CPP TCCC

COMBAT PARAMEDIC/ PROVIDER

TACTICAL COMBAT CASUALTY CARE COURSE

MODULE 15: PAIN MEDICATIONS (ANALGESIA)

Committee on Tactical Combat Casualty Care (CoTCCC)

TCCC TIER 1
All Service Members

TCCC TIER 2
Combat Lifesaver

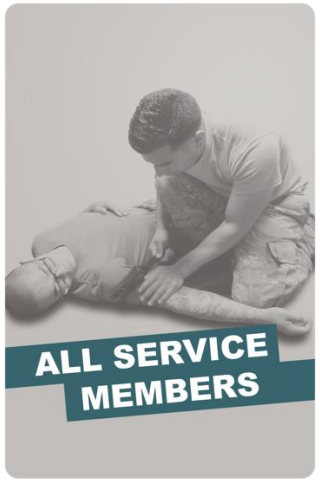
TCCC TIER 3
Combat Medic/Corpsman

TCCC TIER 4
Combat Paramedic/Provider

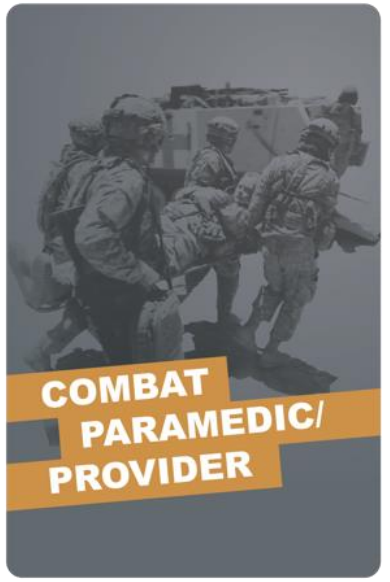
TACTICAL COMBAT CASUALTY CARE (TCCC) ROLE-BASED TRAINING SPECTRUM

ROLE 1 CARE

NONMEDICAL PERSONNEL



MEDICAL PERSONNEL



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STANDARDIZED JOINT CURRICULUM

Module 15: Pain Medications (Analgesia)

1 x TERMINAL LEARNING OBJECTIVE

17 Given a combat or noncombat scenario, perform analgesia administration during Tactical Field Care in accordance with CoTCCC Guidelines.

- **17.1** Identify the indications and considerations of analgesia approaches in Tactical Field Care.
- **17.2** Describe the indications, contraindications, dosage, route, and administration methods of oral acetaminophen in Tactical Field Care.
- **17.3** Describe the indications, contraindications, dosage, route, and administration methods of oral meloxicam in Tactical Field Care.
- **17.4** Demonstrate the administration of a combat wound medication pack in Tactical Field Care.
- **17.5** Describe the indications, contraindications, dosage, route, and administration methods of ondansetron in Tactical Field Care.
- **17.6** Describe the indications, contraindications, dosage, route, and administration methods of oral transmucosal fentanyl citrate lozenges in Tactical Field Care.
- **17.7** Demonstrate the preparation and administration of a transmucosal medication in Tactical Field Care.
- **17.8** Describe the indications, contraindications, dosage, route, and administration methods of fentanyl in Tactical Field Care.

16 x ENABLING LEARNING OBJECTIVES

Module 15: Pain Medications (Analgesia)

1 x TERMINAL LEARNING OBJECTIVE

17 Given a combat or noncombat scenario, perform analgesia administration during Tactical Field Care in accordance with CoTCCC Guidelines.

- **17.9** Describe the indications, contraindications, dosage, route, and administration methods of ketamine in Tactical Field Care.
- **17.10** Describe the indications, contraindications, dosage, route, and administration methods of naloxone in Tactical Field Care.
- **17.11** Demonstrate the preparation and administration of an intranasal medication in Tactical Field Care.
- **17.12** Demonstrate the preparation and administration of an intramuscular medication injection in Tactical Field Care.
- **17.13** Demonstrate the preparation and administration of an intravenous/intraosseous medication injection in Tactical Field Care.
- **17.14** Identify the indications, considerations, and approaches to sedation in Tactical Field Care.
- **17.15** Demonstrate the preparation, administration, and management of procedural or analgesic sedation in Tactical Field Care.
- **17.16** Identify any evidence-based medicine, best practices, casualty data, and Subject Matter Expert consensus on the indications, contraindications, and administration methods of analgesia in Tactical Field Care.

16 x ENABLING LEARNING OBJECTIVES

MARCH PAWS

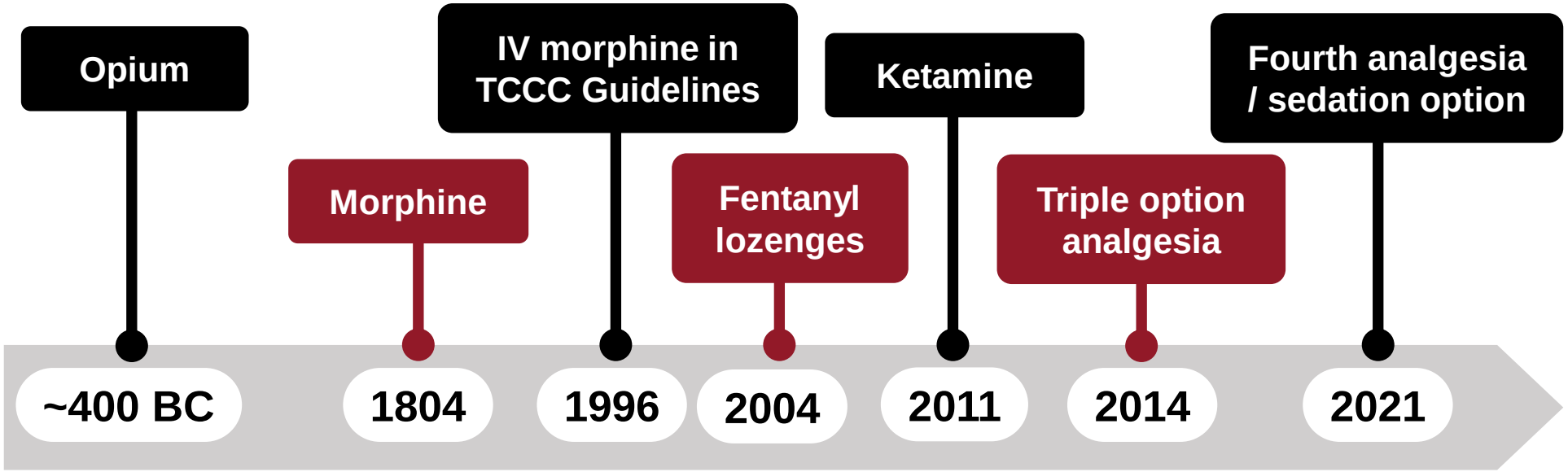
LIFE-THREATENING

- **M** MASSIVE BLEEDING — #1 Priority
- **A** AIRWAY
- **R** RESPIRATION *(Breathing)*
- **C** CIRCULATION
- **H** HYPOTHERMIA / HEAD INJURIES

AFTER LIFE-THREATENING

- **P** PAIN
- **A** ANTIBIOTICS
- **W** WOUNDS
- **S** SPLINTING

BATTLEFIELD ANALGESIA

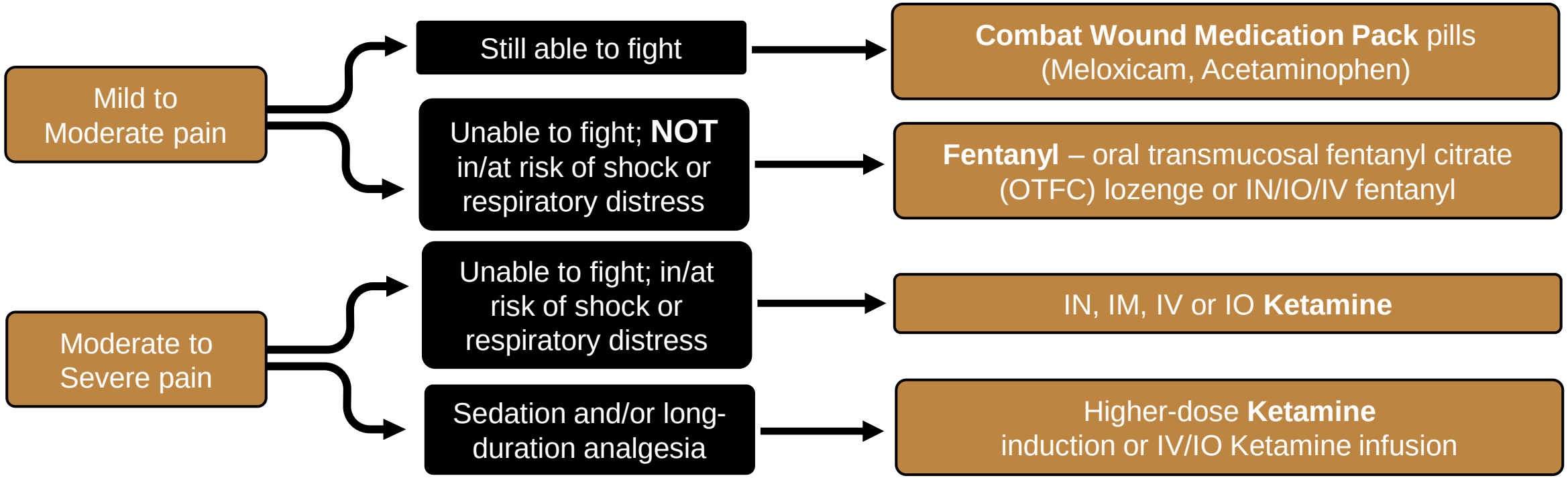


Objectives of **PAIN MANAGEMENT**:

- Reduce pain to a tolerable level while still protecting the casualty's airway and mentation
- Allow casualties to return to the fight, when possible

PAWS

APPROACH TO ANALGESIA IN TACTICAL FIELD CARE



Note: Routine use of morphine or benzodiazepines is **NOT** recommended for analgesia

PAWS

ADMINISTRATION METHODS FOR PAIN MEDICATIONS

Route of Administration	Advantages	Disadvantages
Oral	Self-administration; no IV access needed	First-pass effect may reduce efficacy; delayed onset of action
Transmucosal	No IV access needed; rapid absorption	Requires casualty education on use; dose options may be limited
Intranasal (IN)	No IV access needed; rapid absorption	Impractical with nasal/facial trauma
Intramuscular (IM)	No IV access needed; may be absorbed slowly and have longer duration	Less predictable or incomplete dose delivery; delayed delivery with tissue perfusion compromise (shock)
Intravenous (IV)	Rapid (direct) medication delivery	IV access takes time; risk of overmedication; IV complication risks
Intraosseous (IO)	Rapid (direct) medication delivery	IO access takes time; risk of overmedication; IO complication risks

The **SIX *RIGHTS***:

- ✓ **RIGHT** patient
- ✓ **RIGHT** medication
- ✓ **RIGHT** dose and concentration
- ✓ **RIGHT** time
- ✓ **RIGHT** route of administration
- ✓ **RIGHT** documentation

COMBAT WOUND MEDICATION PACK (CWMP)

The **CWMP** should be used by **all Service members** who are still able to fight with mild to moderate pain

Meloxicam

- COX-2 inhibitor non-steroidal anti-inflammatory (NSAID)
- 15 mg tablet once a day

Acetaminophen

- Two 500 mg tablets
- Extra strength – up to 8 hours analgesia

DOD Trauma Registry study

Only 84 of 11,665 casualties took CWMP (<1%)

Emphasize to your unit that CWMP helps maintain tactical superiority and accomplish mission

- No sedation or altered consciousness - casualty can stay engaged in the mission
- **CWMP** should be self-administered, but might require prompt from **first responders** or **medical personnel**

Note: Aspirin and other NSAIDs cause platelet dysfunction for up to several days – do NOT use before/while deployed

Level of Evidence: C-LD

PAWS

ACETAMINOPHEN ADMINISTRATION

DOSAGE(S):

- **500 mg,** 2 PO every 8 hours

ROUTE(S):

- *Acetaminophen is available in PO form*

INDICATIONS:

- For **mild to moderate** pain management in a casualty that is still able to fight

CONTRAINDICATIONS:

- Hypersensitivity

POTENTIAL SIDE EFFECTS:

- Rash, nausea, vomiting, dizziness, lethargy, diaphoresis, chills or abdominal pain with acute poisoning, elevated LFTs, hypoglycemia and hepatorenal failure with hepatic toxicity

DRUG INTERACTIONS:

- Cholestyramine may decrease absorption
- Barbiturates, carbamazepine, phenytoin, rifampin, and excessive alcohol use may increase potential for hepatotoxicity

ONSET/PEAK/DURATION:

- 20-45 min/1-2 hr/3-4 hr

TACTICAL CONSIDERATIONS:

- Minimal to no mission impact; DO NOT give to K-9 casualties

PAWS

MELOXICAM ADMINISTRATION

DOSAGE(S):

- **15 mg** tablet PO daily

ROUTE(S):

- *Meloxicam is available in PO form*

INDICATIONS:

- For **mild to moderate** pain management in a casualty that is still able to fight

CONTRAINDICATIONS:

- NSAID or salicylate hypersensitivity, asthma, severe renal or hepatic disease

POTENTIAL SIDE EFFECTS:

- Edema, flu-like syndrome, abdominal pain, diarrhea, dyspepsia, nausea, ulceration, GI bleed, anemia, headache or insomnia

DRUG INTERACTIONS:

- Decreased effect of ACE inhibitors and diuretics, increased lithium levels and toxicity, increased GI bleed risk with aspirin and warfarin

ONSET/PEAK/DURATION:

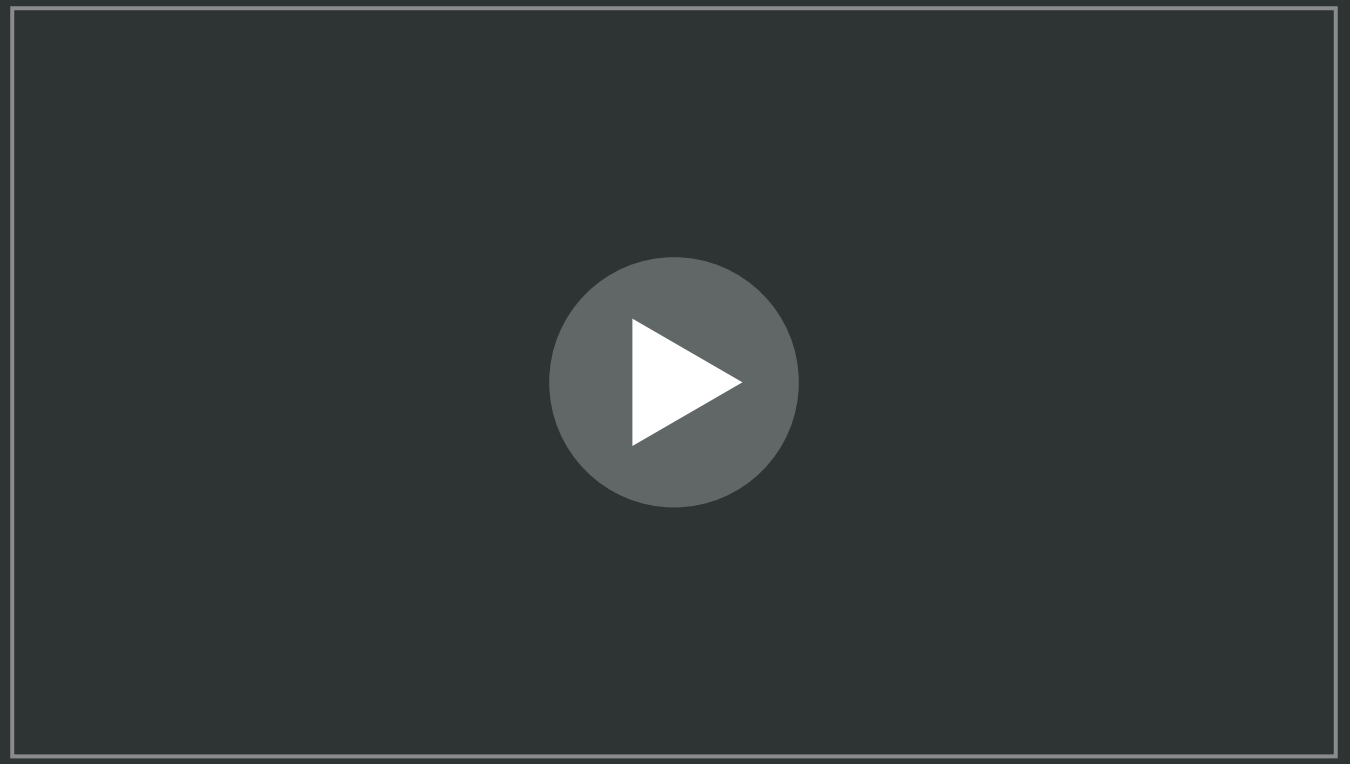
- 30-60 min/5-6 hr/20-24 hr

TACTICAL CONSIDERATIONS:

- Minimal to no mission impact;
  DO NOT give to K-9 casualties

PAWS

ORAL MEDICATION ADMINISTRATION



Video can be found on deployedmedicine.com

TRANSMUCOSAL MEDICATION ADMINISTRATION

ADVANTAGES
of transmucosal delivery:

- Rapid absorption (highly vascular tissues that are very permeable)
- Lack of first pass effect
- Can administer without IV or IO access or performing IM injection

⚠ Swallowing a transmucosal medication reduces its efficacy

Buccal mucosa vs. GI Tract

⚠ Do **NOT** allow casualty to eat or drink during administration

Oral transmucosal **delivery options**:

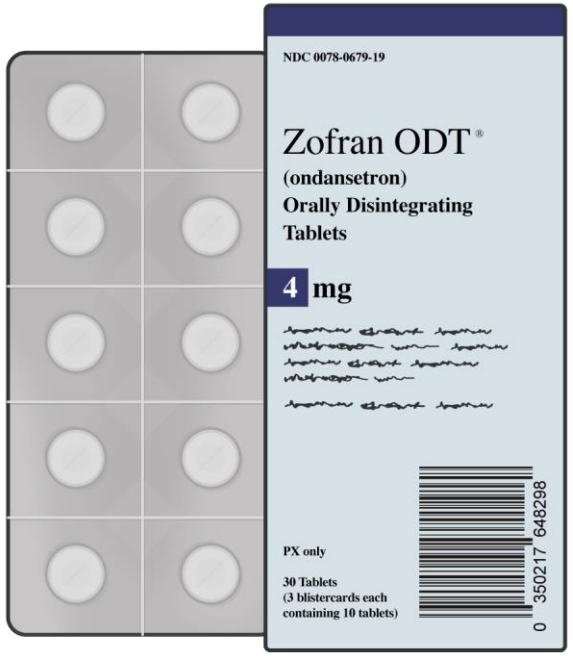
- **Sublingual** – medication placed under the tongue where it dissolves
- **Transbuccal** – medication held between cheek and gums
  Delivery enhanced by moving medication around or side-to-side
- **Translingual** – medication applied or placed on the top of the tongue
  Allow for dissolution and avoid swallowing until dissolved, as tolerated

PAWS

ONDANSETRON INDICATIONS AND ADMINISTRATION

Ondansetron **4 mg** oral disintegrating tablet (ODT) administration

- No need for IV or IO access
- Applied translingually by placing pill on top of tongue
- Advise the casualty NOT to swallow (don't take orally)



Ondansetron is also available in a parenteral form (IV, IM, or IO)

ADVANTAGES:

- Lack of sedation or mental status alteration
- No respiratory depression
- No hypotension

ADVERSE EFFECTS *of other antiemetics*:

- Sedation
- Respiratory depression
- Cognitive impairment

Level of Evidence: A

PAWS

ONDANSETRON ADMINISTRATION

DOSAGE(S):

- Ondansetron (ODT) **4 mg** q 8 hrs, repeat after 15 min for persistent symptoms, no more than 8 mg/8 hr time block

ONSET/PEAK/DURATION:

- 20 sec - 4 min (IV<IO<translingual<IM) / 10-40 min/4 hr

INDICATIONS:

- Prevention and management of nausea and vomiting associated with pain management medications

CONTRAINDICATIONS:

- Hypersensitivity

POTENTIAL SIDE EFFECTS:

- Dizziness, lightheadedness, headache, sedation, diarrhea, constipation, dry mouth

TACTICAL CONSIDERATIONS:

- Applied translingually by placing pill on top of tongue
- Advise the casualty NOT to swallow (don't take orally)

PAWS

FENTANYL INDICATIONS AND CONTRAINDICATIONS

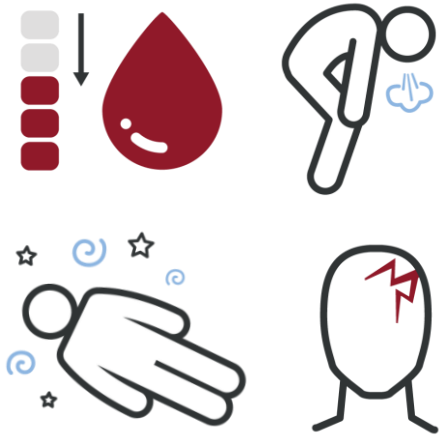
INDICATIONS

Fentanyl is the medication of choice for a casualty in mild to moderate pain who **IS NOT** in shock or respiratory distress or at significant risk of developing either condition

CONTRAINDICATIONS

(applicable for all opioids):

- Hypovolemic shock
- Respiratory distress
- Unconsciousness
- Severe head injury



Ketamine should be used if one of these contraindications exist

Level of Evidence: A

TREATMENT END POINTS:

- Pain reduction (to tolerable level)
- No respiratory compromise, signs of shock or altered mentation

MANAGEMENT CONSIDERATIONS:

- Have naloxone ready to treat any overdose
- Disarm and remove comm equipment from casualties receiving fentanyl
- Assess mental status prior to fentanyl administration (AVPU)

PAWS

ORAL TRANSMUCOSAL FENTANYL CITRATE (OTFC)

DOSAGE(S):

- **First Dose 800 mcg** of **FENTANYL OTFC**
- **Second Dose** may be repeated after **15 mins**, if pain uncontrolled by first dose

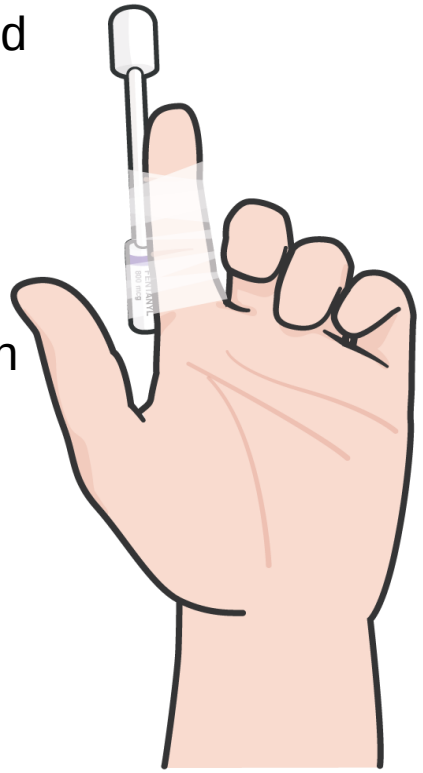
ROUTE(S):

- *OTFC is administered transmucosally – place between the cheek and gum (Transbuccal)*

⚠ Administering OTFC in a prehospital setting is an off-label use (not FDA approved), but consistent with expert panel recommendations

OTFC ADMINISTRATION:

- Place between transbucally - cheek and gum
- **DO NOT** chew or swallow
- Tape lozenge-on-a-stick to casualty's finger OR attach to the casualty's uniform or plate carrier with a safety pin and rubber band
- Reassess in 15 minutes
- Use second lozenge, in other cheek, if pain is uncontrolled
- Monitor for respiratory depression



ℹ Level of Evidence: A

PAWS

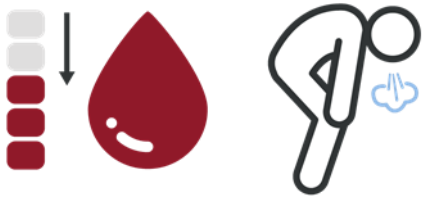
OTFC ADMINISTRATION cont.

INDICATIONS:

Fentanyl is the medication of choice for a casualty in mild to moderate pain who **IS NOT** in shock or respiratory distress or at significant risk of developing either condition

CONTRAINDICATIONS:

- Hypovolemic shock
- Respiratory distress



Ketamine should be used if one of these contraindications exist

POTENTIAL SIDE EFFECTS:

Sedation, euphoria, bradycardia, hypotension, circulatory depression, miosis, blurred vision, nausea, vomiting, laryngospasm, bronchoconstriction or respiratory depression

PAWS

OTFC ADMINISTRATION cont.

DRUG INTERACTIONS:

- Alcohol and other CNS depressants potentiate effects
- MAOIs may precipitate hypertensive crisis

ONSET/PEAK/DURATION:

- 15-60 sec (<transmucosal)/20 sec to 4 min/1-2 hr

TACTICAL CONSIDERATIONS:

- Casualty weapons, communications and sensitive equipment should be secured
- Alterations in mental status can adversely affect assessment for shock and/or traumatic brain injury

TREAMENT END POINTS:

- Pain reduction (to tolerable level)
- No respiratory compromise, signs of shock or altered mentation

ADVANTAGES:

- Rapid analgesia **without** an IV
- Saves time
- Low-light IV access difficult even with NVGs
- Safeguards resources for casualties who might need them

800 mcg of **FENTANYL** provided equivalent pain control to **10 mg** of **MORPHINE**

PAWS

SKILL STATION

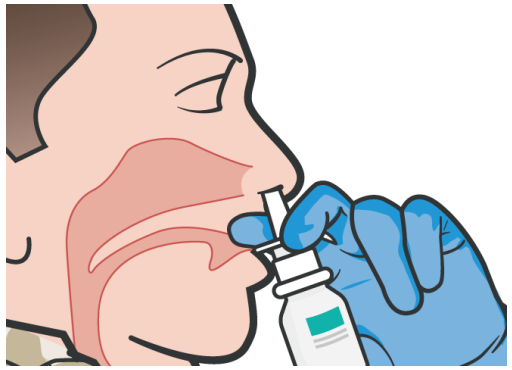
CWMP and Transmucosal Medication Administration

- Combat Wound Medication Pack (CWMP)
- Translingual Ondansetron Oral Disintegrating Tablet (ODT) Administration
- Transbuccal OTFC Lozenge Administration

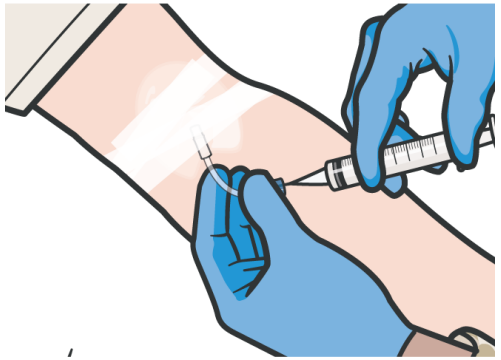
ADMINISTRATION OF FENTANYL IN TACTICAL FIELD CARE

FENTANYL Routes of Administration

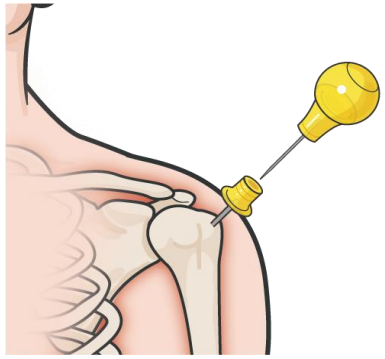
Oral transmucosal



Intranasal **(IN)**



Intravenous **(IV)**



Intraosseous **(IO)**

Parenteral FENTANYL Dosing in TFC

- **50 mcg** (0.5-1 mcg/kg) IV/IO, may repeat q 30 min prn
- **100 mcg** IN, may repeat q 30 min prn

INDICATIONS:

Fentanyl is the medication of choice for a casualty in mild to moderate pain who **IS NOT** in shock or respiratory distress or at significant risk of developing either condition

ONSET/PEAK/DURATION:

- IV: Immediate/5-15mins/30-60min
- IN: 7mins/9-15mins/60mins

DRUG INTERACTIONS:

- Alcohol and other CNS depressants potentiate effects
- MAOIs may precipitate hypertensive crisis

FENTANYL ADMINISTRATION cont.

INTRANASAL ADVANTAGES:

- Rapid analgesia **without** an IV
- Saves time
- Low-light IV access difficult even with NVGs
- Safeguards resources for casualties who might need them

TREATMENT END POINTS:

- Pain control
- Hypotension/signs of shock, respiratory compromise

CONTRAINDICATIONS:

- Hypovolemic shock / Respiratory distress
- **KETAMINE** should be used if one of these contraindications exist

Level of Evidence: A

POTENTIAL SIDE EFFECTS:

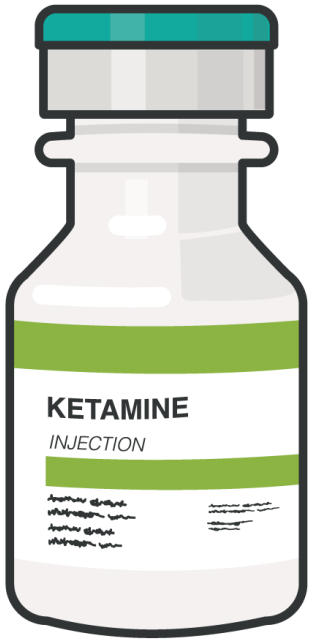
- Sedation, euphoria, bradycardia, hypotension, circulatory depression, miosis, blurred vision, nausea, vomiting, laryngospasm, bronchoconstriction or respiratory depression

MANAGEMENT CONSIDERATIONS:

- Disarm and remove comm equipment
- Assess mental status prior to fentanyl administration (AVPU)
- Monitor airway and breathing
- Have naloxone ready to administer for suspected overdose

PAWS

KETAMINE INDICATIONS AND CONTRAINDICATIONS



KETAMINE is the medication of choice for a casualty in moderate to severe pain and/or who **IS** in shock or respiratory distress or at significant risk of developing either condition

ADVANTAGES (compared to opioids):

- Equivalent pain relief
- Doesn't contribute to hypotension
- No respiratory depression
- Can safely be used as an adjunct to fentanyl

CONTRAINDICATIONS:

- Prior known allergy
- Not related to military population – age under 3 or schizophrenia

SIDE EFFECTS:

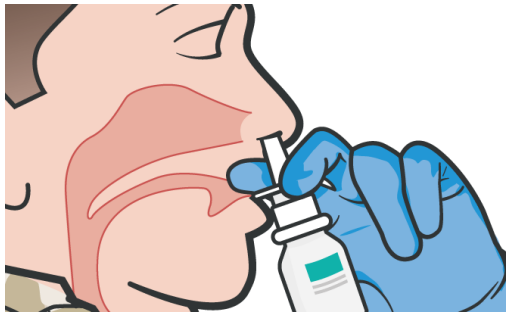
- Well tolerated at analgesia doses
- Sedation, dissociation, or emergence reactions at higher doses used in anesthesia

KETAMINE can be safely used in head and eye injuries despite prior concerns over a potential increase ocular/cerebral pressures

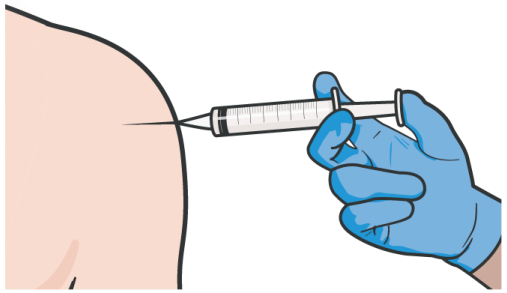
Level of Evidence: B-R

KETAMINE ADMINISTRATION IN TACTICAL FIELD CARE

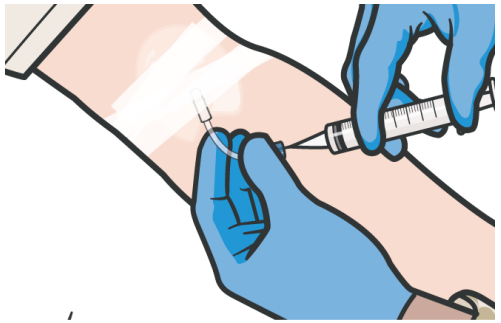
KETAMINE Routes of Administration



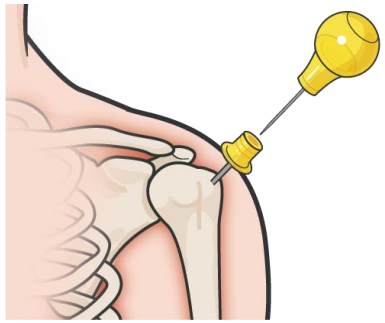
Intranasal **(IN)**



Intramuscular **(IM)**



Intravenous **(IV)**



Intraosseous **(IO)**

Level of Evidence: B-R

KETAMINE Dosing in TFC

- **20-30 mg** (0.2-0.3 mg/kg) slow IV or IO push (over one minute), then repeat q 20 mins prn
- **50-100 mg** (0.5-1 mg/kg) IM or IN, then repeat q 20-30 mins prn

KETAMINE Dosing in long duration analgesia

- **0.3 mg/kg slow IV/IO** infusion in 100mL 0.9% sodium chloride (over 5-15 mins), then q 45 min prn

MANAGEMENT CONSIDERATIONS:

- Disarm and remove comm equipment
- Assess mental status prior to ketamine administration (AVPU)
- Monitor airway and breathing

KETAMINE ADMINISTRATION cont.

POTENTIAL SIDE EFFECTS:

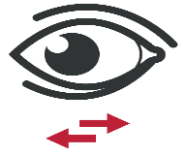
- Well tolerated at analgesia doses
- Sedation, dissociation, or emergence reactions at higher doses used in anesthesia

ADVERSE EFFECTS:

- Well tolerated at analgesia doses
- Sedation, dissociation, or emergence reactions at higher doses used in anesthesia
- Nausea
- Headache

TREATMENT END POINTS:

- Pain control
- Nystagmus

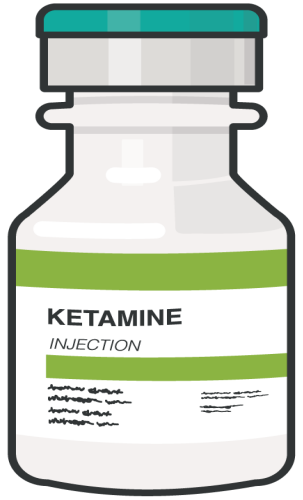


DRUG INTERACTIONS:

- Effects of ketamine are increased when combines with other analgesics or muscle relaxants

ONSET/PEAK/DURATION:

- 30 sec-4min (IV<IO<IN<IM)/1-10 min/5-25 min



KETAMINE can be safely used in head and eye injuries despite prior concerns over a potential increase ocular/cerebral pressures

ADMINISTRATION OF NALOXONE IN TACTICAL FIELD CARE

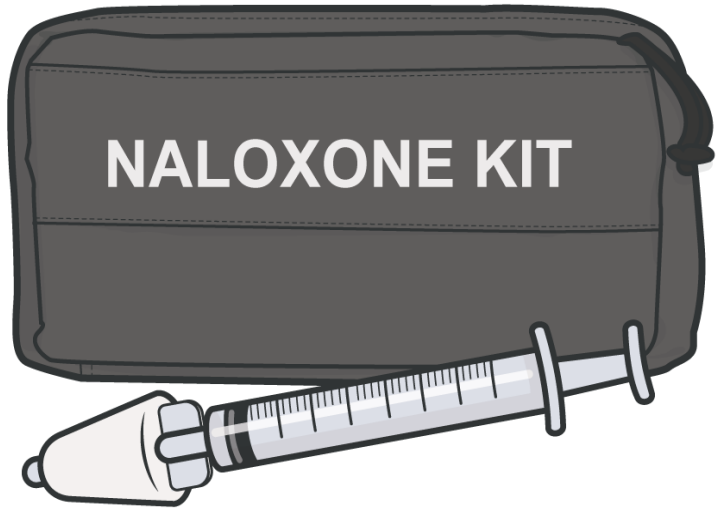
Naloxone is indicated in opioid overdoses

- Hypotension
- Respiratory depression or distress
- Excess alteration of mentation or unconsciousness

ROUTES OF ADMINISTRATION:

- Intranasal (IN)
- Intramuscular (IM)
- Intravenous (IV)
- Intraosseous (IO)

Level of Evidence: B-R



NALOXONE dosing in TFC:
0.4 mg (IN, IM, IV, or IO)
Repeat q 2-3 min until symptoms reverse or max dose of **10 mg**

CONSIDERATIONS:

- Have naloxone on hand whenever administering opiates
- Administer as quickly as possible (don't delay for IV access to be established – use IN or IM preparations)

NALOXONE ADMINISTRATION cont.

CONTRAINDICATIONS:

- Hypersensitivity

POTENTIAL SIDE EFFECTS:

- Analgesia reversal, tremors, hyperventilation, drowsiness, sweating, increased BP, tachycardia, nausea, and vomiting

DRUG INTERACTIONS:

- Cardiotoxic drugs
(may cause serious CV effects)

ONSET/PEAK/DURATION:

- 1-2 min/5-15 min/variable

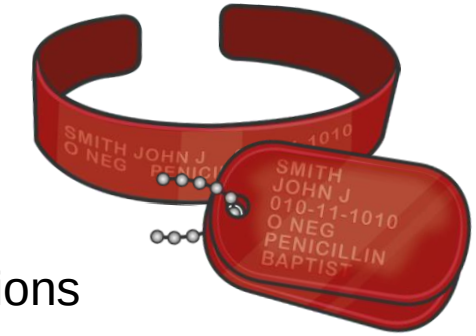
TACTICAL CONSIDERATIONS:

- Have naloxone on hand whenever administering opioid analgesics
- Administer as quickly as possible (don't delay for IV access to be established with OTFC lozenges – use IN or IM preparations)

INTRANASAL MEDICATION ADMINISTRATION

ROUTES OF ADMINISTRATION:

- Check to ensure that the casualty has no known drug allergies to the medication(s) being administered (ask the casualty or locate their red allergy dog tag or bracelet).
- Gather necessary medication(s)
- Verify the five “rights”



Prepare for intranasal administration:

- Confirm nasal passages clear of obstructions (select least obstructed side)
- No blood or fluids present
- Have casualty blow nose, if possible

TCCC medications delivered by IN route: ketamine and naloxone; also, fentanyl

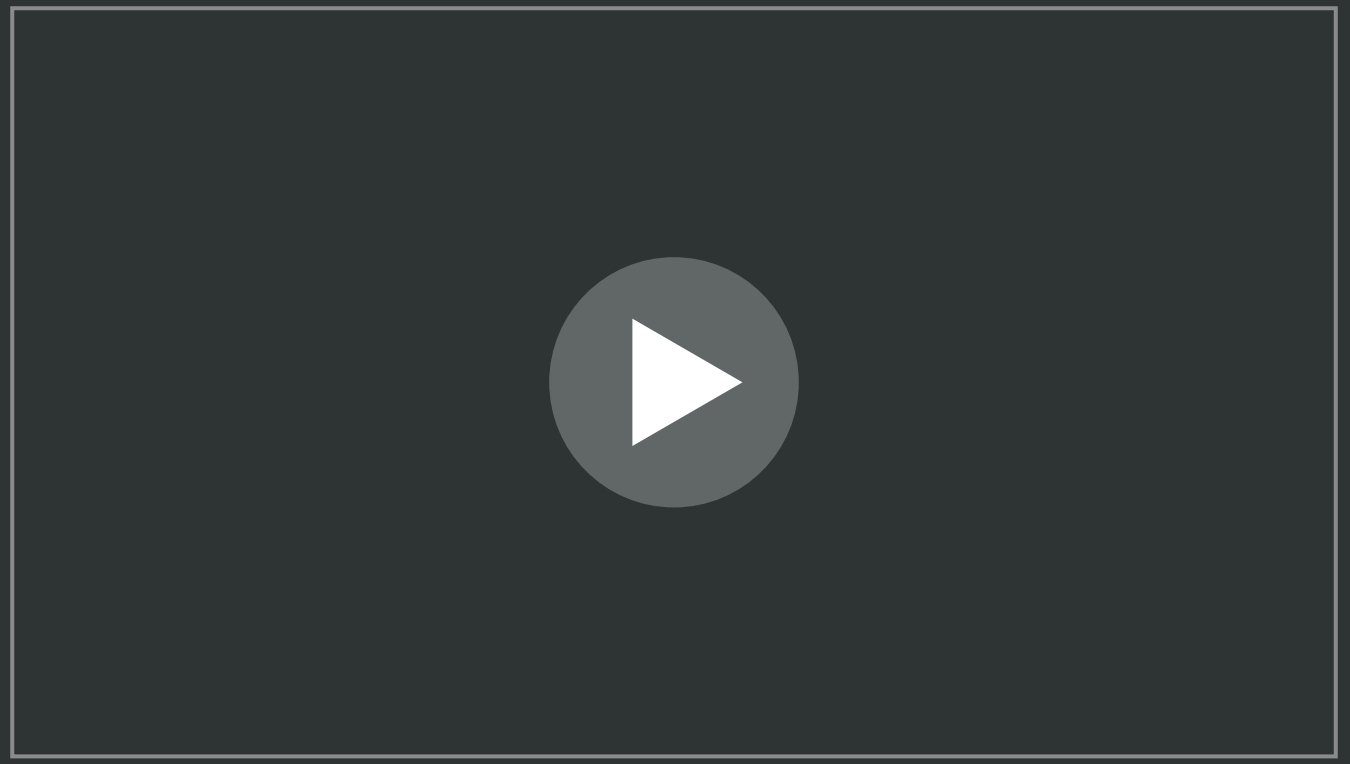
Unit-dosed pump sprays

- Set volume using plunger
- Spray tip atomizes to form mist

Individual-dose plungers or syringes

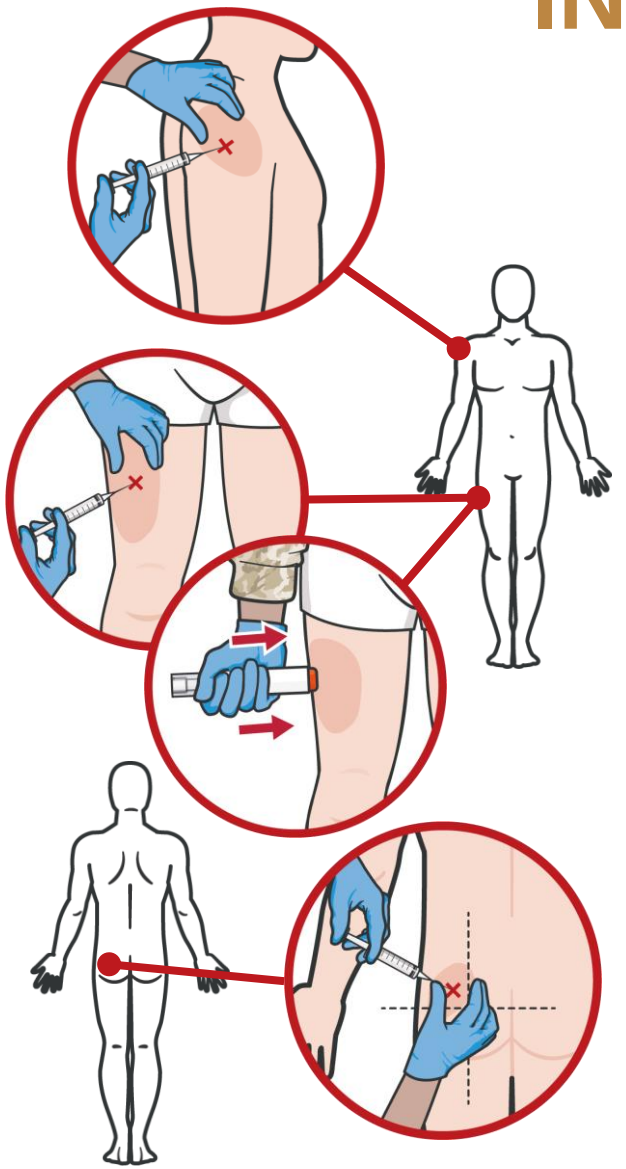
- Set volume
- Atomized mist from spray tip

INTRANASAL MEDICATION ADMINISTRATION



Video can be found on deployedmedicine.com

INTRAMUSCULAR MEDICATION ADMINISTRATION



INTRAMUSCULAR sites:

DELTOID

center of the deltoid muscle; 22-gauge, 1 inch needle

THIGH

halfway between knee and hip, lateral to the midline; 22-gauge, 1½ inch needle

BUTTOCK

Center of the upper, outer quadrant of the gluteal region; 22-gauge, 1½ inch needle

INJECTION CONSIDERATIONS:

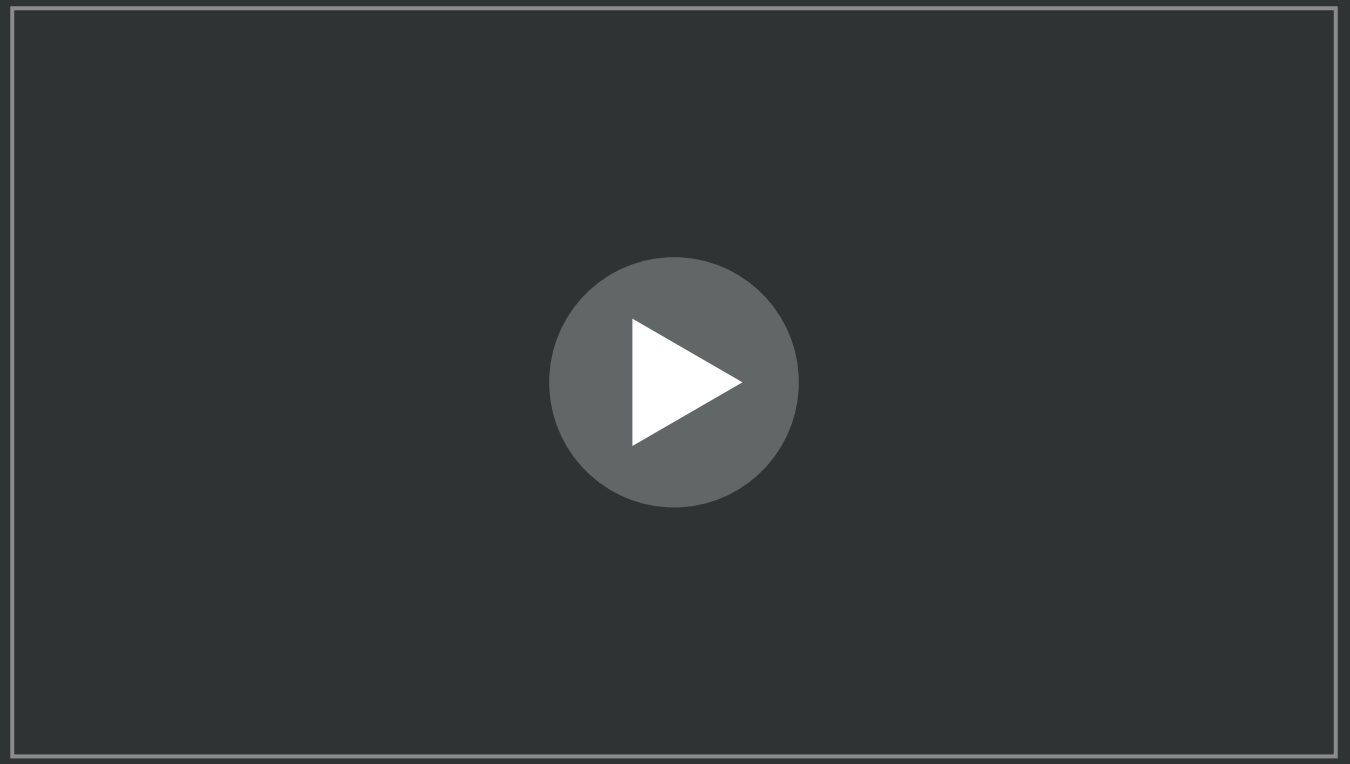
- Inject air into medication vial before withdrawing to avoid negative pressure effects
- Ensure no air present in syringe and needle
- Insert needle with your dominant hand
- Press plunger fully to deliver full dose

If you encounter an auto-injector:

- Confirm dose
- Keep tight against skin
- Maintain in place for 10 sec after activation to ensure full delivery

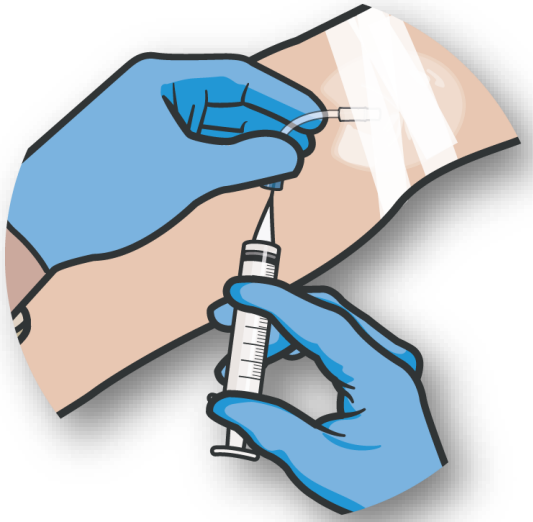
TCCC pain medications delivered by IM route: ketamine, naloxone, and ondansetron

INTRAMUSCULAR MEDICATION ADMINISTRATION



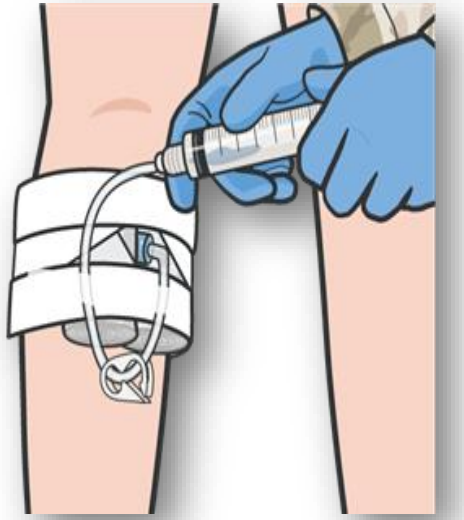
Video can be found on deployedmedicine.com

INTRAVENOUS/INTRAOSSEOUS MEDICATION ADMINISTRATION



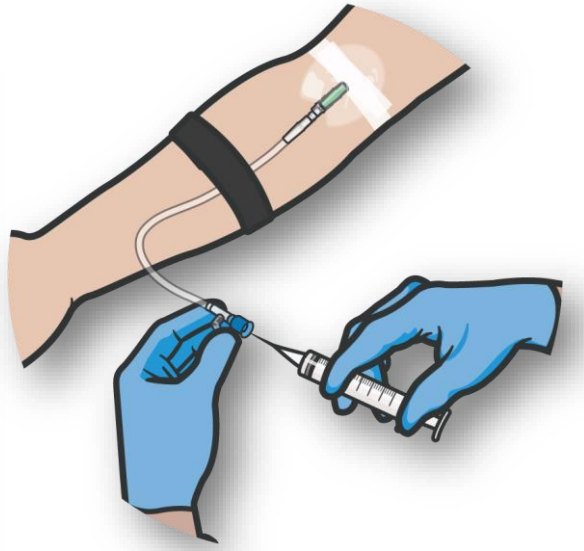
IV saline locks

- Can use same needle from draw
- Flush to ensure med delivery and keep lock patent



IO extension sets

- Clamp extension set when cap open
- Use syringe without needle
- Flush like IV saline lock



IV tubing (using IV or IO access)

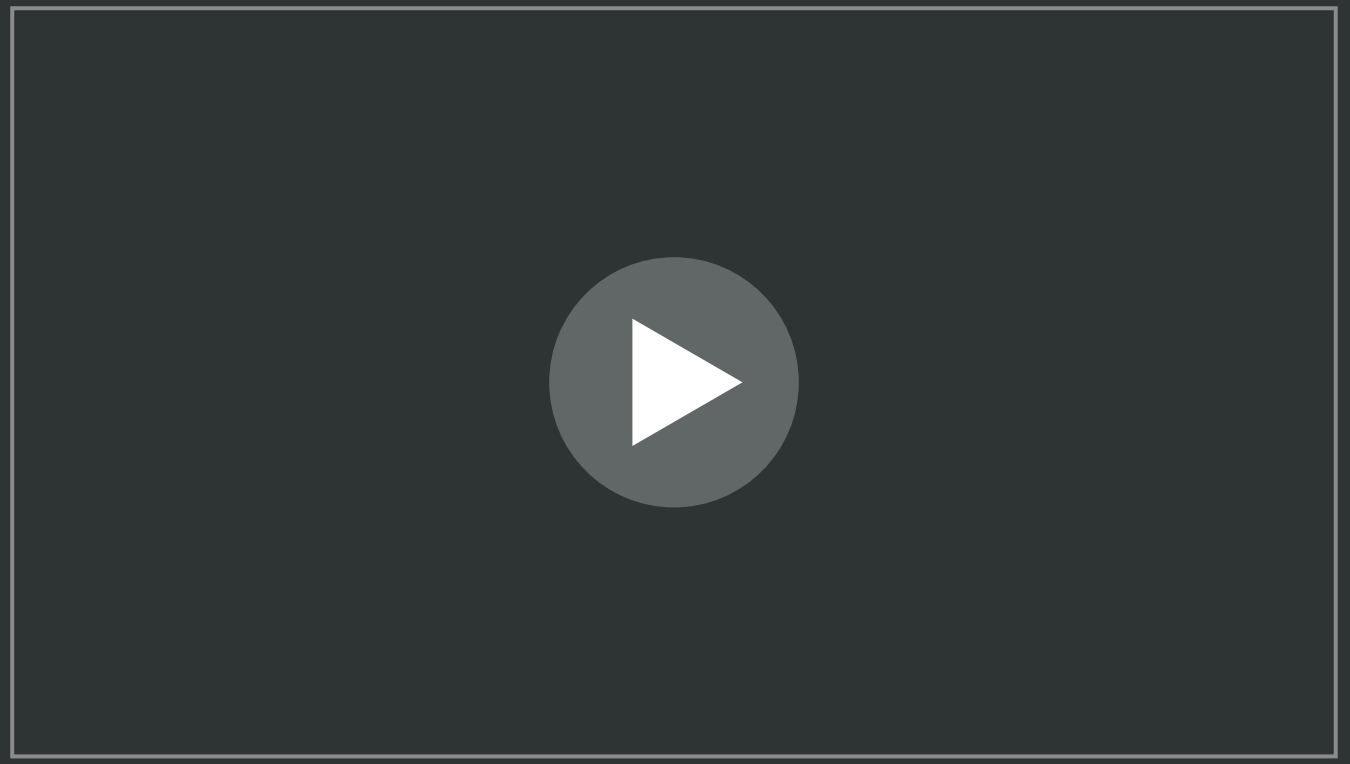
- Close clamps or pinch tubing above injection port during administration
- Flush with saline or LR

RATE OF INFUSION CONSIDERATIONS:

- Some medications must be pushed slowly
- Small volumes over long pushes are hard to manage – consider dilution to have larger volume

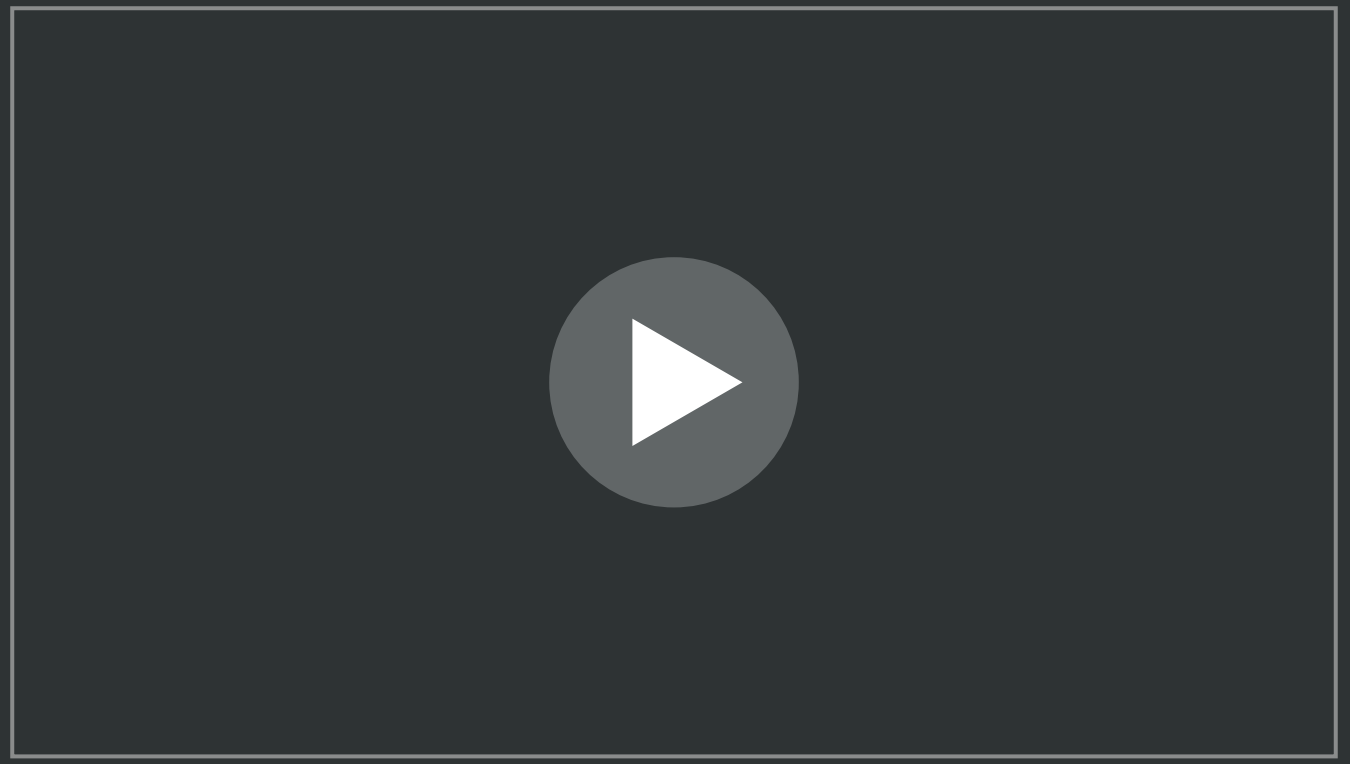
TCCC Medications delivered by **IV** or **IO** route: ketamine, ondansetron, and naloxone; also, fentanyl and midazolam

INTRAVENOUS MEDICATION ADMINISTRATION



Video can be found on deployedmedicine.com

INTRAOSSEOUS MEDICATION ADMINISTRATION



Video can be found on deployedmedicine.com

SEDATION IN TFC: INDICATIONS, CONSIDERATIONS AND APPROACHES

INDICATION: – used when significant severe injuries require dissociation for patient safety or mission success or invasive procedures

EXAMPLES:

- During transport – ease of administration
- When movements/spaces are restricted
- Critical interventions requiring analgesia
- Prolonged analgesia or evacuation
- When OPTEMPO dictates

APPROACHES:

- Initial ketamine dosing is 1-2 mg/kg slow IV push or 2-3 mg/kg (300 mg) IM
- End point is achievement of procedural (dissociative) anesthesia
- For continued sedation, follow JTS CPG guidance on Analgesia in Prolonged Field Care

CONSIDERATIONS:

- Sedation requires continuous monitoring (pulse ox or ETCO2/cardiac monitor)
- Airway monitoring and maintenance (casualty positioning, airway adjuncts, and/or advanced airway placement)

Treat emergence phenomenon with **Midazolam** 0.5-2 mg IV/IO/IM

Level of Evidence: B-R

PAWS

ASSESSING THE EVIDENCE FOR GUIDELINES

Level of Evidence	AHA Recommendation System Terminology Explanation	Why the AHA Classification System?
A	Evidence from multiple randomized clinical trials (RCT) with concordant results or from **HIGH-QUALITY** meta-analyses.	• The level of evidence recommendations allow readers to quickly glean information on the strength, certainty, and quality of evidence supporting each recommendation. • A recommendation with Level of Evidence (LOE) C does not imply that the recommendation is weak. • Although, RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.
B-R	Evidence from moderate-quality trials, or a meta-analysis of moderate quality (RCT) followed by an R to denote **RANDOMIZED** studies	
B-NR	Evidence from moderate-quality trials, or a meta-analysis of moderate quality followed by NR to denote **NON-RANDOMIZED** studies	
C-LD	There is no convincing evidence and is followed by LD to indicate **LIMITED DATA**	
C-EO	There is no convincing evidence and is followed by EO if the consensus is based on **EXPERT OPINION**, case studies or standards of care.	

EVIDENCE SUPPORTING TCCC PAIN MEDICATION GUIDANCE

Subject Category	Study Types	Level of Evidence
Combat Wound Medication Pack	Meta-analysis of observational studies, lab evaluations and case studies	**C-LD**
Fentanyl (indications in TFC, dosages/routes)	Meta-analysis of multiple Randomized Controlled Trials	**A**
Ondansetron (indications in TFC, dosages/routes)	Prospective, Randomized, Double-blind, Placebo-Controlled Trial	**A**
Ketamine (indications in TFC, dosages/routes)	Randomized, Double-blind, Placebo-Controlled, Crossover trial and Prospective Randomized Study	**B-R**
Naloxone (indications in TFC, dosages/routes)	Meta-analysis from Multiple Randomized Controlled Trials	**B-R**
Sedation in Tactical Field Care	Meta-analysis from Multiple Randomized Controlled Trials	**B-R**

SKILL STATION

IN, IM, IV/IO Medication and Analgesic Sedation Administration

- Intranasal Medication Administration
- Intramuscular Medication Administration
- Intravenous/Intraosseous Medication Administration
- Analgesic Sedation Administration

SUMMARY

Knowledge Topics

- Indications and considerations of analgesia approaches
- Indications, contraindications, dosage, route, and administration methods of oral medication
- Indications, contraindications, dosage, route, and administration methods of transmucosal medication
- Indications, contraindications, dosage, route, and administration methods of IM/IN/IV/IO medication
- Indications, considerations, and approaches to sedation
- Identify evidence-based medicine on the indications, contraindications, and administration methods of analgesia in TFC

Skills and Abilities

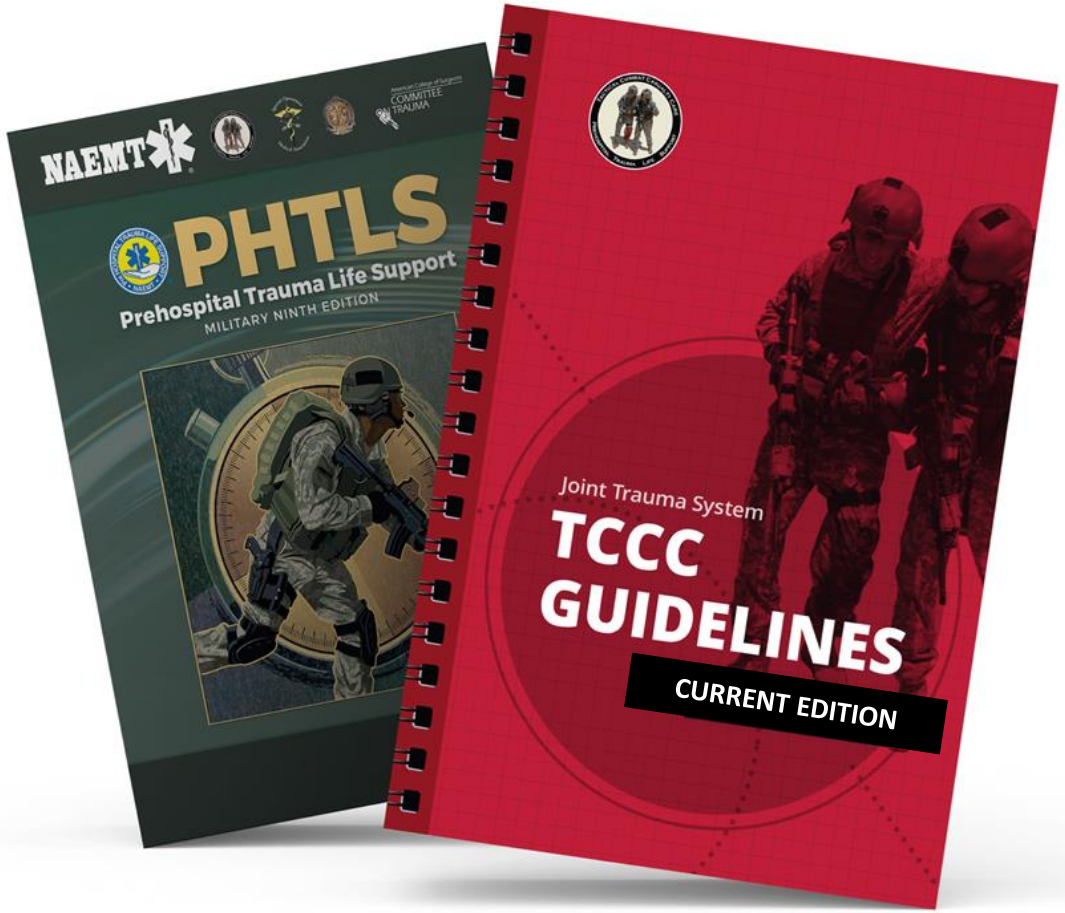
- Oral Medication Preparation and Administration
- OTFC Medication Preparation and Administration
- IM/IN/IV/IO Medication Preparation and Administration
- Preparation, Administration and Management of procedural or analgesic sedation

CHECK ON LEARNING

- What are the contraindications of using the oral transmucosal fentanyl citrate (OTFC) lozenges for moderate to severe pain?
- Which CoTCCC-recommended analgesia medications can be given by the intranasal route?
- Why is it okay to take the meloxicam in the CWMP but not Motrin?
- What are the advantages of using ketamine instead of fentanyl for moderate to severe pain control in the face of shock or respiratory compromise?
- Name the three intramuscular injection sites and their landmarks

ANY QUESTIONS?

REFERENCES



TCCC: Guidelines

by JTS/CoTCCC

These guidelines, updated regularly, are the result of decisions made by CoTCCC in exploring evidence-based research on best practices.

PHTLS: Military Edition, Chapter 25

by NAEMT

Prehospital Trauma Life Support (PHTLS), Military Edition, teaches and reinforces the principles of rapidly assessing a trauma patient using an orderly approach.