MODERATE

UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.

0 1 2 3 4 5 6 7 8 9 10

Verbal Descriptor Scale	NO PAIN	MILD PAIN	MODERATE PAIN	MODERATE PAIN	SEVERE PAIN	WORST PAIN POSSIBLE
WONG-BAKER FACIAL GRIMACE SCALE						
	Alert Smiling	No humor serious flat	Furrowed brow pursed lips breath holding	Wrinkled nose raised upper lips rapid breathing	Slow blink open mouth	Eyes closed moaning crying
ACTIVITY TOLERANCE SCALE	NO PAIN	CAN BE IGNORED	INTERFERES WITH TASKS	INTERFERES WITH CONCENTRATION	INTERFERES WITH BASIC NEEDS	BEDREST REQUIRED
SPANISH	NADA DE DOLOR	UNPOQUITO DE DOLOR	UN DOLOR LEVE	DOLOR FUERTE	DOLOR DEMASIADO FUERTE	UN DOLOR INSOPORTABLE
TAGALOG	Walang Sakit	Konting Sakit	Katamtamang Sakit	Matinding Sakit	Pinaka-Matinding Sakit	Pinaka-Malalang Sakit
CHINESE	不痛	輕微	中度	嚴重	非常嚴重	最嚴重
KOREAN	통증 없음	약한 통증	보통 통증	심한 통증	아주 심한 통증	최악의 통증
PERSIAN (FARSI)	بدون درد	درد ملایم	درد معتدل	درد شدید	درد بسیار شدید	بدترین درد ممکن
VIETNAMESE	Không Đau	Đau Nhẹ	Đau Vừa Phải	Đau Nặng	Đau Thật Nặng	Đau Đớn Tận Cùng
JAPANESE	痛みがない	少し痛い	いくらか痛い	かなり痛い	ひどく痛い	ものすごく痛い

Richmond Agitation-Sedation Scale

	Target RASS Value	RASS Description
+4	Combative	Combative, violent, immediate danger to staff
+3	Very Agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2	Agitated	Frequent non-purposeful movement, fights ventilator
+1	Restless	Anxious, apprehensive but movements are not aggressive or vigorous
0	Alert and Calm	
-1	Drowsy	Not fully alert, but has sustained awakening to voice (eye opening & contact **greater** than 10 seconds)
-2	Light Sedation	Briefly awakens to voice (eye opening & contact **less** than 10 seconds)
-3	Moderate Sedation	Movements or eye opening to voice (but **NO** eye contact)
-4	Deep Sedation	No response to voice, but has movement or eye opening to physical stimulation
-5	Unarousable	No response to voice or physical stimulation

ANTICIPATE SEDATION ≤ 72 HOURS	ANTICIPATE SEDATION > 72 HOURS	PATIENT HAS RENAL IMPAIRMENT
Midazolam	Lorazepam	Lorazepam
Propofol		Propofol

Signs & Symptoms of Withdrawal

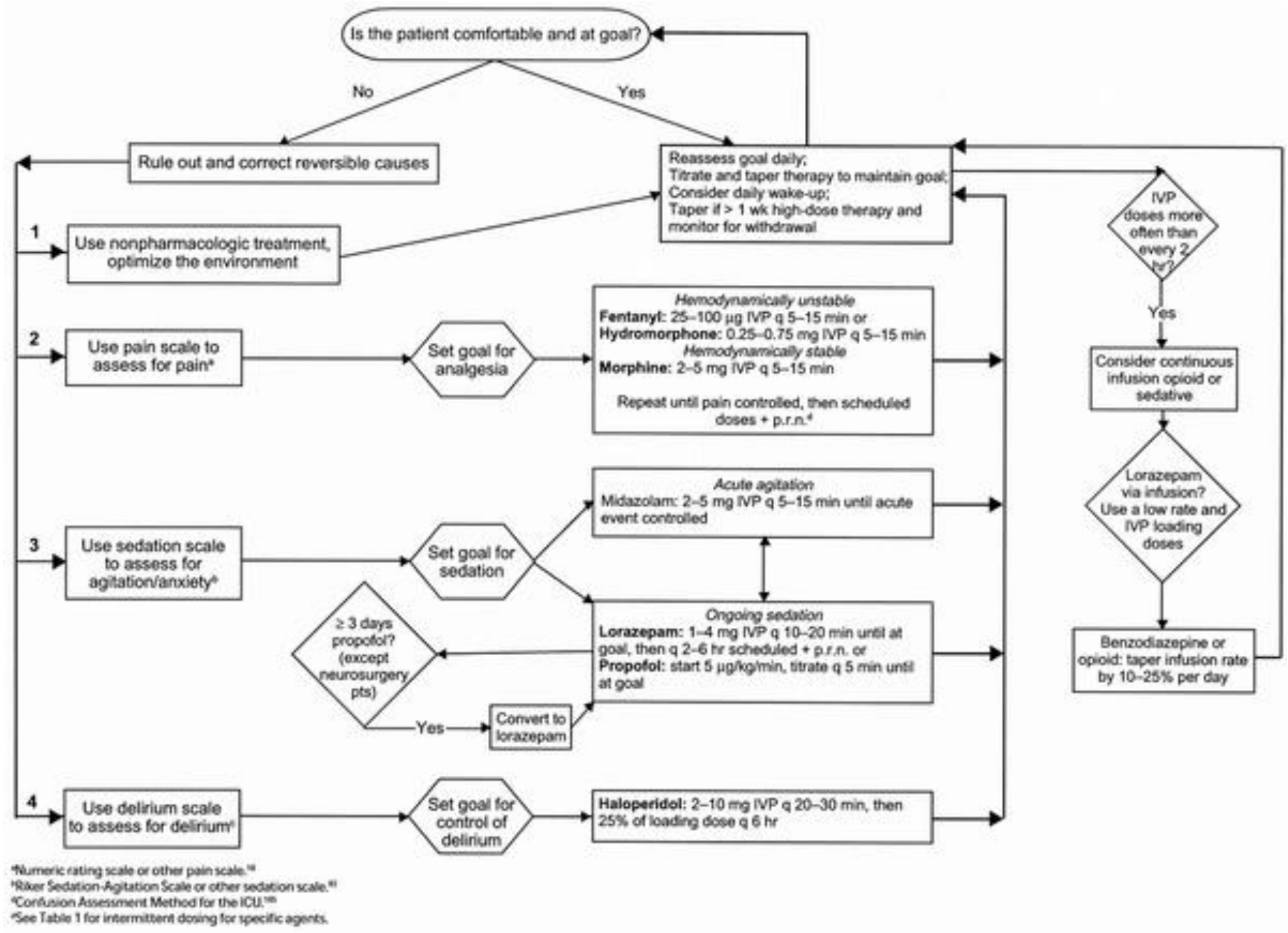
Pupil dilitation	Vomiting
Sweating	Diarrhea
Lacrimation	Hypertension
Rhinorea	Fever
Piloerection	Tachypnea

SEDATIVE CONVERSION TABLE

Drug	Infusion Rate	Recommended Lorazepam Starting Dose	
		IV Infusion Rate	OR Scheduled IV Bolus
Midazolam	≥ 10 mg/hr	4 mg/hr	
	6 – 9.9 mg/hr	3 mg/hr	
	4 – 5.9 mg/hr	2 mg/hr	4 mg IV q2h
	2 – 3.9 mg/hr	1 mg/hr	2 mg IV q2h
Propofol	45 – 60 mcg/kg/min	4 mg/hr	
	30 – 44 mcg/kg/min	3 mg/hr	
	15 – 29 mcg/kg/min	2 mg/hr	
	< 15 mcg/kg/min		1 mg IV q2h

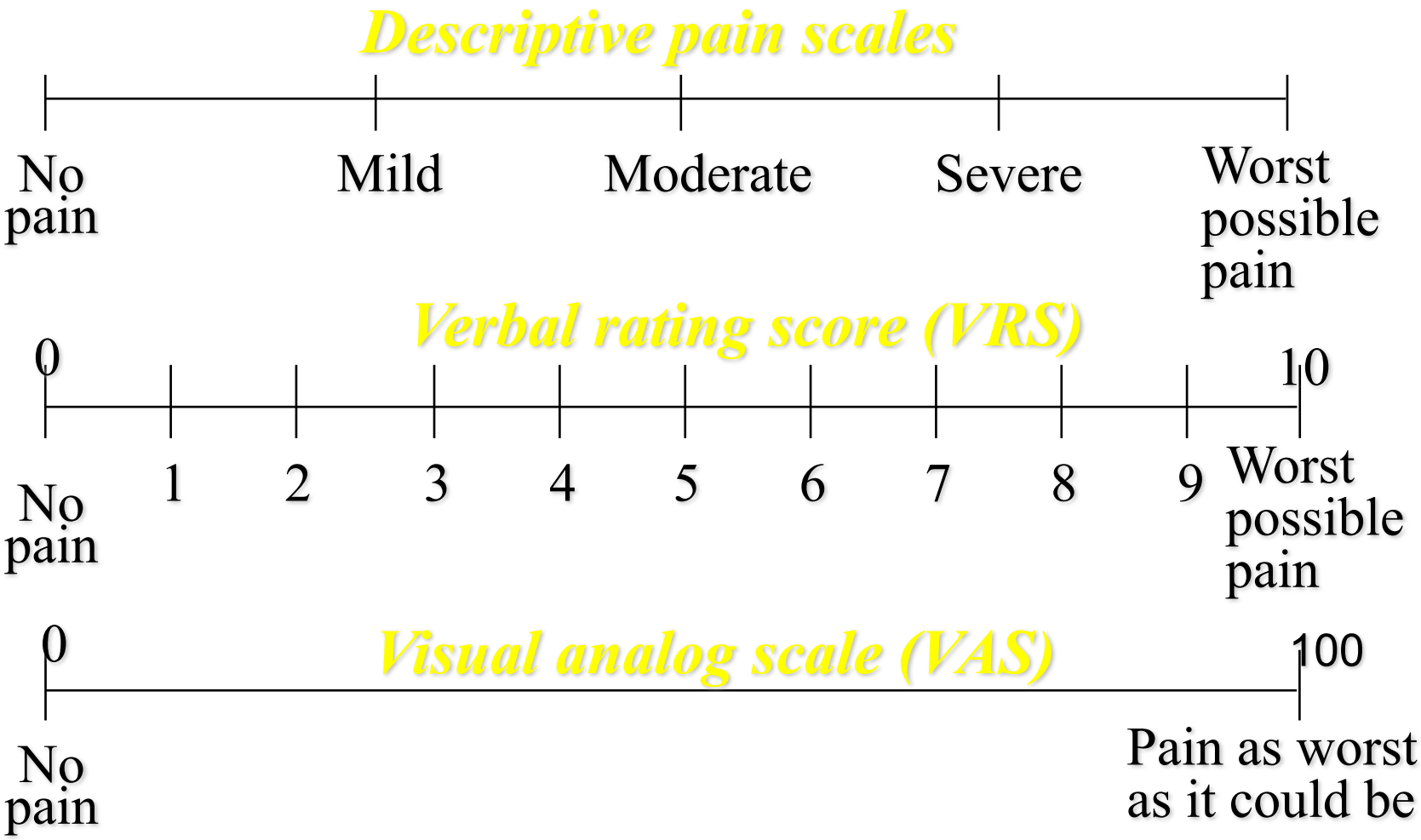
Analgesic Selection

HEMODYNAMICALLY STABLE	**HEMODYNAMICALLY UNSTABLE**	**RENAL IMPAIRMENT**
Morphine	Fentanyl	Hydromorphone
Hydromorphone		Fentanyl
Fentanyl		



[a]Numeric rating scale or other pain scale.[18]
[b]Riker Sedation-Agitation Scale or other sedation scale.[61]
[c]Confusion Assessment Method for the ICU.[105]
[d]See Table 1 for intermittent dosing for specific agents.

Pain Intensity Scales



Pharmacology of selected analgesics

Agent	Equianalgesic Dose	Half-life	Metabolic pathway	Active metabolites	Adverse effects
Fentanyl	200µg	1.5-6 hr	Oxidation	No	Rigidity with high doses
Hydromorphone	1.5mg	2-3 hr	Glucuronidation	None	…
Morphine	10mg	3-7 hr	Glucuronidation	Yes	Histamine release
Meperidine	75-100mg	3-4 hr	Hydroxylation	Yes	Avoid with MAOIs and SSRIs
Ketorolac	…	2.4-8.6 hr	Renal	None	Risk of bleeding, GI and renal adverse effects
Ibuprofen	…	1.8-2.5 hr	Oxidation	None	Risk of bleeding, GI and renal adverse effects
Acetaminophen	…	2 hr	Conjugation	…	…

Pharmacology of selected sedatives

Agent	Onset after IV dose	Half-life of parent compound	Metabolic pathway	Active metabolite	Unique adverse effects
Diazepam	2-5 min	20-120 hr	Desmethylation and hydroxylation	Yes	Phlebitis
Lorazepam	5-20 min	8-15 hr	Glucuronidation	None	Solvent-related acidosis/renal failure in high doses
Midazolam	2-5 min	3-11 hr	Oxidation	Yes	
Propofol	1-2 min	26-32 hr	Oxidation	None	Elevated triglycerides, pain on injection
Haloperidol	3-20 min	18-54 hr	Oxidation	Yes	QT interval prolongation

Analgesia

- Defined as the blunting of absence of sensation of pain or noxious stimuli

Anxiety

- As many as 90% of ICU patients experience anxiety
- Characterized by a sense of foreboding, worry or doom
- Often out of proportion to the actual risk to the patient
- Amplified by pain

Agitation

- Strong or tumultuous emotion
- Violent motion
- Common in the ICU (71% of patients)
- May have deleterious effects on ICU care
  - Unplanned self extubation, central line removal, injury to the patient or staff
  - Lengthened ventilator and ICU days

Agitation Syndrome

- ***Defined by a combination of anxiety and increased motor activity***

- Agitated patients exhibit continual movement
  - Restlessness, moving side to side, pulling objects
  - Vital signs are elevated, increase in the metabolic rate
  - Ventilator desynchronization
- Remain disoriented in one or several dimensions
  - There may be total lack of awareness
  - Intermittent irrational thoughts, rambling conversation, shouting out or unable to follow commands

Factors contributing to agitation

- Pain – post operative
- Hypoxemia
- Medications – singular or interaction
- Brain injury - traumatic, bleeds, infection
- Mechanical ventilation -
- Co morbid disease – substance use or withdrawal (drugs, alcohol and nicotine)
- Delirium

Risk Factors for agitation

Risk Factors	**Odds Ratio**
• Age ≥ 65	• 2.21
• Medical causes of ICU admission	• 3.04
• Sepsis	• 2.61
• Alcohol abuse	• 3.32

Jaber S, A prospective study of agitation in a medical-surgical ICU-incidence, risk factors and outcomes. Chest 2005;4:128

Risk Factors for agitation

Risk Factors	**Odds Ratio**
• Use of sedatives > 48 hours before agitation	• 4.03
• Fever (>38.0)	• 4.52
• Sodium abnormalities – (≤ 134 or ≥143 meq/l)	• 4.95
• Long term use of psychoactive drugs	• 5.63

Jaber S, A prospective study of agitation in a medical-surgical ICU-incidence, risk factors and outcomes. Chest 2005;4:128

Sedation

- The process of establishing a state of mental relaxation or well being
- Alleviate a patient's sense of anxiety
- It may involve an alteration of a patient's level of consciousness
- May require the use of amnesic drugs to lessen a patient's ICU recall

Recommendation-sedation

- A sedation goal or endpoint should be established and regularly redefined for each patient
- The use of a validated sedation assessment scale
- All caregivers should use the same scale

Assessment

- Society of Critical Care Medicine and the Joint Accreditation for Hospitals endorse a method of systematically evaluating a patients level of agitation, sedation and pain control
- Titration of medications need to standardized so that all caregivers may speak a “universal language”

    - *Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult. Crit Care Med 2002;30*

Recommendations

- Analgesia - all patient's have the right to adequate analgesia and pain management
- Sedation of a critically ill patient should be started only after adequate pain control is achieved
- All reversible physiologic causes are corrected

Pain

- Pain assessment and response to therapy should be performed regularly by using a scale appropriate to the patient population
- Patient's not able to communicate should be assessed by subjective observation of pain-related behaviors
  - Movement, facial expression, respiratory rate pulse and blood pressure

Withdrawal of sedatives or analgesic agents

- At risk patients
  - ICU stay greater than 7 days
  - Mechanical ventilation
  - Drug use of lorazepam > 35 mg/day or fentanyl > 5 mg/day (or equivalent doses or other medications)
  - Patients with prior substance usage

- Drug reduction – 5-10% per day

  - *Cammarano WB, Acute withdrawal syndrome related to the administration of analgesic and sedative medications in adult ICU patients. Crit Care Med 1998;26:676-84*

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