Delighting Surgeons and Patients: Enhancing the Service Experience and Increasing Case Volume through Advances in Regional Anesthesia

Sonia Szlyk, MD
Director of Regional Anesthesia
North American Partners in Anesthesia, Mid-Atlantic
My Perspective

Large academic hospital

Freestanding Orthopaedic ASC

Private practice hospital
US-guided Nerve Block Catheter

- Excellent pain control
- Minimize narcotics & nausea
- Faster discharge
- High patient/surgeon satisfaction
- Complex cases as outpatient
- Complex patients as outpatient
The Service Experience... 
For Surgeons 

HAVE IT YOUR WAY®
Expectations are Everything

1. Don’t delay my case
2. Don’t hurt my patient
3. It had better work
4. Don’t slow down rehab

And...
Don’t delay my case!
IF YOU CARE ABOUT...

REDUCING OPIOID USE...

REDUCING NAUSEA...

FAST TRACKING JOINTS...

BUNDLED PAYMENTS AND OUTCOMES...

MORE COMPLEX CASES, MORE COMPLEX PATIENTS, ON AN OUTPATIENT BASIS...

There’s a BLOCK for THAT!
Do you want your patient to have regional anesthesia?

A Survey of Orthopedic Surgeons’ Attitudes and Knowledge Regarding Regional Anesthesia

Matthew Oldman, FRCA, Colin J. L. McCartney, FRCA, Andrea Leung, BSc, Regan Rawson, RN, Anahi Perlas, MD, Jeff Gadsden, MD, and Vincent W. S. Chan, FRCPC

Department of Anaesthesia, University of Toronto, Toronto Western Hospital, Toronto, Ontario, Canada
84% of surgeons said YES

- Less postoperative pain (32%)
- Safety (14%)
- Decreased nausea & vomiting (12%)
Surgeons’ Concerns

Figure 3. Principal reasons regional anesthesia is not favored. OR = operating room; GA = general anesthesia.

- Why surgeons said NO
  – Delays in induction of anesthesia (43%)
  – Unpredictable success rate (12%)
Avoid Delay to OR
Nerve Blocks that Work
NOT YOUR FATHER’S NERVE BLOCK
Tick, Tock, Tick, Tock...

- Improved Efficiency
  - Faster block placement
  - Faster onset


Choi, S. et al. Femoral nerve block does provide significant analgesia after anterior cruciate ligament reconstruction. *Arthroscopy* 2010; 26(11), 1416.

Ultrasound-guided Nerve Block

SAFETY   EFFICIENCY   PRECISION

In-plane
Avoid Delay to OR

• **Triage**
  – Identify “Block patients” on OR schedule
  – Patients arrive 30 minutes earlier to facility
  – Prioritize block patients in registration process

• **Efficiency**
  – Designate block bays and equipment
  – Trained Nursing staff to assist
    • Monitors, sedation, paperwork
Block Nurses

- Maximal Efficiency
  - On-time starts
- Enables safety
- Patient education
- RN Staff satisfaction
  - Block RN course
## RA GUIDELINES

### ORTHOPEDICS

<table>
<thead>
<tr>
<th></th>
<th>TKR</th>
<th>THR</th>
<th>ACL</th>
<th>RCT, Cuff or SLAP</th>
<th>Total Shoulder</th>
<th>ACHILLES/ ORIF Ankle</th>
<th>Hip Scope</th>
<th>Tendon Repair</th>
<th>Wrist Scope</th>
<th>ORIF Radius/Elbow</th>
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<tbody>
<tr>
<td>Dr. Nevak</td>
<td>Adductor canal Cath Mako &amp; TKR</td>
<td>SS/cath Adductor canal</td>
<td>SS/cath Adductor canal</td>
<td>Interscalene SS for scope &amp; subacromial decompression Cath for open</td>
<td>Interscalene cath</td>
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<tr>
<td>Dr. Boyd</td>
<td>Adductor canal SS for Mako &amp; TKR</td>
<td>Spinal no narcs</td>
<td>SS Adductor canal if needed</td>
<td>Interscalene Catheter</td>
<td>Interscalene Catheter</td>
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<td>Dr. Miyamoto</td>
<td>Adductor canal Cath</td>
<td>Interscalene cath only for total shoulder SS for other procedure</td>
<td>Interscalene cath</td>
<td>Popliteal SS OR cath with SS saph</td>
<td>SS Lumboplexus</td>
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<tr>
<td>Dr. Scott</td>
<td>Interscalene cath</td>
<td></td>
<td></td>
<td>SS/Cath</td>
<td>SupraCath No Block</td>
<td>SS Supracath</td>
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</table>
Our Part...
Regional Done Right!

• Block performed in preop bay
  – RN to assist

• Anesthesiologist
  – Proficient in US-guided nerve blocks and catheters
  – Follow-up with patient after block

• Education
  – Patient & family education pre/post block
Develop RA Skills

• Existing staff acquire new skills
  – Hands-on workshops
  – Online learning sites
    • Neuraxiom.com
    • Nysora.com
    • Usra.ca

• Acquire new staff with prior experience
  – Recent graduates
  – RA program at prior employment
Surgeons: Please Do Your Part...

• In the office
  – Mention “nerve block” to the patient
• Scheduling
  – Request nerve block when scheduling case
• Surgical consent
  – Signed and in chart before day of surgery
• Communicate
  – PT goals, specific concerns
Strategic Planning

• Attract new surgeons
  – Meet with prospective surgeons when they tour ASC/hospital
  – Showcase Regional Anesthesia abilities and how it will benefit their patients
• Competitive Edge in pain management
• “Big Picture” future direction of institution

Growth, Decreased LOS, Surgeon and Patient Satisfaction
Interscalene Catheter

ERAS for

- Rotator cuff repair
- Total shoulder
- Reverse shoulder
- AC joint
- ORIF clavicle

Continuous Interscalene Block Provided Superior Analgesic Control Through the First Postoperative Week After Rotator Cuff Repair
Stephen Brockmeier, MD

**Interscalene catheter**
Faster discharge from PACU
Lower mean pain score POD 1, 2
Lower use of narcotics POD 1, 2, 3
Better sleep POD 1, 2
Lowest pain POD 7
Nerve Block Pump

• Ordered by anesthesiologist
• Connected in PACU by RN
• Lasts ~ 3 days
• Pt removes at home
  • Easy, no sharps

0.2% Ropivacaine @ 8 mL/hr
550 mL reservoir
Adductor Canal Catheter

ERAS for

- Partial knee replacement
- Total knee replacement
- ACL repair
Balancing Act

Physical Therapy Goals

Pain Control
ACBC preserved quad strength better than FNBC (52% vs 15% baseline)

NO difference
morphine consumption
pain at rest, flexion
adductor muscle strength
n/v, sedation, antiemetics
mobilization ability
Updated ERAS Pathway

- Mepivacaine spinal
- TXA
- Adductor canal block catheter x 48 hrs
- PT DOS

Results

- Decreased LOS (76.6 to 56.1 hrs)
- Increased DC to home (27% to 52%)
- No increase in readmission
- 30 d readmission rate (7% to 3%)
Make it EASY to...

Do the Right Thing for the Patient.
The Service Experience...
For Patients

Allstate
You're in good hands.
I Know I Need Surgery, but...

What About the PAIN?!!!
Pain Management

One size fits... All?
One size fits... Most?
Inova Fair Oaks Hospital

5 Star Rating
7 consecutive years
Inova Fair Oaks Hospital
REGIONAL ANESTHESIA PROGRAM

2008

- 200 Blocks/year
- 1 Ultrasound machine
- No RN support

2015

- >2000 Blocks/year
- 3 Ultrasound machines
- 1 FTE Block RN (5 trained Block RNs)
Joint Commission Site Visit

“Very impressed with the nerve block program and focus on pain management”

“Excellent program with use of highly trained block nurses”
Staff Do Everything to Help with Pain “Always”

![Bar Chart]

- IFOH: 88%
- All DB: 79%
- All PG DB: 79%
- Bed 150-299: 78%
- Magnet Hospitals: 79%
Would you recommend the hospital? 
“Definitely YES”
12. During this hospital stay, did you need medicine for pain?
   1 □ Yes
   2 □ No ➔ If No, Go to Question 15

13. During this hospital stay, how often was your pain well controlled?
   1 □ Never
   2 □ Sometimes
   3 □ Usually
   4 □ Always

14. During this hospital stay, how often did the hospital staff do everything they could to help you with your pain?
   1 □ Never
   2 □ Sometimes
   3 □ Usually
   4 □ Always
3. During this hospital stay, how often did nurses explain things in a way you could understand?
   1. Never
   2. Sometimes
   3. Usually
   4. Always

20. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?
   1. Yes
   2. No

24. When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.
   1. Strongly disagree
   2. Disagree
   3. Agree
   4. Strongly agree

25. When I left the hospital, I clearly understood the purpose for taking each of my medications.
   1. Strongly disagree
   2. Disagree
   3. Agree
   4. Strongly agree
   5. I was not given any medication when I left the hospital
How Does Pain Management Affect the Bottom Line?
The Era of Bundled Payments

- Patient Satisfaction
- Prevent Readmissions
- Lower Cost
- Better Outcomes
- Coordinate Care

Regional Anesthesia!!!
The Perfect Storm

- Respiratory Depression
- Surgical Pain
- Immobility
- Narcotics
- Nausea
Regional Anesthesia Nerve Blocks

- Pain
- Narcotics
- Nausea
- Respiratory
- Depression

![Image of two people walking](image-url)
Reduced PACU Time

Impact of Regional Anesthesia

30 minutes in Phase 1 PACU

$300
Reduced Opioids

Effect of opioid-related adverse events on outcomes in selected surgical patients.
Oderda GM¹, Gan TJ, Johnson BH, Robinson SB.

- 380 US hospitals
- 320,000 inpatient surgeries
- 12.2% of patients had an opioid-related adverse event (ORADE)
  - respiratory depression
  - nausea and vomiting
  - drowsiness, itching, altered mental status
  - constipation and paralytic ileus

Patients with Opioid-Related Adverse Events

- Hospitalized 3.3 days longer (7.6 vs. 4.2 days)
- $4,707 avg. increase in hospital cost ($22,077 vs. $17,370)
- Higher readmission rate within 30 days (15.8% vs. 9.4%)
- >$180,000,000 in added costs
  - 12,922 added hospital days
  - 6,164 readmissions

Decreased LOS

Decrease LOS 1 day

\[ \times 200 \text{ joints/year} \]

\$405,000 \text{ savings/year}

<table>
<thead>
<tr>
<th>Ave Cost per Inpatient Day</th>
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<tbody>
<tr>
<td>(non-profit hospital)</td>
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</tr>
<tr>
<td>CA</td>
<td>$2676</td>
</tr>
<tr>
<td>LA</td>
<td>$1519</td>
</tr>
<tr>
<td>VA</td>
<td>$1630</td>
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<td>$2092</td>
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<tr>
<td>MN</td>
<td>$1929</td>
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<tr>
<td>CO</td>
<td>$2329</td>
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<tr>
<td><strong>US Average</strong></td>
<td><strong>$2025</strong></td>
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Impact of Regional Anesthesia

Lower Post-acute Care Costs

Skilled Nursing Facility
$700/day

Home Health
$100/day

Impact of Regional Anesthesia

GO ERAS!  GO RA!  GO HOME!
Lower Readmission Costs

ER
$1400 - $2000

Hospital Readmission
THR $12,300
TKR $10,200

Impact of Regional Anesthesia

# Positive Impact of Regional Anesthesia on Bundled Payments

<table>
<thead>
<tr>
<th><strong>DECREASED</strong></th>
<th><strong>INCREASED</strong></th>
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<tr>
<td>Pain Scores</td>
<td>Patient Satisfaction</td>
</tr>
<tr>
<td>PONV</td>
<td>Surgeon Satisfaction</td>
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<tr>
<td>LOS</td>
<td>Ambulation</td>
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<tr>
<td>PACU time</td>
<td>Physical therapy participation</td>
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<tr>
<td>Opioids, ORADE</td>
<td>D/C to home</td>
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<tr>
<td>Need for SNF or Inpt rehab</td>
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<tr>
<td>ER &amp; Hospital readmission</td>
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Anesthesia Team

Patient

Total Joint Replacement
Perioperative Surgical Home

CEO, CFO, CMO, CNO

Physical Therapist

Surgeon

Nurses
“This is the BEST ASC for...”

ME.
MY FAMILY.
MY NEIGHBOR.

MY PATIENTS.

One Exceptional Experience at a Time... Every Day®