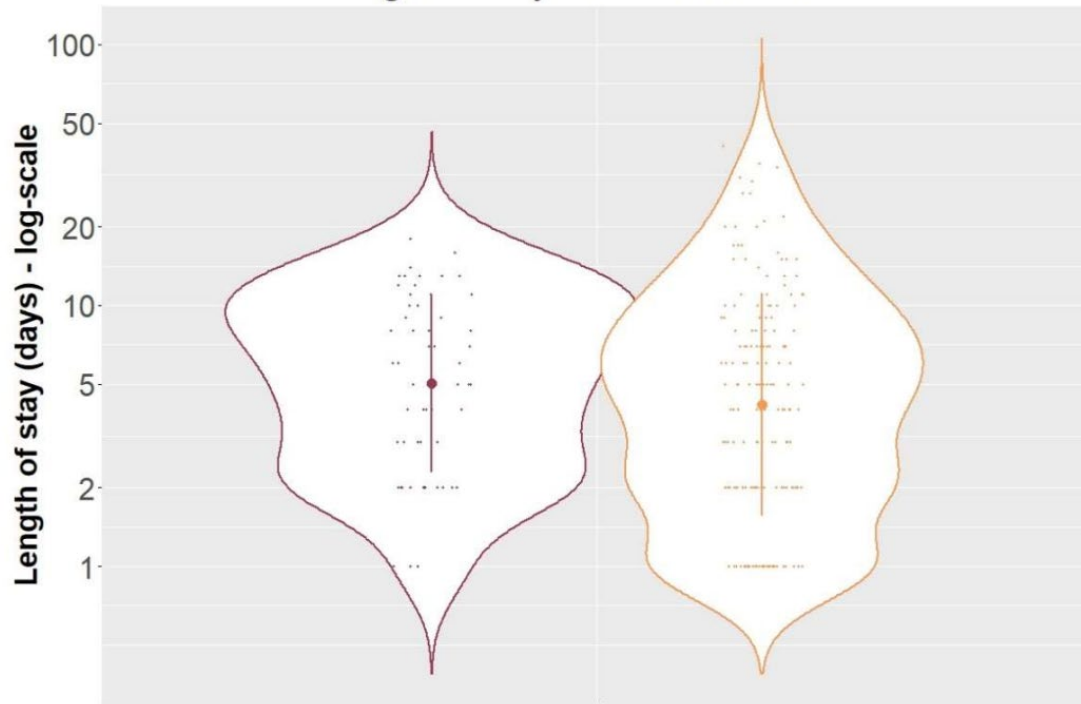




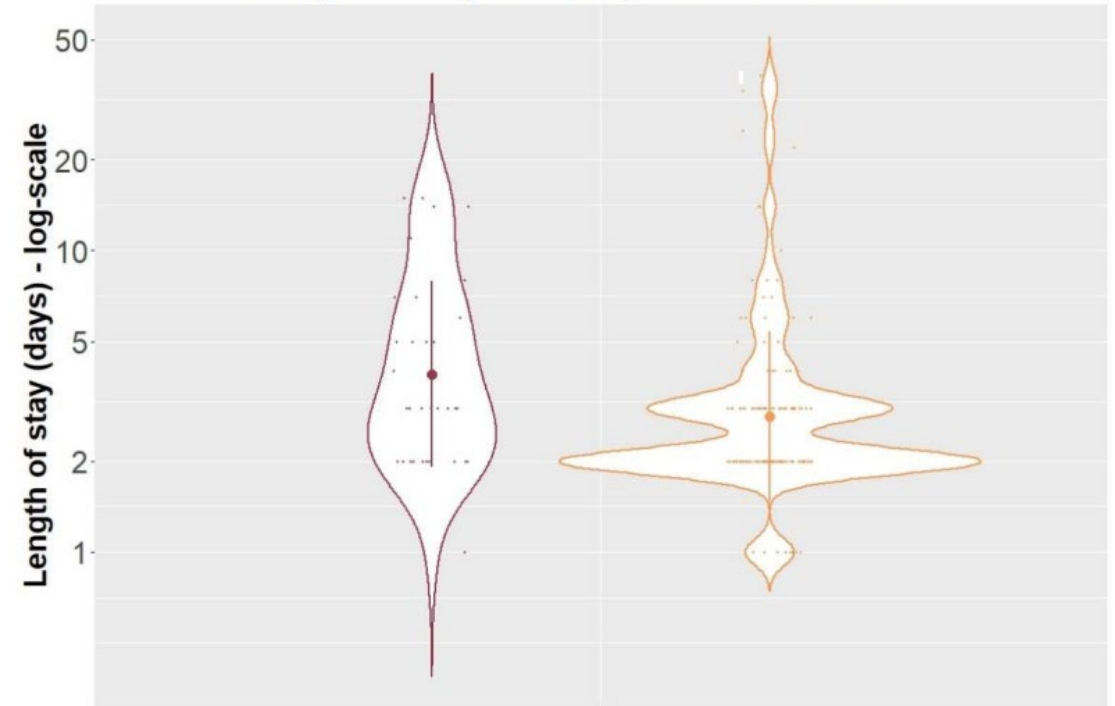
# Tumor Registry Reports



Length of stay - Metastatic tumors

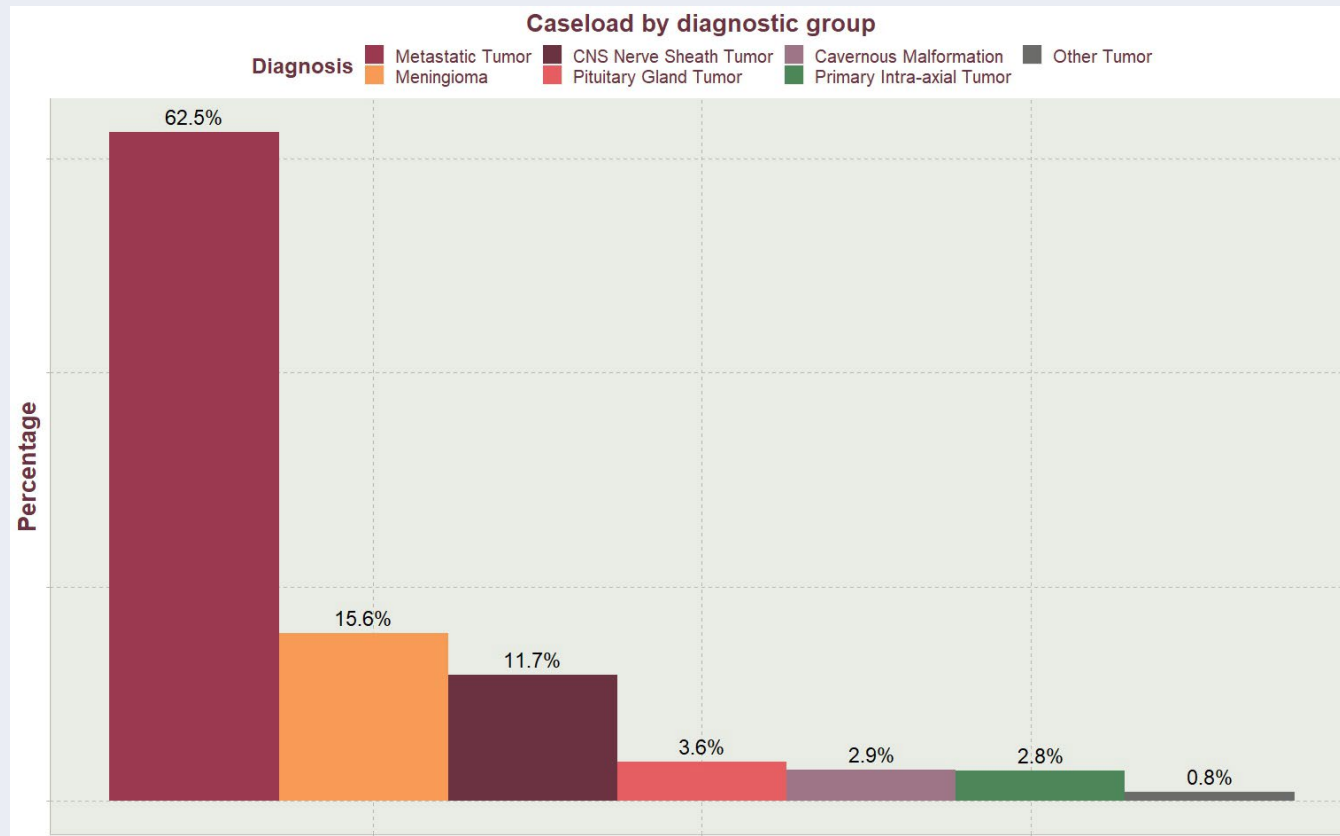


Length of stay - Primary tumors of the sella

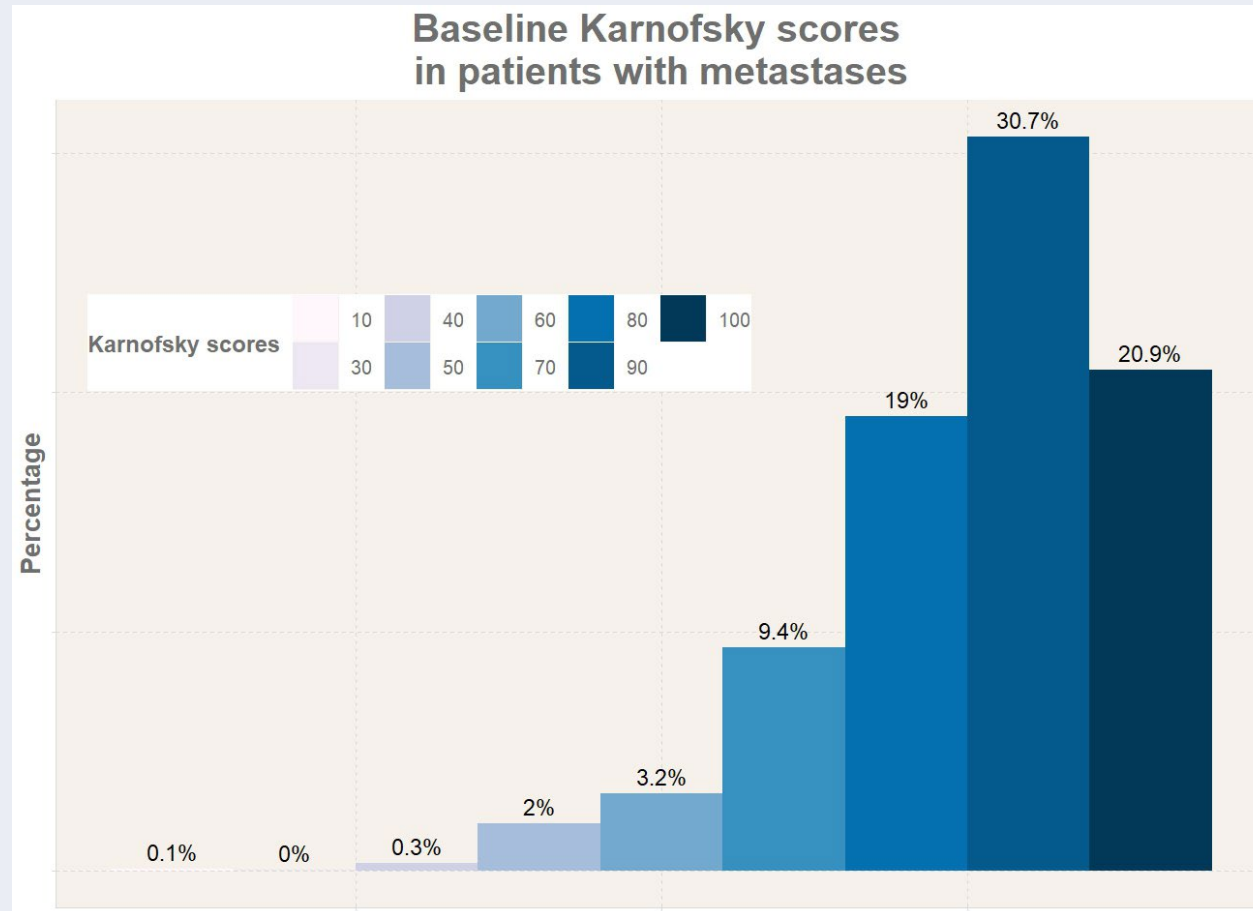


# Stereotactic Radiosurgery Registry

- Launched and developed with Mayo Clinic
- Insights provides by NPA's Practice Based Learning Network



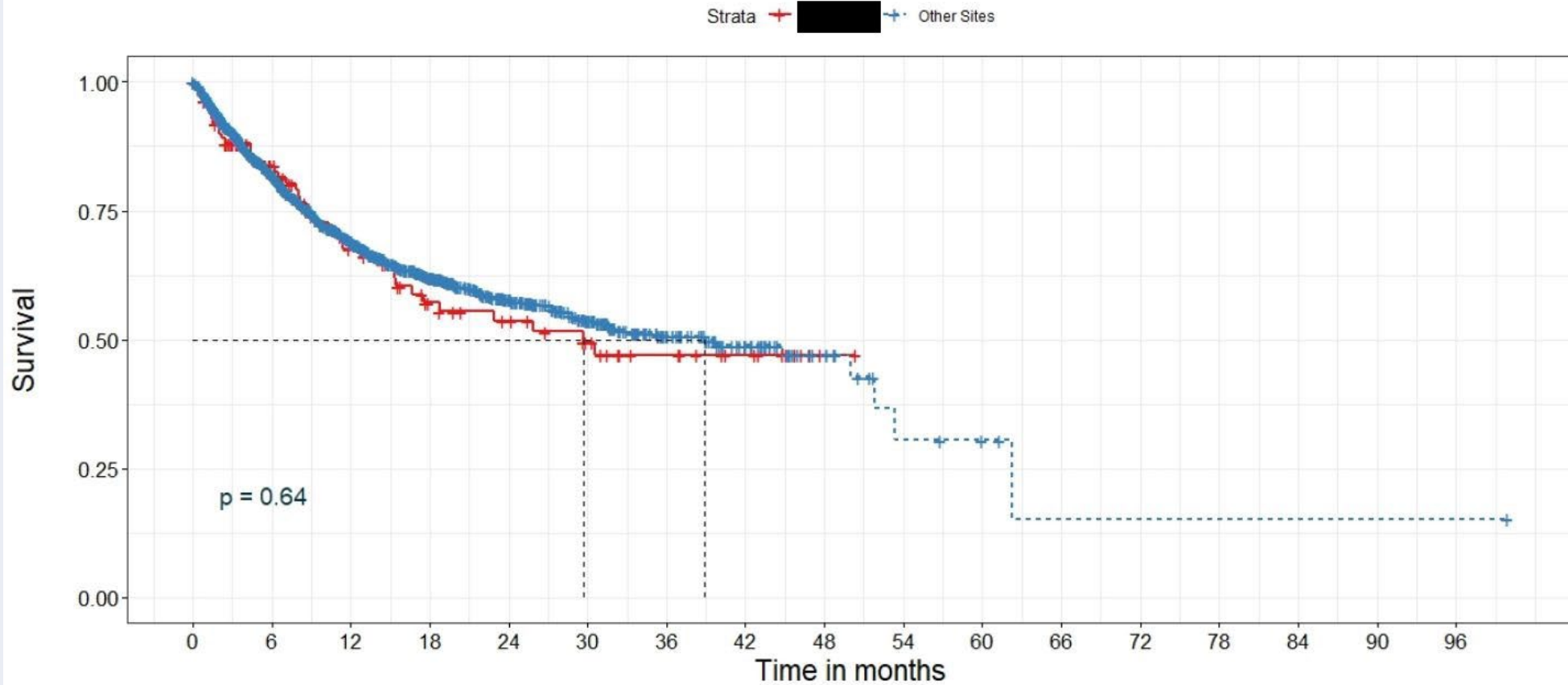
# SRS Registry Reports



# SRS Registry Reports



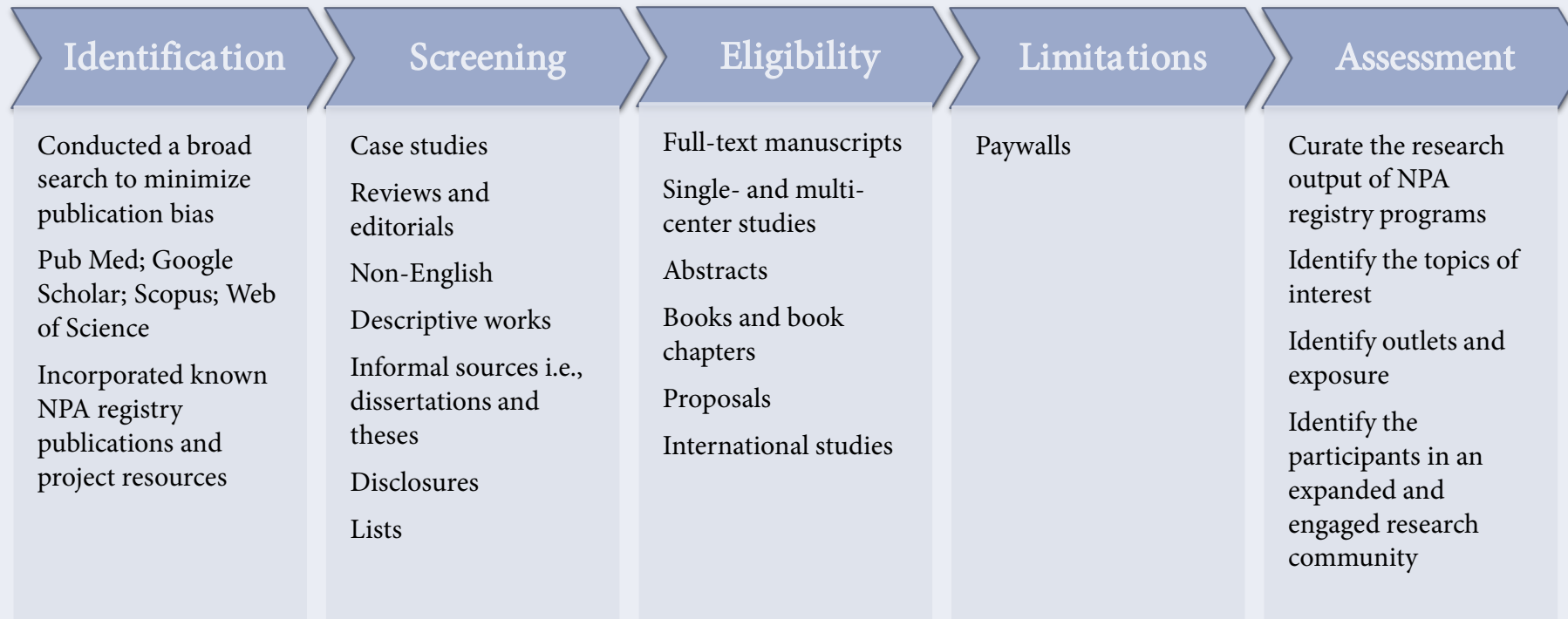
Overall Survival - All Patients with Metastases



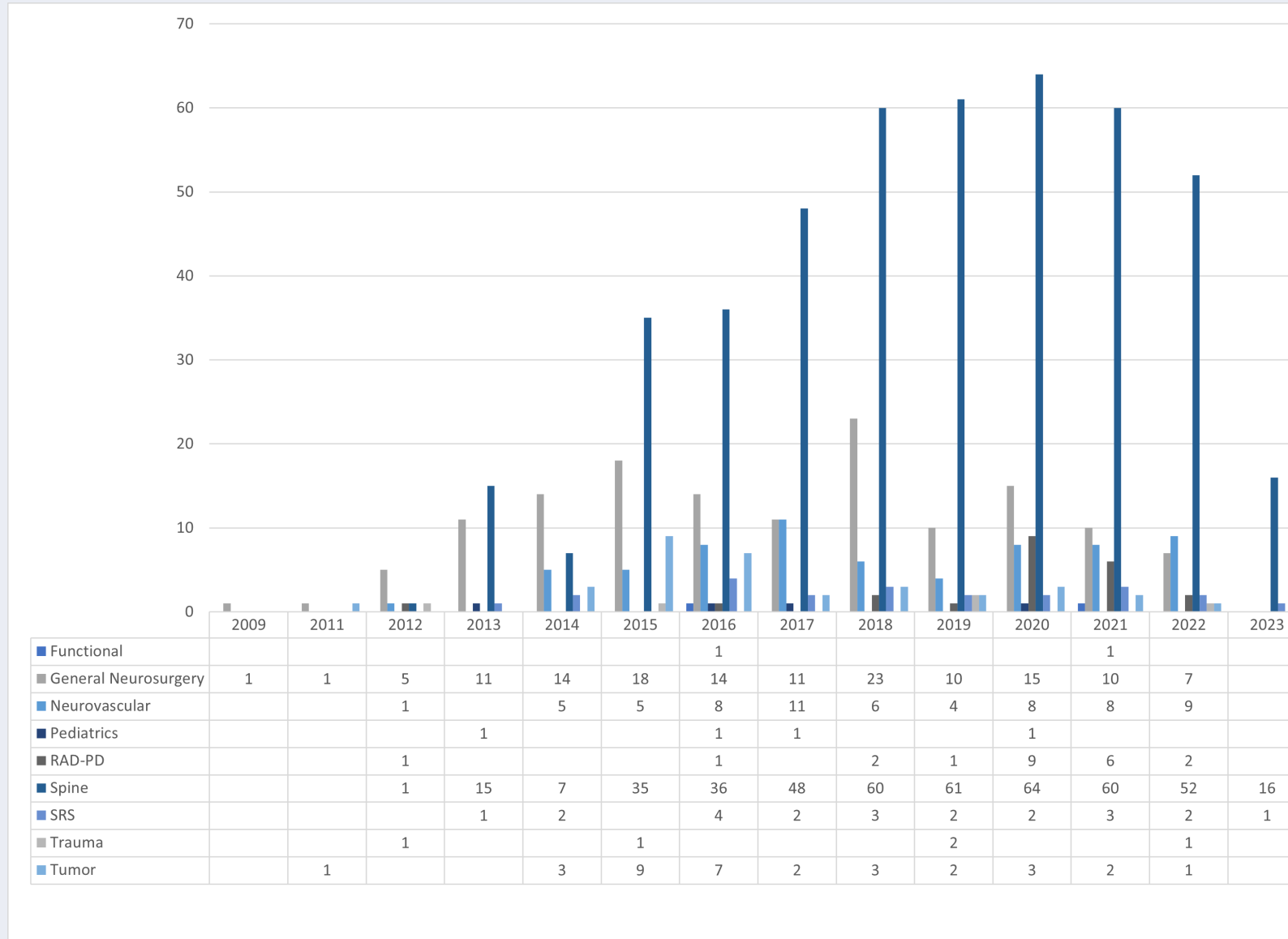
# Closing the Scientific Gaps

- Research production to address scientific gaps in patient care continues to be a priority for NPA in registry capabilities
- The research production out of NPA registry programs has been prolific

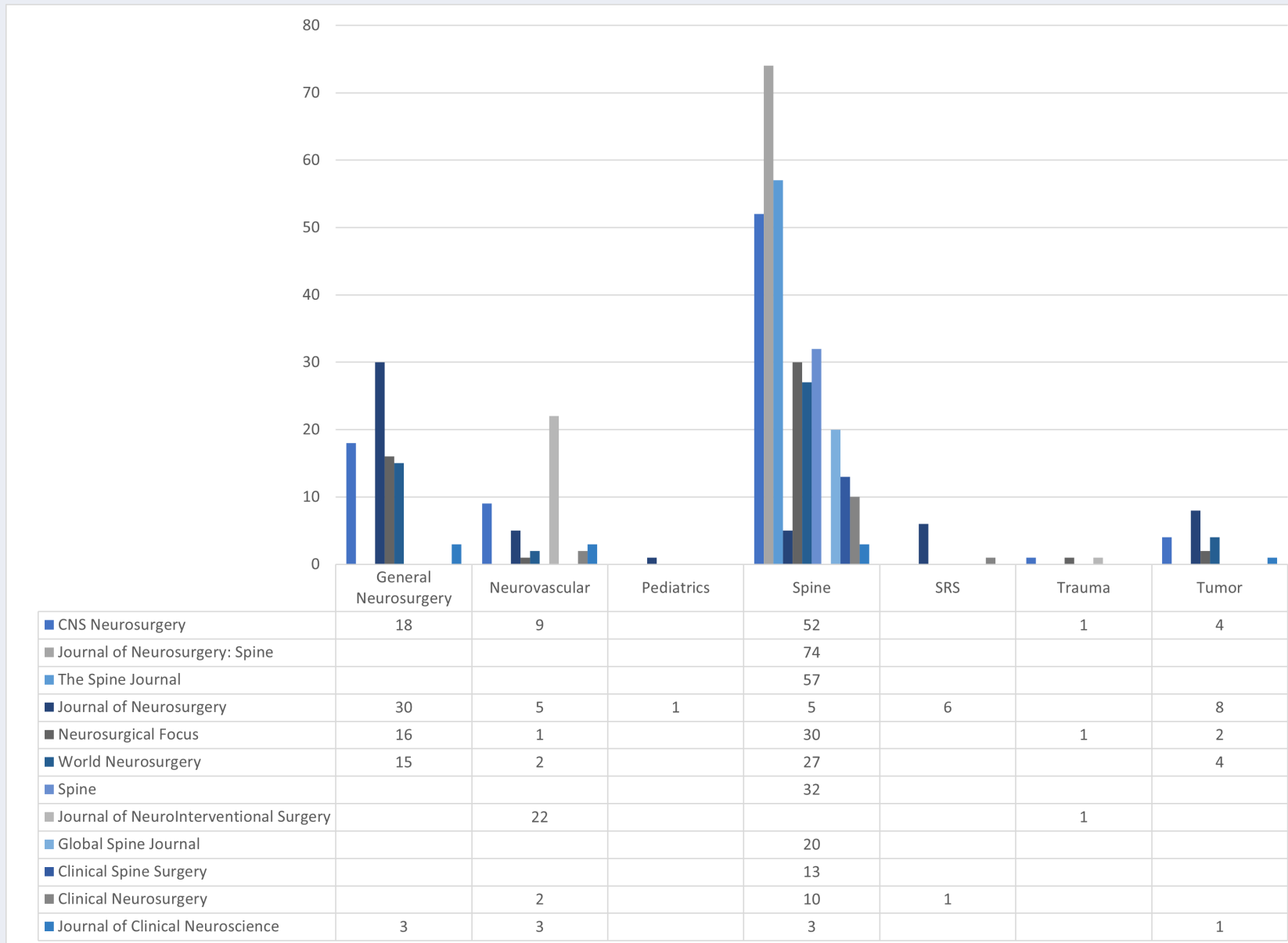
# Systematic Review



# Publications through the Years



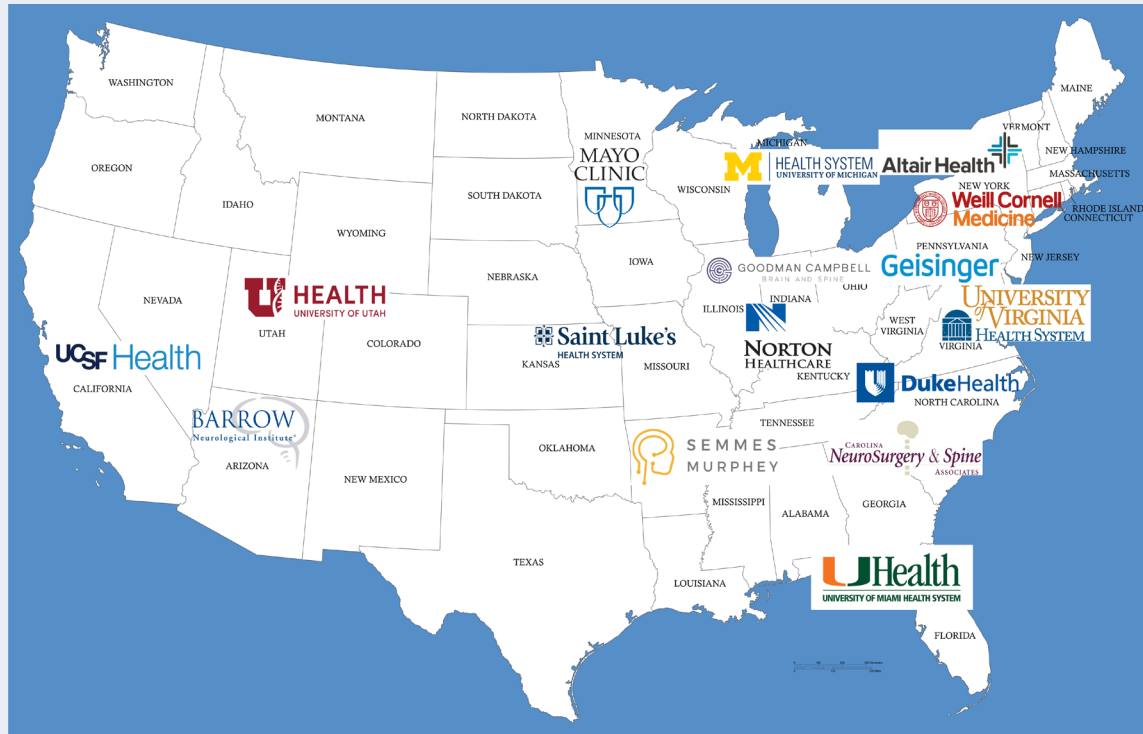
# Top 12 Journals



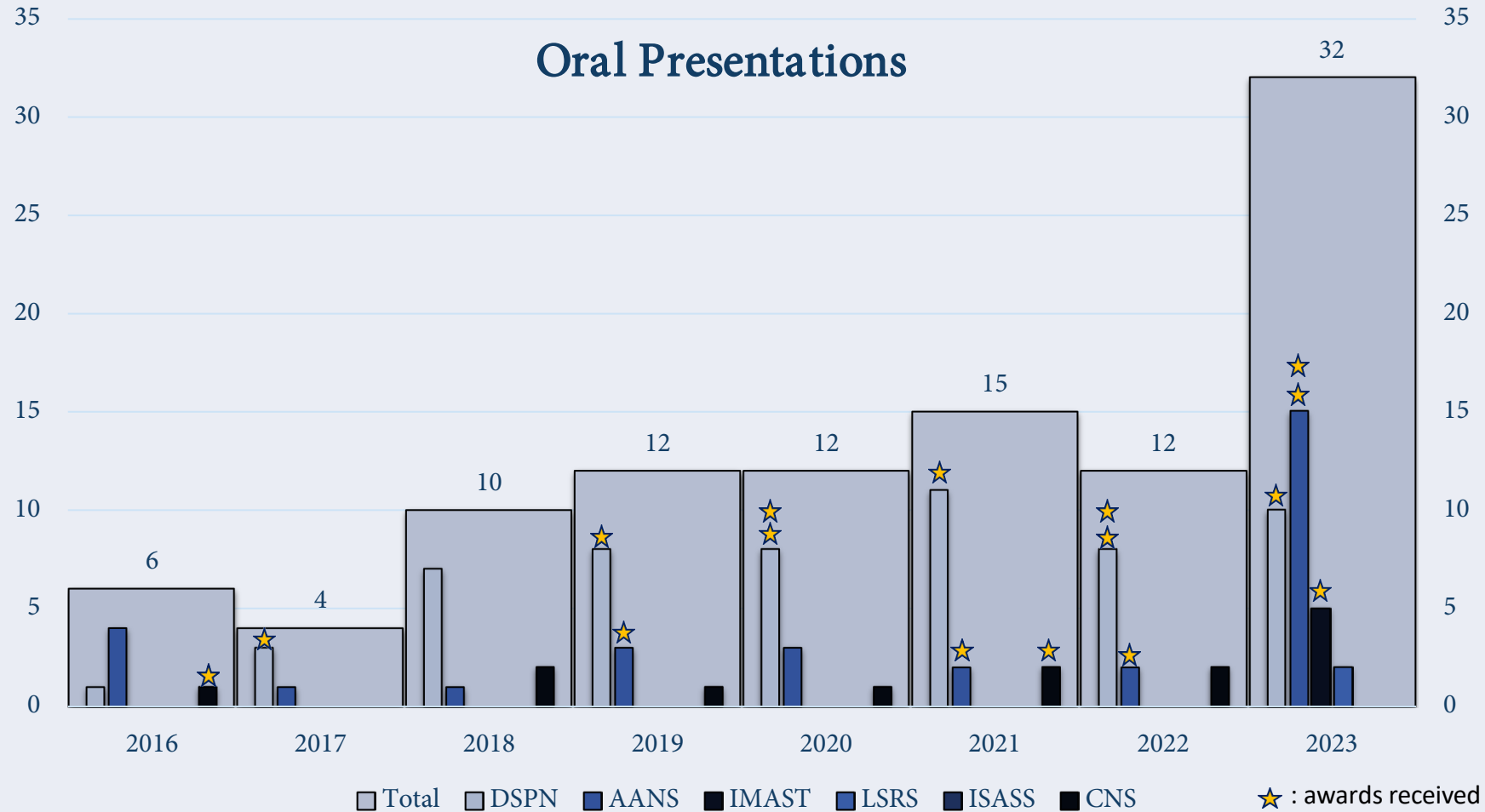


# QOD Study Group

- The QOD Study Group has continued to work with QOD data with the support of members of the NERVES community
- 16 high performing former QOD sites have continued this ongoing effort



# QOD Study Group Research Production



# NPA Registry Research Recognition



American  
Association of  
Neurological  
Surgeons

## AANS Annual Scientific Meetings

- Stewart Dunsker Awards – (Winners in 2021, 2022, 2023)
- Veena D. Mummaneni Award – (Winner in 2023)



SpineSection.org

AANS/CNS Section on Disorders  
of the Spine and Peripheral Nerves

## AANS/CNS Spine Summit

- Kuntz Awards – (Winners in 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023)
- JANE Award – (Winner in 2019)



Congress of  
Neurological  
Surgeons

## CNS Annual Meeting

- Top Spine Paper of the Year – (Winner in 2021)



## IMAST Annual Meeting

- Whitecloud Award – (Winner in 2023)

# Top Journals Hosting QOD Articles

- Articles utilizing the QOD are submitted to selected high-impact journals

Journal	Impact factor	# of QOD studies
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Journal of Neurosurgery: Spine	3.6	24
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Neurosurgery	4.7	11
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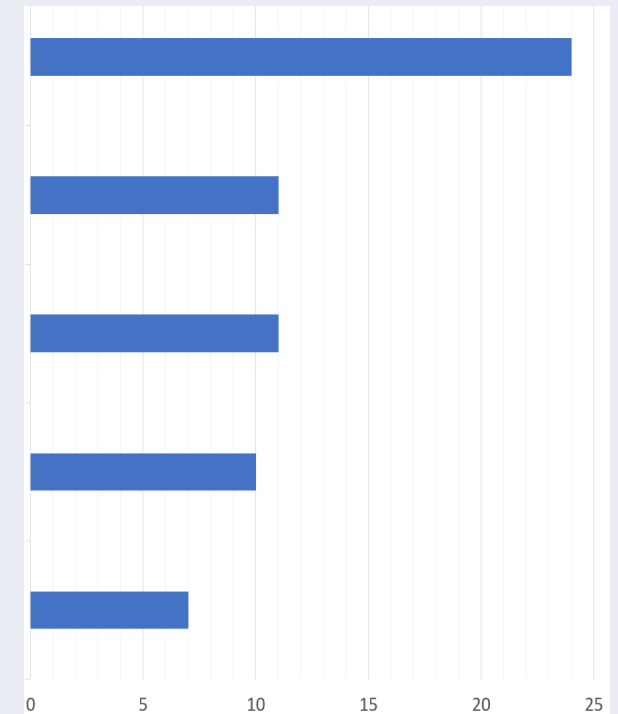
Spine	3.5	11
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Neurosurgical Focus	4.1	10
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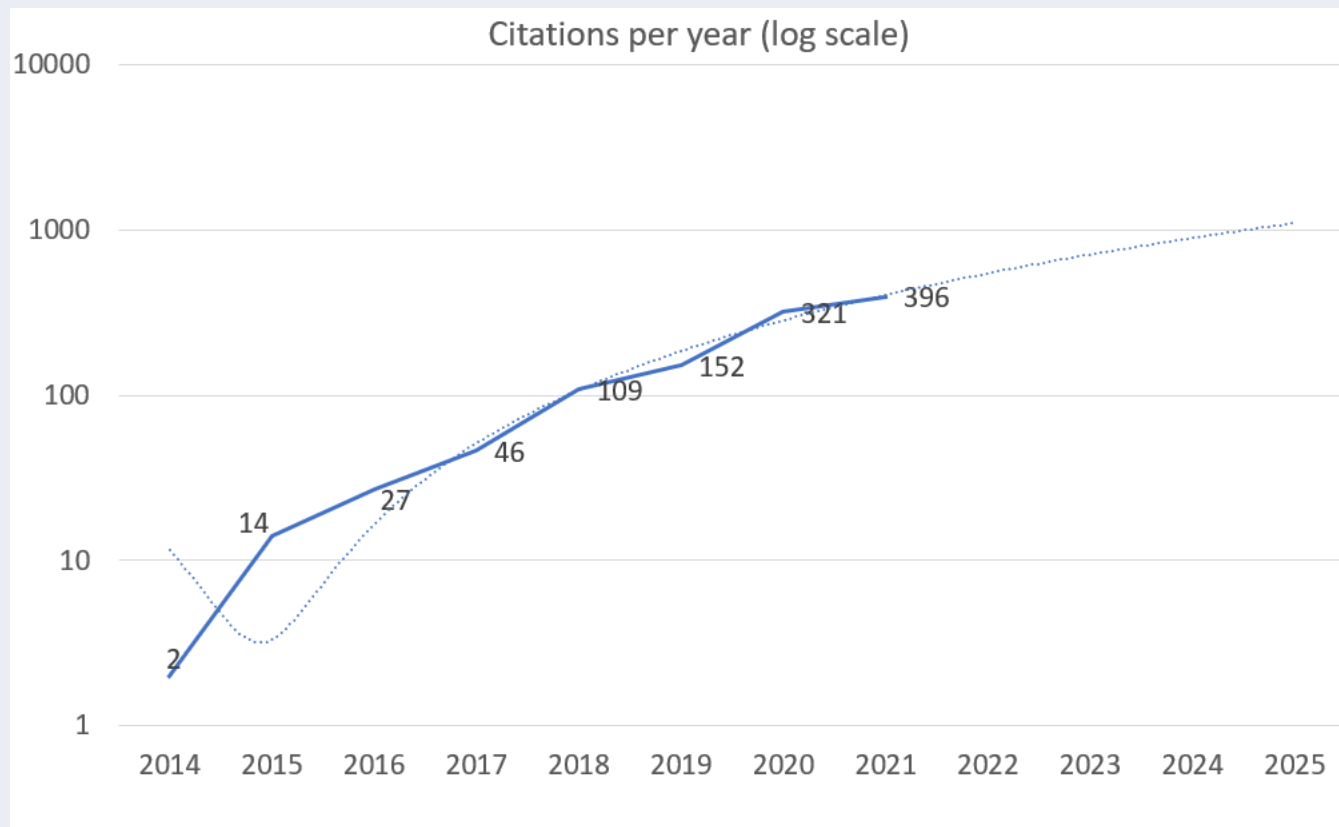


The Spine Journal	4.2	7
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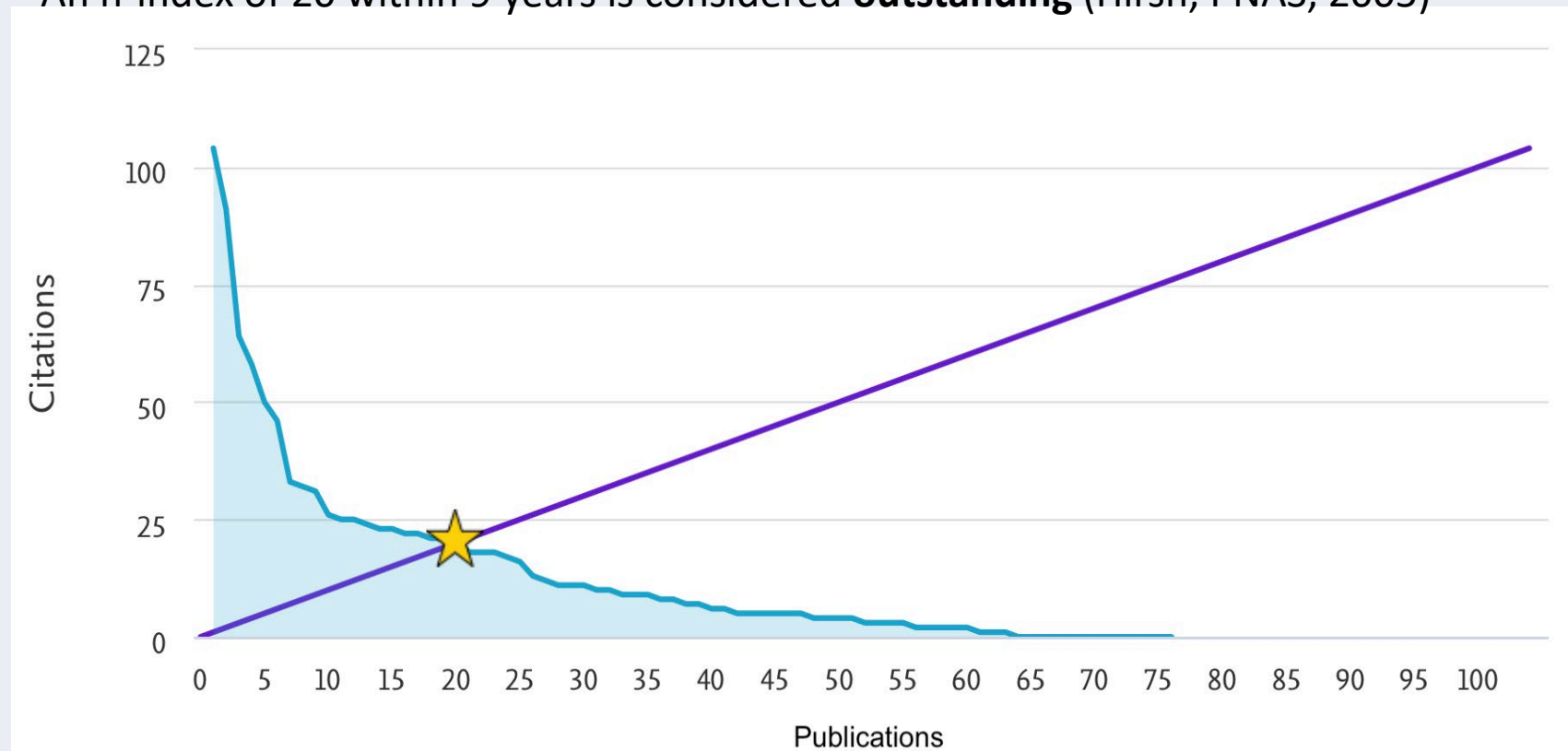
# Research Impact & Citations

- QOD has impacted the spine literature, with >1000 citations within the 9 years of its activity.
- Estimated to reach 1,000 citation per year by 2025 (logarithmic model)



# QOD h-index = 20

- h-index: Number of publications (n) with  $\geq n$  citations
- Representative of **volume** and per-unit **importance** of publications
- An h-index of 20 within 9 years is considered **outstanding** (Hirsh, PNAS, 2005)



# Building Impact of Work

## Identifying application of research production

- Does research identify gaps in care?
- Are there actions that should be taken?
- Does this inform advocacy or educational needs?
- Are there dynamics of care that should be measured or incorporated back into participant quality tools?

## Effective promotion of research production

- What publications are worth highlighting, awards worth sharing, and uses of NPA data worth distributing?
- Who is utilizing the data in a way that demonstrates potential NPA and AANS leadership?
- How do we effectively incorporate into KPIs and addressing AANS strategic priorities related to NPA?
- Are there additional opportunities to highlight research opportunities to surgeons or stakeholders like industry?

## Ensuring utilization of NPA registry output

- Should we evaluate the processes and balance of data access and NPA oversight?
- What evaluative processes should we put in place?

# Addressing Coverage Denials

NPA research addresses scientific gaps in patient care to ensure patients have access to optimal care  
Currently addressing payor cervical procedure denials

## X. Experimental and Investigational Interventions



Aetna considers the following interventions experimental and investigational because there is insufficient evidence to support their use for these indications (not an all-inclusive list): 22853 with 22551 (PEEK SPACERS with ACDF)

22853 is becoming less utilized due to insurance policies citing lack of scientific data



Participating in NPA registries is critical to help ensure coverage of your procedures



# New Leadership NPA Board of Directors

- **Chair** M Bydon
- **Vice -Chair** P Mummaneni
- **Secretary** M Groff
- **Director of Strategy** S Timmons
- **Treasurer (AANS)** S Amin-Hanjani
- **Appointee** M Shaffrey
- **Appointee** E Bisson
- **Appointee** D Coric
- **Appointee** F Barker
- **Appointee** J Sheehan

# Thank You!

NPA looks forward to continuing work to ensure registries are serving the NERVES community needs

Visit the NPA booth for more information both here at NERVES and at the AANS NeuroHub