
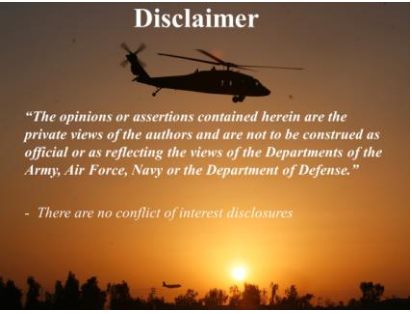


















<p>1.</p>	<p>Tactical Combat Casualty Care for Medical Personnel August 2018 (Based on TCCC-MP Guidelines 180801)</p>  <p>Tactical Field Care 2e Triple-Option Analgesia and Monitoring</p>	<p><b>Tactical Combat Casualty Care for Medical Personnel</b> <b>August 2018</b> <b>(Based on TCCC-MP Guidelines 180801)</b></p> <p><b>Tactical Field Care 2e</b> <b>Monitoring and Triple-Option Analgesia</b></p>	<p>In this presentation we will discuss electronic monitoring and TCCC Triple-Option Analgesia in TFC.</p>
<p>2.</p>		<p><b>Disclaimer</b></p> <p><i>“The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Departments of the Army, Air Force, Navy or the Department of Defense.”</i></p> <p>- <i>There are no conflict of interest disclosures</i></p>	<p>Read the disclaimer.</p>
<p>3.</p>	 <p><b>LEARNING OBJECTIVES</b></p> <p><u>Terminal Learning Objective</u></p> <ul style="list-style-type: none"> <li>• Perform Analgesia Administration in Tactical Field Care.</li> </ul> <p><u>Enabling Learning Objectives</u></p> <ul style="list-style-type: none"> <li>• Describe the indications and considerations of the "Triple Option Analgesia" approach in Tactical Field Care.</li> <li>• Identify the TCCC indications, contraindications, and administration methods of all TCCC-recommended analgesics.</li> </ul>	<p><b>LEARNING OBJECTIVES</b></p> <p><u>Terminal Learning Objective</u></p> <ul style="list-style-type: none"> <li>• Perform Analgesia Administration in Tactical Field Care.</li> </ul> <p><u>Enabling Learning Objectives</u></p> <ul style="list-style-type: none"> <li>• Describe the indications and considerations of the "Triple Option Analgesia" approach in Tactical Field Care.</li> <li>• Identify the TCCC indications, contraindications, and administration methods of all TCCC-recommended analgesics.</li> </ul>	<p>Read the text.</p>




4.	 <p><b>LEARNING OBJECTIVES</b></p> <p><u>Enabling Learning Objectives</u></p> <ul style="list-style-type: none"> <li>Identify the TCCC indications and administration methods of nalaxone in Tactical Field Care.</li> <li>Identify the TCCC indications and administration methods of ondansetron in Tactical Field Care.</li> <li>Demonstrate the preparation and administration of intravenous ketamine.</li> </ul>	<p><b>LEARNING OBJECTIVES</b></p> <p><u>Enabling Learning Objectives</u></p> <ul style="list-style-type: none"> <li>Identify the TCCC indications and administration methods of nalaxone in Tactical Field Care.</li> <li>Identify the TCCC indications and administration methods of ondansetron in Tactical Field Care.</li> <li>Demonstrate the preparation and administration of intravenous ketamine.</li> </ul>	<p>Read the text.</p>
5.	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>9. Monitoring</b></p> <p>a. Initiate advanced electronic monitoring if indicated and if monitoring equipment is available.</p>	<p><b>Tactical Field Care Guidelines</b></p> <p>9. Monitoring</p> <p>a. Initiate advanced electronic monitoring if indicated and if monitoring equipment is available.</p>	<p>Read the guideline.</p> <p>Advanced monitoring units are available and sometimes carried forward by mounted units into Tactical Field Care scenarios. Propaq LT, Tempus Pro, and LifePak are examples.</p>
6.	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>10. Analgesia</b></p> <p>a. Analgesia on the battlefield should generally be achieved using one of three options:</p>	<p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia</p> <p>a. Analgesia on the battlefield should generally be achieved using one of three options:</p>	<p>Read the guideline.</p>



<p>7.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 1             <ul style="list-style-type: none"> <li>- Mild to Moderate Pain</li> <li>Casualty is still able to fight</li> <li>◦ TCCC Combat Wound Medication Pack (CWMP):                 <ul style="list-style-type: none"> <li>- Tylenol – 650 mg bilayer caplet, 2 PO every 8 hours</li> <li>- Meloxicam - 15 mg PO once a day</li> </ul> </li> </ul> </li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 1             <ul style="list-style-type: none"> <li>- Mild to Moderate Pain</li> <li>Casualty is still able to fight</li> <li>◦ TCCC Combat Wound Medication Pack (CWMP):                 <ul style="list-style-type: none"> <li>* Tylenol – 650 mg bilayer caplet, 2 PO every 8 hours</li> <li>* Meloxicam - 15 mg PO once a day</li> </ul> </li> </ul> </li> </ul>	<p>Read the guideline.</p>
<p>8.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 2             <ul style="list-style-type: none"> <li>- Moderate to Severe Pain</li> <li>Casualty IS NOT in shock or respiratory distress</li> <li>AND</li> <li>Casualty IS NOT at significant risk of developing either condition</li> <li>- Oral transmucosal fentanyl citrate (OTFC) 800 ug</li> <li>* Place lozenge between the cheek and the gum</li> <li>- Do not chew the lozenge</li> </ul> </li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 2             <ul style="list-style-type: none"> <li>- Moderate to Severe Pain</li> <li>Casualty IS NOT in shock or respiratory distress</li> <li>AND</li> <li>Casualty IS NOT at significant risk of developing either condition</li> <li>- Oral transmucosal fentanyl citrate (OTFC) 800 ug</li> <li>* Place lozenge between the cheek and the gum</li> <li>* Do not chew the lozenge</li> </ul> </li> </ul>	<p>Read the guideline.</p>
<p>9.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 3             <ul style="list-style-type: none"> <li>- Moderate to Severe Pain</li> <li>Casualty IS in shock or respiratory distress OR</li> <li>Casualty IS at significant risk of developing either condition</li> <li>◦ Ketamine 50 mg IM or IN</li> <li>Or</li> <li>◦ Ketamine 20 mg slow IV or IO</li> <li>* Repeat doses q30min prn for IM or IN</li> <li>* Repeat doses q20min prn for IV or IO</li> <li>* End points: Control of pain or development of nystagmus (rhythmic back-and-forth movement of the eyes)</li> </ul> </li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p>10. Analgesia (continued)</p> <ul style="list-style-type: none"> <li>• Option 3             <ul style="list-style-type: none"> <li>- Moderate to Severe Pain</li> <li>Casualty IS in shock or respiratory distress OR</li> <li>Casualty IS at significant risk of developing either condition</li> <li>◦ Ketamine 50 mg IM or IN</li> <li>Or</li> <li>◦ Ketamine 20 mg slow IV or IO</li> <li>* Repeat doses q30min prn for IM or IN</li> <li>* Repeat doses q20min prn for IV or IO</li> <li>* End points: Control of pain or development of nystagmus (rhythmic back-and-forth movement of the eyes)</li> </ul> </li> </ul>	<p>Read the guideline.</p>

<p>10.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes</b></p> <ul style="list-style-type: none"> <li>a. Casualties may need to be disarmed after being given OTFC or ketamine.</li> <li>b. Document a mental status exam using the AVPU method prior to administering opioids or ketamine.</li> <li>c. For all casualties given opioids or ketamine – monitor airway, breathing, and circulation closely.</li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes</b></p> <ul style="list-style-type: none"> <li>a. Casualties may need to be disarmed after being given OTFC or ketamine.</li> <li>b. Document a mental status exam using the AVPU method prior to administering opioids or ketamine.</li> <li>c. For all casualties given opioids or ketamine – monitor airway, breathing, and circulation closely.</li> </ul>	<p>Read the guideline.</p>
<p>11.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <ul style="list-style-type: none"> <li>d. Directions for administering OTFC: <ul style="list-style-type: none"> <li>- Recommend taping lozenge-on-a-stick to casualty's finger as an added safety measure OR utilizing a safety pin and rubber band to attach the lozenge (under tension) to the casualty's uniform or plate carrier.</li> <li>- Reassess in 15 minutes</li> <li>- Add second lozenge, in other cheek, as necessary to control severe pain</li> <li>- Monitor for respiratory depression</li> </ul> </li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <ul style="list-style-type: none"> <li>d. Directions for administering OTFC: <ul style="list-style-type: none"> <li>- Recommend taping lozenge-on-a-stick to casualty's finger as an added safety measure OR utilizing a safety pin and rubber band to attach the lozenge (under tension) to the casualty's uniform or plate carrier.</li> <li>- Reassess in 15 minutes</li> <li>- Add second lozenge, in other cheek, as necessary to control severe pain</li> <li>- Monitor for respiratory depression</li> </ul> </li> </ul>	<p>Read the guideline.</p>
<p>12.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <ul style="list-style-type: none"> <li>e. IV Morphine is an alternative to OTFC if IV access has been obtained <ul style="list-style-type: none"> <li>- 5 mg IV/IO</li> <li>- Reassess in 10 minutes.</li> <li>- Repeat dose every 10 minutes as necessary to control severe pain</li> <li>- Monitor for respiratory depression</li> </ul> </li> </ul>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <ul style="list-style-type: none"> <li>e. IV Morphine is an alternative to OTFC if IV access has been obtained <ul style="list-style-type: none"> <li>- 5 mg IV/IO</li> <li>- Reassess in 10 minutes.</li> <li>- Repeat dose every 10 minutes as necessary to control severe pain</li> <li>- Monitor for respiratory depression</li> </ul> </li> </ul>	<p>Read the guideline.</p>






<p>13.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>Analgesia Notes (cont)</p> <p>f. Naloxone (0.4 mg IV or IM) should be available when using opioid analgesics.</p> <p>g. Both ketamine and OTFC have the potential to worsen severe TBI. The combat medic, corpsman, or PJ must consider this fact in his or her analgesic decision, but if the casualty is able to complain of pain, then the TBI is likely not severe enough to preclude the use of ketamine or OTFC.</p>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <p>f. Naloxone (0.4 mg IV or IM) should be available when using opioid analgesics.</p> <p>g. Both ketamine and OTFC have the potential to worsen severe TBI. The combat medic, corpsman, or PJ must consider this fact in his or her analgesic decision, but if the casualty is able to complain of pain, then the TBI is likely not severe enough to preclude the use of ketamine or OTFC</p>	<p>Read the guideline.</p>
<p>14.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>Analgesia Notes (cont)</p> <p>h. Eye injury does not preclude the use of ketamine. The risk of additional damage to the eye from using ketamine is low and maximizing the casualty's chance for survival takes precedence if the casualty is in shock or respiratory distress or at significant risk for either.</p>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <p>h. Eye injury does not preclude the use of ketamine. The risk of additional damage to the eye from using ketamine is low and maximizing the casualty's chance for survival takes precedence if the casualty is in shock or respiratory distress or at significant risk for either.</p>	<p>Read the guideline.</p>
<p>15.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p>Analgesia Notes (cont)</p> <p>i. Ketamine may be a useful adjunct to reduce the amount of opioids required to provide effective pain relief. It is safe to give ketamine to a casualty who has previously received morphine or OTFC. IV Ketamine should be given over 1 minute.</p> <p>j. If respirations are noted to be reduced after using opioids or ketamine, provide ventilatory support with a bag-valve-mask or mouth-to-mask ventilations.</p>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <p>i. Ketamine may be a useful adjunct to reduce the amount of opioids required to provide effective pain relief. It is safe to give ketamine to a casualty who has previously received morphine or OTFC. IV Ketamine should be given over 1 minute.</p> <p>j. If respirations are noted to be reduced after using opioids or ketamine, provide ventilatory support with a bag-valve-mask or mouth-to-mask ventilations.</p>	<p>Read the guideline.</p>



<p>16.</p>	 <p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <p>k. Ondansetron, 4 mg ODT/IV/IO/IM, every 8 hours as needed for nausea or vomiting. Each 8-hour dose can be repeated once at 15 minutes if nausea and vomiting are not improved. Do not give more than 8 mg in any 8hour interval. Oral ondansetron is NOT an acceptable alternative to the ODT formulation.</p> <p>l. Reassess – reassess – reassess!</p>	<p><b>Tactical Field Care Guidelines</b></p> <p><b>Analgesia Notes (cont)</b></p> <p>k. Ondansetron, 4 mg ODT/IV/IO/IM, every 8 hours as needed for nausea or vomiting. Each 8-hour dose can be repeated once at 15 minutes if nausea and vomiting are not improved. Do not give more than 8 mg in any 8-hour interval. Oral ondansetron is NOT an acceptable alternative to the ODT formulation.</p> <p>l. Reassess – reassess – reassess!</p>	<p>Read the text.</p> <p>Ondansetron is now the drug of choice for treating nausea and vomiting, replacing promethazine.</p>
<p>17.</p>	 <p><b>Triple-Option Analgesia Video</b></p> 	<p><b>Triple-Option Analgesia Video</b></p>	<p>Click on the photo to play the video.</p>

<p>18.</p>	 <p><b>Pain Control – Fentanyl Lozenges</b></p> <p>Safety Note:</p> <ul style="list-style-type: none"> <li>• There is an FDA Safety Warning regarding the use of fentanyl lozenges in individuals who are not narcotic tolerant.</li> <li>• Multiple studies have demonstrated safety when used at the TCCC-recommended dosing levels.</li> <li>• Fentanyl lozenges have a well-documented safety record in Afghanistan and Iraq - BUT NOTE:</li> </ul> <p><b><u>• DON'T USE TWO WHEN ONE WILL DO!</u></b></p> 	<p><b>Pain Control – Fentanyl Lozenges</b></p> <p><b>Safety Note:</b></p> <ul style="list-style-type: none"> <li>• There is an FDA Safety Warning regarding the use of fentanyl lozenges in individuals who are not narcotic tolerant.</li> <li>• Multiple studies have demonstrated safety when used at the TCCC-recommended dosing levels.</li> <li>• Fentanyl lozenges have a well-documented safety record in Afghanistan and Iraq - BUT NOTE:</li> <li>• <b><u>DON'T USE TWO WHEN ONE WILL DO!</u></b></li> </ul>	<p>Here is an important note regarding fentanyl use:</p> <p>Respiratory depression at the 800-microgram dose level has not been noted in 14 years of combat experience. If it does occur, start an IV and give Narcan. Assist respiration as necessary.</p>
<p>19.</p>	 <p><b>Ketamine</b></p> <ul style="list-style-type: none"> <li>• At lower doses, potent analgesia and mild sedation</li> <li>• At higher doses, dissociative anesthesia and moderate to deep sedation</li> <li>• Unique among anesthetics because pharyngeal-laryngeal reflexes are maintained</li> <li>• Cardiac function is stimulated rather than depressed</li> <li>• Less risk of respiratory depression than morphine and fentanyl</li> <li>• Works reliably by multiple routes – IM, intranasal, IV, IO</li> </ul>	<p><b>Ketamine</b></p> <ul style="list-style-type: none"> <li>• At lower doses, potent analgesia and mild sedation</li> <li>• At higher doses, dissociative anesthesia and moderate to deep sedation</li> <li>• Unique among anesthetics because pharyngeal-laryngeal reflexes are maintained</li> <li>• Cardiac function is stimulated rather than depressed</li> <li>• Less risk of respiratory depression than morphine and fentanyl</li> <li>• Works reliably by multiple routes – IM, intranasal, IV, IO</li> </ul>	<p>“Dissociative” anesthetics distort perceptions of sight and sound and produce feelings of detachment – or dissociation – from environment and self.</p>

<p>20.</p>	 <p><b>Ketamine - Safety</b></p> <ul style="list-style-type: none"> <li>• Ketamine has a very favorable safety profile.</li> <li>• Few, if any, deaths have been attributed to ketamine as a single agent.</li> <li>• FDA Insert:             <ul style="list-style-type: none"> <li>– <i>"Ketamine has a wide margin of safety; several instances of unintentional administration of overdoses of ketamine (up to ten times that usually required) have been followed by prolonged but complete recovery."</i></li> </ul> </li> </ul>	<p><b>Ketamine – Safety</b></p> <ul style="list-style-type: none"> <li>• Ketamine has a very favorable safety profile.</li> <li>• Few, if any, deaths attributed to ketamine as a single agent.</li> <li>• FDA Insert:             <ul style="list-style-type: none"> <li>– <i>"Ketamine has a wide margin of safety; several instances of unintentional administration of overdoses of ketamine (up to ten times that usually required) have been followed by prolonged but complete recovery."</i></li> </ul> </li> </ul>	<p>Read the text.</p>
<p>21.</p>	 <p><b>Ketamine - Side Effects</b></p> <ul style="list-style-type: none"> <li>• Respiratory depression and apnea can occur if IV ketamine is administered too rapidly.</li> <li>• Providing several breaths via bag-valve-mask ventilation is typically successful in restoring normal breathing.</li> </ul>	<p><b>Ketamine - Side Effects</b></p> <ul style="list-style-type: none"> <li>• Respiratory depression and apnea can occur if ketamine is administered too rapidly.</li> <li>• Providing several breaths via bag-valve-mask ventilation is typically successful in restoring normal breathing.</li> </ul>	<p>Naloxone does not reverse the effects of ketamine. Mechanical ventilatory assistance may be required in rare instances if apnea occurs.</p>



<p>22.</p>	<p> <b>Warning: Morphine and Fentanyl Contraindications</b></p> <ul style="list-style-type: none"> <li>• Hypovolemic shock</li> <li>• Respiratory distress</li> <li>• Unconsciousness</li> <li>• Severe head injury</li> <li>• <b><u>DO NOT give morphine or fentanyl to casualties with these contraindications.</u></b></li> </ul> 	<p><b>Warning: Morphine and Fentanyl Contraindications</b></p> <ul style="list-style-type: none"> <li>• Hypovolemic shock</li> <li>• Respiratory distress</li> <li>• Unconsciousness</li> <li>• Severe head injury</li> <li>• <b><u>DO NOT give morphine or fentanyl to casualties with these contraindications.</u></b></li> </ul>	<p>As stated in the video, giving morphine or fentanyl to casualties with these conditions can be fatal.</p>
<p>23.</p>	<p> <b>Warning: Opioids and Benzos</b></p> <ul style="list-style-type: none"> <li>• Ketamine can safely be given after a fentanyl lozenge.</li> <li>• Some practitioners use benzodiazepine medications such as midazolam to avoid ketamine side effects <b><u>BUT:</u></b></li> <li>• <b><u>Midazolam may cause respiratory depression, especially when used with opioids.</u></b></li> <li>• <b><u>Avoid giving midazolam to casualties who have previously gotten fentanyl lozenges or morphine.</u></b></li> </ul> 	<p><b>Warning: Opioids and Benzos</b></p> <ul style="list-style-type: none"> <li>• Ketamine can safely be given after a fentanyl lozenge.</li> <li>• Some practitioners use benzodiazepine medications such as midazolam to avoid ketamine side effects <b><u>BUT:</u></b></li> <li>• <b><u>Midazolam may cause respiratory depression, especially when used with opioids.</u></b></li> <li>• <b><u>Avoid giving midazolam to casualties who have previously gotten fentanyl lozenges or morphine.</u></b></li> </ul>	<p>In the doses recommended, you can safely give a casualty ketamine after he has received fentanyl. Midazolam, however, should never be given to a casualty who has fentanyl or morphine in his system.</p>
<p>24.</p>		<p><b>Questions?</b></p>	

25.	 <b>IV Ketamine Practical</b> 	<b>IV Ketamine Practical</b>	Break into small groups for the practical.
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