

# 2024 Quality Outcomes Report

UT Southwestern Neurosurgery is a leading hub for innovation and high-quality neurosurgical care, education, and research.



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## ACKNOWLEDGMENTS

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# Neurosurgery Quality Council



**Nader Pouratian, M.D., Ph.D.**

*Chair and Professor,  
Department of  
Neurological Surgery*

## Message from the Chair

At UT Southwestern, the Department of Neurological Surgery is committed to optimizing our patients' experience and outcomes, both inside and outside the operating room. We are bringing together patient-centered, multidisciplinary, high-performance teams to focus on every step of our patients' journeys. As a department, we have focused on improving communication with the patient and one another to improve experience, enhance outcomes, increase efficiency, and reduce mortality, all while prioritizing technical excellence.

Over the past year, our department has committed to establishing the Neurosurgery Quality Council and Committee. This effort has brought together a diverse and skilled team comprising physicians in neurosurgery, neurological critical care, hospital medicine, nurse managers, care coordinators, physical therapists, social workers, advanced practice providers, and departmental administrative staff. This collective force has emerged as the driving engine propelling our quality projects and initiatives forward.

Our unwavering focus on patient-centric quality work has empowered us to craft programs that prioritize patient care and safety, resulting in the delivery of unparalleled health care.

Our metrics demonstrate continuous improvement, aligning seamlessly with the evolving needs of our patients as we actively pursue our neurosurgery goals. The collaboration within our department is the catalyst allowing for the success of our quality program.

Thank you for your continued support.

Sincerely,

Nader Pouratian, M.D., Ph.D., FAANS, FACS  
*Chair and Professor, UT Southwestern Department of Neurological Surgery  
Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Surgery  
Director, Neurosurgical Brain Mapping and Restoration Laboratory*



**Brad Weprin, M.D., M.H.C.M.**

*Professor, Departments of  
Neurological Surgery, Pediatrics &  
Radiation Oncology*

"I believe that as neurosurgeons, and leaders within our respective health systems, we have a role to play in ensuring the quality of care and in improving the care that we deliver. We have a responsibility to provide safe, timely, effective, efficient, equitable, and patient-centric care. We want to be doing the right thing at the right time in the right way for the right person and having the best results possible. To that end, we all have a role to shape the culture for providing such care and for seeking out ways to improve that care. The department's Quality Council was established to organize, direct, and implement initiatives to facilitate these efforts to deliver quality neurosurgical care that aligns with the values of UT Southwestern. Our purpose is to identify, iterate, and nurture innovative solutions for not only what is needed now but also what is next in neurosurgical care."



**Ankur Patel, M.D.**

*Assistant Professor,  
Department of  
Neurological Surgery*

"The multidisciplinary, comprehensive quality program within the UT Southwestern Department of Neurological Surgery was developed with the goal of continually improving upon the exceptional care patients with neurological disorders receive at our institution. Through transparency of data and open communication, the program is able to efficiently initiate systematic changes that truly impact our patient outcomes and experience. This includes shortening in-hospital length of stay, decreasing readmissions, and reducing complications. Moreover, the program facilitates the incorporation of new treatments in a safe and efficient manner. Overall, we feel this allows patients to quickly get back to the most important parts of their lives."



**Raneem Tohaibeche, M.S.**

*Project Manager,  
Department of  
Neurological Surgery*

"Our department is dedicated to improving patient care and safety. Our commitment to quality improvement significantly influences the well-being of our patients. With this dedication, we aspire to achieve excellence. The Quality Council diligently measures, analyzes, and executes projects related to improving outcomes. This is crucial because it proactively enhances our communication, patient outcomes, and operational efficiency."

## Neurosurgery Team

## FACULTY

<b>Venkatesh Aiyagari, M.D.</b> Professor	<b>Ankur Patel, M.D.</b> Assistant Professor
<b>Mazin Al Tamimi, M.D.</b> Associate Professor	<b>Toral Patel, M.D.</b> Associate Professor
<b>Salah Aoun, M.D.</b> Assistant Professor	<b>Nader Pouratian, M.D., Ph.D.</b> Chair & Professor
<b>Sam Barnett, M.D.</b> Professor	<b>Rafael de Oliveira Sillero, M.D.</b> Assistant Professor
<b>Paul Boone, M.D.</b> Associate Professor	<b>Russell Payne, M.D.</b> Assistant Professor
<b>Bruno Braga, M.D.</b> Associate Professor	<b>Angela Price, M.D.</b> Associate Professor
<b>Srinivas Chivukula, M.D., Ph.D.</b> Assistant Professor	<b>Matthew Sun, M.D.</b> Assistant Professor
<b>Elias Elias, M.D.</b> Assistant Professor	<b>Dale Swift, M.D.</b> Professor
<b>Frederick Hitti, M.D., Ph.D.</b> Assistant Professor	<b>Alex Valadka, M.D.</b> Professor
<b>Brad Lega, M.D.</b> Associate Professor	<b>Babu Welch, M.D.</b> Professor
<b>Chris Madden, M.D.</b> Professor	<b>Bradley Weprin, M.D.</b> Professor
<b>Panagiotis Mastorakos, M.D., Ph.D.</b> Assistant Professor	<b>Jonathan White, M.D.</b> Professor
<b>Kevin Morrill, M.D.</b> Professor	<b>Brett Whittemore, M.D.</b> Assistant Professor

## ADVANCED PRACTICE PROVIDERS

<b>Audrey Allen, M.P.A.S., PA-C</b>	<b>Micheal Levy, M.S.N., APRN, ACNP-BC, CNRN</b>
<b>Ashley Boothe, M.S., APRN, AGACNP-BC, FNP-C</b>	<b>Caitlin Remaklus, M.S.N., APRN, AGACNP-BC</b>
<b>Calli Fanous, M.S.N., APRN, ACNP-BC</b>	<b>Lisa Wilkins, B.S., B.S.N., RN, AGNP-C, CCRN</b>
<b>Cassie Joly, AGACNP-BC</b>	<b>Amelework Wodajo, M.S.N., APRN, AGACNP-BC</b>

## DIRECTOR OF NEUROSCIENCE SERVICES

**Byron Carlisle, M.S.N., RN, CCRN, SCR N**

## NURSE MANAGERS

<b>Alexa Collins, M.B.A., B.S.N., RN, SCR N</b>	<b>Donald Stout, B.S.N., RN, RT(R)</b>
<b>Nikarlo Rogers, M.H.A., B.S.N., RN</b>	

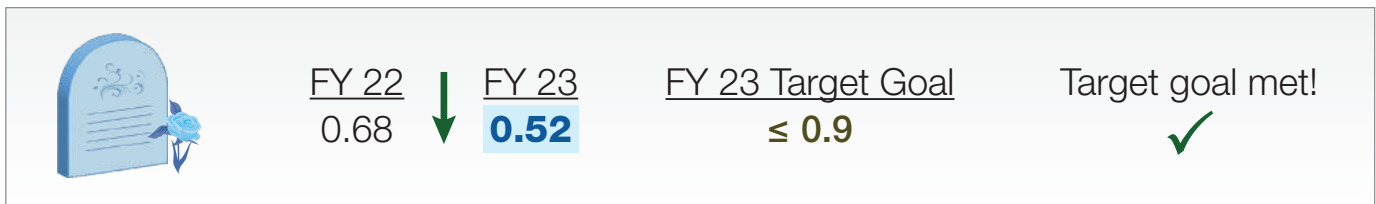
# Key Achievements in FY 23

This report includes data from Fiscal Year 2023, which is September 2022 to August 2023.

## Length of Stay (LOS) Index



## Mortality Index



## Unplanned Readmission Rate



## Discharge Efficiency



## Neurosurgery Dashboards

To track our data, we developed the following dashboards: 1) Neurosurgery Serviceline, 2) Inpatient Discharge Analysis, 3) Readmission Analysis, and 4) Neurosurgery Department Faculty.

## Quality Committee Meeting

We created a monthly multidisciplinary committee meeting to improve patient safety and care.

# Discharge Planning & Efficiency

## Improving Neurosurgery Discharge

How we improve patient discharge:

- Ensure treatment is delivered efficiently
- Identify targeted discharge dates
- Identify an average expected length of stay
- Standardize our process for common procedures
- Discuss and plan discharge with our care team on day 1

## Root Cause Analysis

Our team conducted a four-week root cause analysis that allowed us to discover most of the issues leading to a delay in patient discharge that units faced. These issues were then used to identify solutions and streamline patient discharge.

## Discharge Process Checklist

- We created checklists for our care teams to use when discharging patients.
- The image to the right is an example of the checklist we created for our nurses.

## Discharge Goals for FY 23

- Safely discharge 50% of our patients by noon
- Have an average order to discharge time of ≤ 2 hours
- Prepare and plan for discharge the day before

## Results

- Increase in the number of patients discharged by noon
- Decrease in the average order to discharge time
- Decrease in the median order to discharge time
- Decrease in the average length of stay

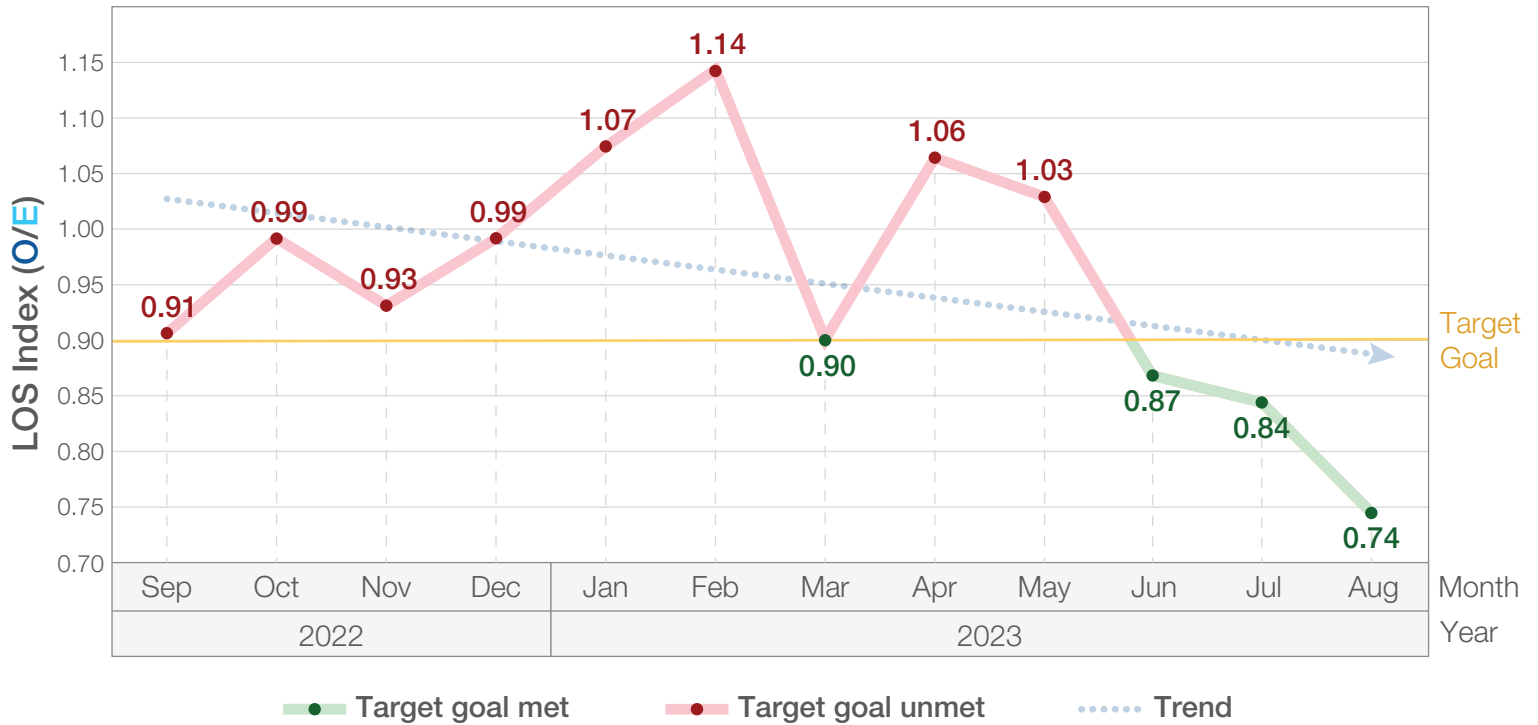


Sample checklist

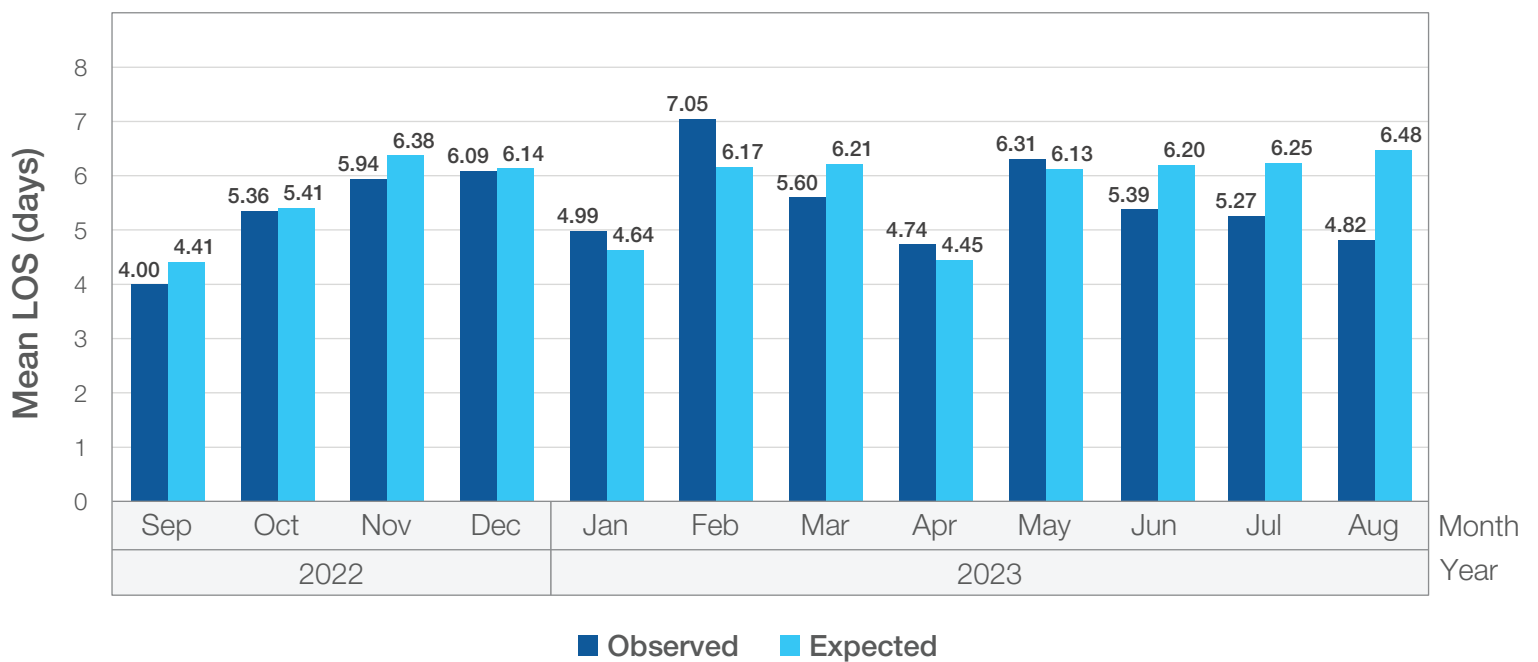
Discharge Month	Total Cases	Average Order to Discharge Time	Median Order to Discharge Time	Average LOS	Discharged By Noon	
					# of cases	% of cases
July	113	3:26	2:48	4.51	30	26.5%
August	126	3:42	3:22	4.18	32	25.4%
September	116	3:10	2:47	4.45	46	39.7%
October	114	2:50	2:37	4.53	36	31.6%

# Length of Stay

## LENGTH OF STAY INDEX



## LENGTH OF STAY OBSERVED & EXPECTED

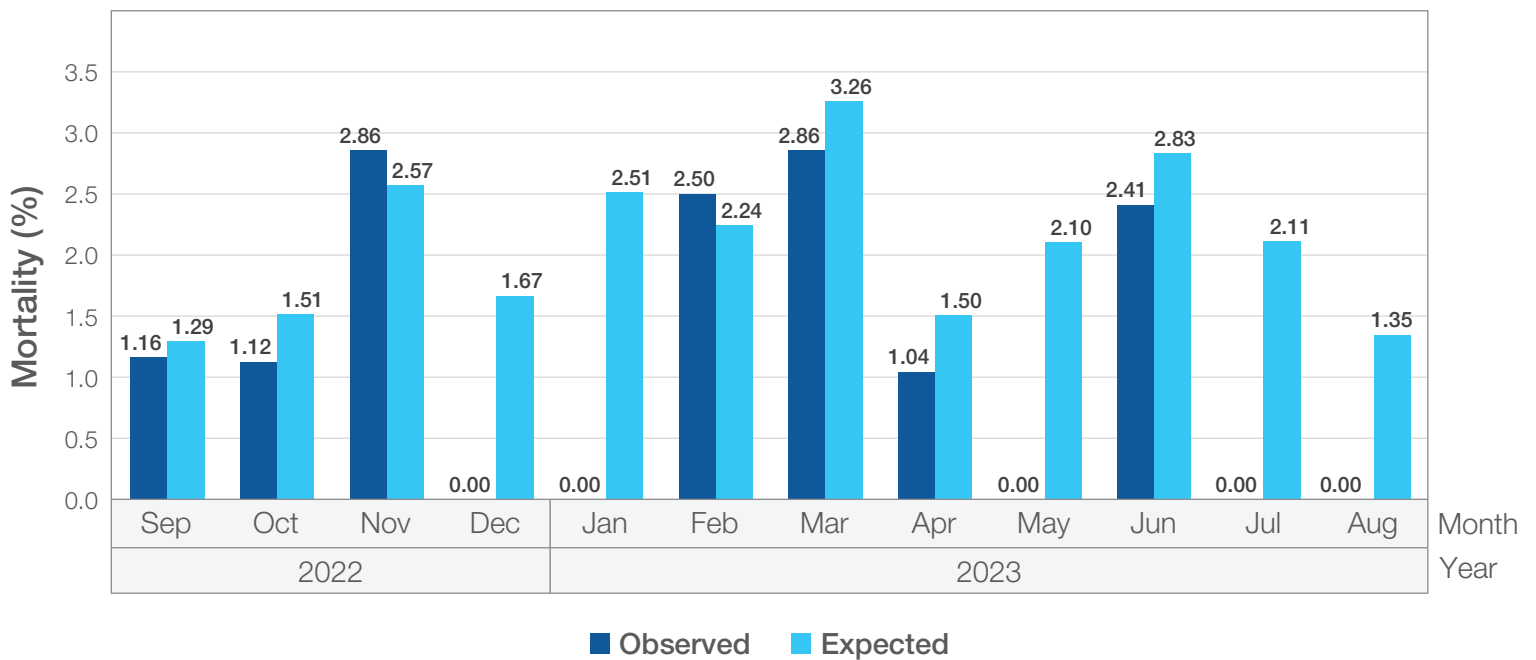


# Mortality

## MORTALITY INDEX



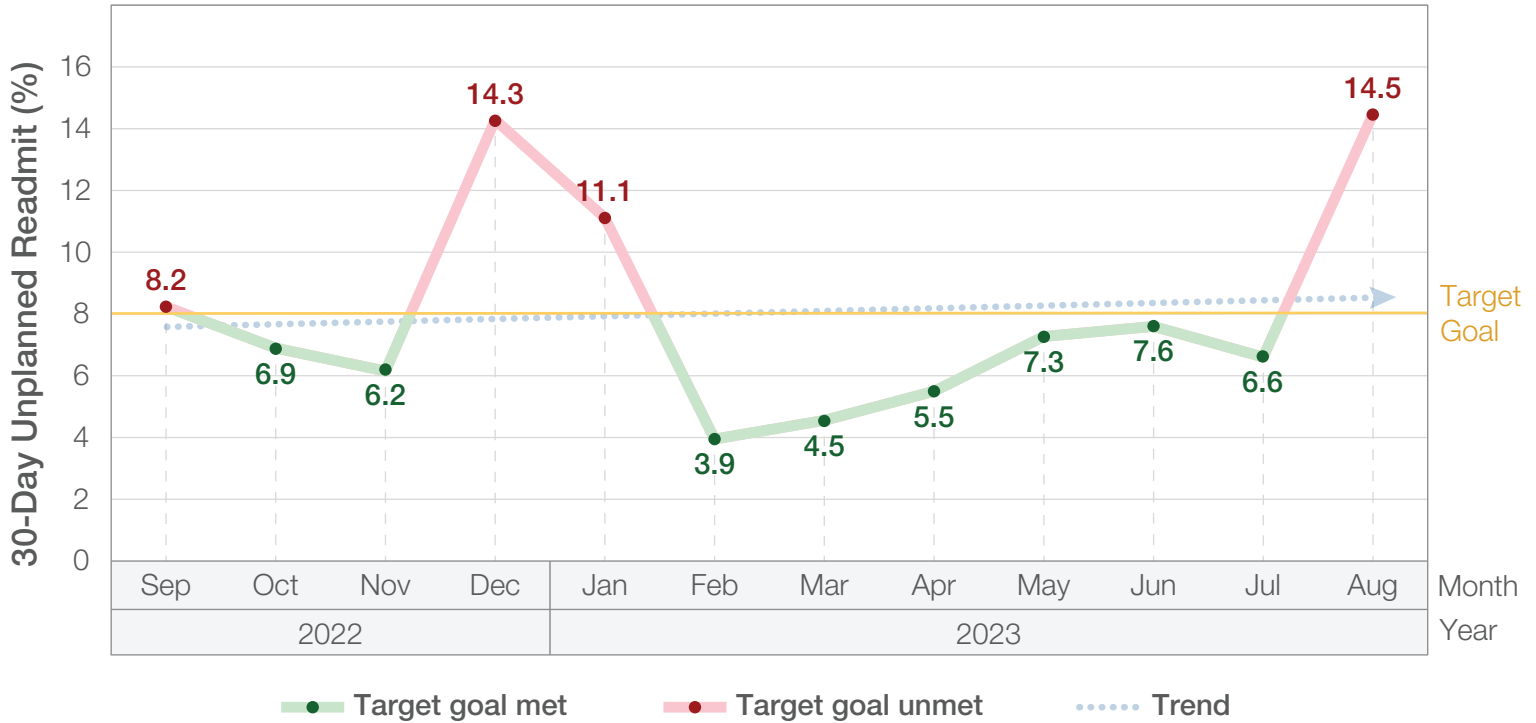
## MORTALITY OBSERVED & EXPECTED



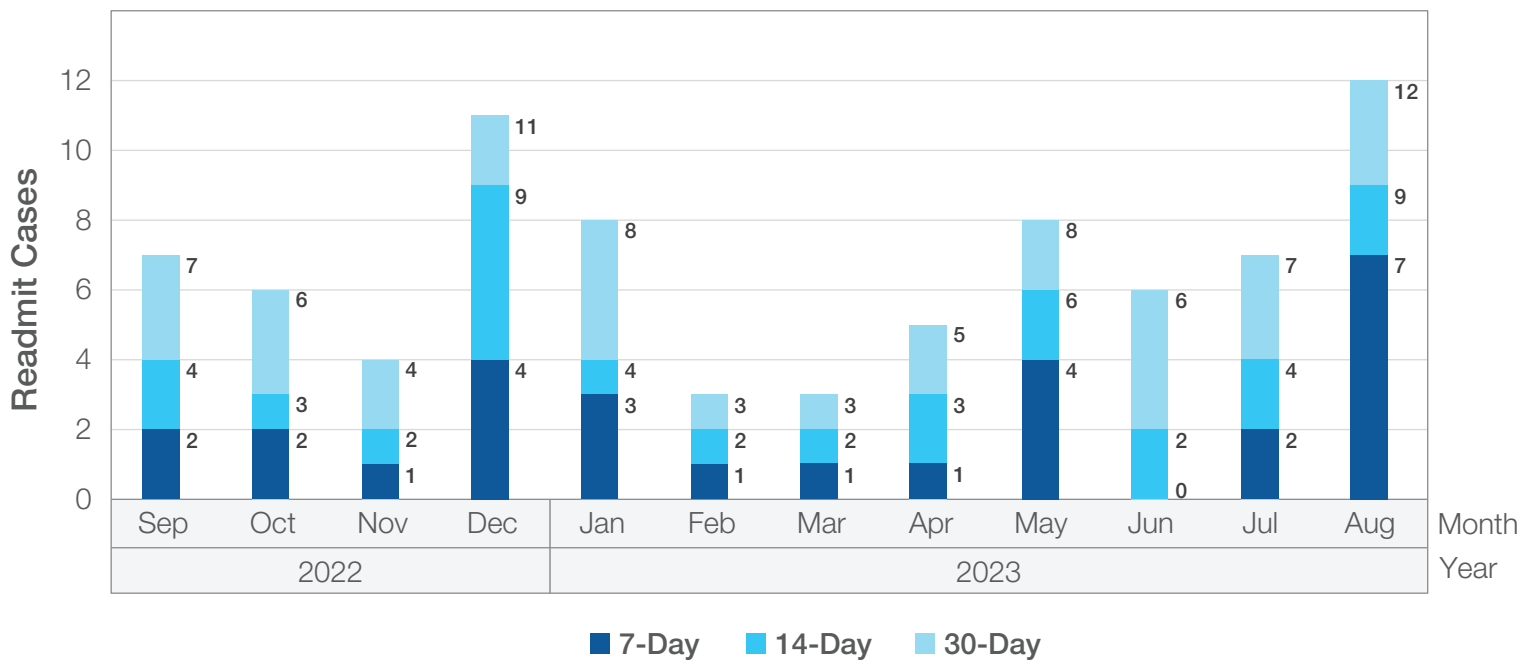


# Unplanned Readmission

## UNPLANNED READMIT RATE PER 30-DAY PERIOD



## UNPLANNED READMISSION PER 7-, 14- & 30-DAY PERIODS



# Neurosurgery Quality Committee

## Monthly Committee Meeting

In an effort to continually improve, the UT Southwestern Department of Neurological Surgery is building a comprehensive clinical quality program, with multiple integrated teams working on several quality initiatives to enhance the already excellent care we deliver. A key component of an exceptional patient experience starts with team communication.

With this in mind, we have launched a monthly multidisciplinary quality committee that includes physicians, advanced practice providers, nurses, therapists, and care coordinators so that our patients receive extraordinary care.

## Neurosurgery Leadership Meeting with Nursing

Our physician leaders have made it a priority to meet with the nursing teams in each of our inpatient units in regular, biannual meetings. During these gatherings, the physician leaders thank the nursing teams for their continuous hard work in reaching the department's goals, discuss key points and future goals, and provide breakfast and tumblers to show appreciation to everyone for their support.



From left: Byron Carlisle, Cassie Joly, Ashley Boothe, Bradley Weprin, Babu Welch, Alexa Collins, Raneem Tohaibeche, Nader Pouratian, Nikarlo Rogers.

## Gold Beacon Award



In 2023, our Neuroscience ICU became the first unit at UT Southwestern, and 1 of only 4 neuro ICUs in the nation, to achieve the gold-level Beacon Award for Excellence from the American Association of Critical Care Nurses.

The award provides gold, silver, and bronze levels of recognition to hospital units that exemplify excellence in professional practice, patient care, and outcomes.

The Beacon Award for Excellence recognizes caregivers in units whose consistent and systematic approach to evidence-based care and unit culture optimizes outcomes. Beacon awardees set the standard for excellence in patient care environments.

In 2020, our Neuroscience ICU earned the silver-level Beacon Award by demonstrating continual learning and effective systems to achieve optimal patient care. Our hard work since then, continuing to provide exceptional care and a healthy work environment, elevated us to the AACCN program's highest level of distinction. Gold-level Beacon Award recipients demonstrate staff-driven excellence in sustained unit performance and improved patient outcomes that exceed national benchmarks.

# Neurosurgery Dashboards

Multiple dashboards circulate monthly to our team, allowing for consistent review of our metrics.



## Neurosurgery Serviceline

To track our goals and metrics for each month and identify areas of opportunity, our department developed a neurosurgery dashboard with monthly serviceline measures such as LOS, Mortality, Unplanned Readmission, CMI, ICU rates, Model Groups, and MS-DRG data.

## Inpatient Discharge Analysis

Our department created a weekly discharge analysis dashboard with data highlighting the number of patients discharged per unit, the average order to discharge time, and the efficiency of each patient's safe and timely discharge.

## Readmission Analysis

Our readmission dashboard identifies all of our readmission cases, and our department designed this to target primary diagnoses to improve patient care and decrease the number of readmissions.

## Neurosurgery Department Faculty

We produced a monthly department faculty dashboard to focus on our faculty with neurosurgery-specific metrics.

# Other Quality Improvement Projects

## Neurosurgery Coding Efficiency

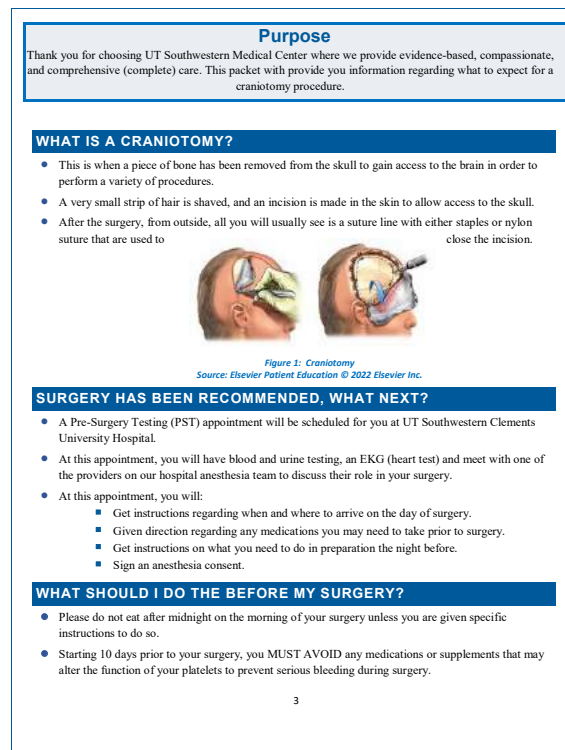
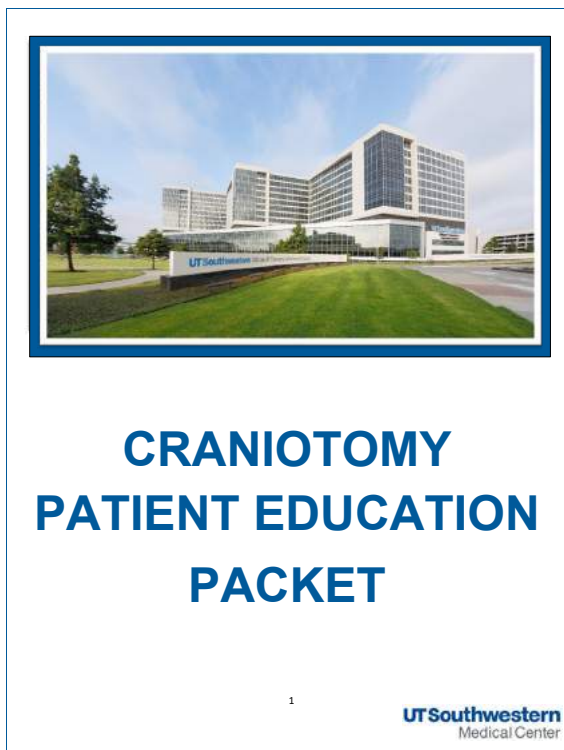
Our department has tremendously increased its coding and documentation efforts. Dr. Ankur Patel created neurosurgery-specific templates that were embedded in Epic, allowing faculty, residents, and APPs to enhance our documentation in patient charts to provide the upmost detail. These templates have greatly improved our coding efficiency.

## Building Neurosurgery Pathways

Our team created procedure-specific pathways in Epic that provide day-to-day details from admission through discharge. These pathways forecast an expected LOS and date of discharge on day one of admission, and thereby promote clear communication between our health care teams and patients.

## Revamping Patient Education Packets

We are currently revamping our patient education packets to present clear, concise, and cohesive documents that explain everything about what to expect for our procedures.



This is our revamped patient education packet for a craniotomy procedure.

## Sources Cited

### Vizient

Vizient Inc., the country's largest member-owned health care services company, provides innovative data-driven solutions, expertise, and collaborative opportunities that lead to improved patient outcomes and lower costs.

### UTSW Balance Score Card

The UTSW Balance Score Card is prepared by the Health System Quality & Operational Excellence Team to show hospitalwide data.

### Epic

Epic Systems Corporation, or Epic, is an American privately held health care software company. Through Epic Reporting we are able to get certain metrics.

# Previous Fiscal Year Data

## FY22 DATA SUMMARY

Calendar Year Discharge Month	2021				2022								Total
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
<b>Encounters</b>	106	83	91	81	76	73	81	92	78	71	87	82	1,001
<b>Mean LOS (days) - Observed</b>	6.40	6.06	5.05	6.79	10.39	5.30	5.53	4.70	5.65	5.97	5.15	5.37	6.00
<b>Mean LOS (days) - Expected</b>	6.54	5.64	5.74	6.03	8.77	4.78	5.34	4.82	5.90	6.74	5.06	4.94	5.84
<b>LOS Index (O/E)</b>	0.98	1.08	0.88	1.13	1.19	1.11	1.04	0.98	0.96	0.89	1.02	1.09	1.03
<b>ICU Cases (%)*</b>	58.49	55.42	63.74	51.85	57.89	64.38	54.32	54.35	64.10	57.75	58.62	57.32	58.14
<b>Mean ICU Days (days)*</b>	2.02	1.76	2.09	2.79	3.39	1.70	1.91	2.08	2.24	1.68	2.24	1.98	2.15
<b>Cases With Complications**</b>	12	4	7	7	11	3	6	8	3	6	2	5	74
<b>Deaths</b>	3	1	3	1	4	0	1	2	0	1	1	1	18
<b>Mortality (%) - Observed</b>	2.83	1.20	3.30	1.23	5.26	0.00	1.23	2.17	0.00	1.41	1.15	1.22	1.80
<b>Mortality (%) - Expected</b>	2.88	1.95	3.10	2.06	6.37	1.47	2.06	1.70	1.97	4.19	2.64	1.52	2.63
<b>Mortality Index (O/E)</b>	0.98	0.62	1.07	0.60	0.83	0.00	0.60	1.28	0.00	0.34	0.44	0.80	0.68
<b>Case Mix Index (CMI)</b>	3.8758	4.0585	3.9043	4.1372	5.1843	3.3929	3.4652	3.5867	3.7614	3.9464	3.8002	3.3140	3.8625

\*From ICU file \*\*Cases with any number of (i.e., 1 or more) complications

## FY21 DATA SUMMARY

Calendar Year Discharge Month	2020				2021								Total
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
<b>Encounters</b>	89	86	88	83	70	69	78	88	76	76	81	77	961
<b>Mean LOS (days) - Observed</b>	5.92	5.38	5.43	5.57	5.90	5.83	6.06	4.89	6.37	7.38	3.59	5.27	5.61
<b>Mean LOS (days) - Expected</b>	8.10	5.53	4.76	4.75	6.14	5.12	5.78	5.34	5.79	5.19	3.87	5.19	5.47
<b>LOS Index (O/E)</b>	0.73	0.97	1.14	1.17	0.96	1.14	1.05	0.92	1.10	1.42	0.93	1.02	1.02
<b>ICU Cases (%)*</b>	71.91	80.23	82.95	71.08	77.14	69.57	60.26	55.68	61.84	56.58	64.20	61.04	67.85
<b>Mean ICU Days (days)*</b>	2.83	2.90	3.23	3.05	3.26	1.90	2.30	2.08	2.15	2.65	1.81	2.02	2.57
<b>Cases With Complications**</b>	3	7	5	6	10	3	3	3	7	5	4	10	66
<b>Deaths</b>	1	5	1	2	2	0	2	3	1	1	0	5	23
<b>Mortality (%) - Observed</b>	1.12	5.81	1.14	2.41	2.86	0.00	2.56	3.41	1.32	1.32	0.00	6.49	2.39
<b>Mortality (%) - Expected</b>	3.04	3.03	2.49	1.73	4.37	1.98	2.96	2.14	2.37	2.90	1.13	4.82	2.73
<b>Mortality Index (O/E)</b>	0.37	1.92	0.46	1.39	0.65	0.00	0.87	1.59	0.56	0.45	0.00	1.35	0.88
<b>Case Mix Index (CMI)</b>	3.7957	3.5717	3.9115	3.5246	4.6512	3.4810	3.7218	3.3827	3.8927	3.7482	3.2554	3.5819	3.7000

\*From ICU file \*\*Cases with any number of (i.e., 1 or more) complications