



Changes in Nerve Block Procedural Volume Associated with the Implementation of a Regional Anesthesia Consult Service

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INTRODUCTION

- **Benefits of regional anesthesia (RA):** less postoperative opioid requirements, faster recovery time, lower post-operative pain scores, and improved patient satisfaction¹
- RA has continued to expand over the last two decades.²
- Many patient-, provider-, and system-level barriers remain
- To mitigate these constraints, our institution implemented a regional anesthesia consult service (RACS) to allow for broader access
- **Study Purpose:** retrospectively review the impact of this service on institutional RA procedural volume over time.

METHODS

- **Design:** Single-center retrospective cohort studying pediatric and adult patients undergoing surgery at Duke University Hospital from 1/1/2016 to 9/1/2024
- **Intervention:** The primary exposure was the implementation of the service on 10/29/2018
- **Primary Outcome:** pre/post intervention utilization of regional blocks (following 6-month phase in period)
- **Secondary Outcomes:** Utilization of regional anesthesia in specialty populations and utilization by surgical services
- **Exclusion Criteria:** Children < 1 year, emergency service, obstetric populations, GI/bronchoscopy procedures, eye surgery, cardiac catheterization procedures, intracranial neurosurgeries, or any other case in which a RA was not indicated

RESULTS

	Pre-Consult Service N=46824	Post-Consult Service N=103467
Age (Mean +/- SD)	51.6 ± 22.4	51.2 ± 22.0
Adult	41272 (88.1%) 57.3 ± 17.0	91228 (88.2%) 56.9 ± 16.5
Pediatric	5550 (11.9%) 8.7±5.3	12239 (11.8%) 8.7 ± 5.3
Sex (Male)	23426 (50.0%)	51960 (50.2%)
Race		
Asian	893 (1.9%)	2203 (2.1%)
Black	12150 (25.9%))	28114 (27.2%)
White	30849 (65.9%)	665135 (63.0%)
Other	2043 (4.4%)	4787 (4.6%)
Ethnicity		
Hispanic	2113 (4.5%)	6259 (6.0%)
Non-Hispanic	43219 (92.3%)	92758 (89.6)
Weight (Kg)	80.6 ± 28.3	80.0 ± 28.2
Adult	86.3 ± 23.2	85.7 ± 23.1
Pediatric	37.8 ± 25.9	37.2 ± 25.3
ASA-PS		
1	3432 (7.3%)	7162 (6.9%)
2	14509 (31.0%)	32273 (31.2%)
3	24766 (52.9%)	53919 (52.1%)
4	3941 (8.4%)	9646 (9.3%)
5	174 (0.4%)	465 (0.4%)
Surgical Service		
General Surgery	15901 (34.0%)	33976 (32.8%)
Gynecology	3804 (8.1%)	8427 (8.1%)
Orthopedic Surgery	13933 (29.8%)	32047 (31.0%)
Pediatric Surgery	2004 (4.3%)	4109 (4.0%)
Plastic Surgery	3894 (8.3%)	8943 (8.6%)
Urology	7284 (15.6%)	15761 (15.2%)
Nerve Block	10273 (21.9%)	25591 (24.7)
Truncal	967 (2.1%)	3418 (3.3%)
Peripheral Nerve Block	9394 (20.1%)	22334 (21.6%)

Table 1: Cohort characteristics

	Pre-Consult Service N=46824	Post-Consult Service N=103467
Overall Cohort		
No Block	36551	77876
Block	10273	25591
Block %	21.9%	24.7%
General Surgery		
No Block	14005	28655
Block	1606	4889
Block %	10.3%	14.6%
Gynecology		
No Block	3680	7972
Block	107	385
Block %	2.8%	4.6%
Orthopedics		
No Block	4691	10493
Block	7418	17499
Block %	61.3%	62.5%
Pediatrics		
No Block	5113	11327
Block	437	912
Block %	7.9%	7.45%
Plastic Surgery		
No Block	2838	6693
Block	571	1223
Block %	16.8%	15.5%
Urology		
No Block	6112	12393
Block	129	583
Block %	2.1%	4.5%

Table 2: Block utilization and rates by surgical service

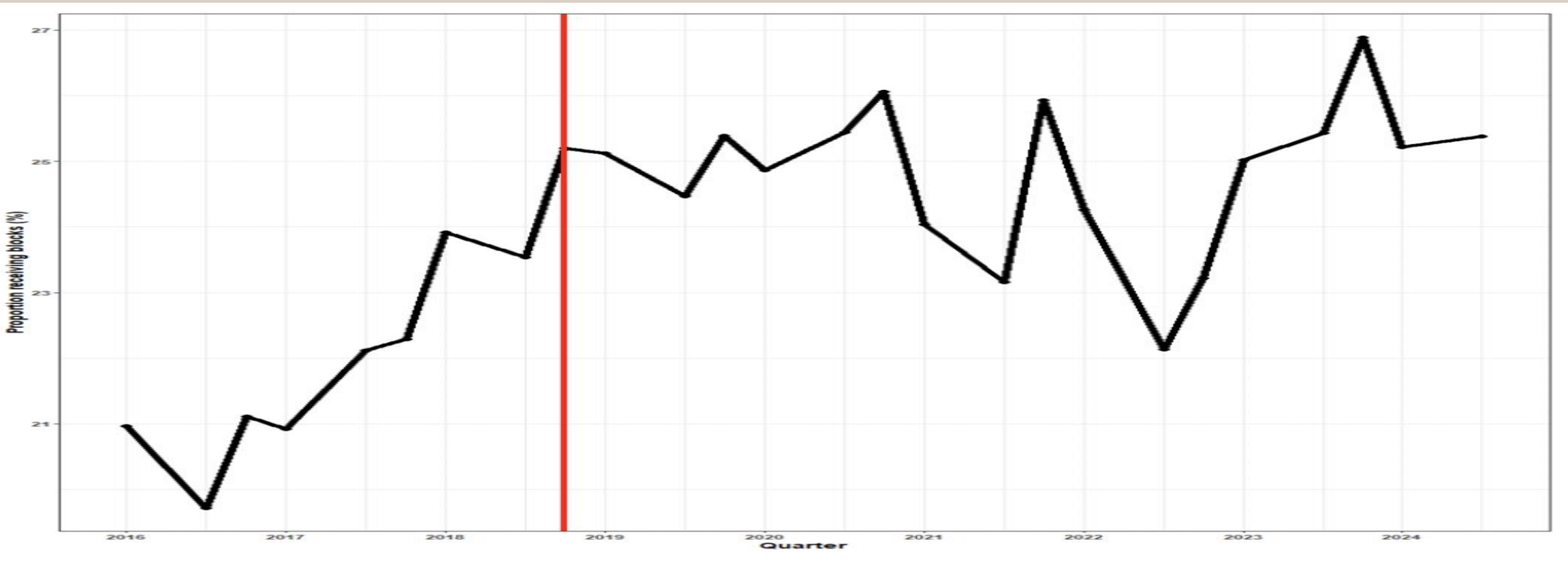


Figure 1: Block utilization and rates by quarter. Red line indicates the intervention.

CONCLUSIONS

- **Prior to the RACS:** 21.9% of cases received a regional anesthetic
- **After the RACS:** 24.7% of cases following the intervention (p < 0.001)
- increase in proportion of both **truncal blocks** (2.1% to 3.3%) and **peripheral nerve blocks** (20.1% to 21.6%) following the intervention.
- Orthopedic Surgery had the highest utilization by surgical specialty both pre/post intervention (61.3% to 62.5%)
- General surgery (10.3% to 14.6%) and urology (2.1% to 4.5%) saw the largest increase in utilization post intervention
- No increase in block utilization by plastic surgery or pediatric surgery

FUTURE DIRECTIONS

- Conducting a segmented regression analysis for an interrupted time series model
- Determining block utilization by specific surgery type, utilization of RA in non-RA trained anesthesiologist cases, consults placed by quarter

REFERENCES

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