INTRODUCTION
The Anesthesia Residency Program at the University of Manitoba has previously had separate Regional Anesthesia and Acute Pain rotations. These separate rotations have met the CANMEDS goals of the Royal College of Physicians and Surgeons of Canada. At the same time there is a desire on behalf of the Anesthesia training program to provide the most well-rounded, comprehensive clinical and educational experience possible to our residents. This will include greater continuity of care as regional anesthetics can be followed post-operatively on the Acute Pain service and a day to day scheduling pattern that attempts to ensure the best use of time, accommodating the widest, most comprehensive clinical exposure possible.

The Acute Pain service at the Health Sciences Centre has been in operation now since March of 1997. It provides acute pain management services for all adult services at the health Sciences Center. There is coverage on a 24h basis. The staff member covering is responsible for rounds on the patients daily, as well as 24h beeper coverage. Patients on the service include postoperative patients, those who require management of painful conditions preoperatively as well as for patients (mostly surgical services) who are non-surgical. There is a full range of acute pain modalities utilized. This includes epidural and other continuous regional techniques, with the routine application of local anesthetics. Co-analgesics are used extensively as needed. Management of patients on PCA is limited at this time to those with special problems. Routine PCA management is left to the surgical services, due to staffing constraints. The purpose of a resident rotation would be to give residents a first-hand experience with the management of acute pain, including the assessment, titration and troubleshooting of continuous regional and epidural catheters, appropriate use of co-analgesics, and the approach to facilitated recovery.

Regional anesthesia techniques are used extensively at both of the teaching hospitals (Health Sciences Centre, Saint Boniface), as well as at some of the community hospitals and the Pan Am Day Surgery Center. These techniques are aimed at managing peri-operative pain, non-operative painful conditions and as the sole or combined anesthetic for various surgical procedures. Both single shot and catheter techniques are employed. Ultrasound guidance for these techniques has recently become more common and the training program at the University of Manitoba is working to provide education and experience in this area to residents.

GOALS AND OBJECTIVES
The Canmeds 2005 project by the Royal College of Physicians and Surgeons is an attempt to provide a framework for outlining the educational needs of residents in specialty training which incorporated the skills and attributes needed by society now, as well as the ability to build on those skills as the needs of society change in their future as specialty physicians. The Canmeds 2005 system envisions the educational as being to prepare the resident to fulfill seven roles, with their attendant attributes. As this is a subspecialty rotation, the greatest emphasis in the goals and objectives is on the specific elements that are different from or go beyond those of the residency overall. Those overall goals will not be repeated, but are nevertheless, still expected as part of the resident’s performance in this rotation.
Please refer also to the National Curriculum for Canadian Anesthesia Residency for more information on expected knowledge and skills.

Medical Expert:

Competencies: The Acute Pain / Regional Anesthesia Physician must develop an appreciation of all aspects of acute pain management and Regional Anesthesia. This includes an understanding of the physiologic processes, as well as the physical and psychological impact. This also implies an awareness and ability to effectively utilize a broad range of therapies aimed at modifying those impacts. Finally, he/she should also demonstrate a familiarity with the impact of pain on health care, both for the individual patient and society at large.

Specific Expectations:

ACUTE PAIN:
By the end of the rotation, the resident will be able to:
1. Describe the physiologic changes producing and induced by acute pain.
2. Describe the options available for postoperative analgesia, their advantages and disadvantages, and select appropriate therapies for individual patients.
3. Discuss the rationale for epidural analgesia, including the advantages and disadvantages of local anesthetics +/- opioids.
4. Assess and manage problems with epidural analgesia.
5. Explain the differences in effects of epidural analgesia at different spinal levels.
6. Explain the concept of facilitated recovery, and how it is implemented.
7. Use a variety of systemic agents effectively as co-analgesics, and/or as primary analgesics.
8. Assess and manage continuous regional analgesic techniques.
10. Describe the characteristics of somatic, neuropathic and sympathetic pain.
11. Appropriately identify new pathology as a contributor to ongoing pain.

REGIONAL ANESTHESIA:
By the end of the rotation, the resident will be able to:
1. Demonstrate the following knowledge base:
   Basic principles
   Rationale for/against regional anesthesia
   Applications of regional anesthesia outside the OR
   acute pain, chronic pain, obstetrics
   Ability to critically appraise the literature
   Complications of regional anesthesia
   identification, management, physiology
   Peripheral Nerve Stimulator
   rationale, function and properties, technique
   For each block
   Anatomy
   Physiologic changes
   Indications/contraindications
   Complications specific to block
   Selection of local and adjuvants

Pharmacology
Local anesthetics
structure, mechanisms, kinetics, dosing
toxicity- physiology, diagnosis, treatment

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selection of agent

Adjuvants
- narcotics, alpha-agonists, bicarb, CO2, anticholinesterases, etc
- rationale for use, physiology, mechanisms
- indications, contraindications, complications

Sedation
- indications and selection of agent
- kinetics, dynamics, toxicity of available agents

2. Demonstrate the following technical Skills
Core Blocks (competence expected by the end of residency)
- Brachial Plexus
  - axillary, interscalene
  - major nerves at the wrist and elbow
- Ankle
- Spinal- all approaches, baricities
- Epidurals
  - Thoracic- T3-12, lumbar, caudal
- Other
  - intercostals, ileoinguinal, airway, penile

Supplemental Blocks (needed for proficiency in regional)
- Lumbar plexus
  - 3in1, psoas, obturator, LFC, femoral nerve
- Sciatic nerve
  - popliteal, Labat, lateral, anterior
- Plexus catheters
  - Axillary, interscalene, femoral
- Cervical plexus
  - deep and superficial
- Cervical Epidural
- Brachial Plexus
  - supraclavicular, subclavian paravascular, infraclavicular
- Sympathetic
  - stellate, lumbar, coeliac

3. Demonstrate the following clinical management
Preoperative
- Assessment
  - indications/contraindications
  - balanced discussion of risks/benefits
- Block planning
  - block/drug selection, adjuvants, sedation, equipment/room set-up
  - failed block contingencies

Intraoperative
- Induction
  - Appropriate monitoring, use of sedation
  - Management of immediate complications

Postoperative
- Management of complications
- Assessment for discharge

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Communicator:

**Competencies**- The management of Acute Pain / Regional Anesthesia requires communication skills sufficient to both solicit and impart information. The physician must be able to quantify and categorize the pain, the underlying cause, and recognize new underlying pathology. The physician also has a duty to inform the patient of the options available, the associated risks and benefits, as well as the expectations and progress in a manner that is useful to the patient.

**Specific Expectations**- By the end of the rotation the resident will be able to

1. Obtain a complete history sufficient to identify the type, severity and impact of pain.
2. Discuss fully the options available in pain management / regional anesthesia and the associated risks and benefits.
3. Help a patient to understand the cause, effect and appropriateness of their clinical course.
4. Instruct outpatients with regard to expectations and safety when discharged home with a completely / partially blocked limb.

Collaborator:

**Competencies**- The acute pain / regional anesthesia physician must work in a team environment, communicating and cooperating with surgeons, nurses, pharmacists, physiotherapists, and others.

**Specific Expectations**- By the end of the rotation the resident will be able to

1. Appreciate the roles of other members of the care team.
2. Communicate clearly in a collegial manner that facilitates the achievement of care goals.
3. Help other members of the care team to enhance the sharing of important pain information, such as the use of pain scales, consistent charting etc.

Manager:

**Competencies**- The Acute pain / regional anesthesia physician must be cognizant of the financial impact, both positive and negative, of acute pain management and regional anesthesia strategies. He/she must also possess an awareness of the logistical constraints of delivery of health care and be able to propose useful and creative solutions.

**Specific Expectations**-

By the end of the rotation, the resident will

1. Outline the structure of the pain service, and how it fits in the administrative structure of the care setting.
2. Discuss the advantages and disadvantages of alternative models.
3. Explain the costs incurred by pain management strategies.
4. Discuss the potential savings in health care expenditure offered by acute pain management, with a realistic description of the nature and quality of the arguments.
5. Discuss the societal impact of acute pain, and the extent to which acute pain management may or may not be expected to modify that impact.
6. Outline the equipment and resources necessary to properly conduct, monitor and follow up regional anesthetics.

Health Advocate:

**Competencies**- The Acute Pain / regional anesthesia Physician must understand the potential benefits to the individual and to society of organized pain management services, and be able to provide realistic and scientifically supportable arguments in favour of such services. He/she must also be aware of the deficiencies in the system which impede the ideal delivery of these services, and be able to contribute to the attempt to eliminate
these deficiencies. He/she must be able to articulate the benefits of regional anesthesia and describe situations when regional anesthetics are most beneficial to a patient.

**Specific Expectations** - By the end of the rotation, the resident will be able to
1. Identify the potential costs and benefits of new and existing techniques.
2. Delineate the obstacles to delivery of analgesia in his/her care environment.
3. Contribute to the development of solutions to the obstacles, and to the expansion of the analgesic armamentarium in his/her care setting.

**Scholar:**

**Competencies** - The Acute Pain / regional anesthesia Physician must be able to assess the ongoing developments in the literature regarding pain management and regional anesthesia, and be able to appropriately incorporate them into practice. He/she must also be able to utilize a variety of sources in order to answer questions as they arise. Finally, he/she must show an appreciation of the conduct of pain / regional anesthesiaresearch.

**Specific Expectations** - By the end of the rotation, the resident will be able to
1. Read and critique publications about pain / regional anesthesia.
2. List appropriate sources for further study.
3. Contribute to the design of studies on pain and pain management and regional anesthesia.
4. Contribute to the conduct, analysis and writing of a clinical study.

**Professional:**

**Competencies** - The Acute Pain / regional anesthesia Physician must exemplify the professional behavior and attitudes inherent in the practice of medicine.

**STRUCTURE AND ORGANIZATION**

The primary change to the two combined rotations is that of a scheduling pattern to allow for the best possible exposure to regional anesthesia, combined with an adequate exposure to the Acute Pain service. The suggested pattern is as follows:

- **Monday** – Regional anesthesia slate at the Pan Am Surgical Center
- **Tuesday** - Regional anesthesia slate at Health Sciences Centre
- **Wednesday** – am Acute Pain rounds, pm academic half day
- **Thursday** - am Acute Pain rounds, pm regional blocks as available.
- **Friday** - am Acute Pain rounds, pm regional blocks as available.

The general principle of scheduling is to give priorities as follows:
1. Regional blocks when available should be sought out and performed, particularly those with catheters.
2. Acute pain rounds in the am, when overnight problems are dealt with and a plan for the day is developed, should be attended when possible. This should occur 2-3 times per week.
3. Full regional slates are usually performed at Pan Am due to the off-site nature, not allowing for APS involvement, and Tuesdays at HSC when there is usually an upper extremity orthopedic slate.

**APS CLINICAL RESPONSIBILITIES**

1. **Daily**
   - Rounds - The resident will be responsible for rounding on all patients at the beginning of the day. This will include an assessment of the quality of analgesia, presence and anticipation of side effects, levels and appropriateness of blocks, and planning further care. The resident is also expected to make rounds at the end of the day, to assess for potential overnight problems. One or both of these
rounds will be planning rounds with the staffperson, the timing of which will be up to the individual staff to discuss with the resident.

Ongoing problem response- The resident will carry a beeper during the day and on designated call nights. The resident will be the first responder for calls form the wards. After assessment, the resident will be expected to manage the problem, consulting with staff as appropriate.

New patients- During the course of the day, new patients in the form of either postop patients or consults will be assessed by the resident and discussed with the staff person.

2. Call

The resident will be on call on a one in four basis. Ideally there should be no non-pain call. However, when there is a shortage of residents, it may be necessary to allow the program to slate the APS resident for some call. In this event, there will be no more than three non-APS calls, the APS call will be reduced accordingly, there will the usual day off after, and the resident will do PAS during the day prior. Weekday call will consist of carrying the first call beeper, as for during the day. Most calls can be handled over the phone, with discussion with the staffperson as needed. Call will also include one weekend. For the sake of continuity, this will be as one whole weekend, Friday to Sunday, and constitute three calls. On the weekend, in addition to carrying the beeper for problem response, the staff and resident must round once each day. There is no day off before or after call, as this is home call. In the rare event that a resident had to come back to the hospital at night, it is expected that the staffperson would make allowances.

REGIONAL ANESTHESIA CLINICAL RESPONSIBILITIES

1. Slating

   1. Residents will be slated into rooms daily during the week, with the exception of off call and scheduled seminar times.
   2. On any given day, the resident may be assigned to any of HSC, SBGH, SOGH, or the PanAm Surgicentre. It will be the responsibility of the resident to check on the slates at the sites other than HSC. For SBGH, this can be done in advance to facilitate planning. The slates at SOGH will have to be checked on a daily basis.
   3. The Pan Am surgicentre is an option only available to residents in their PGY4 year or later. It is impossible to ensure that there will be staff there that day that will be able to supervise blocks. In the event that a resident would like to consider a PanAm slate, he/she should only go if the staffperson is willing and able to cover the blocks. This may require discussion with the particular staffperson assigned to the slate.
   4. The resident will choose slates with the following priorities:
      i. To maximize the potential for regionals.
      ii. When no clear regional slate exists, exposure to regional staff.
      iii. Often, there are potential blocks in more than one room. In this case, the resident will be slated into the room with the greater potential. Every effort will be made to allow the resident out to do the block in the second room as well.

2. Preoperative Assessment

   1. As with any rotation, residents will be expected to see all inpatients and review the available charts of same-day patients the night before surgery.
   2. Same-day patients will be seen in the preanesthetic waiting area.
   3. Residents are not responsible for preop assessment of patients from other slates on whom they will be doing a block. However, good practice
demands a brief interview to establish rapport and assure the appropriateness of the block.

3. Induction of Regional Anesthetics
   1. Residents will be supervised during the induction of all blocks until competence has been demonstrated.
   2. Thereafter, blocks should still be supervised if at all possible, in order to allow for maximal teaching. As with other situations, residents will be granted and expected to exercise a level of autonomy appropriate to their level of experience.

4. Intraoperative Management
   1. Residents will be expected to function with autonomy appropriate to their level, in ongoing anesthetic management and in management of problems.

5. Postoperative Assessment

OTHER RESPONSIBILITIES

Talk rounds-
The resident will be expected to attend at departmental talk rounds, and bring any interesting cases that may have been encountered on the pain service.

Evaluations

- Resident evaluation of the rotation and attendings will occur according to the process established for all rotations in the residency program. Opportunity for the resident to discuss the evaluation will be at the exit interview, the biannual resident interview, or on an ad hoc basis if desired.
- Evaluation of the resident will also conform to the process already in use by the department for resident evaluations. Feedback from each of the attending staff will be sought in the form of the daily resident evaluation forms. These will be filled out after each block of time with a given staff person, rather than daily. There will be an exit interview for all residents, with the possibility of an interim interview in the event of remediable weakness earlier in the rotation.
- Residents will be expected to keep track of their daily schedule, the number of complete slates attended, the number and type of blocks performed and the amount of time spent on the Acute Pain service. On the last day of the rotation, each resident MUST provide a printout from the resident log book detailing his/her experience for the month to the rotation coordinator.

LEARNING RESOURCES

- Ongoing daily discussion of cases with staff.
- Talk rounds
- Teaching sessions with the staff- there will be a list of topics that should be covered in the course of the rotation. The staff rotate through the APS, taking Mon-Wed or Thurs-Sun. Each staffperson will be expected to select and cover one of these topics at some point over the few days they are on the service. The exact timing and form of the session will be at the discretion of the individual attending.
- Acute Pain Reference Binder- There is a binder available of references that will be periodically updated by the APS staff. The residents are encouraged to add to the binder as well. This will be kept in the program office, and signed out as needed.
will be reserved for the APS resident, although it will be available to any resident when there is no PAS resident.

- The Textbook for the rotation will be____________
List of Didactic Sessions to be Covered on the APS

1) Measurement of Pain
   a) General principles
   b) Using scales

2) General Introduction to analgesic Modalities
   a) Physical
   b) Systemic
   c) Regional

3) Rationale for Epidural Analgesia
   a) Risks
   b) Benefits
      i) Analgesia
      ii) Other
   c) Cost-effect

4) Facilitated Recovery
   a) General concept
   b) Role of early feeding/NG
   c) Stress response
      i) Effects
      ii) Modification
      iii) Evidence of benefit

5) NSAID
   a) Efficacy
   b) Types
   c) Indications/contraindications

6) PCA
   a) Basic Pharmacology/kinetics
   b) Mechanism/pump settings
   c) Assessment-troubleshooting

7) Epidural Local Anesthetics
   a) Physiology
   b) Advantages/disadvantages
   c) Choice of LA
   d) Troubleshooting

8) Epidural Opioids
   a) Effects
   b) Choice of opioid

9) Coanalgesics
   a) $\alpha$ agonists
   b) Antidepressants
   c) Ketamine
   d) Gabapentin

10) Other
   a) Staff may elect to discuss a topic not included here, that is related to Acute Pain Management (i.e., epidurals for angina, other epidural agents, COX2 inhibitors, etc)

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