

Pain Management for Primary Care



DoD/VHA
JOINT INCENTIVE FUND (JIF)
PROJECT



Series: Nine
Introduction to Subspecialty Pain Care

Module 9-1
Pain Medicine Specialty Care



Module 9-1

Pain Medicine Specialty Care

By the end of the module, you will be able to:

- Describe the need to treat and the management of acute and perioperative pain
- Describe the indications and procedures done by pain medicine subspecialists
- Define specialty pain management services for acute perioperative and chronic pain

We will review:

Topic 1: Acute and perioperative pain management

Topic 2: Procedures in specialty care

Topic 3: Specialty pain management services

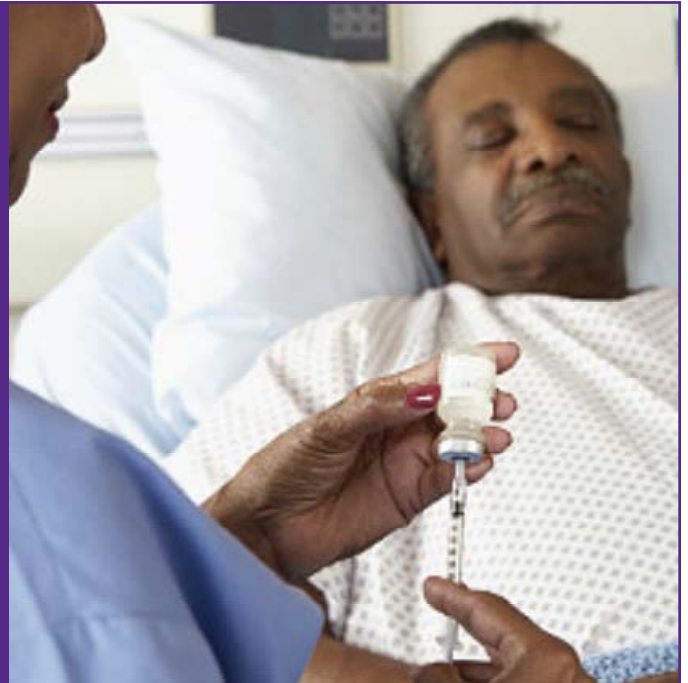
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Topic One

Acute and Perioperative Pain Management



Note that acute pain can be after injury (accident), surgery (perioperative) or medical (sickle cell, cancer breakthrough pain, severe shingles).

Even though not all acute pain is after surgery, close to a half of the patients seen in primary care suffer from chronic postoperative (usually neuropathic) pain. (like post thoracotomy, post mastectomy, post inguinal, post cesarean pain).

Acute pain from trauma or disease, leads to a cascade of events that delays healing and rehabilitation.



Notes

Tissue injury and pain, whether from trauma or disease, leads to a cascade of unwanted consequences that inhibit healing and rehabilitation.

This is why it is important to treat acute pain early on.

Facilitator notes

Organ Systems	Physiologic Responses
Cardiovascular	Increased heart rate, peripheral vascular resistance, arterial blood pressure, and myocardial contractility resulting in increased cardiac work, myocardial ischemia and infarction
Pulmonary	Respiratory and abdominal muscle spasm (splinting), diaphragmatic dysfunction, decreased vital capacity, impaired ventilation and ability to cough, atelectasis, increased ventilation/perfusion mismatch, hypoventilation, hypoxemia, hypercarbia, increased postoperative pulmonary infection
Gastrointestinal	Increased gastrointestinal secretions and smooth muscle sphincter tone, reduced intestinal motility, ileus, nausea, and vomiting
Renal	Oliguria, increased urinary sphincter tone, urinary retention
Coagulation	Increased platelet aggregation, venostasis, increased deep vein thrombosis, thromboembolism
Immunologic	Impaired immune function, increased infection, tumor spread or recurrence
Muscular	Muscle weakness, limitation of movement, muscle atrophy, fatigue
Psychological	Anxiety, fear, anger, depression, reduced patient satisfaction
Overall recovery delayed recovery, increased need for hospitalization, delayed return to normal daily living, increased healthcare resource utilization, increased healthcare costs. Joshi et al., Anesthesiology Clin N Am 2005	

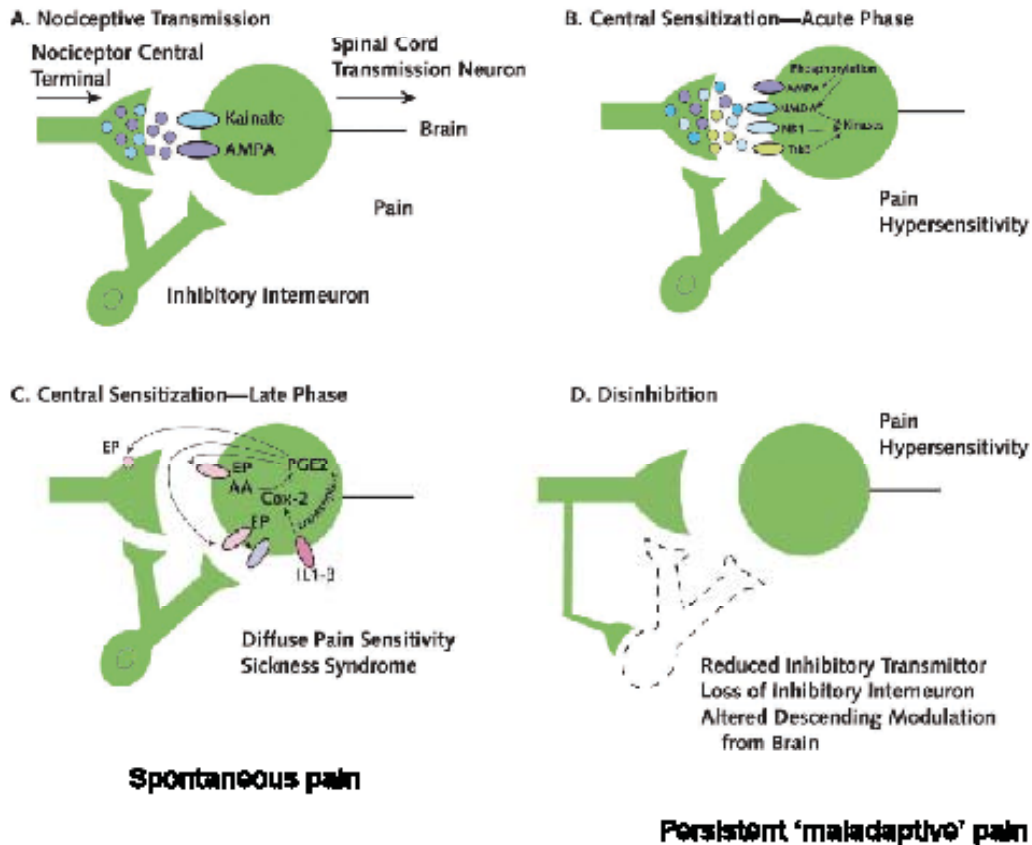
Notes

Briefly skim through the content.

Poorly controlled acute pain can predispose to developing chronic pain (chronification).

Protective 'adaptive' pain

Hyperalgesia, allodynia



Notes

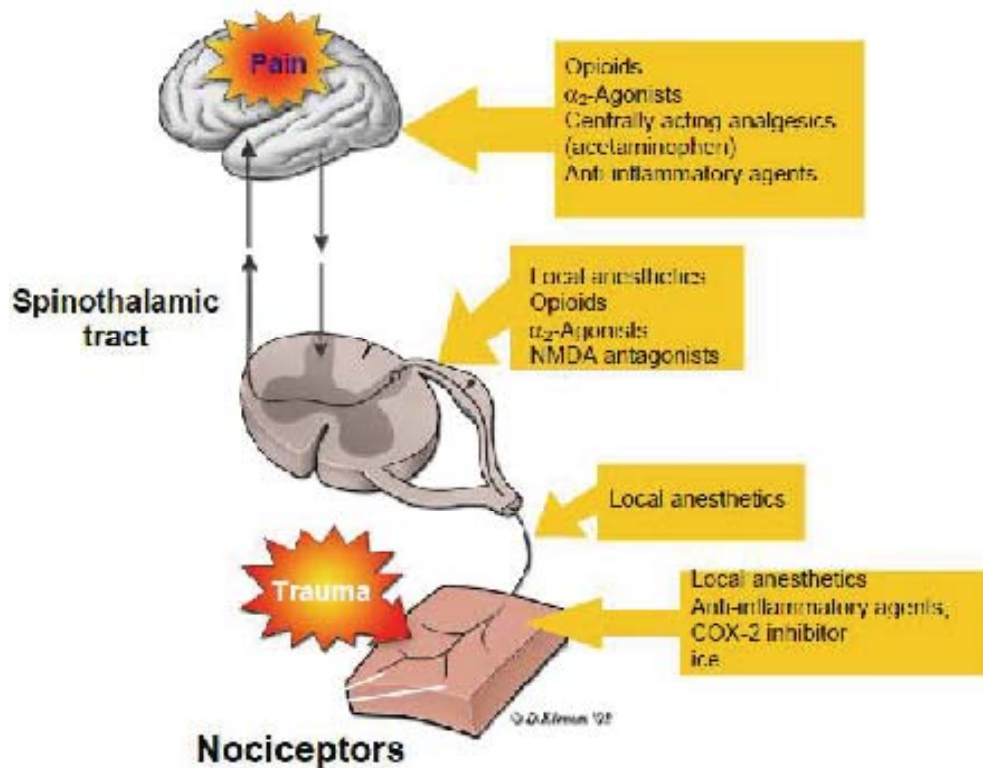
Note that 'adaptive' normal pain (figure A) transitions to 'maladaptive' (figures D) causing chronic pain, as early as a few weeks after injury.

Nociception: painful stimulus causes pain

Hyperalgesia: painful stimulus causes more pain

Allodynia: touch stimulus causes pain

Acute and peri-operative pain care requires a multimodal approach including NSAIDs, opioids, adjuvants, acupuncture and neural blockade.



Notes

Pain management plans should be individualized and multimodal.

The use of multiple medications that work by different mechanisms reduces the amount and side-effect profile of any one drug.

Additionally, pain medications tend to be synergistic thus a multimodal pain management plan is usually far superior to a mono-drug plan that focuses on opioids. Obviously this type of care is more complex and requires improved planning and organization from the healthcare team. Bottom line: this type of care is better for patients.

Ketamine has emerged in the recent conflicts as an important battlefield analgesic.

Neural blockade includes epidural and spinal injections as well as continuous peripheral nerve blocks.



Notes

The image shows an example of a peripheral left sciatic nerve block that can manage lower limb pain. A catheter infusing long acting local anesthetics can be left in situ for a few days to provide continual pain relief.

These type of treatments decrease the need for opioids. It provides better pain relief, better recovery and decreases opioid related side effects like constipation, drowsiness and tolerance.

Knowledge Check

Which of the following are possible consequences of unrelieved acute pain?

- a. Oliguria and increased urinary sphincter tone
- b. Nausea and vomiting
- c. Atelectasis and Hypoventilation
- d. All of the above

Knowledge Check – Answer

Which of the following are possible consequences of unrelieved acute pain?

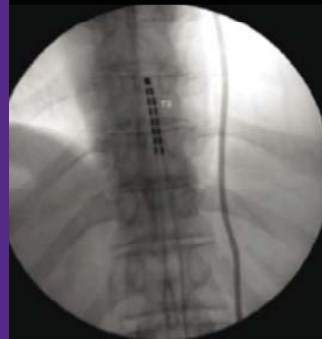
- a. Oliguria and increased urinary sphincter tone
- b. Nausea and vomiting
- c. Atelectasis and Hypoventilation
- d. All of the above

Notes

Read question aloud

Topic Two

Procedures in Pain Specialty Care



The slide above shows two imaged guided procedures done by pain specialists.
On the left are two epidural electrodes implanted for spinal cord stimulation.
On the right L4, L5 transforaminal selective nerve roots are demonstrated (right)
Understand that in almost all cases image-guided treatment is most effective when executed as one component of an interdisciplinary care plan.

Pain medicine specialty clinics are most appropriate to help patients with complex severe, refractory pain.

These clinics are able to:

- Evaluate patients with full range of pain issues
- Manage or provide advice regarding pain medications, including opioids
- Assist in developing care plan for complex patients
- Initiate consults and communicate regularly with a multidisciplinary team
- Treat patients with acute conditions like acute radiculopathy, compression fracture
- Provide image-guided and surgical treatments

Notes

When working in this model, team members should recognize the importance of initiative and attention to detail for interactions with patients and team members to achieve patient-centered care goals. Examples of common barriers to good pain care in this setting include unintended prescription of controlled substances by multiple providers, long wait times to see selected team members, and inadequate team communication leading to conflicting medical advice. As well, reimbursement rules can limit the availability of valuable integrative care techniques including self care education.

Virtual consulting is an evolving capability . For example, at selected VHA locations provider, specialist, and patient can meet in a virtual room to support team based care.

These are examples but there are other instances of conditions and complex presentations

Refer participants to DoD/VA Clinical Practice Guidelines.

Common referrals to specialty pain centers include:

- Axial or radicular spine pain, discogenic, facet, myofascial, post-laminectomy, compression fracture, spinal stenosis, sacroiliac joint, piriformis syndrome
- Peripheral limb, knee, shoulder, hip pain
- Post surgical thoracic, inguinal, abdominal, pelvic pain
- Neuropathic or nerve injury pain syndromes (Complex regional pain syndrome, phantom pain)
- Facial pain, headaches, trigeminal, post herpetic or occipital neuralgia
- Cancer or metastatic pain

Notes

Appropriate conditions/patients to refer

Spine pain

- Axial or with radicular symptoms
 - Discogenic, myofascial, facet joint syndrome, post-laminectomy, compression fracture, spinal stenosis
 - Sacroiliac joint dysfunction, piriformis syndrome

Peripheral limb pain

- Knee, shoulder, hip due to injury or arthritis

Groin pain

- Frequently as a side-effect of surgery (inguinal hernia repair, vasectomy)

These diagnoses and syndromes are commonly treated in pain clinics with available modalities

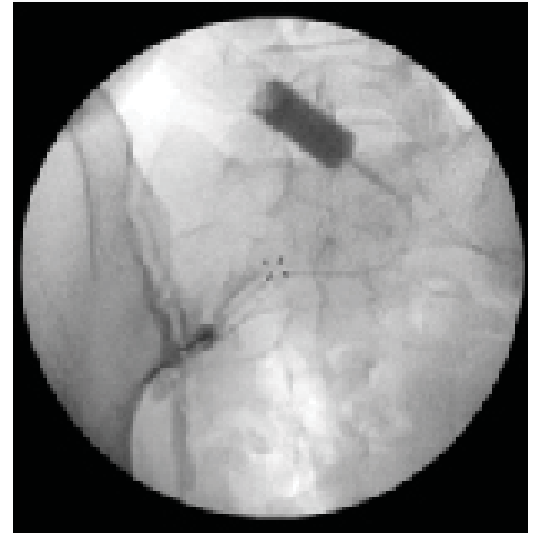
As a provider, the aim is to also prevent chronification

Note the importance of collaborative pain management

Ultimately the patients which should be referred are those patients who are not responding in a reasonable amount of time to treatment.

Interventional pain therapies are mostly percutaneous image-guided procedures aimed to relieve pain and facilitate rehabilitation.

- Image-guided epidural steroids for radicular pain combined with physical and behavioral therapies
- Diagnostic medial branch blocks with subsequent radiofrequency ablation (RFA) for axial spine pain without radicular symptoms
- Intra-articular Sacroiliac blocks for back, hip and/or leg pain followed by radiofrequency ablation
- Other intra-articular injections (shoulder, knee, hip, trochanteric bursa)
- Piriformis muscle injections for buttock leg pain
- Trigger point injections for myofascial pain, acute spasm



Notes

When communicating with the patient in primary care, make sure that the patient understands that the intervention needs to be tied to other modalities.

RFA: radiofrequency ablation (using radio waves to create heat which temporarily interferes with the capacity of nerves to send a pain message).

Percutaneous image-guided procedures can help in cases of severe neuropathic pain.

- Stellate ganglion for upper extremity CRPS, neuropathic pain, PTSD (ongoing trials)
- Lumbar sympathetic plexus for lower extremity CRPS, neuropathic pain
- Celiac plexus for abdominal cancer pain
- Superior hypogastric plexus for pelvic pain
- Ganglion impar for low pelvic, perineal or coccygeal pain
- Peripheral nerve blocks for groin pain
- Intercostal nerve blocks for post thoracotomy pain



Notes

Stress these are for patients with severe refractory pain

Implantable devices such as spinal cord stimulators and intrathecal pumps can be done as outpatient surgery.

- Most common indications for a Spinal Cord Stimulation (SCS) are post-laminectomy syndrome and Complex Regional Pain Syndrome (CRPS)
- These procedures are expensive and may have complications (lead migration, hardware failure, infection), however they provide long-term benefit in well selected cases
- Implantable Drug Delivery Systems (pumps) infuse medication into the intrathecal space and are indicated for a selected group of patient with both malignant and non-malignant pain
- These pumps are typically refilled in an out patient setting every 3-6 months



Notes

The patient should have failed more conservative treatments first before considering SCS

Appropriate patient selection is key. Patients should have a psychological evaluation.

This procedure involves the use of an Intrathecal pump. This is a procedure performed in a very selective patient population.

Other emerging therapies worth knowing about:

- Diagnostic Intradiscal procedures like provocative discography to detect a painful disc in the presence of an annular tear
- Therapeutic Intradiscal procedures like Intradiscal electrothermal annuloplasty (IDET), Biacuplasty and Percutaneous disc decompression
- Vertebral augmentation (Vertebroplasty, Kyphoplasty) may be useful in the treatment of acute vertebral compression fractures
- Stem cell intradiscal injection may be promising however, human trials are forthcoming
- Platelet Rich Plasma therapy for tendinopathy may have anti-inflammatory properties and help in tissue regeneration



Notes

Emerging technologies. Long term outcomes are usually not as good as expected.

Many of these treatments are still under investigation

Topic Three

Specialty Pain Management Services

Acute pain management during evacuation has been a major issue during the recent conflicts. Although this represents an extreme environment for acute pain management, the lessons learned can (and have) be applied to routine acute pain care in our hospitals.

The VHA Pain Directive (2009) and the DoD/VHA Pain Management Task Force (2010) leveraged emerging evidence to provide the enterprise wide policies and recommendations for structuring multi-modal, multi-disciplinary pain care across the continuum of acute and chronic pain.

In a survey of casualties arriving from Iraq and Afghanistan to Landstuhl, Germany demonstrated the impact of pain on important psychological issues. Additionally, the data demonstrated the advantage of advanced acute pain management with regional anesthesia.

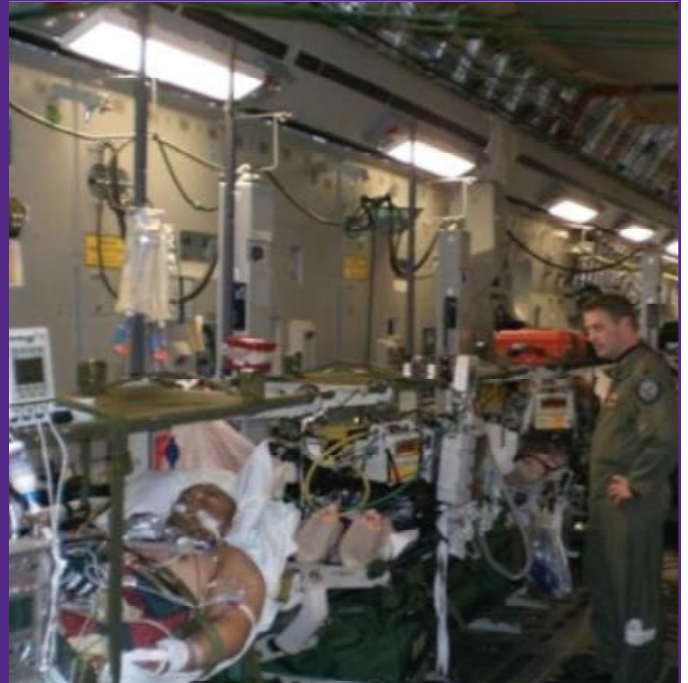
Continuous peripheral nerve blocks (CPNBs) at LRMC reported significantly better pain relief ($p < 0.05$) than those who did not, despite higher worst pain intensity.

Greater worry during transport ($p < 0.05$) and higher worst pain ($p < 0.001$) explained 72.3% ($p < 0.001$) of the variance in average pain levels during transport.

Is this trait (worrying) worth exploring, similar to 'trait anxiety' and / or catastrophizing, that predict pain disability?

Does chronic activation, or low threshold for activation, of noradrenergic "stress centers" facilitate encoding of pain and fear memories, and central sensitization?

Should these traits be assessed, much like physical capacity, as part of fitness, and addressed with resiliency training?



There are many new ways to treat pain.

Transition from the war zone to an acute care hospital, to rehabilitation and recovery in DoD and VHA facilities remains a challenge.

Acute Pain after battlefield injury requires the transition of pain care after injury from:

- War zone to hospital
- Acute hospital care to rehabilitation
- Military care to Veterans Health System and community

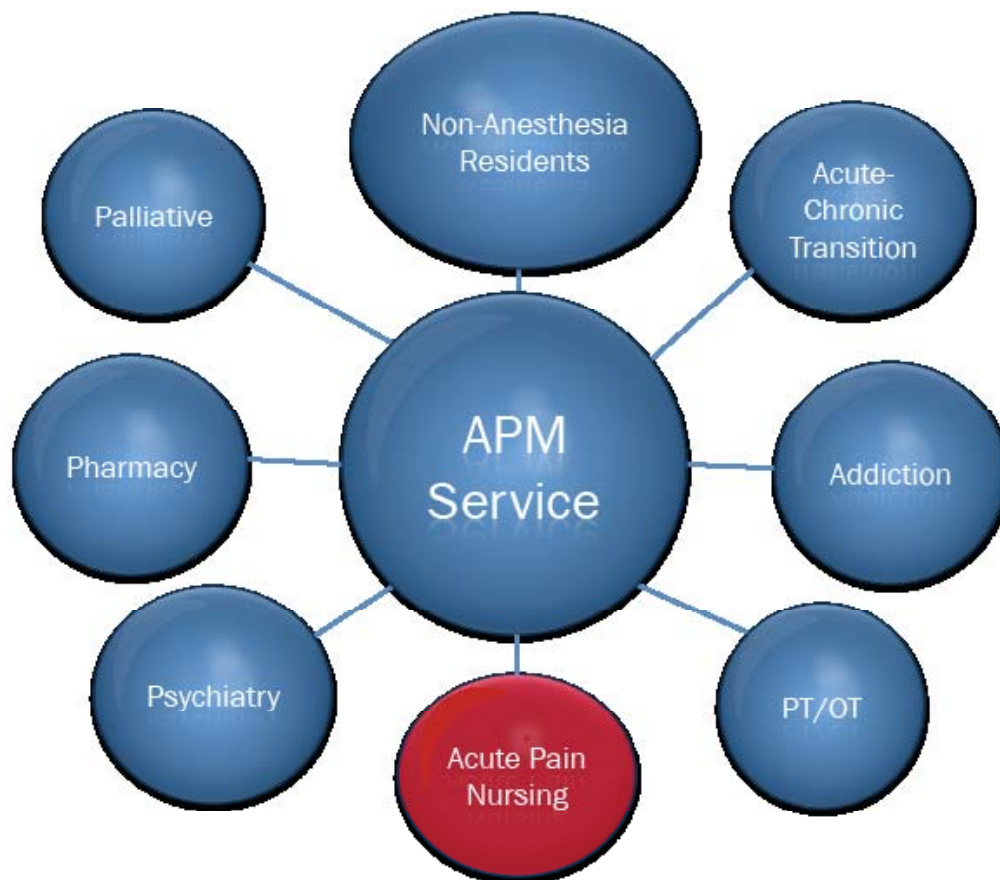
Innovative ways to treat acute pain include the use of Virtual Reality Goggles, Physical conditioning, and Mirror therapy

Using the Stepped care model is the enterprise solution mandated across DoD and VHA

Notes

Acute pain has evolved well beyond: pain = opioid medication. Opioids are still a part (although de-emphasized) component of pain care in appropriate patients. Most pain conditions can be managed in a multimodal fashion with considerably less dependence on opioid medication.

Acute pain management during evacuation has been a major issue during the recent conflicts. Although this represents an extreme environment for acute pain management, the lessons learned can (and have) be applied to routine acute pain care in our hospitals.



Notes

APM: Acute pain Medicine

APM services from acute setting (deployed settings, Role 3/combat support hospital) to tertiary care (Role 5) requires a trained, coordinated effort. APM is dependent on nursing, since nursing (in red) is the key assessment, coordination, and executor of the medical plan.

The diagram above shows Role 5 APM structure. Role 3 might not have all of these components but they will document with expectation that these other roles will be added further down the evacuation/recovery chain.

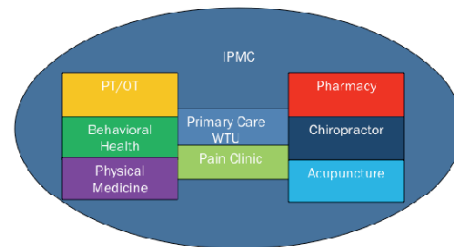
Acute Pain Medicine (APM) services can greatly enhance inpatient pain care and serve as a resource for outpatient primary care. In a perfect system, APM services should be available at every military/VA hospital. APM capabilities are being “grown” across DoD and VHA.

Multi-modal, multi-disciplinary, team care is ultimately necessary for the successful treatment of complex chronic pain.

The Interdisciplinary Pain Management Centers (IPMC) are examples of this type of specialty structure/capability.

Typical IPMC Pain Model

- One multidisciplinary center with common leadership
- Communication fostered by proximity of providers
 - Shared workplace, shared patients, shared goal



As of 2015 there are: 8 IPMCs in the DoD and 1 IPMC in 20 of the 23 VISNs

Notes

Dating back to Dr. John Bonica's post WWII, Anesthesiology-based pain program in 1950's, multidisciplinary programs showed success in the peer-reviewed literature and quadrupled in number from the mid-1970s to 1990.

The number declined by about 50% by the mid-2000s. Most reimbursement was based on procedures while interdisciplinary care was not compensated well. Additionally, competition in the insurance market made long term benefits less attractive since a different insurance company might reap the reward of an upfront investment. Finally, subspecialty training programs adopted easily measured procedural benchmarks over more abstract evidence of interdisciplinary collaboration. [Roth, R., Transitional Behavioral Medicine, 2012]

Based on the promising data, the DoD and VHA have determined that interdisciplinary pain care is the recommended model.

Strong evidence from studies over several decades and recent conflicts.

Limited implementation due to barriers:

- Reimbursement rules
- Insurance practices
- Focus on intervention competency in training programs

VHA has at least one IPMC in most VISN/region

- 74% of facilities have pain medicine specialty clinics
- 18 out of 23 VISNs/regions have tertiary pain centers with CARF accreditation

Army has 8 IPMC sites organized by region (6/8 have a high percentage of capabilities currently available)

Civilian IPMC Programs exist in some areas (Cleveland Clinic, University of Washington)

Key tenets

- Establishment of Interdisciplinary Pain Management Centers (IPMCs)
- Culture shift to multidisciplinary care
- Project power from pain hubs to primary care centers
 - Pain Champions
 - Tele-pain
 - Pain physician in WTUs
 - Improved IT solutions

The DoD/VHA Pain Mgt Task Force (2010) Goals:

- Provide the infrastructure to drive advancements in pain care
- Build and maintain an integrative and interdisciplinary approach to managing pain
- Focus on the Warrior and Family – sustain the force
- Synchronize a culture of pain awareness, education and proactive intervention

Current IPMC services are able to:

- Coordinate readily access to behavioral health, integrative, and subspecialty care in an inpatient and outpatient setting
- Coordinate a range of innovative treatment options from integrative techniques to emerging technologies
- Provide necessary patient and provider pain education
- Routinely treat patients that require complex care including wounded warriors, patients with significant medical and behavioral health comorbidities, and patients with executive or military operational responsibilities

Notes

Based on Biopsychosocial Model applied to pain

May have high initial costs but showing potential to be Cost effective over time in studies in closed settings (like DoD and VHA)

Goals

Improve communication between providers

Avoid uni-modal , medication focuses treatment of pain, and over-prescription of opioids

Improve outcomes

Pain medicine specialty clinics are interdisciplinary, inter-professional centers of care and may include:

- Providers and Staff
 - Pain Subspecialist (Fellowship trained)
 - Physician Assistant and Nurse Practitioners
 - Family Medicine (Primary Care Champion)
 - Psychologist (particularly at VHA facilities)
 - Physical and Occupational therapists
 - Addiction Medicine
 - Chiropractors
 - Integrative Medicine Providers for Acupuncture, Mind-Body, Movement Therapies
 - Case Managers
 - RN, LPN, LNA
 - Radiology technicians
 - IT/VTC Support Tech

Notes

Higher risk and underserved patients may be disproportionately affected when subspecialty pain service availability fluctuates.

Pain Management Subspecialty Clinic (PMSC) – Would typically have a pain subspecialist with capabilities to provide procedures, manage medications or provide medication advice.

Allied team members such as physical and occupational therapists, behavioral health specialists, and providers of integrative techniques could be consulted, but would not all be in house. Interdisciplinary Pain Management Centers (IPMC) are more integrated with all or most of the interdisciplinary care team described under one roof. Such Centers may be found within the DOD and VHA under one of various names and represent the highest step in the Stepped Care Model.

Facilities where IPMC are not available can be supported through DoD Pain ECHO/VHA SCAN ECHO virtual telementoring and teleconsultation. IPMC “Hubs” support designated MTF’s “Spokes”

The lack of unified leadership of team members can result in poor patient care coordination, particularly in the absence of dedicated case management. While in this model is adequate for some patients, for complex patients the challenges of coordination over time and space can negatively affect outcomes. This can also negatively affect cost when ineffective treatments are repeated or expensive treatments are used prior to adequate attention to biopsychosocial factors.



Summary



Recall that acute perioperative pain management is essential in quality surgical care. Failure to control acute pain leads to unnecessary suffering and complicates rehabilitation and recovery.

Remember that early and effective pain management attenuates and can prevent the chronification of pain.

Using a multi-modal pain care plan that de-emphasizes opioids, highlights non-pharmacologic approaches, and follows the Stepped Care model is the best approach.

Image-guided procedures are indicated to facilitate functional recovery in selected cases.

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