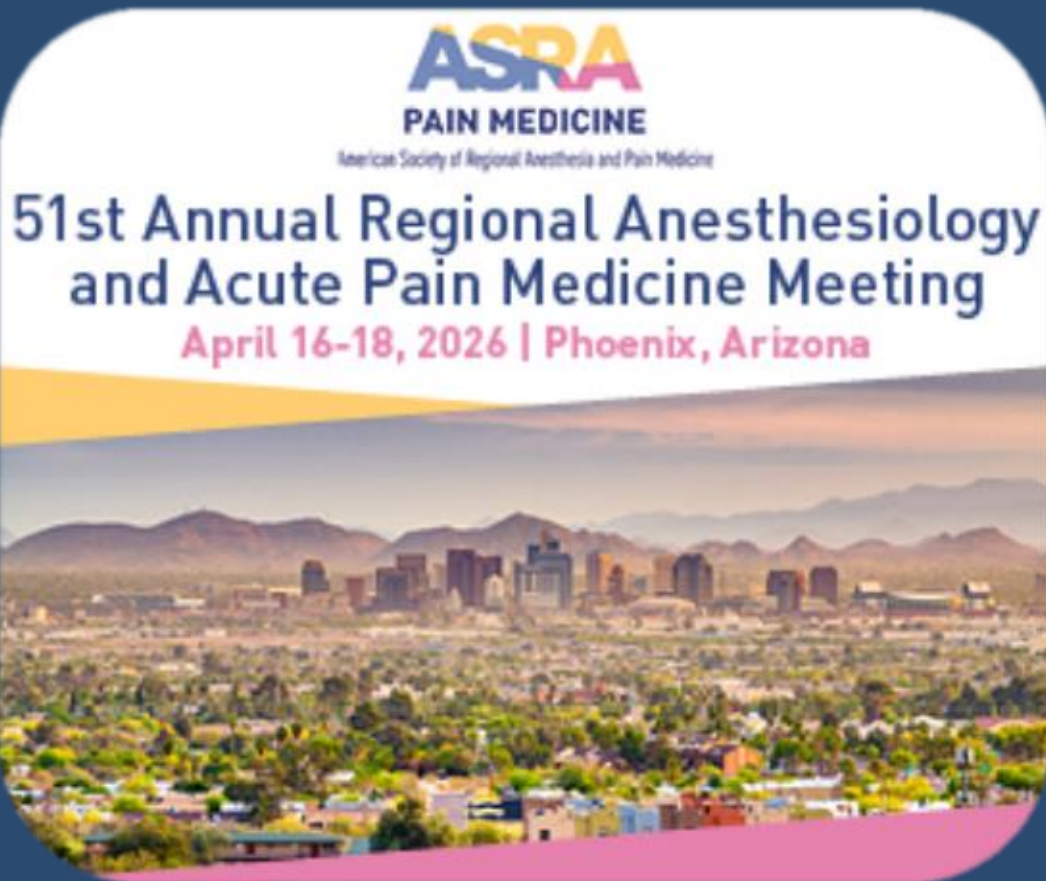




Anesthesia Practice Patterns for Rotator Cuff Repair Across an Integrated Health System



Lillian Phung, BA,¹ Christopher Webb, MD, MBA,^{2,3} Pedram Aleshi, MD,³ Edward Yap, MD^{2,3}

1. Drexel University College of Medicine, Philadelphia, Pennsylvania, USA. 2. Department of Anesthesia, The Permanente Medical Group, South San Francisco, California, USA. 3. Department of Anesthesia and Perioperative Care, The University of California San Francisco, San Francisco, California, USA.

BACKGROUND

- Rotator cuff repair** is associated with significant postoperative pain.¹
- Regional anesthesia improves analgesia, yet **practice patterns vary widely**.²⁻⁴
- Understanding **system-level variation** may identify opportunities to improve practice consistency, optimize analgesic approaches, and support better recovery outcomes.

STUDY OBJECTIVE

To **characterize anesthesia practice patterns** for outpatient rotator cuff repair across a large integrated health system and identify hospital-level variability and **opportunities for system improvement**.

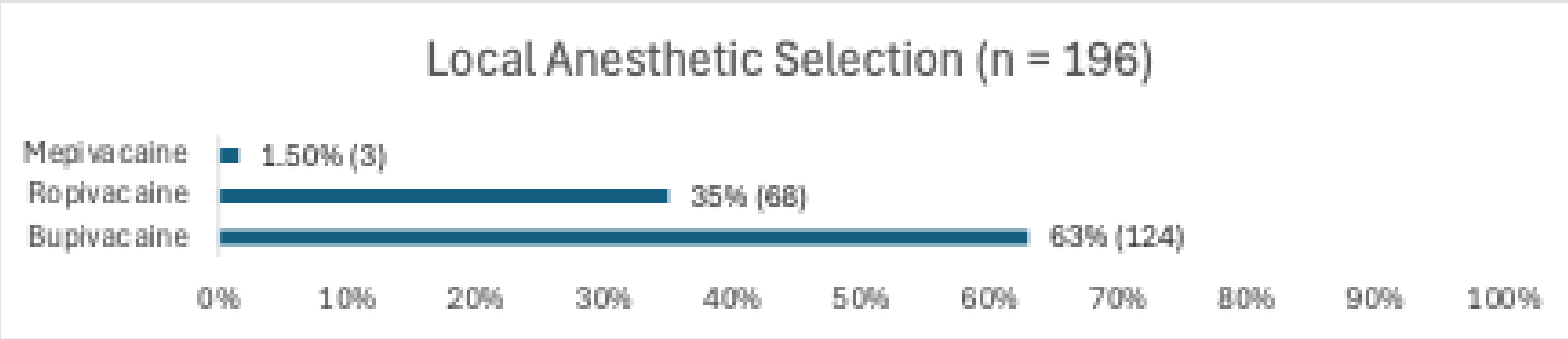
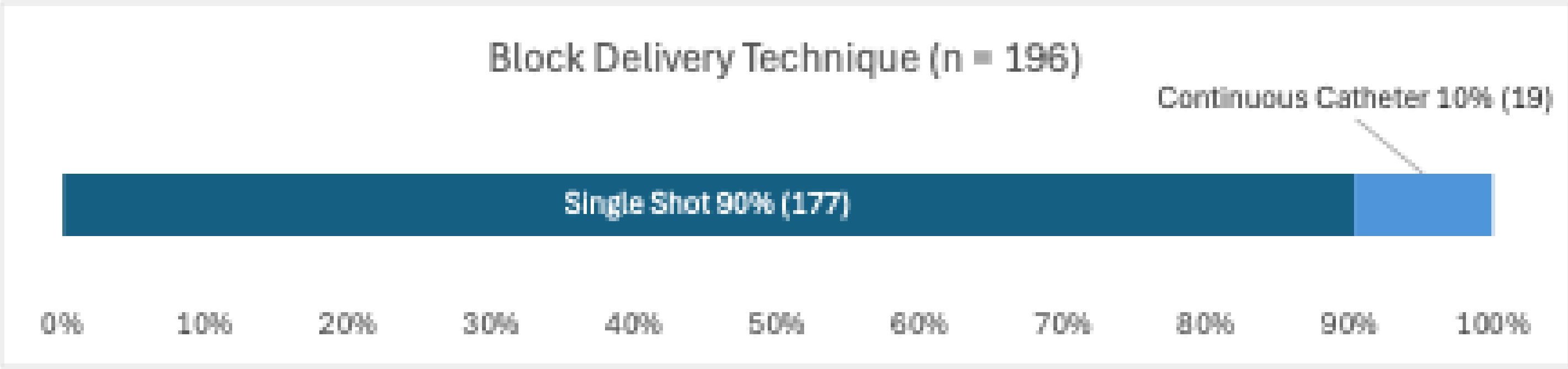
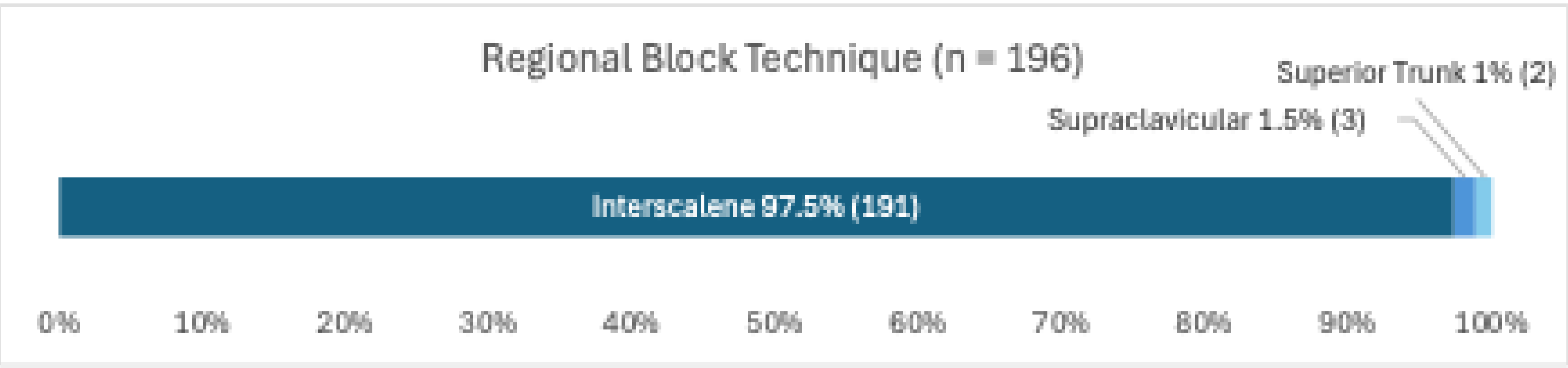
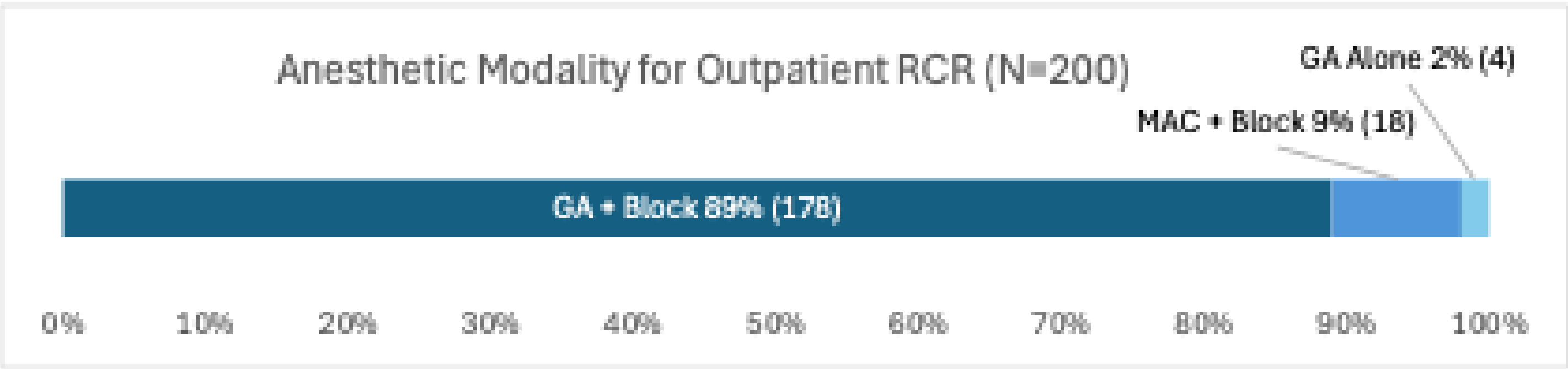
METHODS

- Retrospective quality improvement analysis
- Chart review of **200 outpatient rotator cuff repair cases**
- 20 sites (hospitals or ambulatory surgical centers); 10 cases per site
- May to July 2025
- Descriptive statistics; exploratory Fisher’s exact testing
- Supplemental leadership survey on Acute Pain Service (APS) structure at 12 hospitals

REFERENCES

- de Boer FA et al. Orthop Traumatol Surg Res. 2019.
- Cozowicz C et al. Br J Anaesth. 2015.
- Kalthoff A et al. Arthroscopy. 2022.
- Zhang LL et al. J Am Acad Orthop Surg. 2025.

RESULTS



- Injectate Characteristics**
- Median volume: 10 mL (IQR 10-17 mL)
 - Bupivacaine and ropivacaine most commonly used at 0.5%

Survey of Regional Anesthesia Leadership (12/20 Hospitals)		
Program Infrastructure: Dedicated APS: 50% (6/12), Dedicated block team 58% (7/12)		
Catheter Utilization	Reported Barriers	
		• APS hospitals: 60% catheter use
		• Non-APS hospitals: 10%
		• p = 0.08
		• Budget constraints: 58%
		• Limited trained personnel: 33%

Interhospital Variation in Adjunct Use Across 20 Hospitals (n = 123 blocks)

Hospital	Dexamethasone (%)	Dexmedetomidine (%)	Epinephrine (%)	Liposomal Bupivacaine (%)
E	0	0	0	100
L	0	0	0	100
C	0	0	0	100
N	0	0	0	90
B	0	0	0	90
T	0	0	0	90
H	0	0	20	80
Q	20	0	0	70
R	30	50	40	50
F	0	0	40	20
J	20	0	0	20
A	0	0	0	10
G	0	0	70	0
I	0	0	0	0
D	60	10	10	0
M	0	0	0	0
S	0	0	0	0
O	0	0	20	0
P	0	0	0	0
K	20	0	0	0
Total Count (n)	15	6	20	82

Total adjunct counts (n = 123 blocks): Liposomal bupivacaine, 82; Epinephrine, 20; Dexamethasone, 15; Dexmedetomidine, 6.

Key Findings

- 98% received regional anesthesia
- Interscalene block used in 97.5%
- Single shot technique predominated (90%)
- Liposomal bupivacaine was the most common adjunct
- Variation occurred primarily between hospitals rather than within hospitals**

RECOMMENDATIONS

- Standardize** evidence-based regional anesthesia protocols for outpatient RCR.
- Implement** anticipatory multimodal analgesia prior to block resolution.
- Enhance** pre-discharge patient education to mitigate rebound pain.
- Define** criteria for selective use of continuous interscalene catheters in high-risk patients.
- Integrate** patient-reported pain scores and opioid utilization into quality-monitoring systems.

CONCLUSION

Across a large integrated health system, anesthesia care for outpatient rotator cuff repair was largely consistent, with most patients receiving **general anesthesia combined with an interscalene block**. At the same time, meaningful differences remained in adjunct use, catheter placement, and the availability of Acute Pain Services. These patterns were driven primarily by **institution-level factors**. Developing standardized, evidence-informed regional anesthesia pathways may help reduce unwarranted variation and improve perioperative pain management.

LIMITATIONS

- Retrospective quality improvement design
- Limited sampling per site (10 cases per hospital)
- Small survey response rate
- No patient-reported outcomes included

ACKNOWLEDGEMENTS

Thank you to the Office of Medical Education, Kaiser Permanente Greater Southern Alameda Area for travel support to attend this conference.

We gratefully acknowledge the regional anesthesia and Acute Pain Service leaders across participating hospitals for their collaboration and participation in the survey.