



Military Advanced Regional Anesthesia & Analgesia
Fall 2007 Meeting
Minutes*

*MARAA decisions and recommendations to service Anesthesiology Consultants to the Surgeons General can be found under the heading: **Service anesthesiology consultant recommendation.**

I. ATTENDANCE

Meeting Date: 12, October 2007, 1400-1700

Meeting Location: San Francisco Hilton, San Francisco, California

Voting Members in attendance:

COL Chester Buckenmaier, MD, Army	chester.buckenmaier@na.amedd.army.mil
LTC Todd Carter, MD, Air Force	todd.carter@andrews.af.mil
LTC Scott Croll, MD, Army/WRAMC	scott.croll@na.amedd.army.mil
COL Kenneth Harris, MD, Army/BAMC	kenneth.harris@us.army.mil
CDR Ivan Lesnik, MD, Navy	ilesnic@usuhs.mil
LCDR Kyle Tokarz, MD, Navy/NMC-SD	katokarz@nmcscd.med.navy.mil

Voting Members Absent:

LTC Debra Clise, CRNA, Army/WRAMC	debra.clise@na.amedd.army.mil
MAJ Dan Roke, MD, Air Force/ LRMC	daniel.roke@amedd.army.mil
LCDR Brent Bushey, MD, Navy	
MAJ Chris Wentzel, MD, Air Force	chris.wentzel@andrews.af.mil

CDR Andrew Biegner, MD, Navy
MAJ Brian Koonce, MD, Air Force

arbiegner@nmcsd.med.navy.mil
brian.koonce-02travis.af.mil

OTHER ATTENDEES PER SIGN IN SHEET

MAJ Sean Shockey, MD, ARMY/WRAMC
MAJ Greg Malone, MD, Air Force/WRAMC
MAJ Tracey Cacciatore, MD, Army/WRAMC
MAJ Lee Barton, MD, Army/ TAMC
LCDR Eric Stedjelarsen, MD, Navy/NMCS D
MAJ Chris Hudson, MD, Army/ Evans ACH
LCDR Eugenio Lujan, MD, Navy/NMCS D
MAJ Chad Holme, MD, Army/BRAMC
CAPT Kory R Bodily, Air Force/ WHMC
COL Pata Rajnic, MD, Army/BAMC
MAJ Jeffrey Barr, MD, Air Force/WHMC
MAJ Gerald Haddock, MD, Air Force/WHMC
LCDR Henry Liang, DO, Navy
MAJ Nirvana Kundu, MD, Air Force/Travis AFB
LCDR Jerry Berman, MD, Navy/NMCP
LCDR Matthew Swiber, MD, Navy/NHCL
CAPT Robert Bland. MD, Air Force/Travis AFB
LTC Rocky Reston, MD/Air Force/WHMC
LCDR Jon Gibbons, MD, Navy/NMMC
CAPT Craig Bonnema, MD, Navy/ Pensacola
CAPT John Shapira, MD, Navy/NMCS D
LCDR Jeb Kucik, MD, Navy/NNMC
CPT Brian Macmillan, DO, Army/FT BRAGG
CPT Heather Higgins, MD, Army/ BAMC
CPT Arron Nelson, MD, Army/BAMC
CPT Joshua Packard, MD, Army/BAMC
MAJ Lee Barton, MD, Army/TAMC
Geselle McKnight, CRNA, WRAMC
Christine Rupprecht, MSN, RN, WRAMC/APS
Jeff Devaney, MSN, RN, Sorenson Medical
Chuck Ness, Pharm D, IONSYS

II. REVIEW OF PREVIOUS MINUTES/OLD BUSINESS

1. Opening Remarks by Dr Buckenmaier. MARAA is defined to include its purpose (think tank, working group) as a tri-service anesthesia group that provides information to service anesthesia consultants on issues related to military regional anesthesia and acute pain medicine. MARAA has no implementation authority.

2. Presidential Vote: Floor open to nominations for MARAA president. COL Buckenmaier is nominated by Lt.Col. Carter and this is seconded by Capt. Lesnik. The group unanimously reelected Dr Buckenmaier.

3. AMBITT VS GEMSTAR

- i. Defense Medical Standardization Board (DMSB): the ambIT pump failed a vibration test during air- worthiness testing. DMSB states there were no less than 12 clinicians, including one anesthesia provider, involved in the end-user testing and final recommendation in support of the Gemstar pump. DMSB is unable to document the identity of the anesthesia provider involved in the decision. They state the decision was unanimous and unequivocal. COL Harris read from an email he had received from Capt. Chandler of the DMSB in which she stated the Army and AF general officers had recused their respective MARAA representatives from weighing in on the decision due to the following perceived conflict of interest (COI). The manufacturer of the ambIT pump had sought input from MARAA on characteristics clinicians would find most useful in a forward deployed environment and the A/E system. MARAA went to its membership and ask what they would recommend if they had a choice in designing a pump. MARAA passed this information on to the manufacturer.
- ii. MARAA: is concerned that the working/advisory organization representing those involved in the delivery of acute pain management on the battlefield and the A/E system were recused from the decision making process. This has resulted in a recommendation for a “pain pump” by users who had no working knowledge of the requirements unique to the theatre and the A/E systems. The DMSB decision also is too limited in scope since it only addresses one (PCA) pain infusion mission. MARAA is also concerned that they had unanimously endorsed the continued use of the ambIT pump at the spring 2007 meeting in Vancouver, BC and this recommendation was not taken into consideration. Capt. Lesnik stated that perhaps the DMSB was not properly briefed on the environments the pump would be used in and therefore they were not evaluating it for its intended use (i.e. fixed facility vs. air transport). He further suggested that DMSB may want to reevaluate both pumps using criteria for forward deployed and A/E environments.
- iii. COL Buckenmaier expressed concern about the ability of the Gemstar company to replace the current supply of ambIT pumps and to retrain a large number of clinicians across the theatre of operations on a new piece of equipment mid-conflict. He further stated the product-enhanced pump heads now come with glow-in-the-dark labels to distinguish epidural from PNB from IV PCA infusions as well as an abbreviated instruction card, which would be affixed to each infusion bag.
- iv. Lt. Col. Carter stated DMSB has recommendation authority only, not implementation authority. He stated a functioning system is in place at the CSH level, in the A/E chain and in Landstuhl, which the clinicians are familiar with and logistics is able to support. He further stated that the decision to purchase should be left up to individual hospitals based on their particular needs; but that for now the A/E system wished to continue using the ambIT.
- v. MARAA voted unanimously to endorse the product-enhanced pump heads described above for all future shipments of disposables. Since this endorsement, the Combat Casualty Care Committee monthly VTC has also endorsed continued use of the ambIT for casualty evacuation.

- Do we want to continue with the Ambit Pain Pumps and disregard the recommendation of the DMSB?

Service anesthesiology consultant recommendations: The MARAA group is in agreement with the Combat Casualty Care Committee that a standard casualty evacuation pain pump is needed that will work for the three major pain missions at present; patient controlled analgesia (PCA), epidural infusions, and continuous peripheral nerve block (CPNB) infusions. The DMSB decision was only for a PCA pump and does not appear to apply to evacuation medicine. The Combat Casualty Care Committee has decided to move forward with the ambiT pump with the enhanced pump head package as the evacuation pain pump. Individual medical service Commands remain free to choose their own pain infusion devices. Recommend that the service consultants support the Combat Casualty Care Committee decision and adopt the conclusion that the DMSB decision does not affect evacuation medicine and does not address epidural and CPNB infusions.

4. Regional Anesthesia Tracking System (RATS) & the Joint Patient Tracking Assistance (JPTA) Integration Update:

Dr Buckenmaier has started the process of integrating RATS into Theater Data Management System (TDMA). This process will ensure proper documentation concerning pain management technologies follows the patient through the evacuation system.

- What is the status of this project?

Service anesthesiology consultant recommendations: The development of the Joint Regional Anesthesia Tracking System (JRATS) has received MEDCOM approval to proceed with TDMA requirements development and a Concept of Operation (CONOPS). The initial JRATS requirements outline is provided in Appendix A. Recommend that the Consultants support the development of JRATS and provide comment on the JRATS outline provided to COL Buckenmaier.

5. Medications for Air Evacuations:

- Should Hydromorphone/ Dilaudid be recommended for PCA Infusions, or given prior to or during Air Evacuations? Dr. Carter reported that Dilaudid PCA'S are being used on the Air Evacuations without problems.

Service anesthesiology consultant recommendations: Recommend the use of Dilaudid PCA's on Air Evacuations. Dr Carter recommended that specific dosing regulations be made and that the patient should be on the PCA at least four hours prior to the evacuation.

6. Ketamine on Air Evacuation flights:

- Should Ultra Low Dose Ketamine Infusions be given prior to or during Air Evacuations? Dr Carter expressed some safety concerns regarding the use of Ketamine on the Air Evacuation flights. Also one of the physicians from Bethesda Naval mentioned that some patients went into opiate withdrawal since the Ketamine decreased their narcotic usage dramatically. Several other attendees also expressed some concerns about Ketamine.

Service anesthesiology consultant recommendations: Recommend we table the use of Ketamine on Air Evacuations for the moment.

III. NEW BUSINESS

1. IONSYS RESEARCH PROTOCOL

Chuck Ness Pharm D, MBA, Regional Scientific Director, Ortho McNeil Jansen Pharmaceuticals, presented a system overview of the IONSYS fentanyl HCL PCA Patch. It is indicated for short term management of acute postoperative pain. The side effects are similar to those seen with other Opioids IE: N&V, Pruritis etc. Some patients have experienced erythema at the site of patch application. The fentanyl dose is 40 µG Q 10 mins therefore the patient can receive up to six doses per hour. The patch is applied to the upper arm or chest area and offers pain control and convenience similar or equal to a Morphine PCA. IONSYS uses a small electric current to deliver medication by the process of iontophoresis. Unlike Duragesic fentanyl patches, a reservoir of fentanyl does not build up in the patient's tissues. The elimination half-life of fentanyl using IONSYS is the same as you would see with IV Fentanyl. The device is FDA approved but not clinically approved. It should be approved within the next six months. IONSYS was compared to Morphine sulfate and the efficacy results were very similar about 75% satisfaction rate. One of the largest advantages to IONSYS is ease of care and convenience. In conclusion IONSYS is a novel self contained PCA system.

- Should MARAA support a head to head trial with IONSYS and existing PCAS?

Service anesthesiology consultant recommendations: Recommend that we should explore this option. IONSYS does not yet have an Air Worthiness Certification which could be a hurdle to the study. Therefore, once all of the requirements have been met (FDA approval for patient use), Dr Buckenmaier will be working with Dr Carter will write the protocol for the study.

2. The MARAA Book is progressing nicely. Dr Buckenmaier will send the finished product to the members via email to vote on approving the book for physicians in Theater.

3. Dr. Croll brought up the subject of Acute Pain Teams consisting of a pain physician and two pain nurses in LSRMC, Iraq and Afghanistan. Dr Buckenmaier informed the group that we have a training program in existence at WRAMC to train pain nurses.

- Should MARAA support the concept of Acute Pain Teams?

Service anesthesiology consultant recommendations: Recommend that MARAA support the concept of Acute Pain Teams at Landstuhl, Germany and further forward.

4. The subject of regional anesthesia and compartment syndrome was brought up. Dr Buckenmaier reported on the VTC recently held on this subject. The consensus of which was that all patients who have had an amputation or a properly done fasciotomy were not at risk for compartment syndrome. Also, the most important factor with respect to this issue is open communication between the anesthesiologist and the surgeon.

5. Spring 2008 MARAA meeting.

The Spring 2008 MARAA meeting will be held 25 April 2008 in the Washington D.C. area. Final location TBA.

Meeting adjourned

APPENDIX A. Joint Regional Anesthesia Tracking System (JRATS) requirements outline.

Red = X-populate from existing record

Blue = pull down menu

Underline = page opens w/ mouse click or key stroke

Green = link to another page in TMDS

JRATS ACUTE PAIN NOTES

Demographic data:

Last name

First name

SSN

Rank

Age

Ethnicity

Gender

Allergies

Mechanism of injury (IED, RPG, GSW etc.) w/ link to History & Physical

(We don't care how this information is displayed as long as it is easy to locate and the patient's name, SSN (last 4?) and allergies appear on every page.)

Procedure Note

Select Procedure:

IV PCA

Epidural catheter

Peripheral Nerve Block

1. IV PCA
 - a. Therapy initiated **Date/time**
 - i. Medication
 1. Morphine
 2. Hydromorphone
 3. Other (see comments)
 - ii. Loading dose?
 1. Yes
 - a. Dose: mgs
 2. No
 - iii. Medication concentration
 1. mg/mL
 - iv. Continuous infusion?
 1. Yes
 - a. Rate: ml/hr
 2. No
 - v. Patient controlled bolus (PCA)?
 1. Yes
 - a. Dose: mg
 - b. Lockout: minutes
 2. No

- b. Pre-procedure Verbal analogue score (0-10)
 - c. Post-procedure Verbal analogue score (0-10)
 - d. Comments/Notes/Complications: free text field (no. of characters?)
2. Epidural catheter (selection remains 'active' until the catheter is removed)
- a. Time of placement: **Date/time**
 - b. Level of spine catheter is placed (free text, ex: 'L4')
 - c. Catheter test dosed?
 - i. **Yes**
 - ii. **No – Catheter must be test dosed! Please complete before proceeding.**
 - d. Bolus injection?
 - 1. **Yes**
 - a. Medication
 - i. **Ropivacaine**
 - ii. **Bupivacaine**
 - iii. **Other (see comments)**
 - b. Volume: ml
 - c. Concentration: 0.0%
 - 2. **No**
 - e. Infusion rate: mL/hr
 - f. Patient controlled epidural bolus (PCEA)?
 - 1. **Yes**
 - a. Volume: mL
 - b. Lockout: minutes
 - 2. **No**
 - g. Pre-procedure Verbal analogue score (0-10)
 - h. Post-procedure Verbal analogue score (0-10)
 - i. Comments/Notes/Complications: free text field (no. of characters?)
3. Peripheral Nerve Block (1 note/block)
- a. Select
 - i. **Continuous peripheral nerve block (remains 'active' until catheter is removed)**
 - ii. **Single Injection nerve block (remains 'active' for 24 hours following placement)**
 - b. Continuous peripheral nerve block (CPNB)
 - i. CPNB catheter placed: **Date/time**
 - ii. Laterality of CPNB
 - 1. **Left**
 - 2. **Right**
 - iii. Location of CPNB
 - 1. **Interscalene CPNB**
 - 2. **Supraclavicular CPNB**
 - 3. **Infraclavicular CPNB**
 - 4. **Axillary CPNB**
 - 5. **Paravertebral thoracic CPNB**
 - 6. **Lumbar plexus CPNB**
 - 7. **Femoral CPNB**
 - 8. **Posterior Sciatic CPNB**
 - 9. **Lateral Sciatic CPNB**
 - 10. **Popliteal CPNB**
 - 11. **Other (see notes)**
 - iv. Catheter tunneled?
 - 1. **Yes**

- 2. No
 - v. Catheter test dosed?
 - 1. Yes
 - 2. No – Catheter must be test dosed! Please complete before proceeding.
 - vi. Catheter bolus?
 - 1. Yes
 - a. Medication
 - i. Ropivacaine
 - ii. Bupivacaine
 - iii. Mepivacaine
 - iv. Other (see notes)
 - b. Concentration: 0.0%
 - c. Volume: mL
 - 2. No
 - vii. Infusion rate: mL/hr
 - viii. Patient controlled bolus (PCB)?
 - 1. Yes
 - a. Volume: mL
 - b. Lockout: minutes
 - ix. Pre-procedure Verbal analogue score (0-10)
 - x. Post-procedure Verbal analogue score (0-10)
 - xi. Comments/Notes/Complications: free text field (no. of characters?)
- c. Additional block?
- i. Yes – GO TO (This allows additional blocks, both CPNB and single injection; requires all fields are completed for each individual block).
- d. Single injection peripheral nerve block (PNB)
- i. PNB placed: **Date/time**
 - ii. Laterality
 - 1. Left
 - 2. Right
 - iii. Location PNB
 - 1. Interscalene CPNB
 - 2. Supraclavicular CPNB
 - 3. Infraclavicular CPNB
 - 4. Axillary CPNB
 - 5. Paravertebral thoracic CPNB
 - 6. Lumbar plexus CPNB
 - 7. Femoral CPNB
 - 8. Posterior Sciatic CPNB
 - 9. Lateral Sciatic CPNB
 - 10. Popliteal CPNB
 - 11. Other (see notes)
 - iv. Medication
 - 1. Ropivacaine
 - 2. Bupivacaine
 - 3. Mepivacaine
 - 4. Tetracaine
 - 5. Other (see notes)
 - v. Concentration: 0.0%
 - vi. Volume: mL
 - vii. Pre-procedure Verbal analogue score (0-10)
 - viii. Post-procedure Verbal analogue score (0-10)
 - ix. Comments/Notes/Complications: free text field (no. of characters?)

- e. Additional block?
 - i. Yes – GOTO * (This allows additional blocks, both CPNB and single injection, but requires all fields are completed for each individual block).

Clinical Note

(This X-populates with all previously entered and currently active procedure notes)

1. IV PCA
 - a. Date/time therapy started
 - i. Medication type
 - ii. Medication concentration: mg/mL
 - iii. Continuous infusion rate: ml/hr
 - iv. Patient controlled bolus (PCA)
 1. Dose: mg
 2. Lockout interval: minutes
2. Epidural catheter
 - a. Catheter placed: Date/time
 - b. Level of placement
 - c. Medication type
 - d. Medication concentration: 0.0%
 - e. Infusion rate: mL/hr
 - f. Patient controlled bolus (PCEA)
 - i. Volume: mL
 - ii. Lockout interval: minutes
3. Peripheral nerve block
 - a. Continuous peripheral nerve block (CPNB) or Single Injection (PNB)
 - b. Block placed: Date/time
 - c. Laterality of CPNB/PNB
 - d. Location CPNB/PNB
 - e. Medication type
 - f. Medication concentration: 0.0%
 - g. Infusion rate: mL/hr
 - h. Patient controlled bolus (PCNB):
 - i. Volume: mL
 - ii. Lockout interval: minutes
4. New Clinical Note: Date/time
5. Adjunct Medication list: (can we populate from existing medication list?)
6. Current Verbal analogue score (0-10)
7. Verbal analogue score last 24 hours (0-10)
8. Is patient satisfied with pain management?
 - a. Yes
 - b. No – Please explain in comments.
9. Treatment/catheter discontinued
 - a. PCA
 - b. Epidural
 - c. CPNB
10. Pain management plan for next 24 hours: Free text field (no. of characters?)

(In order to update a patient's pain management plan we need to be able to edit the X-populated fields in the clinical note. For example: an infusion is running at 10ml/hr. The clinician wants to

increase it to 12ml/hr. The field for that day's clinical note should auto-populate at 10ml/hr but the clinician can click on the field and increase the rate to 12. This rate increase is now saved as the most recent, active note. The previous note is now archived as the clinical note for that particular point in time.)

11. Comments/Notes/Complications: free text field (no. of characters?)

(Once catheters or PCA is discontinued the procedures will no longer populate the active procedure list for the patient. Single injection blocks remain active for 24 hours. However, all terminated procedures should be accessible for review)

Transfer Note**

(The transfer note can serve as the clinical note on the day of transfer)
Note will x-populate as above)

1. IV PCA
 - a. Date/time therapy started
 - i. Medication type
 - ii. Medication concentration: mg/mL
 - iii. Continuous infusion rate: ml/hr
 - iv. Patient controlled bolus (PCA)
 1. Dose: mg
 2. Lockout interval: minutes
2. Epidural catheter
 - a. Catheter placed: Date/time
 - b. Level of placement
 - c. Medication type
 - d. Medication concentration: 0.0%
 - e. Infusion rate: mL/hr
 - f. Patient controlled bolus (PCEA)
 - i. Volume: mL
 - ii. Lockout interval: minutes
3. Peripheral nerve block
 - a. Continuous peripheral nerve block (CPNB)
 - b. Block placed: Date/time
 - c. Laterality of CPNB/PNB
 - d. Location CPNB/PNB
 - e. Medication type
 - f. Medication concentration: 0.0%
 - g. Infusion rate: mL/hr
 - h. Patient controlled bolus (PCB):
 - i. Volume: mL
 - ii. Lockout interval: minutes
4. New Clinical Note: Date/time
5. Adjunct Medication list: (can we populate from existing medication list?)
6. Current Verbal analogue score (0-10)
7. Verbal analogue score last 24 hours (0-10)
8. Is patient satisfied with pain management?

- a. Yes
 - b. No – Please explain in comments.
9. Treatment/catheter discontinued
- a. PCA
 - b. Epidural
 - c. CPNB
10. Pain management plan for next 24 hours: free text field (no. of characters?)
11. Comments/Notes/Complications: free text field (no. of characters?)
12. New Location (**TRACES**)
- Receiving location SHOULD x-populate from TRACES **and** automatically generate an email alerting the receiving location's pain personnel that a patient with advanced pain management technologies are en route and the provider should check TMDS.
 - Active procedures (PCA, Epidural, CPNB) should be available to edit all fields. When the provider selects an active procedure for edit, the old active procedure will be archived to provide a record of management changes.

Receiving location email

Example of a recent email:

RATS user malong has transferred patient:

1lt XXXX

to WRAMC. This is an informational message to inform you of the event. The patient should be visible when you log into the RATS system.

Please visit the RATS site at <http://rats.cermusa.org>

This message was sent from an automated service account; please do not send administrative requests to this address; humans do not read mail sent to this account.