PAIN MANAGEMENT – Education Manual

We have designed this basic self-learning module for physicians, nurses and other professional support staff who care for patients within MISH. The information provided in this module reflects general pain management care issues across the continuum of care (both outpatient and inpatient).

A. Definitions of Pain

Several definitions of pain are well accepted in the literature and recognize the subjective nature of the pain experience:

- "**Pain is** whatever the experiencing person says it is, existing whenever the experiencing person says it does"
- "**Pain is** an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage or both" (International Association for the Study of Pain, 1994).

Pain can be defined further according to its duration, location and etiology:

- **Acute pain**: Usually the result of acute trauma, illness or surgery, that resolves once the underlying condition has been treated or improves; lasts less than three months, but, occasionally, can persist up to six months depending upon the type of injury and/or treatment rendered; often (but not always) associated with objective, physiologic findings such as tachycardia, hypertension, diaphoresis, mydriasis and pallor.
- **Chronic pain**: Persists beyond the expected recovery time, generally longer than three to six months; usually not associated with the autonomic nervous system response seen in acute pain, but instead associated with sleep difficulties, loss of appetite, irritability, decreased motor and/or sexual function and depression.
- **Malignant pain**: Associated with cancer or its treatment; may include pain related to HIV infection or AIDS; may be either acute, chronic or have characteristics of both.
- **Non-malignant pain**: Associated with non-malignant processes (e.g. arthritis or other musculoskeletal disorders); can also be present with no clearly defined medical disorder; may be either acute, chronic or have characteristics of both.

Pain may also be classified according to the site of pain origination:

- **Somatic pain:** originates in bone, skin, ligament and muscle and is well localized; generally described as aching, throbbing, or gnawing.
- Visceral pain originates in solid or hollow organs; is initiated by distention, traction or ischemia; is generally poorly localized and may be referred to other areas; usually described as cramping, pressure, deep aching, or squeezing.
- **Neuropathic pain:** stems from dysfunction and/or lesion of the central or peripheral nervous systems and may be associated with neurologic deficit or altered sensation; generally described as burning, electrical shock, hot, stabbing, shooting, numbing, itching, or tingling.

Although it may be difficult to assess the type of pain a person is experiencing, especially in the young, nonverbal and/or cognitively impaired, it is important to differentiate between these various types of pain. Different types of pain necessitate different methods/medications for management. For example, somatic and visceral pain responds better to opioids and NSAIDs while neuropathic pain also responds to antidepressants, anticonvulsants and other adjuvant medications.

Other terms:

- **Tolerance:** Need for gradually escalating doses of medication to maintain an equal analgesic effect over time.
- **Physical Dependence**: Biologic response to chronic opioid administration characterized by onset of withdrawal symptoms when opioids are stopped or antagonist administered. Withdrawal symptoms include: sweats, chills, tremors, increased pain, diarrhea, nausea, vomiting, and runny nose.
- **Addiction:** Concomitant behavioral pattern of drug use characterized by craving for drug and overwhelming involvement in obtaining and using drug for reasons other than pain control. Actual risk for addiction in medical use is very low.
- **Pseudoaddiction**: Under-medication for pain can lead to behaviors that mimic addiction. These behaviors subside when pain is adequately treated.

B. Myths and Truths About Pain

Myths about pain continue to be perpetuated by both in health care professionals and the public. Most myths persist because of lack of knowledge about pain, its characteristics and/or its management. Since patients and their families may consider many of these myths to be true, all health care providers need to be familiar with them to enable clarification.

Children and adults will tell you when they are in pain	Many children and adults will not admit that they are in pain for many reasons: fears or misperceptions about the cause of their pain, fear about side effects of medications, or feeling a need to be stoic about their pain.
The use of opioids for pain relief can lead to addiction	It is extremely rare for addiction to occur as a result of using opioids for pain relief.
Strong pain medicines aren't appropriate and/or cannot be tolerated by elderly patients	Medications appropriate for pain should not be based on age but on the patient's medical condition and ability to tolerate adverse effects. Initial opioid doses should be adjusted downward in the elderly.
Objective/visible signs are necessary to verify existence and severity of pain	A patient's self report is the most reliable indicator of pain. Some patients with severe acute pain and many patients with chronic pain may not display any visible or overt signs.
Activity level is a good indicator for severity of pain	Activity level may or may not be affected when someone is in pain.
Experience with pain leads to greater tolerance	Assessing prior pain experiences is critical to understanding the patient's needs as this may affect coping with the current pain condition.
Mood has no effect on pain	The meaning a person associates with pain can play a critical role in the pain experience. Anxiety, fear and depression do not cause pain but can accentuate its perception and decrease coping ability.
Cultural practices and/or spiritual beliefs are not important in management of pain	Many cultural practices and spiritual beliefs can impact pain assessment and management. Health care providers need to incorporate these practices and beliefs into an individualized pain management plan.

C. Effects of Pain: Physiological, Psychological, Spiritual/Cultural

Pain causes physiological, psychological, emotional, and spiritual effects. These effects are variable, depending on an individual's age, past experiences with pain, psychological characteristics, sociocultural background and spirituality.

1. Physiological Effects of Pain

   a. Acute Pain

System	Physiological Effects
Cardiovascular	↑ heart rate, ↑ blood pressure, ↑ cardiac output, ↑ peripheral vascular resistance, ↑ myocardial oxygen consumption.
Respiratory	↓flows and volumes from splinting resulting in tachypnea, bradypnea or apnea, ↓cough, atelectasis, hypoxemia, hypcrcapnea
Gastrointestinal	↓gastric and bowel motility, emesis
Genitourinary	↓ urinary output, urinary retention
Musculoskeletal	fatigue, immobility, muscle atrophy and contractures
Immune	depression of immune system
Cognitive	reduction in cognitive function, mental confusion
Quality of life	sleeplessness, anxiety, fear, hopelessness, depression,

   b. Chronic Pain

Objective, easily measured physiological effects are often absent in chronic pain. However, patients often have fatigue, altered sleep patterns, decreased appetite, and other neuropsychological symptoms.

2. Psychological/Emotional Effects

a. Acute Pain:

Unrelieved acute pain, i.e., procedural related pain, postoperative pain, pain secondary to illness or trauma, may result in both short and/or long term adverse psychological effects. Repetitive painful procedures without adequate analgesia can create anticipatory fear and anxiety. Patients often describe feeling victimized, violated, and even attacked when forced to endure painful procedures without pain control. At higher risk for psychological effects of unrelieved pain are patients with cognitive limitations, or persons with developmental disabilities.

Anxiety often accompanies pain, and is characterized by excessive worrying, restlessness, irritability, muscle tension, disturbed sleep, feeling easily fatigued, and difficulty concentrating. Anxiety is not easily assessed/evaluated in infants and young children but can manifest itself as disturbances in normal sleep patterns, decreased appetite and increased need for parental comfort.

b. Chronic Pain:

Patients with chronic pain have an increased incidence of depression, suicidal ideation, anxiety, somatization, sleep disturbances, substance abuse, and personality disorders. These changes in mood arc often related not only to the pain itself, but also to quality of life changes that often accompany chronic illnesses, such as changes in occupational and/or financial status, role identity, family relationships, and decreased recreational and social interactions.

3. Spiritual/Cultural Effects

The presence of pain and/or its treatment may significantly influence a patient's ability to use his/her faith and or cultural traditions. Patients in pain may exhibit either an increase or decrease in dependence on their faith tradition (e.g. anger at God for allowing pain versus acceptance of pain as evidence of God's care). The side effects of pain medications may prevent a patient from utilizing their faith or cultural practices as fully as they desire. Often, patients may prefer to have some pain as long as they have full ability to use their faith/cultural traditions. Caregivers must be aware of these nuances of pain management and individualize care. In addition, and especially for non-verbal patients, there needs to be careful assessment of the impact of pain and its management on the family's spiritual and cultural framework. A negative impact on the family in this area may significantly affect their ability to support the patient's belief system, particularly when they have the same beliefs.

D. Patient Rights and Responsibilities

Upon admission to MISH every patient and/or family member receives a copy of patient's rights and responsibilities booklet. As health care providers, we need to insure that all patients and families understand that pain assessment and management is a joint responsibility. When patients are unable to speak for themselves because of age, illness, disability or language barriers, we should enlist the support of individuals who can assist in this endeavor. Interpreter Services or language lines are available for this purpose. Involving patients and their families in the pain management process may help facilitate increased comfort and satisfaction with the care provided.

E. Pain Assessment

All patients admitted and cared for within MISH must be screened for the presence of pain. This essential prerequisite to the management of pain should be done:

(1) On initial contact with the patient,
(2) With any change in medical condition,
(3) After providing treatment for pain and

(4) With any complaints of unrelieved pain.

Once it is determined that pain is, or is likely to be present, as many of the following ten components of pain should be incorporated into the initial pain assessment as appropriate and possible:

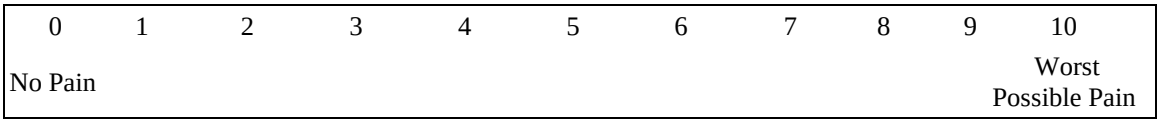
Ten Components	Questions to Ask
1. History of onset	How/when did your pain begin? When was the last time you were pain free?
2. Location	Where exactly is your pain?
3. Quality	What does it feel like (e.g., sharp, dull, burning, cramping)?
4. Intensity	How would you rate your pain now? Pain when it is the least? Pain at the worst? Pain on average? Use an intensity rating scale appropriate to patient's language, developmental and cognitive level
5. Temporal Pattern	Is your pain constant or intermittent? If intermittent, frequency and duration of episodes; variability according to time of day, etc.
6. Aggravating Factors	What factors make your pain worse?
7. Alleviating Factors	What factors decrease your pain?
8. Associated Symptoms	What other sensations are associated with your pain (e.g., nausea, vomiting, dizziness, weakness, incontinence, itching, vasomotor changes)?
9. Previous Methods of Treatment	What treatments have you tried for your pain, e.g., medications, behavioral strategies or alternative therapies such as acupuncture, massage, herbal therapies? How effective have they been?
10. Impact of Pain on Quality of Life (for patients with chronic or recurrent acute pain)	What effect has your pain had on your quality of life? This information may not be feasible to gather on the initial evaluation, due to time or pain intensity, but should be gathered on subsequent contact with the patient. Areas to assess include: mood, sleep, appetite, functional status/activities of daily living.

F. Pain Assessment Tools at MISH

Objective pain assessment is essential to appropriate management of pain. For some patients, only physiologic and physical exam assessments are possible (pre-verbal, neurologically or developmentally compromised, post-anesthesia, etc.). However, for patients who are able to understand and communicate about their pain even in basic ways, a pain assessment tool should be selected that is appropriate to the patient's age and cognitive ability.

A. Most Frequently Used Pain Assessment Tools

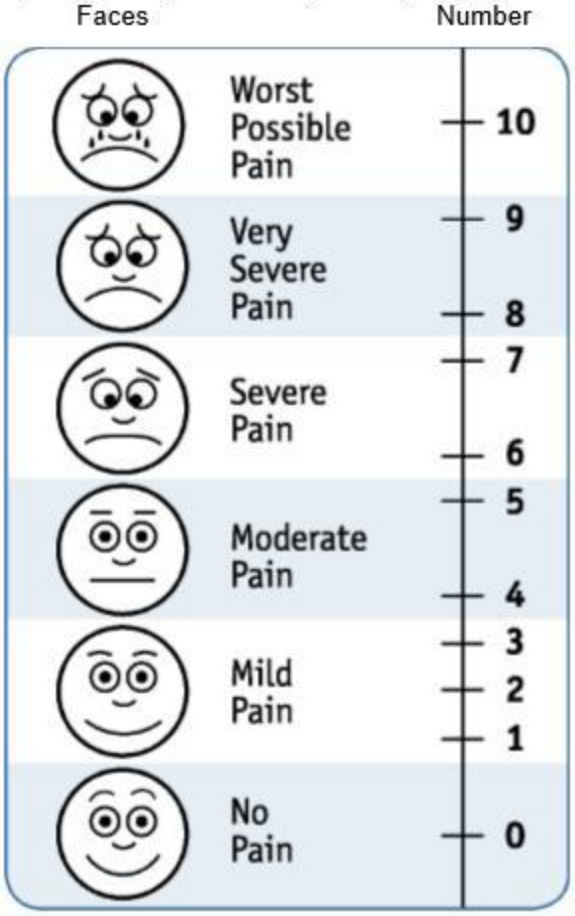
1. Numeric Scale for Pain Intensity (0 - 10):
   For adults who are cognitively and developmentally appropriate. The care provider is to explain to the patient that "0" represents "no pain" and "10" represents "worst possible pain".



2. Wong-Baker Faces Scale (0 - 10):
   For adults who are cognitively or developmentally delayed, and for use with geriatric patients who are unable to use the numeric scale. The care provider is to explain to the patient that the "0" represents "no pain" and the "10" represents "worst possible pain".

Faces Pain Scale

Describe how bad your pain is on a pain scale to help your physician and nurse know if the treatment is working or if a change is needed. Rate your pain on a scale of 0 to 10.
(0 = no pain; 10 = worst possible pain)



G. Pain Treatment Guidelines

A Pain Plan must be formulated and documented in the medical record by the prescribing provider, for:

- Every patient who has or is anticipated to have at least a moderate level of pain, defined as follows:
    1) Numeric Scale Pain > 4/10
    2) Wong-Baker Scale Pain > 4/10
- Every patient who requests that his or her pain be treated (regardless of pain intensity score).

For clear and consistent documentation, the pain management plan needs to be documented in the progress notes or on service specific forms. The plan must address non-pharmacologic and pharmacologic interventions as appropriate to the clinical situation.

H. Types of Pain Treatment Interventions

Four types of pain treatment interventions are briefly described in this section. A more in-depth review/description of each can be found in the Pain/Sedation Resource Manual.

1. Non-pharmacologic Interventions

Non-pharmacologic interventions should always be considered in the treatment of pain. They may be used solely or in combination with pharmacologic interventions.

Intervention	Description
Activity /rest cycling	Alternating periods of activity and rest to reinforce return to normal sleep cycle and provide graduated activity appropriate to functional limitations.
Position changes	Changing position to improve circulation and relieve tense/ constricted muscles.
Distraction techniques	Focusing attention elsewhere, e.g., doing puzzles, video games, listening to music, reading-
Relaxation techniques	Structured training to relax specific muscle groups or for general decrease of anxiety.
Spiritual / pastoral support	Provide relief from pain by strengthening belief systems and providing comfort/support during periods of illness, trauma and/or stress.
* Exercise	Moderate, active exercise to decrease muscle spasm, improve patient functioning and self-image. Physical Therapy consult required for inpatient evaluation, and to initiate home exercise program, as appropriate.
* Cutaneous stimulation	Apply moist or dry heat or cold compresses and massage to aid relaxation and increase circulation.
* Counterstimulation	Transcutaneous electrical nerve stimulation (TENS): small non-invasive device that delivers low voltage electrical stimulation via wires attached to FCG electrodes, placed proximal or directly over the painful site.
** Acupuncture and Acupressure	Insertion of small needles or application of pressure at specific points along 12 meridian zones of the body
** Hypnosis	Using an induced and altered state of consciousness to maximize the individuals control over the perception of pain.

*,**Provider Order and/or Referral Required;

2. Pharmacologic

A wide variety of medications are available for the management of pain.

Medication Class	Indications	Route *	Actions	Potential Side Effects	Examples
Analgesic: Topical	Used for dermal anesthesia on normal intact skin prior to skin punctures. Used in patients with post herpetic neuralgia, diabetic neuropathy, reflex sympathetic dystrophy	Topical: ointment, patch	Stabilize neuronal membranes and block peripheral nerve impulses	Skin irritation (erythema and hives). **With Lidocaine ointment - rare systemic adverse reactions (light-headedness, confusion, nervousness, dizziness) Caution in patients with hepatic disease.	EM LA cream Lidocaine ointment Lidocaine patch (Lidoderm). Patch on for 12hr/off for I2hr
Analgesic: Acetaminophen	Used for mild pain and in combination with stronger pain medications	Oral, rectal	Antipyretic and analgesic	Caution: In patients over 40 kg., liver toxicity potential if taking x 3OOOmg/day	

Analgesic: Non-steroidal Anti-inflammatory INSAIDS)	Used for mild to moderate pain and in combination with stronger pain medications. Ceiling effect; tremendous interpatient variability in response. Around the clock (ATC) dosing for best effect. Use for 7-10 days before changing to another NSAID	Oral, rectal, IV	Reduction of pain r/t soft tissue inflammation or bony destruction	Rash, decreased platelet aggregation, GI irritation, ulceration/bleeding Cautious use in patients with impaired renal function, CHF, liver dysfunction, known GI disease and diabetes.	Cox inhibitors-nonspecific: Aspirin Ibuprofen Ketorolac Naproxen Cox-2 Specific: Rofecoxib Celecoxib
Analgesic: Tramadol	Used for moderate to severe pain.	Oral	Low activity at mu opioid receptors; inhibits noradrenaline and 5HT neuronal reuptake	Nausea, vomiting, rash, itching Caution: increased risk of seizures if concomitant use of MAO inhibitors or neuroleptics. Increased plasma levels if impaired renal function or liver disease	Ultram
Analgesic: Opioids	Used for moderate to severe pain. Can be in combination form with Tylenol /ASA or pure opioid agonist	Oral, rectal, IV, SQ, patch	Block transmission of pain at opioid receptors in the brain, the spinal cord and the GI tract.	Respiratory depression (seen more often with opioid naive patients), •constipation, *nausea, sedation, urinary retention, confu si on/hal 1 uc inations, pruritus, myoclonic jerking. *These adverse effects should be treated pre-emptively, with stool softeners/laxatives or anti-emetic medications respectively.	Hydrocodone Codeine Oxycodone Morphine Hydromorphone Fentanyl Methadone
Antidepressants	Used for neuropathic pain and other chronic pain syndromes, e.g fibromyalgia	Oral	•Exact mechanism of action unknown; hypothesized to augment descending pain inhibitory pathways	Dry mouth, sedation, postural hypotension, tachycardia, blurred vision, constipation, urinary retention Caution in patients with cardiac history, particularly prolonged ORS	Amitriptyline Nortriptyline Dcsipramine Venlafaxine Paroxetine I'luoxelinc
Anticonvulsants	Used for neuropathic pain	Oral	•Exact mechanism of action unknown; hypothesized to stabilize irritable nerve cell membranes to reduce pain transmisson.	Sedation, ataxia, vertigo, blurred vision, slurred speech, nystagmus, blood dyscrasias, altered liver function, skin changes Monitor CBC and liver function tests	Gabapentin Carbamazepine Phenytoin I .amotrigine

Antiarrylhmics	Used for neuropathic pain	Oral	Block transmission of pain impulses	Oral agcnts-GI distress, heartburn, diarrhea, tremor, headache, rash, ataxia	Mexiletine Tocainide
Muscle Relaxants	Useful for pain related to spasm	Oral, IM, IV, IT	Reduce muscle spasm	Sedation, weakness, fatigue, nausea, constipation	Lioresal Cyclobenzaprine Tizanidmc

*Routes: Not all medications in each category available by all routes specified

3. Invasive Modalities

These techniques require advanced training in administration/monitoring of the patient.

Modality	Description
Intravenous analgesia	IV delivery of pain medication by: Continuous dosing Interval dosing Patient Controlled Analgesia (PCA)
Epidural catheters	Local anesthetic and/or opioid delivered via epidural catheter by: Continuous infusion Patient Controlled Epidural Analgesia (PCEA)
Subcutaneous infusion	Subcutaneous infusion of opioid medications for pain management when alternative routes of administration are not effective. Commonly used for cnd-of-life pain management.
Nerve Blocks and Injections: • Axillary block • Celiac plexus blocks • Digital blocks • Dorsal penile block • Facet joint/medial nerve injections • Greater trochanteric bursa injection • Lumbar epidural steroids injection • Sacroiliac joint injection • Trigger point injection	Injection of local anesthetics and/or steroids into a specific area of the body to provide analgesia and/or anesthesia.
Sympathetic nerve blocks: • Stellate ganglion block • Lumbar sympathetic block	Injection of local anesthetic into the sympathetic nerve plexus to temporarily block the sympathetic nervous system in that area. Useful in Chronic Regional Pain Syndrome and peripheral vascular insufficiency patients.
Neuroablalive procedures	Injection of neurolytic agents, cryo or radio-frequency ablation of different neural structures for pain relief.
Spinal cord stimulation	Stimulation of dorsal column of spinal cord via internal nerve stimulator to block pain sensation.
Implanted intrathecal infusion pump	Infusion of medication (e.g. opioid, local anesthetic, or lioresal) via catheter into the subarachnoid space for the management of pain or spasticity.

I. Documentation Standards

As stated previously, a screen/assessment of a patient's pain must be consistently and carefully documented. Each patient care area has incorporated a place for this screen/assessment on their standard patient care assessment forms. The pain screen/assessment must be documented for each patient during the admission process to the hospital or

potentially at an outpatient visit. In addition, the prescribing provider should document their assessment/management of pain in the initial admission/outpatient note and subsequent notes as appropriate.

For hospitalized patients: When pain has been assessed as moderate to severe, interventions need to be documented and the pain reassessed at appropriate time intervals after the intervention. This will be documented on unit-specific patient care forms.

For ambulatory patients: When pain is present and assessed to be moderate to severe, the prescribing providers' recommendations for helping the patient manage pain should be documented as a part of the treatment plan. After implementation of the plan, re-assessment with documentation may occur with follow-up telephone contact or during a scheduled follow-up appointment.