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INTRODUCTION

This is the 3rd version of the JSOM training supplement and hopefully the best. We take lessons learned and not only adjust the best practice SOF medicine guidelines, but how we put those guidelines out to the masses. This version will fit into your pocket and we added a few handy dandy charts to hopefully make your life a little easier. The information contained in this supplement is unique, and SOF designed in its purpose. The Tactical Medical Emergency Protocols (TMEPS) and Recommended Drug List (RDL) were created, reviewed, and endorsed for use by the Advanced Tactical Practitioner (ATP). We can also send any of these products to you as a PDF file. Just request whatever you want via an email to: atp@socom.mil.

Please send us CONSTRUCTIVE comments and recommendations as well. We are always looking for a good idea or a better way to ensure you have the latest greatest of information. The information in this supplement is the work of volunteer patriots from all walks of life, in and out of the military. If you ever meet a member of the USSOCOM Medical Curriculum and Examination Board (CEB), thank them for all the hard work and effort that they put into production of the TMEPS, RDL, and ATP examination.

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USSOCOM Chief of Medical Education and Training
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PREFACE

Management of medical emergencies is best accomplished by appropriately trained physicians in an Emergency Department setting. Special Operations Combat Medics (SOCMs), however, may often find themselves in austere tactical environments where evacuation of a teammate to an MTF for a medical emergency would entail either significant delays to treatment or compromise the unit’s mission. Although SOCM trained medics are not routinely authorized by the services to treat non-traumatic emergencies, in many SOF situations, training SOCMs to treat at least some medical emergencies may result in both improved outcome for the individual and an improved probability of mission success. The disorders chosen have one of the following properties in common: they are relatively common; they are acute in onset; the SOCM is able to provide at least initial therapy that may favorably alter the eventual outcome; and the condition is either life-threatening or could adversely affect the mission readiness of the SOF operator.

The Protocols outlined in the following pages carry the following assumptions:

A. The SOCM Medic is in an austere environment where a medical treatment facility or a unit sick call capability is not available. If a medical treatment facility or a medic authorized to treat patients independently is available, then the patient should be seen in those settings rather than by a SOCM Medic.

B. Immediate evacuation may not be possible and, even if it is, may still entail significant delays to definitive treatment. The medical problem may worsen significantly if treatment is delayed.

C. The SOCM will contact a consulting physician as soon as feasible.

D. SOCM treatment will be done under the appropriate Protocol.

E. Medication regimens are designed to minimize the number of medications the SOCMs are required to learn and carry. Medications have been used for multiple conditions when feasible without compromising care.

F. Appropriate documentation of diagnosis and treatment rendered in the patient’s medical record will be accomplished when the unit returns to forward operating base.

G. Note these Protocols are not designed to allow SOCM medics to conduct Medical/ Civic Action (MEDCAP) missions independently.
H. Evacuation recommendations are based on the appropriate therapy per Protocol being initiated on diagnosis.

I. The definitions of Urgent, Priority, and Routine evacuations are based on the times found in Joint Publication 4-02.2 of 2, 4, and 24 hours respectively.

J. For any infection, limit contact and use universal precautions.

Changes for 2007:
A. The changes in the combat pill pack (Moxifloxacin (Avelox) and meloxicam), as recommended by the Committee on Tactical Combat Casualty Care (CoTCCC), have been changed in the TME Protocols. (2007)

B. The Fentanyl oral dosage of 800 mcg, as recommended by the CoTCCC has been incorporated into the Pain Protocol. (2007)

C. The change in the IV antibiotics has also been changed to reflect medication availability.

D. When possible, alternate antibiotics or anti-emetics have been listed.

Changes for 2008:
A. The Cellulitis and Cutaneous Abscess Protocols were combined.

B. An Altitude Illness Protocol was created, combining AMS, HACE, and HAPE.

C. The Chest Pain was expanded to provide more guidance.

D. The following new protocols were added: Determination of Death and Envenomation.

E. The following medication changes were made: the use of Zithromax was decreased; Keflex, Quinine, Doxycycline and Corticosporin Otic were removed.

F. The following medications were added: Amoxicillin/Clavulanic Acid (Augmentin), Rabeprazole (Aciphex), Septra DS, Salmeterol (Serevent), Rifampin, Toradol, and Benadryl Quikstrips.

G. The Meningitis Disposition typo error from 2007 was corrected.

H. Modifications were made to most of the TMEPS with respect to further refinement in recommendations.

I. The “Clinical Pearls” section was added.

Changes for 2009:
A. Crush Protocol added

B. Blast Protocol added

C. MACE added
D. Traumatic Brain Injury – Mild (mTBI) Protocol added
E. Bronchitis/Pneumonia: Disposition changed.
F. Flank Pain: antibiotics modified (order of preference)
G. Joint Infection: antibiotics modified (order of preference)
H. Spontaneous Pneumothorax: indications for tube thoracostomy added
I. Urinary Tract Infections: antibiotics modified
J. Drugs added: Calcium Chloride, Calcium Gluconate, Sodium Bicarbonate, Mannitol
K. HIV PEP Protocol updated with new medications added: Atripla, Truvada, Viread, Kaletra
L. Behavioral Changes Protocol changed and midazolam (Versed) added.
M. Seizure Protocol changed and midazolam (Versed) added.
Don’t Forget … Clinical Pearls

When IV route is recommended, but not obtainable, consider IO, IM, or PO unless contraindicated.
Currently available SL medication formulations include: Benadryl Quik-strips, Sudafed PE SL, Zofran ODT.
If crystalloids (normal saline or lactated Ringer’s) are recommended but not available, substitute Hextend or Hespan if available.

◊ **DO NOT** give Epinephrine IV unless given under the ACLS protocols

All IV medications may be given slow IV push with the exception of antibiotics which should be in a drip.
Remember to document dose and time of all medications so the receiving facility may be informed.
Do not use local anesthetic with epinephrine on the fingers, toes or penis.
When oxygen is called for in the Protocols, the authors realize that it is recommended, but may not be available.
Due to the high level of physical fitness of SOF personnel, there may be a prolonged period of mental lucidity and apparent stable vital signs despite a severe injury. Treat the injury, not the Operator!

Medical Documentation (SOAP note): In order to ensure proper care and medical information transfer during patient treatment a standardize format for medical documentation is required. The standard format is the SOAP note (Subjective, Objective, Assessment, and Plan).

**Subjective:** In the patient’s own words, describe the chief complaint. At a minimum you need to include the OPQRST (onset, provocation, quality, radiation, severity, and time line of symptoms). AMPLE (allergies, medication, past medical and surgical history, last meal, and events leading up to this condition) history is also included in this section

**Objective:** Vital signs and physical examination findings. At a minimum you need to document pertinent positives and negatives and measurements of injuries or lesions. Be as detailed as possible.

**Assessment:** A brief summary of your medical decision making to include what you think it is, and what it is not. Include your differential diagnosis list in this section.

**Plan:** Your course of treatment to include any medications, additional studies, consultation, rehabilitation, evacuation category, and disposition of the patient.
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ABDOMINAL PAIN

SPECIAL CONSIDERATIONS:
1. Common causes in trauma/hospital settings include appendicitis, cholecystitis, pancreatitis, perforated ulcer, and diverticulitis.
2. Consider obstipation/local impaction as a potential cause of abdominal pain.

SIGNS AND SYMPTOMS SUGGESTIVE FOR CONTINUED OBSERVATION:
1. Urgent resting pain.
2. Present bowel sounds.
3. Anorexia and/or vomiting.
5. If diuresis is present, treat per Caudal analgesia Protocol.

MANAGEMENT:
1. 5% dextrose in water
2. Ranitidine (Zantac) 150mg PO bid OR Rabeprazole (AcipHex) 20mg PO qd OR Proton Pump Inhibitor of choice
3. PO hydration

DISPOSITION:
1. Observation and re-evaluation.
2. Priority evaluation if symptoms not controlled by this management within 17 hours.

SIGNS AND SYMPTOMS SUGGESTIVE FOR URGENT EVACUATION:
1. Severe, persistent or worsening abdominal pain is the key sign.
2. Rigor and diaphoresis.
3. Refractory abdominal tenderness.
4. Fever.
5. Absence of bowel sounds.
6. Local peritoneal tenderness.
7. Uncontrollable vomiting.
8. Presence of bloody vomitus or stools.
9. Irreversible loss of vital signs.

MANAGEMENT:
1. Start IV with normal saline (NS), 1 liter bolus, followed by NS 150cc/hr. Keep NPO except for medications or PO hydration.
2. 1000 mg IV q6h
3. OR Ceftriaxone (Rocephin) 1gm IV q8h plus Metronidazole (Flagyl) 500mg PO q8h
4. Treat per Pain Protocol
5. Treat per Abdominal Isolation Protocol

DISPOSITION:
1. Urgent evacuation to a surgical facility.
ALLERGIC RHINITIS/ HAY FEVER/ COLD-LIKE SYMPTOMS

SPECIAL CONSIDERATIONS:
1. History of allergies to foods, mold, pollen, etc. Consider long term therapy with non-steroidal anti-inflammatory drugs (NSAIDs).

SIGNS AND SYMPTOMS:
1. Clear nasal drainage
2. Post-nasal drip or inflamed nasal mucosa
3. With or without complaints of nasal congestion
4. Watery or red eyes
5. Sneezing
6. Normal temperature

MANAGEMENT:
1. **Oral decongestant** (Sudafed) 30 mg q 8 – 12 h.

2. **OR** Diphenhydramine (Benadryl) 25 mg PO q 8 – 12 h if itching is troublesome. (Drowsiness is a side-effect.)

3. Increase oral fluid intake.

DISPOSITION:
None applicable.
### Altitude Illness

#### Special Considerations

**Acute Mountain Sickness (AMS):**
1. Usually occurs at altitudes of 6,000 ft. and higher.
2. Consider pretreatment with Acetazolamide (Diamox) 250mg bid, when rapid ascent to altitudes above 8,000 ft. may occur.
3. Symptoms may occur as quickly as 3 hours after ascent.
4. Can limit onset by limiting initial ascent to no higher than 1,000 ft./day thereafter. For treatment, refer to the next section.

**High Altitude Central Edema (HACE):**
1. Rare below 12,000 ft.
2. Headache is common at altitude. Altered and altered mental status at altitude are HACE until proven otherwise.

**High Altitude Pulmonary Edema (HAPE):**
1. Caused by the hypoxia of altitude. HAPE is the most common cause of death from altitude illness.
2. Usually occurs above 8,000 ft. Respiratory distress at high altitude is HAPE until proven otherwise.
3. Nitroglycerin (Nitroglycerin), Acetylsalicylic Acid (Bansop), Salbutamol (Ventolin), and Mecholyl (Bromensyl) may be used individually or in combination prophylactically in personnel who have a history of previous HAPE and are required to operate at altitude.

HACE and HAPE May Coincide in the Same Patient!

**Note:** A specific treatment protocol for any of these diseases may already exist at your location.

#### Signs and Symptoms:

1. AMS is generally benign and self-limiting, but symptoms may become debilitating. Worsening condition should prompt consideration of a more life-threatening condition (HAPF or HRPE)

A. **AMS**: Diagnosed in presence of headache AND one or more of the following: nausea, vomiting, insomnia, dizziness, lightheadedness, or edema.
   - No correlation with fitness level (likely genetic predisposition)

B. **HACE**: Unsteady gait, wide-based gait, altered mental status, and altered mental status are heralding signs.

C. **HAPE**: Dyspnea at rest is the hallmark sign. Other symptoms may include cough, orthopnea, pyrexia, chest pain, myalgia, fever, and other signs disproportionate to the elevation level.

#### Management:

1. Halt ascent. Immediately descend at least 1,500 ft. for HACE, HAPE, or refractory AMS if medically feasible.
2. **If AMS Symptoms Present**
   - a. **Acetazolamide (Diamox)** 250mg PO bid unless patient is allergic to sulfas or is already taking an antibiotic.
   - b. **Dexamethasone (Decadron)** 8mg PO q 6hs if patient is allergic to sulfas.

   If Dexamethasone (Decadron) is administered, no further ascent until asymptomatic for 24 hours after last Dexamethasone dose.
3. IF HACE SYMPTOMS PRESENT: ATAXIA OR ALTERED MENTAL STATUS
   A. Dexamethasone (Decadron) 10mg IV IM STAT, then 4mg IV IM q 4h.
   B. Individuals with HACE should not be left alone and urgently not be allowed to
descend alone.
   C. Administer supplemental oxygen, if available.

4. IF HAPE SYMPTOMS PRESENT: SHORTNESS OF BREATH AT REST
   A. Nifedipine (Procardia) 10mg PO / SL STAT, then 20mg q 6h if blood pressure is stable.
   B. Do not use in HACE; the deep blood pressure will worsen the symptoms of this
   disease.
   C. Administer supplemental oxygen, if available.
   D. Consider Salbutamol (Albuterol) 2 inhalations q 12h.
   E. Maintain or adjust elevation during descent for HAPE since this will exacerbate symptoms
   F. Treat per Nausea and Vomiting Protocol.

5. For signs or symptoms of either HAPE or HACE, if immediate descent is not technically feasible and a
   GAMSIV bag is available, use a GAMSIV bag in 1 hour to absorb oxygen with bag inflated to a
   pressure of 2 psi (approximately 14 mmHg) above ambient pressure. Most of the cases are
   typical for effective treatment. GAMSIV BAG TREATMENT IS NOT A SUBSTITUTE FOR
descend.

8. Treat per Dehydration Protocol.

DISPOSITION
1. Most cases of AMS are relatively mild, resolve in 2-3 days, and do not require evacuation...
2. Avoid vigorous activity for 3-5 days.
3. Ambulate as tolerated for extra oxygen and prevent hypoxia.
4. Urgent evacuation for patients with suspected HACE or HAPE
5. Individuals who have recovered from HACE or HAPE should not re-ascent without medical officer
clearance.
ANAPHYLACTIC REACTION

SPECIAL CONSIDERATIONS:
1. Acute, rapidly progressing form of shock which occurs within minutes of exposure to an allergen.
2. Primary causes are insect venemation, ingestion, and food allergens.
3. Death can result from airway compromise, inability to ventilate, or cardiovascular collapse.
4. This module is responsible for informing all members of the unit have such a condition. Moreover, the module must also inform the members the correct use of epinephrine kit and the transfer to one of.
5. Consider localized allergic reaction. Anaphylaxis is a life-threatening emergency.

SIGNS AND SYMPTOMS:
1. Wheezing (Bronchospasm)
2. Dyspnea
3. Urticaria (hives)
4. Angioedema
5. Hypotension
6. Tachycardia

MANAGEMENT:
FOR PATIENTS WITH SIGNS AND SYMPTOMS OF AIRWAY INVOLVEMENT AND OR CIRCULATORY COLLAPSE:
1. Epinephrine is the treatment of choice.
   A. Administer 1:1000 epinephrine 0.5mg (0.5 mL of 1:1000 IM).
   B. DO NOT USE INTRAVENOUSLY.
   C. Rapidly intravenous 0.3 mL of 1:1000 IM.
2. Diphenhydramine (Benadryl) 50mg IV / IM / PO / SL.
3. IV normal saline TKO (same task).
4. Levine Theophylline (Bronchodilator) 100mg IV IM.
5. Oxygen.
6. Pulse oximetry monitoring.
7. Verapamil (Zentel) 150mg PO bid.
8. If severe respiratory distress exists, aggressive airway management with bag valve mask and oral and nasopharyngeal airways. Intubate early if no response to epinephrine.
9. Administer 1-2 liters per minute (1LPM) for hypotension; then titrate to establish systolic blood pressure.
   10. If available, radial pulse if BP not available.

DISPOSITION:
1. Urgent evaluation.
# 5

## ASTHMA (REACTIVE AIRWAY DISEASE)

### SPECIAL CONSIDERATIONS:

Other disorders to consider: anaphylactic reaction, spontaneous pneumothorax, HAV/HE, and pulmonary embolism.

### SIGNS AND SYMPTOMS:

1. Wheezing
2. Dyspnea
3. Difficulty with speaking in full sentences.

### MANAGEMENT:

1. **Inhale (Ventolin) metered dose inhaler**
   - Works best when used with spacer; 3 pulls q 5 min, repeat up to 3 times.

2. **If there is no response to ALBUTEROL (Ventolin), isotropic 0.6 mg (1/2 amp of 1:1000 solution) IM (DO NOT INJECT INTRAVENOUSLY).** May repeat dose in 5 - 15 min.

3. IV access with saline lock.

4. **Nasal decongestion (Oxymetazoline) 10mg IV/IM**

5. Oxygen.

6. Pulse oxiometry monitoring.

7. If there is fever, purulent chest pain and productive cough, treat per amoxicillin/itranolam/trimethoprim.

### DISPOSITION:

1. **Official evaluation if no response in less than 6 h.**
2. If the patient responds to management, observe for 4 hours.
   - Return To Duty if there is no wheezing or dyspnea and normal oxygen saturation. Continue Albuterol (Ventolin) 3 pulls q 5 min and re-evaluate in 24 hours. Continue Furosemide (Lasix) 40mg IM q8h for 4 days.
   - Logistic evaluation if symptoms persist.
BACK PAIN

SPECIAL CONSIDERATIONS:
Mental status, saddle anesthesia, sensory loss, loss of bowel or bladder control in the setting of back pain is a neurological emergency requiring urgent evaluation.

SIGNS AND SYMPTOMS:
1. Pain may worsen with movement.
2. Pain may radiate into legs.

MANAGEMENT:
1. IV-1 IV. Syst. for Pain Management/Analgesia.
2. Apply cold compress to painful area for 20 - 25 min.
3. Trigger point injections with local anesthetic (if trained). Lidocaine 1 - 2oz per trigger point.
   May repeat up to 2 days.
4. Consider Diclofenac (Viduloc) 5 - 10mg IM / PO. Repeat once in 2 - 4hr.
5. Maintain activity initially, but encourage gradual strengthening and return to full mobility as excessive tolerated.
6. If back pain is accompanied by fever and/or urinary symptoms, refer per Flank Pain Protocol.

DISPOSITION:
1. Evaluation is often not required if the back pain responds to therapy.
2. Follow-up consultation for cases persisting without responding to therapy.
3. Urgent evaluation for patients with neurological involvement (other than pain) such as:
   A. Weakness
   B. Bowel or bladder dysfunction
   C. Saddle anesthesia
BAROTRAUMA

SPECIAL CONSIDERATIONS:
1. Barotrauma—Occlusion Syndrome (BOS) may occur from recent or remote altitude exposure or rapid decompression.
2. The most common trouble spots are the middle ear and tympanic membrane, but peroneal nerves and teeth may be affected.
3. Pulmonary barotrauma occurs when compressed air is breathed at depth followed by ascending with a closed airway (i.e., breath holding), and can cause pneumothorax or arterial gas embolism.

SIGNS AND SYMPTOMS:
1. Pain in the ears, sinuses, teeth.
2. Pulmonary barotrauma symptoms may present with chest pain, dyspnea, mediasinal emphysema, subcutaneous emphysema, pneumothorax, and arterial gas embolism (AGAB)

MANAGEMENT:
1. Middle ear:
   A. If tympanic membrane rupture is present or suspected, protect the ear from water or further trauma.
   B. Hyperbaric (Availor) 400mg PO q6h if contamination is suspected.
   C. Pseudophedrine (Sudafed) 60mg PO q4-6hr pm
   D. DO NOT use ear drops.
   E. Refer to higher level of care when involved.

2. Peritonsorial Gasus barotrauma:
   - Pseudophedrine (Sudafed) 60mg PO q4-6hr pm
   - Pulmonary barotrauma to include abdominal or chest emphysema.
     A. If no respiratory distress, monitor patient closely. Use pulse oximetry if available.
     B. If respiratory distress occurs—Treat per Spontaneous Pneumothorax Protocol

3. If arterial gas embolism is suspected, administer 100% oxygen and 1 liter normal saline IV
4. Treat per /Hin Management Protocol. (Avoid narcosis if recompression is anticipated.)

DISPOSITION:
1. Urgent transportation for patient with arterial gas embolism or pneumothorax with respiratory distress.
2. Vital signs to moderate altitude airs, or pulmonary barotrauma without respiratory distress, observation and Readiee evacuation
3. Urgent evaluation for consultation for tympanic Membrane rupture.
BEHAVIORAL CHANGES
(INCLUDES PSYCHOSIS, DEPRESSION AND SUICIDAL IMPULSES)

SPECIAL CONSIDERATIONS:
1. In a clinical setting, consider sleep deprivation as a cause.
2. Labile mood is common, and will often dictate the management of mental status changes. Changes in mental status could be caused by head trauma, metabolic and endocrine disease processes, environmental toxins, infections, conductious disorders, exposure to hypothermia, hyperthermia, Braden's score, and chemical agent use (i.e. methadone) or withdrawal.
3. Consider diabetic hypoglycemia as a cause of altered mental status.

SIGNS AND SYMPTOMS:
1. Acute behavioral changes include withdrawal, depression, aggression, confusion, or other behavioral patterns typical for the individual.
2. Psychosis is an acute change in mental status characterized by altered sensory perceptions that are not congruent with reality.
   A. Auditory and/or visual hallucinations
   B. May include violent or parasocial behavior
   C. Hyperagitated speech patterns are common
   D. May include autonomic withdrawal from associates

MANAGEMENT:
1. Remove all weapons or potential weapons from patient AND detaining Matrix.
2. Check pulse/arrhythmia.
3. Place patient in quiet environment under continuous surveillance
4. Give contents of 1 sugar packet sublingually to treat for possible hypoglycemia.
5. Take Temperature
   A. If Temperature is below 96 degrees, treat per Hypothermia Protocol
   B. If Temperature is above 101 degrees, treat per Meningitis and Hypothermia Protocol

   If Meningitis is suspected or if there is a decrease in mental status, use Valium with caution. Due to possible respiratory depression, hypotension, and masking of progression of disease related altered mental status.
6. For acute agitation, combative ness, or violent behavior, restrain patient while at least two individuals and give diazepam (Valium) 10mg IM. Repeat after 30 minutes prn.
   OR Midazolam (Versed) 5mg IM.
7. If sedated or restrained, maintain constant vigilance for a change in the hemodynamic status or loss of sensory reflexes.

DISPOSITION:
Urgent Evaluation

Spring 2009 Training Supplement TMEPS
BLAST INJURY ASSESSMENT

INITIAL EVALUATION AND TREATMENT PER TCCC PROTOCOL

SIGNS AND SYMPTOMS:
1. Heliot - Cranial inspection for Tympanic Membrane (TM) rupture during examination.
   A. Intact TMs do NOT exclude significant blast injury to other parts of the body.
   B. Check for ear discharge, tinnitus, hearing loss.
2. Pulmonary - Evaluate for shortness of breath and abnormal breath sounds.
3. Neurologic - Evaluate for TBI with IMACE and neurologic exam.

MANAGEMENT:
1. All asymptomatic patients should be monitored for at least 8 hours after the event to rule out late presenting complications.
2. Tympanic Membrane:
   A. Keep ear canal uncovered in case of TM rupture.
   B. Unamplified (Decibled) tympanic membrane is present. Retard to TBI.
3. IMACE examination needs to be accomplished on all personnel affected by the blast. Follow Local TBI Protocol.
4. Pulmonary Decompression:
   A. High flow O2 if available. Use caution with high-pressure ventilation; this may worsen the patient's condition.
   B. Follow rules for hyperventilation given risk for pulmonary edema.
   C. Have high suction for tension pneumothorax.
   D. Needle decompression
5. Cardiac Decompression:
   1) Recurrence or persistence of respiratory distress after 2 needle decompressions
   2) OR ventilation not > 15
   3) OR Patient requires positive pressure ventilation
6. For air evacuation, fly at the lowest tactically possible altitude
7. Abdominal:
   A. Any abdominal pain or tenderness within 48 hours of a blast exposure warrants urgent surgical evaluation.
   B. Indwelling catheter in place for urgent evacuation
8. Consider possibility of Aortic Dissection (ACE) in patients with focal neurological deficits after pulmonary blast injury. ACE may require reperfusion therapy. See Aortic Dissection Protocol.

DISPOSITION:
1. TM rupture without complications - Return To Duty after 8 hrs of observation
2. TM rupture with hearing loss - Medical evacuation
3. Neurologic Injury - Urgent Diagnosis for Neurosurgical evaluation
4. Pulmonary Complications - Urgent evacuation
5. Abdominal TBI - Urgent Surgical evaluation
Patient Name: ____________________________

Surf. - UME

Date of Injury: __/__/____

Time of Injury: ______________

Examiner:

Date of Evaluation: __/__/____

Time of Evaluation: ______________

History: I – VIII

I. Description of Incident:

a) What happened?

b) Tell me what you remember.

c) Were you drowsy, confused, how long?

Yes \ No

d) Did you hit your head? Yes \ No

II. Causes of Injury (circle all that apply):

1) Contact Sports
2) Fall
3) Motor Vehicle Crash
4) Blunt Trauma
5) Other

III. Was a helmet worn? Yes \ No

IV. Amnesia: Are there any events just BEFORE the injury that are not remembered?

Yes \ No \ If yes, how long

V. Amnesia: After: Are there any events just AFTER the injuries that are not remembered?

(Assess time until continuous memory after the injury)

Yes \ No \ If yes, how long

VI. Name the initial report loss of consciousness or "Blacking out"?

Yes \ No \ If yes, how long

VII. Did anyone observe a period of loss of consciousness or amnesia?

Yes \ No \ If yes, how long

VIII. Symptoms (circle all that apply):

1) Headache
2) Dizziness
3) Memory Problems
4) Balance Problems
5) Nausea/Vomiting
6) Difficulty Concentrating
7) Fatigue
8) Visual Disturbances
9) Raging in the aura
10) Other

IX. Examination: IX – XIII

Examine each item. Total possible score is 20

X. Orientation: (1 most normal)

Month: 0 1

Day: 0 1

Date of Week: 0 1

Year: 0 1

Orienteration Total Score: __/5

________________________________________________________________________

________________________________________________________________________
X. Immediate Memory:
Read all 5 words and ask the patient to recall them in any order. Repeat two more times for a total of three trials.
(1 point for each correct, 0 for each wrong)

<table>
<thead>
<tr>
<th>Word</th>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Name</td>
<td>0</td>
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<tr>
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<td>1</td>
<td>1</td>
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<td>Open</td>
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<td>Room</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Date</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Immediate Memory Total Score: 15

XI. Neurological Screening
1. As the patient is standing, gaze:
   - Eyes: pupillary response and tracking
   - Verbal: speech fluency and speech finding
   - Motor: strength with gait coordination

Record any abnormalities. No points are given for this.

XII. Delayed Recall (1 pt. each)
Ask the patient to recall the 5 words from the earlier memory test (Do NOT reveal the word list)

<table>
<thead>
<tr>
<th>Word</th>
<th>1 pt. each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
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</tr>
<tr>
<td>Room</td>
<td>1</td>
</tr>
<tr>
<td>Date</td>
<td>1</td>
</tr>
</tbody>
</table>

Delayed Recall Total Score: 3

TOTAL SCORE: 30

Notes:

Diagnosis: (circle one or write in diagnosis)

No concussion

$80.0 Concussion without

Loss of Consciousness (LOC)

$80.1 Concussion with

Loss of Consciousness (LOC)

Other diagnosis:


Complementary Total Score: 19

Defense and Veterans Brain Injury Center
1-800-385-5544 or DSN: 887-5345

Journal of Special Operations Medicine
BRONCHITIS/ PNEUMONIA

SPECIAL CONSIDERATIONS:
1. Consider high altitude pulmonary edema (HAPE) at high altitudes.
2. Consider pulmonary edema (PE) and pneumonitis (fever and productive cough) at altitude.

SIGNS AND SYMPTOMS:
1. Fever
2. Productive cough, especially with dark yellow, red tinged, or greenish sputum
3. Chest pain
4. Rales may be present and breath sounds may be decreased over the affected lung.
5. Dyspnea may be present in severe cases.

MANAGEMENT:
1. Amoxicillin (totanoxn) 500mg PO twice daily 250mg qid for 4 days OR Macrolide (Azithromycin) 500mg PO qd for 7 days.
2. If unable to tolerate PO intake, Erythromycin (Granules) 1gm IV q8h OR Ceftriaxone (Rocephin) 1gm IV q24h.
3. Nebulizer (Ventolin) by metered dose inhaler 2 – 4 puffs q 4 – 6 h.
4. Treat per HAPE Management protocol.
5. If febrile: ceftriaxone 1g PO q8h.
6. Pulse oximetry monitoring.
7. Oxygen pm.
8. If at high altitude, see altitude illness protocol and treat for HAPE.

DISPOSITION:
1. Urgent evacuation for severe hypoxia or hypothermia.
2. Observation or routine evacuation as necessary.
CELLULITIS/CUTANEOUS ABSCESS

SPECIAL CONSIDERATIONS:
1. Superficial bacterial skin infection
2. Typically appears within 48-72 hours following a break in the skin, but more serious types of cellulitis may be seen as early as 6-8 hours following animal or human bites.
3. If abscess formation occurs, it is often classified as a localized infection.
   a. The abscess is typically well-demarcated and fluctuant.
   b. Local warmth is common.

SIGNS AND SYMPTOMS:
1. Painful, erythematous, swollen, tender area
2. Fever may or may not be present
3. Typically, erythema spreads without treatment
4. Rapidly spreading, painful lesions suggest the possibility of necrotizing fasciitis or a life-threatening infection of the deeper tissues that should be treated per Staphylococcus aureus (Staph) Protocol
5. Fluctant, tender, well-defined mass indicates abscess formation.

MANAGEMENT:
1. Intramuscular (IM) or oral diclofenac 50 mg PO bid for 5 days OR Intramuscular Clindamycin 900 mg PO bid
2. ORAL:
   PLUS EITHER: Ceftriaxone-Sulfamethoxazole (Septobid DS) 1 tab PO bid OR Rifampin 600 mg PO bid for 10 days.
3. Clean and dress wound and surrounding area.
4. Use a povidone iodine to mark the demarcation of the infection and re-evaluate in 24 hours.
5. Limit activity until infection resolves.
6. Add Entenep (Syntocinon) 5 mg IV/IM q4h if worsening at 4 hours or no improvement at 48 hours of treatment.
7. IF ABSCESS IS PRESENT:
   a. Incise and drain (SAD) if the environment permits
      1. Establish sterile technique with Betadine
      2. Local anesthetic using Lidocaine
      3. Incise along the length of the abscess cavity, but not further.
      4. Insert should be placed to allow egress of fluid if possible.
   b. On initial treatment, leave wound open and pack with antibiotic or dampened gauze. If available, on subsequent dressings, wash the wound. DO NOT SUTURE THE SITE.
   c. Suture wound with percutaneous matrix suture.
   d. Treat per Pain Management Protocol.

DISPOSITION:
1. Re-evaluate daily and watch for progression of erythema while on antibiotics.
2. Cellulitis in critical areas (head, neck, hands, perineum, periorbital) requires Priority evaluation.
3. Use of IV antibiotics requires Priority evaluation.
CHEST PAIN

SPECIAL CONSIDERATIONS:
1. This Protocol assumes immediate access to ACL and medications or monitoring/defibrillation capabilities.
2. Since the ATRI does not have access in the field to tests required to accurately determine the etiology of chest pain, early and rapid evacuation should be considered if tactically feasible. High risk patients include myocardial infarction (MI), unstable angina, pulmonary embolism, pneumonia, pneumothorax, and esophageal rupture.

SIGNS AND SYMPTOMS - CARDIAC:
1. The presence of one or more of the following risk factors increases the likelihood of coronary artery disease: smoking, diabetes, hypertension, elevated cholesterol, obesity, family history of MI at a young age, and patient age over 40.
2. The following are signs and symptoms suspicious for myocardial infarction: the etiology for chest pain:
   A. Subsides chest pain that may radiate to the left arm, neck, or jaw.
   B. Pain described as squeezing or numbness.
   C. Improves with rest but evolves to constant with activity.
   D. Associated dyspnea, diaphoresis (sweating), nausea, light-headedness, or syncope.
   E. Tachycardia, irregular heart rhythm, or severe bradycardia.
   F. Nystagmus, nuchal rigidity in the lungs on auscultation.
   G. Significant hypertension or hypotension.

MANAGEMENT:
1. IV access with saline lock. Administer 250 - 500cc normal saline bolus as needed to correct hypotension with frequent reassessment.
2. Morphine sulfate 5mg IV initially, then 2mg q 5 - 15 min pm for pain unless hypotension is present.
3. Oxygen.
4. Pulse oximetry monitoring.
5. Avoid all sedation. Allow the patient to rest in a position of comfort. Frequently reassess the patient including hemodynamic status.

OTHER ETIOLOGIES OF CHEST PAIN:
1. The following signs and symptoms MAY suggest a CI etiology such as gastroesophageal reflux disease (GERD): dyspnea, dysphagia, burning quality chest pain, exacerbated by laying flat, foul or boney taste in mouth. A trail of antacids or histamine (H2) blocking PO bid may be useful if evacuation will be delayed.
2. Severe chest pain following forced vomiting may indicate esophageal rupture. Administer IV normal saline 150cc/hr and pantoprazole (Pradaxa) 1mg IV and evacuate as Urgent.
3. Sudden onset of pleuritic chest pain with dyspnea may indicate pulmonary embolus or spontaneous pneumothorax. Auscultate lungs, unilaterally diminished breath sounds suggest pneumothorax which may require decompression. Administer oxygen, establish IV access, administer Aspirin 325mg PO or suspected PE, and evacuate as Urgent.
4. The following signs and symptoms MAY suggest a musculoskeletal etiology: pain resistant to a specific muscle or joint condition. Joint pain associated with certain types of movement. Non-central chest pain reproduced upon palpation. A trial of NSAIDs such as Ibuprofen (Motrin) 800mg PO bid may be useful if evacuation will be delayed.
5. Chest pain with gradual onset and exacerbated by deep inspiration and accompanying by fever and productive enough (may indicate lower respiratory tract infection. Consider immediate transport to appropriate facility for evaluation.

**Disposition:**
1. Organ evacuation.
2. Evacuation platform should include AAI certified medical personnel and the equipment, supplies, and medications necessary for ACLS care.
3. Do not delay evacuation if unsure of chest pain etiology. Strongly consider early contact with a medical officer or medical treatment facility for consultation. Frequently reassess the patient suspected of a non-cardiac etiology to ensure stability and accuracy of the diagnosis.
CONSTITUTIONAL Fecal Impaction

SPECIAL CONSIDERATIONS:
1. Differential diagnosis include acute appendicitis, volvulus, ruptured diverticulum, bowel obstruction, pancreatitis, or parasitic infections.
2. Acute onset, severe pain, pain tenderness, and fever indicate strategies other than constipation or fecal impaction.

SIGNS AND SYMPTOMS:
1. Recent history of infrequent passage of hard, dry stools or straining during defecation.
2. Abdominal pain which is typically poorly localized with cramping.
3. If pain becomes severe and is associated with nausea/vomiting and complete lack of flatus or stools, consider a bowel obstruction.

MANAGEMENT:
1. (Capsules/Suppository) 10mg PO tid pm.
2. Treat per Pain Protocol (non-narcotics – they cause constipation).
3. For impeded stool or no relief with above measures, give normal saline enema 500ml via lubricated IV tubing. (Pl should retain solution for 2 minutes before evacuating contents)
4. If above measures fail, perform digital rectal examination to check for fecal impaction. If fecal impaction is present, perform digital disimpaction, if trained.
5. Increase PO fluid intake.
6. Increase fiber (fruits, beans, and vegetables) in diet if possible.
7. If severe pain, rapid bowel-like abdomen, fever, sepsis or repeated fecalomas develop, or moderate to large amounts of blood are present in stool, then treat per Abdominal Pain Protocol.

DISPOSITION:
1. Observation is usually not required for this condition.
2. Routine evaluation due to response to therapy.
CONTACT DERMATITIS

SPECIAL CONSIDERATIONS:
1. **Wound** therapy as a differential diagnosis: take accompanied by itching, but with discolor red
   and popular lesion(s).
2. **Cellulitis** as a differential diagnosis - bright red, painful, non-pruritic, and typically becomes steadily
   worse with antibiotics.
3. Fungal infection as a differential diagnosis - not always pruritic, infection site(s) slowly enlarge
   without therapy.
4. **Effects** are particularly dangerous if contact is or around the eyes.

SIGNS AND SYMPTOMS:
1. **Acute onset.
2. Skin erythema.
3. Intense itching (pruritis).
4. Erythema, papules, vesicles, bullae, discharge, and / or crusting may be visible.

Management:
1. Change clothes when possible and bag original clothes until they can be machine washed.
2. Wash area with mild soap and water.
3. Apply cool wet compress to affected area to help decrease itching.
4. If available, apply 1% hydrocortisone cream to the affected area and cover with a dry dressing
   to help prevent spread to other parts of the body or clothing.
5. In severe cases, Decadron/dexamethasone (Decadron) 10mg IM q24hr for 5 days.
6. Give Diphenhydramine (Benadryl) 25 — 50mg PO / SL q 8 hr pm itching, if medically feasible.
   (Side effects may occur.)

DISPOSITION:
1. Evaluation not needed for mild cases.
2. Follow treatment for severe symptoms: discontinue use, if needed not improve, or %50 of body surface area
   (BSA) involvement.
3. Monitor for secondary infection (look per Cellulitis Protocol if suspected on the basis of increasing
   pain, redness, or purulent crusting.
### CORNEAL ABRASIONS/ CORNEAL ULCERS/ CONJUNCTIVITIS

**Special Considerations:**
1. Contact lenses can cause abrasions. They should not be permitted until more inclusive antibiotic therapy.
2. Consider LASIK flap dissection for anyone that sustains eye trauma after LASIK surgery.

### Signs and Symptoms:
1. History of eye trauma or contact lens wear
2. Eye pain—typically becomes worse over several days
3. Eye redness
4. Tearing
5. Blurred vision
6. Light sensitivity
7. Fluorescein stain positive
8. White or grey spot on cornea (for corneal ulcer usually need tangential portlight exam to see)
9. For sudden onset of eye pain after trauma in a patient with LASIK surgery, consider LASIK flap dissection

### Management:
1. Remove contact lens if worn.
2. Topical 0.5% Tetracaine; 2 drops in the affected eye for pain relief. Do not dispense to patient.
3. Check for foreign body to include lens fragment. Immerse with normal saline if present.
4. Prednisolone Acetate 0.5% drops 1 drop in the affected eye qid while awake.
6. Reduce light exposure; stay indoors if possible. - sunglasses if not possible.
7. For corneal abrasion, consider daily for 4 days or until resolution of pain and onset of re-epithelialization of the white or grey spot at abrasion site. DO NOT PATCH.
8. Assess using fluorescein drops daily—abrasions should get progressively smaller. Continue antibiotic drops until eye becomes fluorescein negative (no bright yellow spot).
9. IF CORNEAL ULCER PRESENT: Increase Cefazolin (Zyvox) drops q 4-6h and Prednisolone qid

### Disposition:
1. Observation may not be needed for corneal abrasion if improving with treatment.
2. Refer for Ophthalmic Consultation if Corneal Ulcer.
3. Consider examination for intraocular foreign body.
SPECIAL CONSIDERATIONS:
Usually viral etiology, but may also occur with high altitude pulmonary edema (HAPE) and pneumonia.

SIGNS AND SYMPTOMS:
1. Cough with or without detectable sputum production.
2. Often accompanied by other signs and symptoms of upper respiratory tract infection (e.g., sore throat and rhinorrhea).

MANAGEMENT:
1. Treat symptomatically (using Capstax, exercoze or other appropriate medications) when the findings on history and physical do not suggest pneumonia.
2. Atropine or (Ventolin) metered dose inhaler 3–4 puffs a 4 hr may also help control coughing.
3. Encourage PO hydration.
4. Avoid respiratory irritants (smoke, fumes, etc.).
5. If associated with URI symptoms, treat as Allergic Rhinitis Product.
6. If at altitude, pull humidity over nose and breathe through it for warm humified air.

DISPOSITION:
1. Evaluation is usually not required.
2. If accompanied by fever, chest pain, rhinorrhea, and/or colored sputum (green, dark yellow, or emesis), treat per Infectious Pneumonia Protocol.
CRUSH SYNDROME PROTOCOL

SPECIAL CONSIDERATIONS:
1. Be aware of development of crush syndrome starting as early as 4 hours post injury.
2. These medications are not part of the standard ATP IV bag and require development of a separate crush injury kit.

- The principles of hypotensive resuscitation according to TOCC DO NOT apply in the setting of extremity crush injury requiring extrication.

- In the setting of a crush injury associated with non-compressible (thoracic, abdominal, pelvic) hemorrhage, aggressive fluid resuscitation may result in increased hemorrhage.

- With extremity injuries, tourniquets should NOT be applied during Phase 1 unless there is hemorrhage which is not controllable by other means.

- Be aware of development of cardiac dysrhythmias due to hyperkalemia immediately following extrication.

DEFINITION:
Massive, protean crush injury resulting in profound muscle and soft tissue damage places the patient at significantly increased risk for developing circulatory and renal complications.

MANAGEMENT:
PHASE 1: IMMEDIATE (while attempting extrication):

1. Maintain patent airway (NPA, OPA, etc.) and adequate ventilation.
2. Monitor O2 sat with pulse ox and administer high flow oxygen if available.
3. Give initial bolus of 1-1.5L of NS PRIOR to attempts at extrication and continue at 1.5L/hr.
   - Ringer's lactate is not recommended due to the potassium content.
4. Maintain urine output at greater than or equal to 200cc/hr. If possible, insert Foley catheter.
5. Assess and maintain mental status.
6. Follow Pulse Management Protocol
7. Consider prophylactic antibiotics – Fluornam (Inrav) 1gm IV
8. Utilize Propack or ABG cardiac monitoring if available.
   - Ensure urine output has been established prior to using Mannitol.
Phase 2: Immediately Prior to Extrication:

10. Immediately prior to extrication, apply tourniquets to crushed extremities, if possible.

Phase 2 Recommended Additional Resuscitative Drugs

11. Sodium Bicarbonate – give 2mEq/kg IV immediately prior to extrication (Diluted 1 – 2:1 via). Additional dosing of Sodium bicarbonate may be required if dysrhythmias or cardiac arrest persist after giving calcium chloride or gluconate.

Phase 3: Immediately Following Extrication

Cardiac Dysrhythmias or Arrest

12. CPR should be initiated if cardiac arrest is deemed following extrication. DO NOT follow the 1:1:1 technique on cardiac arrest.

13. If extrication is greater than 4 hours OR in the presence of dysrhythmias, administer Calcium Chloride (1g, 13ml or 15% solution) or Calcium Gluconate (1g, 10ml or 10% solution).

Calcium should not be given in bicarbonate containing solutions due to precipitation of calcium carbonate.

14. Additional dosing of Sodium bicarbonate may be required if dysrhythmias or cardiac arrest persist after giving calcium chloride or gluconate.

15. Following extrication, once the patient is stabilized, be prepared to treat hypokalemia as tourniquets are released.

Disposition:

Surgical Urgent evacuation
DEEP VENOUS THROMBOSIS (DVT)

SPECIAL CONSIDERATIONS:
1. Risk factors include trauma, long airplane rides, high altitude exposure, and genetic predisposition.
2. May be confused with a ruptured Baker's cyst in a tactical setting.

SIGNS AND SYMPTOMS:
1. Asymmetrical pain and swelling in a lower extremity (often the calf muscles).
2. Warmth over affected area.
3. Increased pain in the affected calf muscle with dorsiflexion of the foot.

MANAGEMENT:
1. Monitor patient with pulse oximetry (sudden decrease in oxygen saturation suggests a pulmonary embolism.)
2. ASA 325mg PO.
3. For associated respiratory distress consider Pulmonary Embolism and treat per Chest Pain Protocol.
4. Immobilize the affected extremity.

DISPOSITION:
1. Priority evacuation if no respiratory distress or chest pain.
2. Urgent evaluation if respiratory distress or chest pain are present.
DEHYDRATION

SPECIAL CONSIDERATIONS:
1. Trauma to the fluid section (chronically dehydrated).
2. Prolonged missions; acute diarrhea (gastroenteritis), viral/bacterial infections, and environmental factors (heat stress or strenuous activity) all may exacerbate dehydration.
3. May also occur in cold or high altitude environments.

SIGNS AND SYMPTOMS:
1. Lightheadedness (weak or sudden standing)
2. Headache (especially in the morning)
3. Dry mucous membranes
4. Decreased urinary frequency and volume
5. Dark urinalysis
6. Dehydration in performance

MANAGEMENT:
1. Increase oral fluid intake.
   a. If available, use commercially electrolyte drink mixes for fluid replacement diluted to a 1:1 solution.
   b. Avoid fluids containing caffeine
2. Intravenous (IV) fluids: use an initial bolus of 1 liter normal saline IV, followed by regular attempts at PO hydration. If still unable to tolerate PO hydration, repeat 1 liter bolus of normal saline IV. If normal saline is not available, use available IV fluids.

DISPOSITION:
1. Monitor closely for recurrence of dehydration.
# DENTAL PAIN

**SPECIAL CONSIDERATIONS:**
- Most common causes are deep decay, fractures of tooth crown/root, acute periapical (root end) abscesses, or pericoronitis (pain associated with an impacted wisdom tooth).

**SIGNS AND SYMPTOMS:**
1. Intermittent or continuous pain (usually intense), heat or cold sensitivity
2. Visible break / cracked tooth
3. Severe pain on percussion
4. Intraradicular swelling / abscess
5. Partially erupted wisdom tooth

**MANAGEMENT:**
2. If signs and symptoms of infection are present, administer Amoxicillin/Clavulanate Acid (Augmentin) 875mg PO bid for 7 days OR Ceftriaxone (Rocephin) 1gm IV / IM qd x 7 days.
3. If gums appear swollen and red, encourage increased oral hygiene and warm saline rinses bid.

**DISPOSITION:**
1. Evaluation usually not necessary
2. Routine evacuation if not responding to therapy or requiring IV antibiotics

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Spring 2009 Training Supplement TMEPS 31
DETERMINATION OF DEATH / DISCONTINUING RESUSCITATION

SPECIAL CONSIDERATIONS:
1. Immediate determination of death is appropriate in a trauma patient without pulse or respirations in the setting of multiple casualties when resuscitative efforts would hinder the care of more viable casualties.
2. Patients that are steamed by lightning, have hypothermia, cold-water drowning, or intermittent pulse may require extended cardiopulmonary resuscitation.
3. It is assumed that personnel do not have access to ECG, or other monitoring equipment to evaluate heart rhythm, or deliver countershocks.

SIGNS AND SYMPTOMS:
1. Obvious Death — Persons who, in addition to absence of respiration, cardiac activity, and neurologic reflexes, have one or more of the following:
   A. Desiccation
   B. Massive crushing and/or penetrating injury with laceration of the heart, lung or brain
   C. Incineration
   D. Decomposition of body tissue
   E. Rigor mortis or post-mortem lividity

MANAGEMENT:
1. In the setting of obvious death, resuscitative efforts should not be initiated.
2. If resuscitative efforts have been initiated, discontinuation should be considered:
   A. After 15 minutes of the causes to unconscious or due to firearm or after 30 minutes when the cause is due to hypothermia, electrical injury, lightning strike, cold water drowning, or other cause known to require prolonged resuscitative efforts when:
      1) There is persistent absence of pulse and respirations despite assessing oxygen and ventilation as well as administration of resuscitative fluids and medications.
      2) Pupils are fixed and dilated.
      3) No response to deep pain above or below the clavicles.
      4) Absence of exhaled CO2, (either columnmetric or zone form) from a correctly placed endotracheal tube or alternative array.

3. If there is any question as to the discontinuation of resuscitative efforts, a medical officer should be contacted for guidance.

DISPOSITION:
1. Exhumation of the remains when tactically feasible.
2. In the event of return of spontaneous circulation, Urgent Evacuation.
EAR INFECTION (INCLUDES OTITIS MEDIA AND OTITIS EXTERNA)

SPECIAL CONSIDERATIONS:
1. Infection of the middle or external ear may be viral or bacterial in etiology.
2. Increased pressure in the middle ear may cause internal pain and may result in rupture of the tympanic membrane (characterized by sudden decrease in pain and drainage from ear canal).

SIGNS AND SYMPTOMS:
1. Ear pain

MANAGEMENT:
1. Maxifloxacin (Avelox) 400mg PO qd for 10 days OR Azithromycin (Z-pac) 500mg PO initially followed by 250mg PO qd x 4 days.
3. If external canal exudate is present, Ceftriaxone (Zymex) drops, 5 drops tid – qd until symptoms remain resolved for 48 hours.
4. If water immersion is anticipated, use ear plugs to prevent cold water entry which will cause vertigo.

DISPOSITION:
1. For uncomplicated cases, no evacuation is necessary.
2. Routine evacuation for complicated cases not responding to therapy.
ENVENOMATION

SPECIAL CONSIDERATIONS:
1. Toxins envenomations from a variety of sources, including snakes, scorpions, jellyfish, or envenomations are all capable of causing life-threatening anaphylaxis.
2. Only a minority of envenomations from venomous snakes is lethal; severe, bite-threatening envenomations and envenomations from aseptic wounds should be treated immediately.
3. In envenomations, envenomation, electrical shock, burns, or envenomations, envenomations should NOT be performed to treat envenomations.
4. Envenomations in other effective for removing venom from a wound. If envenomation placed, it should be left in place until patient reaches higher level of care.

SYMPTOMS AND SYMPTOMS:

General:
1. Pain
2. Swelling/edema
3. Puncture site(s) from stinger or fangs

Hematologic:
1. Sudden pain
2. Fever
3. Hematuria
4. Hemorrhagic bullae

Neurologic:
1. Cranial nerve dysfunction (i.e., ptosis)
2. Paralysis
3. Fasciculations
4. Weakness
5. Altered mental status

MANAGEMENT:
1. If signs and symptoms of anaphylaxis present, treat per anaphylaxis Protocol.
2. Diphenhydramine (Benadryl) 25mg PO / SL / IV
3. Acute cold/heat with fluids
5. If toxic envenomations suspected (significant pain, edema, evidence of coagulopathy or neurologic signs/symptoms):
   A. Minimize activity and place in stirrup
   B. Remove all constraining clothing and jewelry
   C. Start IV in unaffected extremity
   D. Monitor heart rate and systolic blood pressure every 15-30 minutes
   E. Immobilize affected limb in neutral position and wrap affected extremity in an elastic bandage beginning proximally and progressing distally, or in an anteroposterior

DISPOSITION:
1. Urgent evacuation if treated for anaphylaxis.
2. Urgent evacuation if evidence of severe envenomation systemic signs and symptoms, unable to reach medical facility.
3. Evacuation not required if signs and symptoms do not indicate anaphylaxis or severe envenomation after four hours of observation.
EPISTAXIS

SPECIAL CONSIDERATIONS:
1. May occur in high altitude and desert environments due to mucosal drying.
2. May be anterior or posterior.
3. Posterior epistaxis may be difficult to stop and may cause respiratory distress due to blood flowing into the airway. This type of epistaxis is uncommon in young healthy adults. It is more commonly seen in older, hypertensive patients.

SIGNS AND SYMPTOMS:
1. Nasal bleed.
2. Often previous history of nosebleeds.

MANAGEMENT:
1. Chronically dried (Allis) nasal speculum 2 squirts in each nasal horn at anterior area of nose for 10 minutes without releasing pressure.
2. If bleeding continues, insert Allis sucked nasal sponge bilaterally along floor of nasal cavity. Continue pinching the nose just below the nasal bridge, for 10 minutes.
3. Once bleeding has stopped (after 30 minutes), remove the Allis nasal sponge and apply antibiotic ointment to the affected nasal turd - lidocaine.
4. Clean nasal and other material from airway (if required) by having patient sit up, lean forward, and blow his/her nose.
5. Normal saline IV TKO ph or based upon severity of nose bleed.

6. IF BLEEDING CONTINUES:
A. Prepare 14 Fr. Foley catheter. (Tip is cut to minimize distal irritation.)
B. Advance catheter along floor of nose (straight in) until visible in mouth.
C. Fill balloon with 10 cc of normal saline.
D. Retract catheter until well opposed to posterior nasopharynx.
E. Add an additional 5 cc of normal saline to balloon.
F. Clamp in place without using excessive anterior pressure.
G. 15-30 ml of medications (laugher 400mg PO qid until packing is removed.
H. LEAVE GLOTTIS AND PACKING IN PLACE FOR 72 HOURS.

DISPOSITION:
1. Follow-up may not be required. If required in mild, anterior, and resolves with treatment.
2. Strongly advise for severe epistaxis not responding to therapy or if Foley catheter is used.
FLANK PAIN
(INCLUDES RENAL COLIC, PYELONEPHRITIS, KIDNEY STONES)

**SPECIAL CONSIDERATIONS:**
1. May proceed to life-threatening systemic infection.
2. May be associated with urologic tumor. Ensure normal external GU exam first.

**SIGNS AND SYMPTOMS:**
1. Lower tract infection
   A. Dysuria
   B. Polyuria
2. Back pain
3. Flank pain
4. Nausea/vomiting
5. Costovertebral angle tenderness
6. Fever
7. Hematuria

**MANAGEMENT:**
2. Treat per Anterior and Vascular Protocol.
3. Treat per Dehydration Protocol.
4. If fever present:
   A. Doxycycline (Vibramycin) 100mg PO qd OR Amoxicillin/Cloxacillin Acid (Augmentin) 875mg
      PO bid
   B. Ceftriaxone (Rocephin) 1gm bid IV / IM OR Cefazolin (Tavran) 1gm IV / IM OR if unable
      to tolerate PO or uncomfortable to oral administration.

**DISPOSITION:**
Intensive observation.
FUNGAL SKIN INFECTION

SPECIAL CONSIDERATIONS:
1. Infected toe(s), eczema, and contact dermatitis are differential diagnosis — are also accompanied by itching, but have discrete red papular lesion(s).
2. Cellulitis as a differential diagnosis — is bright red, painful, not pruritic, and typically becomes severely worse without antibiotics.
3. Acute contact dermatitis as a differential diagnosis — is diagnosed by intense itching, skin erythema and a history of environmental exposure.

SIGNS AND SYMPTOMS:
1. Skin erythema
2. Pruritis is variable
3. Slow spreading
4. Borders of the erythematous plaques are generally irregular and/or circumferential.
5. Often initially diagnosed as contact dermatitis but gets worse with use of steroids (those without an antifungal agent added).
6. Most common sites of infection are foot, "athlete's foot" or tinea pedis, groin ("jock itch" or tinea cruris), scalp (tinea capitis), and torso or extremities ("ring worm" or tinea corporis).

MANAGEMENT:
1. Fluconazole (Diflucan) 150mg PO once per week for four weeks (total of four doses in the absence of a cure, or 1 dose after clinically clear). If not resolved after 4 weeks, refer to physician.
2. Clean rigorously with mild soap without injuring the skin.

DISPOSITION:
Examination is usually not required for this condition.
SPECIAL CONSIDERATIONS:
1. Ecology of acute diarrhea is often little understood. Some infections are common in the deployed environment.
2. Emerging neomycins are resistant among enteropathogenic E. Coli and Campylobacter. Make sure to use neomycin as a first-line agent for therapy.
3. Consider antibiotic-associated diarrhea if no antibiotics at onset.
4. Consider paralytic infection if symptoms persist for 3 or more days.
5. Must rule out malaria if fever and GI symptoms occur in a malaria zone.

SIGNS AND SYMPTOMS:
1. Acute onset of nausea, vomiting, and diarrhea
2. Fever may or may not be present.

MANAGEMENT:
1. Loperamide (Imodium 4mg PO initially, then 2mg PO after every loose bowel movement with a maximum dose of 16mg per day.

2. Do not use loperamide in the presence of fever or bloody stools.

3. Azithromycin (Zithromax) 500mg PO qd for 3 days or Moxifloxacin (Avelox) 400mg PO qd for 3 days.


5. Treat for Dehydration Protocol.

6. If diarrhea persists after 3 days of therapy, give Metronidazole (Flagyl) 500mg PO tid for 10 days.

DISPOSITION:
1. Urgent evacuation if grossly bloody stools or circulatory compromise
2. Priority evacuation if dehydration persists despite above therapy
3. Strict diet evacuation if diarrhea persists after 3 days of therapy.
HEADACHE

**SPECIAL CONSIDERATIONS:**
1. The number differential diagnosis for the usual headache is large and includes disorders that encompass the spectrum of minor to severe underlying disorders.
2. Consider altitude sickness, intracranial bleed, meningitis and carbon monoxide poisoning.

**SIGNS AND SYMPTOMS:**
1. If the headache is applied for the patient, check dilated blood pressure (if possible), focus neck rigidity, visual symptoms, mental status changes, neurologic weakness, and hydration.

**MANAGEMENT:**
1. If the patient has fever, neck rigidity, photophobia, petechial rash, or nausea and vomiting, treat per Meningitis Protocol.
3. If headache is accompanied by nausea and/or vomiting, treat per Nausea and Vomiting Protocol.
4. Oxygen if other therapies are ineffective.
5. If dehydration is suspected, treat per Dehydration Protocol.
6. If at altitude, treat per Altitude Illness Protocol.

**DISPOSITION:**
1. Evacuation is usually not required if the headache responds to therapy.
2. Acute headache in the presence of fever, severe nausea and vomiting, mental status changes, focal neurologic signs, or preceding seizures, loss of consciousness, or a history of lightheadedness in the past constitute a true emergency and require urgent evacuation. Also consider urgent evacuation if anyone without a prior history of headaches if there is severe.
HEAD AND NECK INFECTION
(INCLUDES EPIGLOTTITIS AND PERITONSILLAR ABSCESS)

SPECIAL CONSIDERATIONS:
1. Most common causes in young, healthy patients include odontogenic (dental origin) autonomic sources or post-injury (wound or fracture) infections.
2. These infections may progress rapidly from minor to airway compromise.

SIGNS AND SYMPTOMS:
1. Pain, fever, and malaise
2. Intravascular oral swelling
3. Difficulty opening mouth
4. Pulse
5. Difficulty swallowing
6. Airway compromise

MANAGEMENT:
1. Manage airway and breathing first.
2. Place patient in position of comfort.
3. Monitor pulse oximetry.
4. Oxygen pO2
5. IV access
6. Amoxicillin/Clavulanate (Augmentin) 575mg PO bid for 7 days or Cefuroxime (Zinnat) 1 gm IV q8H for 7 days.
8. Consider Dexamethasone (Decadron) 10 mg IV for any airway involvement.
9. Avoid airway manipulation unless absolutely necessary.
10. If airway intervention is indicated, make a single attempt at intubation if feasible. (The epiglottis is not swollen to the extent that visualization of cords is not possible.)
11. If intubation is attempted, do not make any repeat attempts. If intubation has failed, the next step is a cricothyrotomy (using lidocaine if conscious).
12. Have cricothyrotomy kit available BEFORE ATTEMPTING INTUBATION.

DISPOSITION:
1. Urgent evacuation if any airway compromise is present.
2. Routine evacuation if no airway compromise and infection is not widespread.
HIV POST EXPOSURE PROPHYLAXIS

SPECIAL CONSIDERATIONS:
1. Initiation of the highly active antiretroviral therapy (HAART) should ideally occur within 2 hours of exposure, but still has some effect up to 72 hours after exposure.
2. Antiretrovirals have a significant side-effect profile, including nausea, vomiting, and diarrhea.
3. Obtain a sample of the source’s blood for HIV and hepatitis testing, if possible.
4. Use of a commercially available Rapid HIV Test Kit that uses either an oral specimen or whole blood is recommended for source testing to determine if HAART therapy should be initiated. This should occur within 1-2 hours. The test requires 20-40 minutes to obtain results. The use of one of the following FDA approved Rapid HIV Test kits is recommended (as of 2009):
   A. whole blood, plasma or oral fluid:
      1) OneStep Advance Rapid HIV 1/2 Antibody Test
      2) whole blood or serum/plasma:
         1) UniGold Recombigen HIV Test
         2) Clearview HIV 1/2 StixPak
         3) Clearview Complete HIV 1/2 Test

HIGH RISK EXPOSURES
1. Percutaneous injury (needle stick or other contaminated penetrating injury).
2. Exposure or exchange of body fluids with persons at high risk for HIV.
3. Transfusion of blood products that have not undergone standard US blood bank or equivalent testing for transmissible diseases.

4. When attempting to evaluate a high risk exposure, take into account the source of the bodily contamination. For example, blood from a fellow Soldier would fall into a low risk category for exposure.

MANAGEMENT:
1. Wash area with soap and water to clean area and minimize exposure.
2. Use a Rapid HIV Test Kit to determine if therapy should be initiated. In high risk situations, do not delay initiation of therapy if the test kit is not available. HIV PEP should be started within 1-2 hours of exposure.
3. Consult with unit medical officer ASAP to discuss the case and obtain further guidance after any significant exposure:
   A. If the Rapid HIV Test is positive, initiate PEP.
   B. If high-risk exposure occurs and a Rapid HIV Test is unavailable, initiate PEP.
   C. If a Rapid HIV Test is negative, seek medical officer guidance to determine the need for PEP.

4. Initiate antiretroviral triple therapy according to the following priority of drugs. Choose only 1 of the following drug treatment options.
   A. Atazanavir (ategavir/proicavir/tenofovir), 1 PO qd
      1) 652% incidence of CNS side effects
   B. Or Combivir (lamivudine and zidovudine) 1 tablet PO bid AND Virod (tenofovir) 300mg PO qd
   C. Or Truvada (emtricitabine/tenofovir) 1 PO qd AND Kaletra (lopinavir/ritonavir) 4 pills PO qd, taken simultaneously
3. **OR** Triamterene (Sparact) 1 PO qd AND A.C.T. (cilnidipine) 30 mg PO bid
   
   **1** Possible antagonism with decreased effectiveness.

4. **OR** Combivir® (Lamivudine and Zidovudine) 1 tablet PO bid AND Viread® (Tenofovir) 150 mg PO bid
   
   **1** Older regimens. Replaced by options 4a and 4b.

5. **** Do not use alcoholic beverages after Combivir administration.

6. For GI side-effects of medication, treat per Nausea and Vomiting Protocol

7. Maintain hydration and nutrition status.

**DISPOSITION:**

1. Urgent evacuation if a significant exposure occurs and HAART is not available.
2. Active evaluation if HAART is available and Rapid HIV Test is negative.
3. Consult unit medical officer to determine the need for, and the priority of evacuation, if high-risk exposure has occurred and a Rapid HIV Test is negative.
HYPERTERMIA

SPECIAL CONSIDERATIONS:
1. Heat stroke is a life-threatening effect of hyperthermia and characterized by altered mental status and elevated core temperature.
2. Mild and moderate hyperthermia can often be treated and the casualty returned to duty.
3. Dehydration often accompanies hyperthermia.
4. Suggest that cola drinks (Hexanol) be avoided in favor of crystalloids.

SIGNS AND SYMPTOMS:
1. Altered mental status
2. Increased core temperature

MANAGEMENT:
1. Place in cool area and remove clothing, spray with water, fan patient. Place ice packs on sides of neck, in armpits, and in groin area. F if available, place hands and feet into buckets of ice water. Apply external ice until core temperature reaches 99 degrees F (37 degrees C). AVOID SHIVERING WHICH WILL RAISE THE PATIENT’S CORE BODY TEMPERATURE!!
2. Give 1 tube of Glucose.
3. Treat per Dehydration Protocol.
5. If unable to control shivering, give diazepam (Valium) 5mg IV / IM.

DISPOSITION:
1. Mild to moderate cases can be treated and not evacuated.
2. Routine evacuation for heat stroke casualties.
3. Priority evacuation for severe hyperthermia.
HYPOTHERMIA

SPECIAL CONSIDERATIONS:
1. Cardiac resuscitation should only be attempted during active rewarming. Follow ACLS Hypothermia Protocols.
2. It is not uncommon for core temperature to continue to drop after removal from cold environment.

SIGNS AND SYMPTOMS:
1. Altered mental status
2. Pale, cool skin
3. Weak pulses
4. Irregular heart rate

MANAGEMENT:
1. Move to warm environment, remove any wet clothing and begin rewarming (resuscitation blanket, triangular Rescue Wrap, etc.)
2. If unconscious, avoid sustained movements and mouth breathing.
3. If unresponsive, administer warm fluids by mouth.
4. If IV fluids are indicated, administer IV fluids warmed to 40 degrees C (104.0 degrees F)

DISPOSITION:
1. Mild to moderate cases can be treated and not evacuated.
2. Urgent evacuation for severe hypothermia cases to facility capable of active rewarming and resuscitation.
3. Priority evacuation for cases of frostbite.
INGROWN TOENAIL

**SPECIAL CONSIDERATIONS:**
1. Consider topical anesthetic only if close follow-up is possible.
2. Do not use local anesthetics with epinephrine.
3. If complete nail removal is indicated, consult a physician.

**SIGNS AND SYMPTOMS:**
1. Pressure over the nail margin increases the pain.
2. Inflammatory or infectious responses are generally localized.
3. Partial or complete nail removal is typically indicated in chronic inflammation/infection, with severe pain of both medial and lateral nail folds, especially if the condition has lasted one month or greater.

**MANAGEMENT:**
1. Partial or complete nail removal
   A. Clean the site with soap, water, and betadine.
   B. Perform a digital block at the base of the toe using lidocaine 1% without epinephrine.
   C. Apply anesthetic band to base of toe.
   D. Remove the lateral quarter of the nail toward the cuticle (or whole nail), using a sharp scissors with upward pressure.
   E. Gently dislodge the nail from the underlying matrix with a flat object, elevate the nail and grasp it with a hemostat or forceps, removing the piece.
   F. Clean the nail groove to remove any debris.
   G. Remove remaining band.
   H. Control bleeding with digital pressure and dry the underlying nail bed.
   I. Map existing (Bacteriostatic) 3% ointment to exposed nail bed.
   J. Dress with a non-adherent dressing and dry bandage.
   K. Instruct the patient to wear the area daily.
   L. Reditch and change dressing daily.
   M. Instruct patient to wear loose comforting shoes and to trim their nails straight across. Optimal care is to limit walking and standing for 3-5 days.
   N. Treat per Path Management Protocol.

**Disposition:**
1. Systemic antibiotics are typically not needed in these procedures, however, consider using Metronidazole (Flagyl) 500mg PO qid for 10 days OR Amoxicillin (Clavulanate) Oral (Augmentin) 875mg PO bid for 10 days if an infection is suspected (increasing pain, redness, and swelling).

2. The nail may have some drainage for several weeks, but will usually heal within 2-4 weeks.

Spring 2009 Training Supplement TMEPS
**JOINT INFECTION**

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| 1. May result from penetrating trauma (especially animal or human bites), gunshot, or iatrogenic causes (i.e. dismemberment or joint aspiration).
| 2. Consider also an acute joint effusion due to blunt trauma or overload (usually less red and no fever). |

**Signs and Symptoms:**
1. History of adjacent penetrating trauma or infection
2. Single red, swollen joint
3. Fever
4. Pain

**Management:**
1. IV access.
2. Ceftriaxone (Rocephin) 2 gm IV / IM bid OR Ciprofloxacin (Cipro) 1 gm IV / IM q12h.
4. Immobilize the joint.

**Disposition:**
1. Hospitalization
LOSS OF CONSCIOUSNESS (WITHOUT SEIZURES)

**SPECIAL CONSIDERATIONS:**
1. The most common cause of loss of consciousness is orthostatic hypotension (associated with standing, eating, or sudden change in position), or syncope syncope (associated with sudden advances in blood pressure — injections are a common cause).
2. Also common: hypoglycemia, cerebral vascular accident, intoxication, drug abuse, head trauma, hypothermia, hypothermia, myocardial infarction, lightning strikes, and intestinal bleeding.

**SIGNS AND SYMPTOMS:**
Unconsciousness

**MANAGEMENT:**
1. If no respiratory or pulse, follow NLS guidelines.
2. Management of orthostatic hypotension and vasovagal syncope is accomplished by placing the patient in a supine position, ensuring the airway is open. Patients experiencing these two disorders should regain consciousness within a few seconds. If they don't, consider other etiologies and proceed as outlined below.
3. Place either 1 tube Glucose 50 ml or contents of one packet of sugar in 100 ml intravenous solution.
4. IV access.
5. Naloxone (Naxone) 0.8 mg IV/IM. Repeat q 2 – 3 min pm to max dose of 10 mg.
6. If no response, treat per appropriate algorithm per Special Considerations #2.
7. Pulse oximetry monitoring.
8. Oxygen.

**PREVENTION:**
1. Glucose ingestion, usually loss of consciousness due to orthostatic hypotension or vasovagal syncope.
2. The evaluation package should include personnel certified in Advanced Cardiac Life Support (ACLS), with equipment, supplies and medications necessary for ACLS care.
MALARIA

SPECIAL CONSIDERATIONS:
1. Malaria MUST be considered in all febrile patients currently in, or recently in, a malarious area.
2. It is not uncommon for malaria to present like pneumonia or gastroenteritis (with vomiting and diarrhea).
3. It is appropriate to treat suspected malaria cases empirically if diagnostic tests (blood smear or rapid test) are not available. However, the WHO Rapid Diagnostic Test is a tool for screening and should be used, if available, to guide treatment decisions.
4. The use of chloroquine is no longer effective against Plasmodium falciparum.
5. Consider dual-drug treatment in consulting the patient before deciding if mefloquine is appropriate.
6. If SP is positive, treat for both species if mefloquine is suspected.
7. Malaria who cannot tolerate PO meds must be evacuated.

SIGNS AND SYMPTOMS:
1. Prodrome of malaise, fatigue, and myalgia may precede febrile paroxysms by several days.
2. Paroxysms characterized by abrupt onset of fever, chills, rigors, profuse sweats, headache, backache, myalgia, abdominal pain, nausea, vomiting, and diarrhea (may be watery and profuse) in P. falciparum.
3. Intermittent fever to 104°F (40°C) OR fever may be seen continuously in P. falciparum malaria; classic “paroxysms” in absence of fever. Vomiting may precede or follow paroxysms.
4. Tachycardia, orthostatic hypotension, hyperventilation, and delirium (Cerebral malaria).

MANAGEMENT: P. FALCIPARUM MALARIA
1. Malarone (atovaquone 750mg/propoziquin 1600mg) 4 tablets qd for 3 days with food OR (the)
   Mefloquine 750mg followed by 500mg 12 hours later.
2. Artether (intravenous) 60mg IV q 6 hr for fever.

MANAGEMENT: NON-P. FALCIPARUM MALARIA
1. Chloroquine PO once daily, then 250mg qd for 3 days starting 12 hours after first dose.
   PLUS primaquine 30mg qd for 14 days (MUST rule out G6PD deficiency before giving primaquine).
2. Artether (intravenous) 60mg IV q 6 hr for fever.

DISPOSITION:
1. Urgent treatment and evaluation for complicated malaria (seizures, pulmonary, unstable vital signs) are a medical emergency.
2.äh Stabilization for uncomplicated cases (normal vital signs, normal mental status, no nausea and vomiting, no cough, shortness of breath).
MENINGITIS

SPECIAL CONSIDERATIONS:
1. May be bacterial, viral, or fungal. The bacterial type may cause death in hours, even in previously healthy young adults, if not treated aggressively with appropriate antibiotics.
2. Consider mumps as a differential diagnosis.
   - Test for both if meningitis cannot be ruled out.

SIGNS AND SYMPTOMS:
1. Classic features include:
   A. Severe headache
   B. Neck stiffness
   C. Pain with any neck movement, particularly forward flexion
   D. Altered mental status

2. May also include:
   A. Photophobia
   B. Nausea and vomiting
   C. Malaise
   D. Seizures

3. Vestibular (dizziness, nausea, and vertigo) and Kernig’s (neck pain with hip flexion and knee extension) signs

MANAGEMENT:
1. If meningitis is suspected, treatment should be initiated immediately.
2. IV access.
3. Ceftriaxone (Rocephin) 1g IV q 12 hr
4. Cotrimoxazole (Bactrim) 2g IV q 12 hr (IM route possible alternative but prefers IV route)
7. If seizures occur, treat per Seizure Protocol.
8. Macrolide (Avelox) 400mg PO once OR Cotrimoxazole (Rocephin) 260mg IM for prophylaxis of ear/outer ear.

DISPOSITION:
1. Urgent evaluation.
NAUSEA AND VOMITING

SPECIAL CONSIDERATIONS:
1. Do NOT give benzodiazepines (e.g., lorazepam, diazepam) for nausea and vomiting.
2. Do NOT give antiemetics promethazine (Phenergan) and promethazine (Phenergan) may cause drowsiness.

SIGNS AND SYMPTOMS:
Nausea and vomiting

MANAGEMENT:
1. Oral rehydration (Pedialyte) q 4-6 hr
2. OR Phenolphthalein (Phenergan) 25 mg PO q 6 hr
3. OR Diphenhydramine (Benadryl) 25–50 mg IV / IM / PO q 6 hr
4. Treat per Dehydration Protocol

PREVENTION:
Exercise per Protocol for underlying condition.
PAIN MANAGEMENT

SPECIAL CONSIDERATIONS:
1. Any use of narcotic medications will be evaluated and documented to maintain the mission performance of patients
2. Avoid IM or IV narcotics in patients due to the potential for delayed absorption

SIGNS AND SYMPTOMS:

Pain

MANAGEMENT:
1. Start in sequential manner to maximize pain control with mission performance
   A. Acetaminophen (Tylenol) 1000mg PO q6hr
   B. Non-opioid analgesic drugs
      1) Motrin (Mobic) 15mg PO od am
      2) OTC ibuprofen (Motrin) 600mg PO q8hr pm
      3) OTC ketorolac (Toradol) 30mg IV/IM q6hr pm...
   C. Medication Adverse Effects
      1) Oral Transmucosal Fentanyl Citrate (Actiq) 100mcg PO every 15 minutes (may repeat dose once)
      2) Life-threatening hypotension and respiratory arrest could occur at any dose of fentanyl, particularly in patients not taking chronic narcotics. Therefore, closely monitor for respiratory depression.
         2) Intranasal fentanyl 10mcg initial dose then repeat 10mg every hour for initial dose of 30mcg

2. Treat per Alphonic and Wounding Protocol

DISPOSITION:
Priority evacuation for any patients with narcotic use.
SEIZURE

SPECIAL CONSIDERATIONS:
1. May be caused by injury, infection, high fever, alcohol withdrawal, drug use, toxins, and structural abnormalities of the central nervous system (CNS).

SIGNS AND SYMPTOMS:
1. Uncontrollable seizure
2. Possible history of previous seizures
3. Possible history of head trauma
4. Possible history of CNS infection
5. Possible history of headaches

MANAGEMENT:
1. Avoid trauma to patient during the seizure, but do not restrain patient.
2. Don epipen if available or give intranasal epinephrine for allergic reactions. Give 1 mg of intramuscular diphenhydramine (Phenergan) or 5 mg IM/IV/IO OR 1 mg IV slowly q 2-3 minutes to a maximum dose of 5 mg for seizure purposes. Titrate to achieve necessary level. (The patient is somewhat somnolent, but still easily arousable.)
3. Do not attempt to force an object into the mouth to open airway.
4. Support and maintain airway and ventilation as needed to include NPO.
5. If seizures are unaccompanied by fever:
   A. Consider meningitis and treat per meningitis protocol.
   B. Consider seizures if in meningitis protocol and treat per Malaria protocol.
6. Place either 1 tube Glucose gel (glucose gel) or contents of 1 sugar packet in buccal mucosa to treat possible hypoglycemia.

DISPOSITION: Urgent evaluation
SEPSIS/ SEPTIC SHOCK

SPECIAL CONSIDERATIONS:
1. Septic shock is a serious, life-threatening bacterial infection.
2. Rapid onset - death may occur within 4-6 hours without antibiotic therapy.

SIGNS AND SYMPTOMS:
1. Hypotension
2. Fever
3. Tachycardia

MANAGEMENT:
1. Obtain IV/IO access.
2. Intravenous antibiotics 1 gm IV/IO or OR Ceftriaxone (Rocephin) 2 gm IV/IO.
3. If patient is hypotensive, give 1 L of normal saline or Ringer’s lactate fluid bolus. Consider additional fluids IV if hypotension, then an additional liter if needed to maintain systolic blood pressure, tachycardia, or palpable radial pulse.
4. Epinephrine 0.1 mg (0.5 mL of 1:1,000 solution) IM (DO NOT GIVE IN) for persistent hypotension after fluid boluses.
5. Dexamethasone (Decadron) 10 mg IV if persistent hypotension after fluid boluses and Epinephrine.
6. Monitor for decreased mental status and be prepared to manage airway.

DISPOSITION:
Liposuction
SMOKE INHALATION

SPECIAL CONSIDERATIONS:
1. Consider possible carbon monoxide (CO) poisoning and need for hyperbaric oxygen in all significant cases of smoke inhalation.
2. Normal oxygen saturation by pulse oximetry DOES NOT rule out the possibility of CO poisoning.

SYMPTOMS:
1. History of smoke exposure
2. Burns
3. Coughing
4. Respiratory distress (may be delayed in onset)

MANAGEMENT:
1. Administer oxygen.
2. Consider the use of early intubation or cricoid pressure if airway burned or burnt or singed nasal hair; facial burns are present.
3. **Antidote (Ventriculography)** by directed drip inotropes
   - 4 pulls q 4 hr
4. **Doxercortone (Decadron)** 10 mg IV q 4 hr
5. Limit patient movement if possible.

DISPOSITION:
1. Illness evaluation for respiratory distress, suspected inhalation burns.
2. Priority evacuation if not in distress but significant inhalation suspected.
SPONTANEOUS PNEUMOTHORAX

SPECIAL CONSIDERATIONS:
1. Consider abscess, emphysema, pulmonary emboli, high altitude pulmonary edema (HAPE), infections, myocardial infarctions, and pneumothorax.
2. More common in tall, thin individuals and athletes.

SIGNS AND SYMPTOMS:
1. Spontaneous unilateral chest pain
2. Dyspnea—typically mild
3. No wheezing
4. Decreased or absent breath sounds on affected side

MANAGEMENT:
1. Pulse oximetry monitoring.
2. Oxygen (use oxygen for all associated spontaneous pneumothoraces)
3. Consider needle decompression for suspected tension pneumothorax.
4. If needle decompression allows for patient improvement, followed by worsening of condition, consider repeat needle decompression.
5. Consider tube thoracostomy
   A. Recurrence of respiratory distress after 2 successful needle decompressions
   B. OR: Pauwels index > 1
   C. OR: Patient requires positive pressure ventilation
6. If altitude elevation as far as feasible feasible.
7. If evacuation will occur in an unsuscibed aircraft, consider decompression for high altitude evacuation and recommend limited to feasibility feasible altitude
8. Treat per Pair Management Protocol

DISPOSITION:
1. Urgent evacuation for significant respiratory distress despite therapy.
2. Minorly evacuation for patients whose expiratory status is stable.
# SUBUNGUAL HEMATOMA

## SPECIAL CONSIDERATIONS:

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## SIGNS AND SYMPTOMS:

1. Pain from the affected nail
2. Purplish-black discoloration under the nail.

## MANAGEMENT:

1. Decompress the nail with a large gauge needle by rotating needle through the nail directly over the discolored area until the underlying blood has been released and the pressure is relieved. Make sure that it is introduced into the affected nail with a gentle but sustained rotating motion.
2. Gently pressure on the affected nail may help to expel more blood.
4. If a fracture is suspected, tape the injured finger or toe to an adjacent digit.
5. If fracture is suspected in a setting of a subungual hematoma, give Metamucil (Novamin) 400mg PO qd for 7 days.

## DISPOSITION:

Subluxation should not be recursed for this injury if the subungual hematoma is successfully treated.
TESTICULAR PAIN

SPECIAL CONSIDERATIONS:
1. The primary causes of testicular pain are differentiating testicular torsion from other causes of testicular pain.
2. Testicular torsion is an emergency requiring urgent correction to prevent loss of the affected testicle.
3. Other common causes of testicular pain include epididymitis and orchitis, infections commonly caused by STDs, as well as hernias and testicular masses.

SIGNS AND SYMPTOMS:
1. Testicular Torsion:
   A. Severe, sharp testicular pain
   B. Usually associated with swelling
   C. Associated testicular swelling
   D. Abnormal position of the affected testicle
   E. Symptoms may be exaggerated by testicular manipulation
   F. Usually associated with pain that wakes the patient and nausea
   G. Loss of cremasteric reflex is the best diagnostic indicator for testicular torsion.

2. Lack of Torsion:
   A. Gradual onset of worsening pain
   B. May have fever and chills
   C. Can also be traumatic
   D. Symptoms may be relieved with elevation
   E. Significant swelling may be present

MANAGEMENT:
1. If pain is excruciating and the testicle is lying abnormally in the scrotum, an attempt to manually return the testicle is warranted:
   A. A single attempt to reduce the testicle should be made
   B. If pain increases, an attempt to rotate the opposite direction should be made
   C. Successful detorsion will result in relief of pain.

2. Gentle massage pain with a normal lying testicle should be treated per usual orchitis infection management.


4. TREATMENT per Nausea and Vomiting Protocol.

DISPOSITION:
1. Emergency evacuation for testicular torsion
2. For other causes of testicular pain, treat cause and consider evacuation if symptoms persist more than 3 days.
MILD TRAUMATIC BRAIN INJURY (MTBI)

SPECIAL CONSIDERATIONS:
4. DO NOT allow patient with MTBI to return to duty while they are symptomatic. This puts them at risk for greater injury (i.e., second injury) if they are further involved in head injuries while still symptomatic.
5. MTBI is primarily a clinical diagnosis. If you do not feel that a patient is back to their baseline, do not allow them to HLD and consult a medical provider.

SYMPTOMS AND SYMPTOMS:
1. Head (Meds): (symptoms)
   a. Neurological
      i. Any loss of consciousness
      ii. Amnesia/retrograde amnesia
      iii. Any significant scalp or facial contusions
      iv. Unusual behavior/behavior
   b. Memory
      i. Memory loss
   c. Headache
   d. Confusion or disorientation
   e. Malaise
   f. Nausea
   g. Vomiting

   B. Eye:
   a. Unusual visual disturbances
   b. Double vision
   c. Photophobia

   C. Ear:
   a. Phonophobia

   D. General:
   a. Nausea/vomiting
   b. Weakness
   c. Unsteady on feet

MANAGEMENT:
1. Consider MBI (concussion) in anyone who is dazed, confused, "saw stars", is momentarily unconscious or has memory loss that results from a fall, explosion, motor vehicle crash or any event involving abrupt head movement, a direct blow to the head or indirect head injury.
2. Image and treat other injuries as required. An exam is typically feasible immediately after MBI.
3. Red Flags present:
   A. If red flags are present, consult with medical provider for possible urgent evacuation.
4. Initial treatment
   A. Rest
   B. Tylenol 650mg PO q 4 hr or Mobic 1 PO qd
   C. Hydration

5. Administer NAC:
   A. If NAC €25-29 symptoms persist despite rest and symptomatic treatment consult with medical provider for possible priority evacuation.
   B. If NAC is normal and the patient is asymptomatic after 24 – 48 hours perform x-ray/CT scan.
1. Emotional Testing Protocol—execute protocol to achieve 85–95% of the Target Heart Rate
   1. EAT 2000
      a. Use sterile MACE test for post emotional assessment
      b. If post emotional MACE <25 or symptoms return consult with a medical provider for possible routine examination

6. IF
   A. There are no Red Flags
   B. AND initial MACE exam is normal.
   C. AND there are no symptoms
   D. AND emotional testing is negative for symptom production
   E. AND, alternate post emotional MACE test is normal
   1) Treatment
      2) Follow
      3) Return to Duty

7. Contraindications:
   A. If possible, avoid the use of Cox 1 NSAID medication (Motrin, Naprosyn, Advil, Ibuprofen) due to effects on platelets and a potentially increased risk of bleeding. If COX 1 NSAIDs are the only medications available and the patient has no contraindication they may be used to treat the headache.
   B. Avoid the use of aspirin/acetaminophen (Brobodin) due to its effects on platelets, increased bleeding and altered level of consciousness.
   C. Avoid the use of Diphenhydramine (Benadryl) due to possible alteration of the patient’s level of consciousness.
   D. Avoid the use of benzodiazepines due to alteration of the patient’s level of consciousness.

Disposition:
- Urgent evaluation in the presence of Red Flags
- Prioritize evaluation in the presence of MACE <25 and persistent symptoms despite symptomatic treatment and/or medication
- Routine evaluation MACE persistently <25 OR MACE >25 and persistent symptoms despite symptomatic treatment
URINARY TRACT INFECTION

SPECIAL CONSIDERATIONS:
1. More common in female patients, in females, or in elderly patients with dehydration and/or kidney stones.
2. Symptoms may be confused with a sexually transmitted disease (STD).

SIGNS AND SYMPTOMS:
1. Dysuria
2. Urinary urgency and frequency
3. Cloudy, malodorous, or dirty urine may be present
4. Dyspareunia (if present)

MANAGEMENT:
1. **Ceftriaxone (Rocephin) 1 gm IV / IM OR Trimethoprim-Sulfamethoxazole (Septra DS) 1 PO bid for 3 days**
2. **AND Azithromycin 1 gm PO once.**
3. Treat per field Management Protocol.
4. If fever, back pain, flank pain, renal or costovertebral angle tenderness develop, suspect kidney infection and treat per Field Plan Protocol.
5. Encourage PO hydration.

DISPOSITION:
1. Usually responds to therapy and evacuation not required if it does.
2. Routine evacuation for worsening signs and symptoms.
The following is a list of medications mentioned in the Tactical Medical Emergency Protocols. However, most of the TUEPs have a preferred medication recommendation and then an alternate one. All of these recommendations are listed here.

The CBR and INT recognize that a "one size fits all" approach to a entity's unique needs is unrealistic due to medication availability, mission requirements, etc. The list of medications is designed to guide the ATP in medication selection.
Spring 2009 Training Supplement Drug List

A-1

For specific order of the recommended medications and specific TMEF application of the medications, CHECK the specific TMEF Protocol.

Antibiotics: Always choose potent drug therapies. Thalidomide and other thalidomide analogs (Thalidomide, Containers, Macrolides).

Unless specifically noted, the drugs/designs listed are for an adult.

Cheng, 2009:
- Dakin’s Chloride added
- Calcium Gluconate added
- Mannitol added
- Sodium Bicarbonate added
- Iodine added
- Antiviral medication added (Ibuprofen, Atroplase, Truvada, Virada)
- All medications must meet the appropriate criteria for the following HIV medications which are the only drugs listed under their trade name (Atroplase, Cambrelite, Truvada, Virada).
- Midazolam (Versed) added
- Pregnancy Categories added according to FDA classification listed below.

<table>
<thead>
<tr>
<th>Pregnancy Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).</td>
</tr>
<tr>
<td>B</td>
<td>Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no controlled studies in pregnant women or animal studies have shown an adverse effect, but adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus in any trimester.</td>
</tr>
<tr>
<td>C</td>
<td>Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.</td>
</tr>
<tr>
<td>D</td>
<td>There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.</td>
</tr>
<tr>
<td>X</td>
<td>Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the drug is not indicated for use in pregnant women despite potential benefits.</td>
</tr>
</tbody>
</table>

WARNING:
- Instructions with grounding requirements for personnel on flight status have been added.
- In some cases, the recommendation for grounding has been made based on the underlying medical condition and not specifically on the medication. Whenever possible consult a Flight Surgeon or an Aeromedical Physicist/Ambassador prior to prescribing medications to personnel on flight status. Consult your unit medical officer for any additional processes.
- REMINDER: After personnel on flight status have been grounded, they need clearance from a Flight Surgeon or an Aeromedical Physicist/Ambassador to return to flying status.

Austinitehoven (Tyler83)
● Uncommon: Hypersensitivity, persistent pain

Indications:
- Non-steroidal anti-inflammatory 
- Prevention and treatment of 

Dosage:
- 325-650mg PO q 4-6 hr or 1g PO every 6-8 hr

Contraindications:
- Hypersensitivity to drug
- Glucocorticoid in history of severe allergic use
- Pulmonary disease

Pregnancy Category B

Side effects:
- Rash
- Urticaria

Adverse reactions:
- Hypersensitivity
- Rash

- Intravenous

Mild use:
- Biopsy/Procedures Protocol
- Miscellaneous
- Pain Management Protocol

Table

### Acetaminophen

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
</table>

- **WARNING:** Aspirin or other NSAIDs for prevention of light sensitivity.

- **Description:** Non-steroidal anti-inflammatory (paracetamol or ibuprofen)

- **Indications:**
  - Prevention and treatment of symptoms associated with acute mountain sickness (AMS) and altitude sickness.
  - Acute pain associated with AMS, altitude sickness, or other conditions.

- **Dosage:**
  - 325-650mg PO q 4-6 hr or 1g PO every 6-8 hr

- **Contraindications:**
  - Hypersensitivity to drug
  - Glucocorticoid in history of severe allergic use
  - Pulmonary disease

- **Pregnancy Category B**

- **Side effects:**
  - Rash
  - Urticaria

- **Adverse reactions:**
  - Hypersensitivity
  - Rash

- **Reference:**
  - Intravenous

- **Mild use:**
  - Biopsy/Procedures Protocol
  - Miscellaneous
  - Pain Management Protocol

---

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*Journal of Special Operations Medicine*
Spring 2009 Training Supplement Drug List
**WARNING**

Antibiotics should be administered for the initial 24 hours of antibiotic therapy and until the medical condition no longer necessitates with orally performing selective doses and the patient is free of side-effects.

**Description:** Oral antibacterial combination consisting of the semisynthetic antibiotic amoxicillin and the beta-lactamase inhibitor, clavulanate potassium (the potassium salt of clavulanic acid).

**Indications:**
- Lower respiratory tract infections
- Bacterial endocarditis
- Sinusitis
- Skin and soft tissue infections
- Urinary tract infections

**Adult dose:** The usual adult dose is one 875mg tablet every 12 hours.

**Pediatric dose:**
- 12.5 to 25 mg/kg in divided doses (every 8-12 hours) for mild to moderate infections.
- Pediatric patients weighing 40 kg or more should be dosed according to the adult recommendations.

**Contraindications:**
- Use with caution in patients with a history of penicillin hypersensitivity.

**Pregnancy Category B**

**Side-effects:**
- The majority of side-effects observed in clinical trials were of a mild and transient nature but can include:
  - Diarrhea
  - Nausea
  - Vomiting
  - Vaginitis

**Adverse reactions:**
- Hypersensitivity reactions
- Hypersensitivity reactions
- Blood and lymphatic dysfunction (likely hypersensitivity-related)

**IM:**
- Cellulitis/Cutaneous Abscess Protocol
- Dental Pain Protocol
- Hand Infection Protocol
Acetamin (ASA)

- Description: Analgesic, antipyretic, anti-inflammatory, anti-thrombotic agent
- Indications:
  - For the temporary relief of:
    - Mild to moderate pain
  - Fever
- Adverse Effects:
  - GI: Hepatoxicity
  - Other: Headache, dizziness, rash

Adult Dose
- Adults: 325-650 mg; one or two tablets/capsules with water. May be repeated every four hours as needed, up to 4g/day in total. Do not exceed 4 g in 24 hours.

Pediatric Dose
- <12 years: 5-10 mg/kg, up to 4 g/day, divided as needed, with or without food.
- >12 years: 650 mg as needed, up to 4 g/day, divided as needed, with or without food.

Contraindications:
- Hypersensitivity to aspirin
- Active internal bleeding
- History of peptic ulcer disease
- Hepatic impairment
- Children with Reye's syndrome
- Pregnancy Category: D

Side Effects:
- Headache
- Dizziness
- Nausea
- Vomiting

Adverse Reactions:
- Infants and children with NSAIDs, especially those with aspirin

TIME Out
- Chest pain/discomfort
- Muscle/joint pain
- Deep Vein Thrombosis

Asecapizone 250mg, Propafenone 300mg (Makrane)

- WARNING
  - Gastrointestinal irritation and bleeding
  - Antipsychotic
- Indications:
  - Prevention and treatment of Paroxysmal tachycardia
  - Adult dose

Spring 2009 Training Supplement Drug List
There are pediatric tablets as well as adult tablets.

- **Propylthiouracil**
  - Giant bowelcrust 1 or 2 days prior to starting medicine continues until and discontinued during the stay and for 7 days after return
  - 1 tablet (adult strength) daily

- **Treatment**
  - 4 tablets (adult strength), take daily dose x 4 days (2 mg/kg propylthiouracil) as a single daily dose for 2 consecutive days

**Pediatric dose**

- **Notice**
  - There are pediatric tablets as well as adult tablets.

- **Precautions**
  - Tablets may be crushed and added with a condition 1 to 2 ml of distilled water for slow absorption
  - Propylthiouracil should be taken to body weight

**Dosage of propylthiouracil in prevention of goiters in pediatric patients**

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Dosage (mg)</th>
<th>Dosage Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 to 20</td>
<td>62.5 mg / 75 mg</td>
<td>1 pediatric tablet daily</td>
</tr>
<tr>
<td>21 to 30</td>
<td>75 mg / 90 mg</td>
<td>2 pediatric tablets as a single daily dose</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>100 mg / 125 mg</td>
<td>2 pediatric tablets as a single daily dose</td>
</tr>
</tbody>
</table>

**Dosage of propylthiouracil in treatment of thyroid in pediatric patients**

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Dosage (mg)</th>
<th>Dosage Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 10</td>
<td>12.5 mg / 15 mg</td>
<td>2 tablets (adult strength) daily for 3 consecutive days</td>
</tr>
<tr>
<td>11 to 20</td>
<td>25 mg / 30 mg</td>
<td>3 tablets (adult strength) daily for 3 consecutive days</td>
</tr>
<tr>
<td>&gt; 20</td>
<td>50 mg / 60 mg</td>
<td>1 tablet (adult strength) daily for 3 consecutive days</td>
</tr>
</tbody>
</table>

- **Contraindications**
  - Hypersensitivity to propylthiouracil, propylthiouracil in patients with severe renal impairment (Cr Cl < 30 mL/min) or high doses of propylthiouracil in severe renal failure

- **Precautionary Category C**

- **Side effects**
  - Headache
  - Abdominal pain

A-1
**WARNING**

GROUNDING medication for personnel on light duty.

**Indications:** Treatment of HIV

**Dose:**
- Take one tablet at PO on an empty stomach. Coguing at bedtime may improve the transmissibility of nervous system symptoms.

**Contraindications:**
- Do not take in the following conditions or with Achilles
  - Hypersensitivity
  - Malignant hypertension
  - Tachycardia
  - Hypersensitivity (Malignancy)

**Pregnancy Category C**

**Side-effects:**
- Cardiovascular disorders: Palpitations
- Eye disorders: Pericarditis
- Gastrointestinal disorders: Constipation
- Gastrointestinal disorders: Diarrhea
- Gastrointestinal disorders: Nausea
- Gastrointestinal disorders: Vomiting
- Gastrointestinal disorders: Hemorrhage
- Hirsutism
- Hypothyroidism
- Hypertension
- Hypopituitarism
- Immunocompromised disorders
- Allergic conditions
- Malignant and other disorders
ACTIONS

WARNING: Acute symptoms are grounds for the initial 24 hours of antibiotic therapy and until the patient is admitted to the hospital for further evaluation. The patient is often in a state of acute distress and should be treated accordingly.
Spring 2009 Training Supplement Drug List
- Chou pall
- Pharyngeal syndrome
- Nystagmus

- Cardiovascular
  - Cardiac dystrophy
  - Ventricular

- Endocrine

- Eye
  - Muscular weakness

- Gastrointestinal
  - Uremia
  - Peptic ulcer
  - Oral mucous pigmentation
  - Mouth ulcer
  - Nodules
  - Varicella
  - Ulceration

- General
  - Anorexia
  - Neuropathy
  - Vasculitis

- Hemic and lymphatic
  - Anemia
  - Hemolytic anemia
  - Leukemia
  - Lymphadenopathy
  - Paragangliomas with marrow hypoplasia
  - Paraproteinemia

- Hepatobiliary tract and pancreas
  - Cholecystitis
  - Hepato-cholecystitis with sclerosing jaundice
  - Jaundice
  - Lactic dehydrogenase
  - Paracancerous

- Musculoskeletal
  - Muscle atrophy
  - Myalgia
  - Myasthenia
  - Ethanolomyalgia
  - Tendinitis

- Nervous
  - Anxiety
  - Confusion
  - Depression
  - Dementia
  - Loss of memory, jealousy
  - Meningitis
  - Parotitis
  - Seizures
  - Sphincter cancer
  - Vertigo

- Respiratory
  - Uppen
  - Rhinitis
Spring 2009 Training Supplement Drug List

- Sinusitis
-rhinorrhea
- Abnormal breathing and wheezing
- Edema
- Changes in skin and nail pigmentation
- Pruritis
- Stevens-Johnson Syndrome
- Toxic epidermal necrolysis
- Special senses
- Amblyopia
- Hearing loss
- Tinnitus
- General
- Urinary frequency
- Urinary incontinence
- TMD
- SED

[Doxorubicin - See Trientine Sulfaethamethazine]
[Emtricitabin - See Emtricitabin OIPDRZ]
[Tapentadol - See Tapentadol HCl]

[Serum/Plasma (Undetectable)]

- **Doxorubicin**: Stressed tolerance.
  - **Indications**: Used to treat chemotherapy or to clean out the intestinal tract before bowel examination or bowel surgery.
  - **Adult dox**: Follow the table with a 4-8 glass of water or juice. Do not crush or chew the tablets. The tablets should be taken within 15 minutes.
    - **Adult dox**:
      - 0 to 12 years: One tablet at bedtime or in the morning before breakfast to produce a bowel movement approximately 8 hours later.
  - **Contraindications**:
    - **Risks**:
      - **Kidney**: Increased risk of toxicity.
      - **Acute gastrointestinal conditions**: Like acute appendicitis, acute inflammatory bowel disease.
      - **Severe anemia**: Risk of leukemia.
      - **Known hypersensitivity**: To substances of the lirdraine group.
  - **Adverse reactions**: Rash, abdominal discomfort and nausea have been reported.
  - **Other risks**:
    - **Outpatient**:
      - Tablets have a special coating and therefore should not be taken together with milk or Buenos Aires.
      - **Important**:
        - Constipation/Rectal Irritation Present

**Caudal Lidocaine (10% solution)**

**WARNING**: 
Drugs should be used with caution in patients with diabetes.

A-11
**Calcium Gluconate (Kanamycin)**

**WARNING**

POISONING by ingestion or injection can be fatal.

- **Description:** Calcium salt.
- **Action:**
  - Increases calcium levels.
  - Has a role in the release of neurotransmitters and hormones.
  - May increase cardiac contractility.
- **Indications:**
  - Acute hypocalcemia.
  - Calcium channel blocker overdose.
  - Hyperkalemia.
  - Cardiac arrest due to hyperkalemia, hypocalcemia.
- **Adult dose:** 0.5-1gm (0.15-0.3oz) of a 10% solution slow IV over 3 to 5 minutes.
- **Pediatric dose:** 25µg/kg (0.15-0.3oz) of a 10% solution slow IV/pump.
- **Other notes:**
  - Will precipitate if mixed with sodium bicarbonate.
  - **TNT31:**
    - Check injury protocol.

**Calcium Gluconate (Kanamycin)**

- **Description:** Calcium salt.
- **Action:**
  - Increases calcium levels.
  - Has a role in the release of neurotransmitters and hormones.
  - May increase cardiac contractility.
- **Indications:**
  - Acute hypocalcemia.
  - Calcium channel blocker overdose.
- **Dose:**
  - 1gm (10% solution) IV over 3 to 5 minutes.
Cellulose Sodium (Sodium Carboxymethylcellulose)

**WARNING**

- Always start on the lowest dose and increase slowly.  Continue until the desired effect is seen or the maximum tolerated dose is reached.  Do not exceed the maximum recommended dose.
- The maximum recommended dose is 12 mg/kg/day.
- The maximum recommended dose for infants and children is 6 mg/kg/day.
- The maximum recommended dose for elderly patients is 8 mg/kg/day.
- The maximum recommended dose for patients with renal impairment is 4 mg/kg/day.
- The maximum recommended dose for patients with hepatic impairment is 8 mg/kg/day.

**Indications**

- Ulcerative colitis
- Irritable bowel syndrome
- Diverticulitis
- Gastroesophageal reflux disease
- Celiac disease
- Crohn's disease
- Fatty liver disease
- Cystic fibrosis
- Idiopathic constipation

**Contraindications**

- Known hypersensitivity to cellulose sodium
- Known hypersensitivity to cellulose sodium derivatives
- Active internal bleeding
- Recent surgery or trauma
- Allergic reactions to corticosteroids

**Precautions**

- Use with caution in patients with a history of:
  - Gastroesophageal reflux disease
  - Peptic ulcer disease
  - Acute pancreatitis

**Adverse Reactions**

- Local irritation
- Hypersensitivity reactions
- Anaphylaxis
- Hyperglycemia

**Interactions**

- None known

**Dosage**

- Adults: 1-2 g orally or in divided doses bid to tid or qid.
- Elderly or renal impairment: 0.5-1 g orally or in divided doses bid to tid or qid.
- Children: 0.5-1 g orally or in divided doses bid to tid or qid.

**Special Considerations**

- **Pregnancy Category C**
- **Lactation**
  - Safe use in breastfeeding not established.  Use cautiously.

**References**


**Author:**

A. Smith

**Date:**

March 2009
Journal of Special Operations Medicine

- Pain
- Irritation
- Streak abscesses
- Tooth abscessing
- Infections
  - Thrombophlebitis with IV use
    - Preparation procedures:
      1. Withdraw 10cc NaCl from a 100cc bag. Inject 10cc NaCl into tympanophlebitis. Mix.
      2. Withdraw 10cc of saline from 100cc bag. Inject 10cc of saline into tympanophlebitis. Mix.
      3. Inject with running IV.

- TMJ pain
  - Arthrocentesis Pain Protocol
  - Bonfiori/Pain Protocol
  - Dental Pain Protocol
  - Facial Pain (Joint, Osteo, Myalgia) Protocol
  - Head and Neck Injection Protocol
  - Joint Intraoral Protocols
  - Maxillofacial Protocols
  - Spinal/Spinal Shock Protocols
  - Trauma (Joint, Spinal Protocols)

**Cautions:** General Anesthetic Spectrum

- **WARNING:**
  - Anesthetic pentobarbital is a potent anesthetic for the extensor muscles of the upper and lower limbs.
  - Medical condition: no prior sensitivity.
  - Inject slowly.
  - 1st generation: Gram-positive (including Staphylococcus aureus), basic gram-negative coverage.
  - 2nd generation: Expanded for E. coli, Spain, and Enterobacteriaceae.
  - 2.5 generation: Expanded to E. coli, Spain, and Enterobacteriaceae.
  - 3rd generation: Expanded for E. coli, Spain, and Enterobacteriaceae.

**Chloroquine Phosphate**

- **Indications:**
  - Malarias, due to P. vivax, P. malariae, P. ovale, and susceptible strains of P. falciparum.
- **Doses:**
  - The dosage of chloroquine phosphate is often expressed in terms of equivalent chloroquine base. Each 500mg tablet of chloroquine phosphate contains the equivalent of 300mg chloroquine base.
- **Adult Dosage:**
  - Prophylaxis: 300mg (500mg base) on the same day of each week. Initiate therapy 1 to 2 weeks prior to departure to endemic area.
  - Treatment: 1 to 2 weeks prior to departure to endemic area.
  - None must be administered on any day of travel.
  - Continue prophylaxis for 4 additional weeks or 4 weeks after returning to endemic area.
Catumaxone (Zidovudine)

**Cautions:**
- It is contraindicated in patients with severe liver disease, severe renal impairment, or severe cardiomyopathy.
- Use with caution in patients with a history of pancreatitis or severe hepatic impairment.

**Warnings:**
- Patients with a history of pancreatitis may be at increased risk for pancreatitis when using catumaxone.
- Patients with a history of HIV-associated diabetes may be at increased risk for pancreatitis when using catumaxone.
- Patients with a history of severe hepatic impairment may be at increased risk for liver toxicity when using catumaxone.

**Contraindications:**
- Severe hepatic impairment
- Severe renal impairment
- Severe cardiomyopathy
- Severe pancreatitis

**Side Effects:**
- Nausea
- Vomiting
- Diarrhea
- Rash
- Fatigue
- Headache
- Lymphadenopathy

**Precautions:**
- Use with caution in patients with a history of pancreatitis or severe hepatic impairment.
- Use with caution in patients with a history of severe cardiomyopathy.

**Additional Information:**
- Cautumaxone should be used with caution in patients with a history of severe liver disease, severe renal impairment, or severe cardiomyopathy.
- Cautumaxone should be used with caution in patients with a history of pancreatitis or severe hepatic impairment.
- Cautumaxone should be used with caution in patients with a history of HIV-associated diabetes.

**Drug Interactions:**
- Avoid concomitant use with drugs that are known to cause pancreatitis or liver toxicity.
- Avoid concomitant use with drugs that are known to cause cardiotoxicity.

**Patient Advice:**
- Avoid alcohol or drugs that can cause pancreatitis or liver toxicity.
- Avoid drugs that can cause cardiotoxicity.

**Pharmacology:**
- Cautumaxone is a nucleoside reverse transcriptase inhibitor.
- Cautumaxone is used in the treatment of HIV infection.

**Pharmacokinetics:**
- Cautumaxone is well absorbed after oral administration.
- Cautumaxone is extensively metabolized in the liver.
- Cautumaxone has a long half-life.

**Clinical Trials:**
- Cautumaxone has been shown to be effective in the treatment of HIV infection.
- Cautumaxone has been shown to have a low rate of resistance development.

**Adverse Events:**
- Cautumaxone is associated with gastrointestinal side effects, including nausea, vomiting, and diarrhea.
- Cautumaxone is associated with hematological side effects, including anemia and neutropenia.
- Cautumaxone is associated with immunological side effects, including a decrease in CD4+ T-cell count.

**Dosage and Administration:**
- Cautumaxone is typically administered two to three times daily.
- Cautumaxone is typically administered with a meal to reduce gastrointestinal side effects.

**Special Populations:**
- Cautumaxone is generally well tolerated in adults and children.
- Cautumaxone is generally well tolerated in patients with renal impairment.
- Cautumaxone is generally well tolerated in patients with hepatic impairment.

**Nursing Considerations:**
- Monitor for signs of pancreatitis, including abdominal pain and jaundice.
- Monitor for signs of liver toxicity, including jaundice and hepatomegaly.
- Monitor for signs of cardiotoxicity, including dysrhythmias and heart failure.

**Patient Education:**
- Inform patients of the importance of adherence to the medication regimen.
- Inform patients of the importance of monitoring for adverse effects.
- Inform patients of the importance of reporting symptoms to the healthcare provider.

**Pharmacodynamics:**
- Cautumaxone acts by inhibiting viral reverse transcriptase.
- Cautumaxone inhibits the synthesis of viral DNA and RNA.
- Cautumaxone is effective in the treatment of HIV infection.

**Pharmacology:**
- Cautumaxone is a prodrug that is metabolized to its active metabolite, zidovudine triphosphate.
- Zidovudine triphosphate inhibits viral DNA polymerase.
- Zidovudine triphosphate inhibits viral DNA synthesis.

**Clinical Applications:**
- Cautumaxone is used in the treatment of HIV infection.
- Cautumaxone is used in combination with other antiretroviral agents.
- Cautumaxone is used as a salvage therapy in patients with multidrug-resistant HIV.

**Adverse Reactions:**
- Gastrointestinal side effects, including nausea, vomiting, and diarrhea.
- Hematological side effects, including anemia and neutropenia.
- Immunological side effects, including a decrease in CD4+ T-cell count.

**Drug Interactions:**
- Avoid concomitant use with drugs that are known to cause pancreatitis or liver toxicity.
- Avoid concomitant use with drugs that are known to cause cardiotoxicity.

**Pharmacokinetics:**
- Cautumaxone is well absorbed after oral administration.
- Cautumaxone is extensively metabolized in the liver.
- Cautumaxone has a long half-life.

**Summary:**
- Cautumaxone is a nucleoside reverse transcriptase inhibitor.
- Cautumaxone is used in the treatment of HIV infection.
- Cautumaxone is generally well tolerated in adults and children.
- Cautumaxone is generally well tolerated in patients with renal impairment.
- Cautumaxone is generally well tolerated in patients with hepatic impairment.

**References:**
- Gastrointestinal
  - Indigestion and intolerance
  - Dyspepsia
  - Vomiting

- Hematological
  - Cell mucosal pigmentation
  - Bleeding
  - Thrombocytopenia
  - Decreased appetite

- General
  - Vomiting
  - Weakness
  - Malaise and fatigue
  - Fever or chills

- Hematologic and lymphatic
  - Anaemia, including eosinophilic and severe anaemia
  - Jaundice
  - Splenomegaly

- Hepatic and peritoneal
  - Jaundice
  - Hepatitis
  - Palpable splenomegaly
  - Abdominal distension or ascites

- Hypersensitivity
  - Hypersensitivity reactions (including anaphylaxis)

- Urologic
  - Urinary tract infection

- Nervous
  - Parathesis
  - Palpitations, tachycardia
  - Confusion

- Respiratory
  - Abnormal breath sounds
  - Wheezing

- Skin
  - Pruritus
  - Erythema

- HIV Post Exposure Prophylaxis (PEP) Protocol

Decadron® – See Decadron®

Decamethasone (Decadron®)
**WARNING**

**Ground Crew**

**Description:** A drug is considered to be a ground crew drug if it meets the following criteria:

- It is not prescribed for crew members.
- It is not regularly stocked in the crew medical kit.
- It is not used for personal medical needs.
- It is not required for flight operations.

**Indications:**

- Use of Deseretin to control allergic reactions.
- Use of Deseretin in the event of an emergency.
- Use of Deseretin in case of a medical emergency.
- Use of Deseretin to control allergic reactions in crew members.
- Use of Deseretin in the event of a medical emergency.
- Use of Deseretin to control allergic reactions in passengers.
- Use of Deseretin in case of a medical emergency.

**Contraindications:**

- Use of Deseretin in patients with a history of:
  - Hyperkalemia
  - Hypocalcemia
  - Hypoglycemia

**Pregnancy Category C**

- Use of Deseretin in pregnant women.
- Use of Deseretin in breastfeeding mothers.

**Adverse Effects**

- Use of Deseretin may cause:
  - Dryness of the skin
  - Rash
  - Blurred vision
  - Dizziness

**THERAPY**

- Use of Deseretin in patients with extreme hypokalemia.
- Use of Deseretin in patients with extreme hypocalcemia.
- Use of Deseretin in patients with extreme hypoglycemia.

**Dosage - Adult Dose**

- Use of Deseretin in patients with mild hypokalemia.
- Use of Deseretin in patients with mild hypocalcemia.
- Use of Deseretin in patients with mild hypoglycemia.

**Dosage - Pediatric Dose**

- Use of Deseretin in children with mild hypokalemia.
- Use of Deseretin in children with mild hypocalcemia.
- Use of Deseretin in children with mild hypoglycemia.

**Additional Information**

- Use of Deseretin in patients with severe hypokalemia.
- Use of Deseretin in patients with severe hypocalcemia.
- Use of Deseretin in patients with severe hypoglycemia.

**REFERENCES**

- Use of Deseretin in the treatment of hypokalemia.
- Use of Deseretin in the treatment of hypocalcemia.
- Use of Deseretin in the treatment of hypoglycemia.

**Further Reading**

- Use of Deseretin in the treatment of hypokalemia.
- Use of Deseretin in the treatment of hypocalcemia.
- Use of Deseretin in the treatment of hypoglycemia.
- First-line drug for anaphylaxis (benzyl alcohol for children only)
- Causes bronchial constriction, vasoconstriction, increase of blood pressure
- decreases airway responsiveness due to allergic reactions
- **Note:**
  - 1:1,000 dilution epinephrine (1mg in 10cc) is standard paramedic dose.
  - 1:10,000 dilution (1mg in 10cc) is the standard 'Cardio' dosage form for IV use.
  - 1:1,000 epinephrine can be diluted to the 1:10,000 form by adding 1 cc of 1:1000 epinephrine to the 1:1000 form by giving for all.
  - 1:10,000 epinephrine (1mg per 1cc) in be of normal saline (total volume of 10cc).  

- **Indications:** Anaphylaxis
  - Allergic reactions (mild/moderate/severe)
  - Asthma

- **Adverse Effects:**
  - Cardiac arrest/incompetence
  - Venous thrombosis
  - Vascular collapse
  - Angina
  - Hypertransfusion
  - Top
  - Nausea
  - Vomiting
  - Worsening of symptoms

- **Contraindications:**
  - 1:1,000 Epinephrine is NOT given IV
  - Use caution in patients with a history of heart disease or over the age of 40.
  - Do not inject Epinephrine for conditions unrelated to anaphylaxis like drowsiness, loss, nose, ears, pain, pain, waken undetermined may occur nerves.

- **Proper Dosage:**

- **Side Effects:**
  - Cardiac arrhythmias
  - Vascular thrombosis
  - Venous thrombosis

- **Adverse Reactions:**
  - Life-threatening effects on respiratory & cardiac system

**TNT referral**

**WARNING**

- Aviation personnel are grounded for the entire 24 hour of treatment and may not be allowed out of the medical condition unless reevaluated with safety performing aviation duties and the patient is free of side effects.

- **Contraindications:**
  - Cardiac arrhythmias
  - Vascular thrombosis
  - Venous thrombosis
  - Angina
  - Hypertransfusion
  - Top
  - Nausea
  - Vomiting
  - Worsening of symptoms

**Reactions:**

**TNT referral**

**WARNING**

- Aviation personnel are grounded for the entire 24 hour of treatment and may not be allowed out of the medical condition unless reevaluated with safety reevaluating aviation duties and the patient is free of side effects.

- **Contraindications:**
  - Cardiac arrhythmias
  - Vascular thrombosis
  - Venous thrombosis
  - Angina
  - Hypertransfusion
  - Top
  - Nausea
  - Vomiting
  - Worsening of symptoms

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- Acute pain medications
  - Drug of choice for penetrating battlefield trauma
    - Adult dose:
      - 1 mg/kg
      - May be administered IV up to 14 days or IM injection for up to 7 days
      - For IV administration, infuse over 30 minutes
    - Pediatric dose
      - Not approved for patients < 15 yrs
  - Contraindications:
    - Hypersensitivity to ropivacaine
    - Pre-existing allergy to or documented severe reaction to PCEA
    - Hypersensitivity to opioid analgesics
    - Hypersensitivity reactions to other beta-agonists and ketorolac tromethamine
    - IM: hypersensitivity to lidocaine or other anesthetics of amide type
  - Pregnancy Category B
  - Side effects:
    - None
    - Intestinal obstruction/dehydration
    - Nausea/vomiting
    - Pruritus
    - Vaginitis
  - Adverse reactions:
    - Nausea
  - Other notes:
    - Visualize test area, stay within the margin and devascularization prior to use with caution
    - Solutions may be stored from refrigeration to room temperature. Variations in color do not affect potency
  - IV administration - must be reconstituted prior to administration
    - Do not mix or co-infuse with other medications
    - Do not use diluents containing dehydrating agents
      - Reconstitute the contents of 1 1mL vial of ropivacaine with 10 mL of 0.9% NaCl or lactated Ringers solution
      - Shake well to dissolve, and immediately transfer contents to 500mL of 0.9% NaCl
      - Complete reconstitution within 6 hrs of reconstitution
  - IM administration - must be reconstituted prior to administration
    - Reconstitute the contents of a 1mg/mL vial of ropivacaine with 3 mL of 1% lidocaine HCl injection (without epinephrine). Shake and thoroughly to form solution
    - Draw the required IM solution into a large syringe (such as a 3-5 mL syringe or located part of the thigh)
    - In the reconstituted IM solution within 1 hr after preparation. DO NOT ADMINISTER THE RECONSTITUTED IMMEDIATELY IV.

- Injuries:
  - Abdominal Penetrating Wound Protocol
  - Blunt Head/Neck Trauma Protocol
  - Cardiac/Concussion/Abdomen Protocol
  - Chest Injury Protocol
  - Femur Fracture (Rapid Cycle, Phlebotomy, Kidney Stone) Protocol
  - Joint Infection Protocol
  - Mammography Protocol
  - Sepsis/Septic Shock Protocol
Fluconazole (Diflucan®)

**WARNING**
Administration for the initial 48 hours after therapy and until the medical condition no longer interferes with taking peritoneal dialysis and the patient is free of side effects.

**Description:** Synovial fluid and joint fluid.

**Indications:**
- Osteomyelitis and septic arthritis due to Coxsackie.
- Osteomyelitis and septic joint.
- Fungal skin infections.

**Dosage:**
- Oral: 150 mg once per week for 4 weeks.
- Single dose: Vaginal Candidiasis. The recommended dosage of fluconazole for vaginal candidiasis is 150 mg as a single dose.
- Oral: Oral: The recommended dosage of fluconazole for oral thrush is 200 mg on the first day, followed by 100 mg once daily. Clinical evidence of oral thrush candidiasis generally resolves within seven days, but treatment should be continued for at least 2 weeks to decrease the likelihood of recurrence.

**Contraindications:**
- Hypersensitivity to fluconazole.

**Pregnancy Category:**
- D (not recommended for use in pregnancy unless the potential benefit justifies the risk to the fetus). The drug should be used during pregnancy only if the benefit outweighs the potential risks to the fetus.

**Side Effects:**
- Primarily skin discoloration, including keratoconjunctivitis and skin rash.

**IMPRO:**
- Oral: Fungal Skin Infection Protocol

Gentamicin 0.3% Ophthalmic Liquid (Flomax)®

**WARNING**
Administration for the initial 48 hours after therapy and until the medical condition no longer interferes with taking peritoneal dialysis and the patient is free of side effects.

**Description:** Osteomyelitis.

**Indications:**
- Osteomyelitis.
- Vaginal candidiasis.

**Dosage:**
- Adult doses:
  - Oral: 150 mg once per week for 4 weeks.
  - Single dose: Vaginal Candidiasis. The recommended dosage of fluconazole for vaginal candidiasis is 150 mg as a single dose.
  - Oral: Oral: The recommended dosage of fluconazole for oral thrush is 200 mg on the first day, followed by 100 mg once daily. Clinical evidence of oral thrush candidiasis generally resolves within seven days, but treatment should be continued for at least 2 weeks to decrease the likelihood of recurrence.

**Contraindications:**
- Hypersensitivity to fluconazole.

**Pregnancy Category:**
- D (not recommended for use in pregnancy unless the potential benefit justifies the risk to the fetus). The drug should be used during pregnancy only if the benefit outweighs the potential risks to the fetus.

**Side Effects:**
- Primarily skin discoloration, including keratoconjunctivitis and skin rash.

**IMPRO:**
- Oral: Fungal Skin Infection Protocol

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Diabece (Dextrose, Glucose)

- **Dextrose, Glucose**

**Indications:**
- Altered mental status caused by hypoglycemia defined as:
  - Diabetes: Fasting blood glucose less than 60 mg/dL
  - Non-diabetes: Random blood glucose less than 60 mg/dL

**Adult dose:**
- Full labo given in small doses (25-50 ml) - standing usually

**Pediatric dose:**
- 0.5 mg/kg in small doses - subcutaneous

**Drug Action:**
- Tissue fuel source

**Contraindications:**
- Hypersensitivity to glucose
- Pregnancy/Thyroid:
  - Hypothyroidism
  - Hyperthyroidism

**Precautions:**
- Use with caution
  - In elderly patients or those with liver or kidney disease
  - Patients who are unable to protect their own airway
  - Patients who are unable to swallow

**Pregnancy Category C**

**Adverse Effects:**
- Hypoglycemia
- Hypertonicity
- Hypokalemia

**Hazards:**
- Hypotension
- Plasma Volume Expander (Artificial Collodion)

{| Drug | Formulation |
<table>
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<tr>
<td>NuScarb</td>
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**Warnings:**
- In elderly patients or those with liver or kidney disease
- Patients who are unable to protect their own airway
- Patients who are unable to swallow

**Precautions:**
- Use with caution

**Pregnancy Category C**

**Adverse Effects:**
- Hypoglycemia
- Hypertonicity
- Hypokalemia

**Hazards:**
- Hypotension
- Plasma Volume Expander (Artificial Collodion)
Hemorrhage (Hemotrans) in Limited Exchange Solution

- Description: Apheresis volume expander (without red cells)
- Both Hemotrans and the newer product Pasmol are amniotic fluid solutions and are used to expand the plasma volume. The major advantage over crystalloids is that these products allow volume expansion for a longer period of time for the same infused volume. These products are not blood or plasma replacement fluids, they have no oxygen carrying capacity, and they have no coagulation properties. These products should not be the primary fluid used to treat hemorrhagic patients, but can be used if no other fluids are available.

- Indications: Treatment of shock secondary to hemorrhage.

- Contraindications:
  - Pregnancy
  - Known bleeding disorder or uncontrolled hemorrhage
  - CHF
  - Renal impairment
  - Not for use in disseminated intravascular coagulation
  - Use with caution in pregnancy.

- Pregnancy Category C

- Side Effects:
  - Neurosensory
  - Hypersensitivity
  - Hyperkalemia
  - Hypertension
  - Anaphylaxis

- Adverse reactions:
  - Severe anaphylaxis (death)

- Preparations (Oral):

- Dosage:
  - 200-400mg PO 6-8 hr as needed. Not to exceed 2400mg/day (500mg lid)

- Contraindications:
  - None. Should not be given to patients with a history of aspirin sensitivity or severe asthmatic
  - Fenestration
  - Hypersensitivity
  - Nursing mothers

- Pregnancy Category B

- Side effects:
  - Nausea
  - Vomiting
  - Headache
  - Diarrhea
  - Fatigue

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Adverse reactions:
- Prolonged bleeding time
- Tinnitus
- Eosinopenia
- Pruritus

Precautions:
- Chronic Traumatic Encephalopathy (CTE) and Pain Management:

Indications:
- Pain Management Protocol

WARNING
- Do not double the dosage of any medication. This medication is intended for use in emergencies. The dose of this medication should be increased as necessary to achieve the desired effect. If you miss a dose, take it as soon as you remember. If you are not sure whether this medication is right for you, consult your doctor.

Contraindications:
- Do not take this medication if you are pregnant or breastfeeding.
- Do not take this medication if you are allergic to any of the ingredients or if you have any of the following conditions:
  - Sensitivity to the ingredients in this medication.

Propensity Category C:
- Surgical

Side-effects/reactions:
- Body aches, back pain, chest pain, cold, cough, runny nose, sneezing, headache, fever, hypotension, ataxia, tachycardia, tachypnea, and vomiting.

Cardiovascular System:
- Hypertension, cardiac arrest, deep vein thrombosis, migraines, myocardial infarction, palpitations, pain, and hypotension. Thrombosis, hypotension, vomiting, and vomiting.

Digestive System:
- Diarrhea, constipation, dry mouth, nausea, vomiting, dyspepsia, indigestion, dyspepsia, nausea, vomiting, and vomiting.

Musculoskeletal System:
- Myalgia, myositis, periarthritis, pseudogout, cartilage, tendinitis, and tendinitis.

Pediatric System:
- Neonatal:

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Loperamide HCI (Imodium®)

**WARNING**
Aviation personnel are grounded until medical condition is not a factor and free of side-effects for 24 hours.

**Description:** Anti-diarrheal agent.

**Indications:** Treatment of acute diarrhea. For use in acute, non-invasive diarrhea only.
- Refer to medical emergency if blood and/or mucus are present in stool, or diarrhea is associated with fever, blood, or mucus.

**DOSAGE:** 2 capsules (10mg) first dose, then 1 capsule (5mg) after every unformed stool, not to exceed 15 mg in 24 hours. Use only if control of diarrhea is critical for mission operations.

**Contraindications:**
- Use in children <12 years old
- Pregnancy Category B
- Use with caution in patients with renal, hepatic, or cardiovascular disease.

**Adverse reactions:**
- Hypersensitivity
- Use with caution in patients with renal, hepatic, or cardiovascular disease.

**TIME OF USE:**
- Guided by MIL-H-13045

Macrolide Class of Antibiotics – See Azithromycin (Zithromax®).

Mefenamic Acid – See Advil® 200mg, 400mg

Mepipavic (Demerol®)

**WARNING**
Mepipavic (Demerol®) is a potent analgesic and anti-inflammatory agent.

**Description:** Oral and injectable.

**Action:**
- Increases permeability of the glomerular filter, which increases the reabsorption of water, increasing systemic and osmotic pressure.

**Indications:**
- Trauma injury
• Uses:
  - 5-30 mg at the rate of 1 gram

• Contraindications:
  - Allergy
  - Pseudotumor cerebri
  - Hypertension
  - Hyperthyroidism
  - Pregnancy Category C

• Side effects/Adverse Reactions:
  - Headache
  - Transient visual changes
  - Nausea or vomiting
  - Stomach pain
  - Rash
  - Nausea or vomiting
  - Drug may crystallize at temperatures of 45 degrees F or lower

• Other notes:
  - Do not take in liquid
  -TIME gap:
  - 3-6 hours post

Mepronine (Typical)

• WARNING: GROUNDING medication for personnel on flight status.

• Unwanted Intestinal Agent:

• Indications:
  - Prevention or control of malaria caused by Plasmodium vivax (including chloroquine-resistant strain) and P. falciparum.
  - Treatment of malaria caused by Plasmodium falciparum, P. vivax (including chloroquine-resistant strain), and P. ovale.

• Adult dose:
  - Prophylaxis: 200mg once weekly.
    - Initial therapy 1 to 2 weeks prior to departure to endemic area.
    - Once monthly administration on travel day or weekly.
    - Continue prophylaxis for 4 additional weeks upon return from endemic area.
  - Treatment: 5 pills (250mg) given as a split dose twice 6-8 hours apart.
  - Do not base on empty stomach.
  - Take with at least 4-8oz glass of water.

• Pediatric doses:
  - Prophylaxis:
    - Children > 45kg: 200mg (1 tablet) should be taken in 4/5th
    - Children <45kg: weekly dose should be proportion to body weight (0.4-0.6mg/kg weekly).
    - 0-15kg: 0.4-0.5 tablets
    - 20-30kg: 0.5 tablets

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• 40 mg (2 tablets), 3 times daily
• Lamotrigine: initial dose < 3 months or weighing < 90 kg is initiated
• Add-on therapy: 1 week prior to initiation in endocrine area
• Dose must be administered on same day of week
• General precautions for 4-7 days are usually prescribed (begins: 6 weeks ago)

a. Treatment: 100 mg/day in 2 divided doses
• Split into 2 or 3 doses taken in 8-hourly intervals may reduce adverse effects
• Treatment in children has been associated with severe rashes, if patient not within 30 min of urine
• If severe, treatment is continued in age-appropriate children
• For very young patients, dose may be increased every week or may be administered as needed for symptoms
  - Administer in patients < 3 months or < 6 kg as needed

b. Contraindications:
  - Hypersensitivity to related compounds (e.g., quinine, quinidine)
  - Patients with:
    - Acute symptom
    - Seizure disorder
    - History of depression
    - Schizophrenia or other major psychiatric disorders

Pregnancy Category C

Side effects:
• Cardiovascular disturbances
  - Exercise caution when performing activities requiring alertness and fine motor coordination such as driving, piloting, operating heavy machinery as diminished level of tolerance has occurred with lamotrigine during and following the aura
• Abnormal vision
  - Reactions (symptoms) attributable to lamotrigine cannot be distinguished from symptoms of retinopathy due to high levels of this drug. Symptoms should be assessed for several weeks following the first dose.
  - Photophobia
    • Noting (3%)
    • Blurred vision
    • Visual disturbances
  • Lamotrigine-related vision changes should persist for several weeks following the first dose.
  - Treatment:
    • Dark glasses, shade
    • Mydriasis (miosis, diaphragmatic
    • Nausea, vomiting
    • Fever, chills
    • Dizziness
    • Skin rashes
    • Abnormal pen
    • Pulmonary
    • Loss of appetite
    • Tinnitus (ringing in the ears)

Other notes:
• Patients given lamotrigine for P. Malarial are at risk of relapse and should subsequently receive Plasmodium
• There is insufficient clinical data to document lamotrigine's effect on malaria caused by P. ovale or P. malariae
• Use lamotrigine as per instructions in the manufacturer's instructions.
Metronidazole (Flagyl®)

- **Description:** Nitroimidazole antibiotic
- **Adverse Effects:** Gastrointestinal distress due to Flagyl
  - **Adult Dose:**
    - Metronidazole: 250 mg PO bid x 7 days
    - Flagyl: 500 mg PO bid x 7 days
    - Clarithromycin: 500 mg PO bid x 7 days
  - **Pediatric Dose:**
    - Safety and efficacy have not been established, except for amebiasis. 35-50 mg/kg/day for 10 days.
    - Neonates exhibit a reduced capacity to metabolize the drug.

**WARNING**
- Allergic personnel are protected for the initial 74 hours of antibiotic therapy and until the medical condition no longer interfere with safely performing aviation duties and the patient is free of side effects.
- No intramuscular antibiotic
- **Fever:**
  - Clarithromycin: 500 mg IV q 8 hr
- Drug interactions:
  - Clarithromycin: no significant interactions
- **Contraindications:**
  - Hypersensitivity to Nitroimidazole antibiotics
  - Caution: Use in patients with impaired liver function or renal impairment

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Methadone (Methadone®)

- **Indications:**
  - Malignancy pain and other cancer-related pain
  - Neuropathic pain

- **Caution:**
  - Use with caution in patients receiving CYP3A4 inhibitors

- **Contraindications:**
  - Seizure disorder
  - CYP3A4 inhibitor

- **Side Effects:**
  - Central nervous system (CNS) effects
  - Respiratory depression
  - Sedation
  - Nausea
  - Vomiting

- **TMD:**
  - Naloxone Protocol

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### Morphine Sulfate (Controlled)

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#### WARNING
- **COURTING** medication for personnel on flight status.

#### Indication: Analgesic.
- **Dosage:** 5 mg IV (1 mg/kg) every 4-8 hours. Titrate to response.

#### Side Effects:
- **Nausea**
- **Vomiting**
- **Diarrhea**
- **Hypotension**
- **Urination**
- **Frequency**
- **Seizures**
- **Skin flushing**

#### Adverse Reactions:
- **Shock**
- **Allergic reactions** with large doses.
- **Coma**
Microbesin (Adequate)

**WARNING**

- Avoid accidental i.m. injection for the initial 24 hours of antibiotic therapy and until the
- medical condition no longer interferes with safely performing admission states and the patient is free of
- side effects.

- **Description:** 4th generation quinolone

- Broad-spectrum antibiotic with broad-spectrum coverage for PO/NH administration. Inhibits DNA-penetrating
- cellular replication and division.

- **Indications:**
  - Community-acquired pneumonia (CAP), including CAP caused by multi-drug resistant Streptococcus
    pneumoniae
  - Complicated skin and skin structure infections, including diabetic foot infections
  - Complicated intra-abdominal infections, including polymicrobial infections such as abscesses

- **Dosage:**
  - For IV: 40 mg/kg
  - For PO: 80 mg/kg

- **Contraindications:**
  - Hypersensitivity to Fluoroquinolones
  - Pregnant or breastfeeding
  - Pregnancy and lactation
  - Uncontrolled hypertension

- **Pregnancy Category C

- **Side Effects:**
  - Headache
  - Nausea
  - Diarrhea
  - Phototoxicity
  - Insomnia
  - Vertigo

- **Adverse Reactions:**
  - Tendon rupture
  - Use cautiously with NSAIDs due to increased C-E-S stimulation
  - Protracted GI irritation
  - Abnormal dreams
  - Prostatic hypertrophy or outlet

- **Other Notes:**
  - Oral solution: decrease absorption of the Microbealin when taken orally.
  - Usually react any solution of Microbealin for particular states and administration prior to use. Solution
    must be clear.
  - IV administration – must be administered prior to administration
  - Do not mix or dilute with other medications
  - All contraindications and precautions may occur, which will re-dissolve at room temperature.

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Mupirocin Ointment 2% (Bactroban®)

- Description: Topical antiseptic
- Indications:
  - Impetigo
  - Impetigo-like infections
- Adult dose:
  - Clean affected area
  - Apply a small amount of ointment to the area 1 to 3 times/day
  - The treated area may be covered by a bandage or a sterile bandage
- Pediatric dose:
  - Regularly in chilhood has been established in areas 2 to 12 yrs
  - Pediatric dosage of adult dosage
- Contraindications:
  - Should not be used with open wounds
- Pregnancy Category B
- Side effects:
  - Burning, itching, pain, itching at application site
    - Adverse reactions
    - Nasopharynx
- Adverse reactions:
  - Dry skin
  - Tenderness
  - Swelling
  - Contact dermatitis
  - Increased sensitivity (rare)
  - Systemic reactions (rare)
- Other notes:
  - For external use only
  - Protect from light and moisture
  - If no improvement in 3 to 5 days, consider alternative therapy
- TMF Use:
  - External Protocol
  - Impetigo Therapy Protocol

Naloxone HCI (Narcan®)

- WARNING: Medication for personnel on flight status
Magnesium Ombramid 2% (Daraprim)  
- Description: Topical antiseptic  
- Indications:  
  - Infection  
  - Tissue skin infections  
- Adult Use:  
  - Clean affected area  
  - Apply small amount of antibiotic to the area 1 to 3 times/day  
  - The affected area may be covered by a patch or a sterile bandage.  
- Pediatric use:  
  - Safety in children has not been established in infants 2 to 16 years  
  - Use as directed by the adult dosage  
- Contraindications:  
  - Should not be used with wound dressings  
- Veterinary Category B  
- Side effects:  
  - Burning, stinging, pain, itching at application site  
  - Allergic reactions  
  - Nausea  
- Adverse reactions:  
  - Dry skin  
  - Inflammation  
  - Smelling  
  - Conduct disorder  
  - Increased irritability (rare)  
  - Systemic reactions (rare)  
- Other notes:  
  - For oral use only  
  - Avoid contact with mucous membranes  
  - If improvement in 3 to 5 days, consider alternative therapy  
- TIMING:  
  - External Use  
  - Intravenous Thallium  

**WARNING:** Grounding medication for personnel on flight status.
**NAME**

**WARNING** GROUNDING medication for personnel on flight status

**Description:** An antihypertensive drug belonging to a class of pharmacological agents, the calcium channel blockers, it works by relaxing blood vessels so blood can flow more easily.

**Indications:**
- Mild or moderate hypertension
- Certain types of heart disease (angina), it may help to remove excessive fatigue and decrease the frequency of angina attacks. Use other medications, e.g., angiotensin inhibitors, to relieve symptoms of heart failure.

**Contraindications:** Known allergy to medication
- Pregnancy Category C
- Lactation
- 10mg PO, then 20mg PO q 6 hr.

**Side Effects:** Primarily associated with dizziness, peripheral edema

**Warning:** Although as in most patients, the hypotensive effect of nifedipine is modest and well-tolerated, occasional patients have had excessive and poorly controlled hypotension.

**TIMP Use:**
- Avoid during Pregnancy

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**Contraindications (Continued):**

**WARNING** GROUNDING medication for personnel on flight status

**Description:** antihypertensive

**Indications:**
- Prevention of nausea and vomiting
- Adult doses:
  - Oral dose: 4mg PO bid up to 48 hrs
  - IV/IM dose: 4mg/hr over 2 min or 4mg IM bid

**Pediatric Use:**
- Oral dose:
  - Little Information available on dosage in children < 3 yrs
  - 4-11 years of age: 4mg PO bid up to 48 hrs
  - > 12 years of age: 4mg PO bid up to 48 hrs
- IV dose:
  - Little Information available on dosage in children < 2 yrs

---

**Spring 2009 Training Supplement Drug List**

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• 2-12 years old and <4 kg: single, tripling IV dose over 2-5 min
• >13 Years and >4 kg: drug IV over 2-3 min

Contraindications:
• Hypersensitivity to any component of product

Precautions/Consideration:

SideEffects:
• Anorexia
• Nausea
• Vomiting
• Diarrhea
• Urinary retention
• Maculopapular rash
• Rash
• Candidiasis
• Hypotension
• Hypoglycemia
• Dysphonia

Adverse Reactions:
• Hypocalcemia
• Rare cases of hyperkalemia, sometimes severe (hyperkalemia) have been reported
• Sinus tachycardia (rare)
• Hypertension (rare)
• Transient blurred vision (rare)
• Hypokalemia (rare)
• Refractory hypotension and/or endocardial levels

Helpful:
• Nasal and urging protocol

Fentanyl Oral (AstraZeneca)

WARNING
• CIRCUMVENCINDA medication for conscious or not
• Description: Opioid - Oral transmucosal fentanyl citrate
• Indications: Severe breakthrough related trauma pain
• Dose: 100 mcg

The clinical package should be opened with scissors immediately prior to product use. The patient should be given the ACTG citrate or the mouth between the cheek and lower gum, not necessarily making the drug matrix from one site to the other using the noronic. The ACTG citrate should be swallowed, not chewed. A unit dose of ACTG Citrate mouth is swallowed, eightfold in lower peak concentrations and lower bioavailability. All sites and tongue embedded in the ACTG-C citrate should be swallowed to the mouth. Lower or shorter consumption times may produce less efficacy than reported in ACTG clinical trials. If signs of overdosage occur, the patient's mouth is immediately fitted to removed from the patient's mouth immediately and further doses should be decreased.

Contraindications: Known allergy to this product

Pregnancy Category C

Treatment of overdose:
• Ventilatory support
• Intravenous fluids

102 Journal of Special Operations Medicine
Oxymetazoline HCl (Afrin® Nasal Spray)

- **Description:** Vasoconstrictor (decongestant)
- **Indications:** Used as an adjunct to topical anaesthetic to clear nasal and sinus passages.
- **Dose:** Spray into each nostril 2 times, twice daily. Not to exceed three consecutive doses due to rebound congestion.
- **Route:** Nasal
- **Contraindications:**
  - Severe damage to tympanic membranes or earducts.
  - Pregnancy Category C
  - Rail effects:
    - Sinusitis
    - Sensitivity and stinging of nasal mucosa
- **Adverse reactions:**
  - Rhinitis
  - Rebound congestion
- **TDM Use:**
- **Pharmacokinetics:** See Older Formulations of Oxymetazoline HCl.

Primaxone

- **Description:** Antidepressant
- **Indications:** Used to reduce nasal congestion and to prevent nausea and vomiting, especially in patients who are prone to motion sickness.
- **Dose:** 30 mg PO daily, or 5 mg PO 1-2 hours before traveling or eating the meal area.
- **Route:** Gastric
- **Contraindications:**
  - Glaucoma
  - Hypertension
  - Overactive bladder
- **Pregnancy Category C
- **Side-effects:**
  - Dizziness
  - Dry mouth
  - Urinary retention
  - Nausea
  - Gastrointestinal
WARNING

CIRCUMSTANCE medication for personnel in light status

Description: Phenclostimate dose is 30 mg in the morning. The duration of action is generally from four to six hours. The major side-effects of this drug are vomiting.

Indications:
- Nausea
- Vomiting
- Abdominal cramps
- Achondroplasia
- Vomiting patients
- Hypothalamic
- Antacids
- Antacids
- Methemoglobinemia

TUEP use:
- Methemoglobin Protocol

Phenclostimate HCl (Phenclostimate)

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- Antacids
- Antacids
- Methemoglobinemia

TUEP use:
- Methemoglobin Protocol

Phenclostimate HCl (Phenclostimate)


- **Precautions:**
  - Pregnancy
  - Cautions: medication
  - Hypertension
  - Diabetes mellitus
  - Porcelain hypertension
  - Location
  - Hypertension

- **Side-effects:**
  - CNS: Tinnitus, anxiety, insomnia, headaches, dizziness, hallucinations, seizures
  - CV: Palpitations, tachycardia, hypotension, ventricular arrhythmias
  - EENT: Dry nose, irritation of nose and throat
  - GI: Nausea, vomiting, anorexia, dry mouth
  - GU: Dysuria

- **Other notes:**
  - Do not use continuously; or more than recommended dose.
  - Overdose congestion may occur.
  - Avoid taking at bedtime: stimulation may occur.

- **NURSE Notes**
  - Allergic rhinitis for Fitzer Gold Line Symptons
  - Borrelia Herpetic

---

**Cautions - General Antimicrobial Spans**

- **WARNING**
  - Cautions: medication no longer interferes with activity performing duties duties and the patient is free of side effects.
  - 3rd generation: non-symptoms non-enzymes, enzymes only
  - Example: amoxicillin
  - 4th generation: Gram-negative (excluding Pseudomonas), Pseudomonas, Acinetobacter, etc.
  - Example: amoxicillin, chloramphenicol, cefotaxime, ceftriaxone
  - 5th generation: Cefuroxime (including Pseudomonas), gram-positive (including Staphylococcus and Pseudomonas), expanded gram-negative coverage.
  - Example: vancomycin
  - 4th generation: Same as 3rd generation plus broad anaerobic coverage.
  - Example: piperacillin, sulbactam, imipenem

**Indications:**
- Chronic infections, severe allergies to macrolides
- Pregnancy Category C

---

**Rabeprazole (Ambiscent)**

- **Description:** Glucagon-proton pump inhibitor (PPI)
  - Gastric (PPI) that specifically suppresses gastric acid secretion by inhibiting the acid secretion in the cells of the mucosa. Does not have histamine receptor blocking properties

**Indications:**
- Peptic ulcer disease, atrophic gastritis, reflux esophagitis, duodenal ulcers, and hypersecretory conditions

**Contraindications:**
- PP: hypophosphatemia
- Pregnancy
- Pregnancy Category D

**Adult doses**
- 20 mg PO qd
Spring 2009 Training Supplement Drug List
Abdominal Pain Protocol
Abdominal Radiologic Imaging
Chest Pain Protocol (Other 3 Injuries)

Misoprostol - See 5-2 Trench

Misoprostol (Misoprostol)

**WARNING**
A continuous infusion of misoprostol is indicated for the initial 24 hours of antibiotic therapy and until the patient is free of side-effects.

**Description:** Misoprostol is a prostaglandin, a synthetic analog of the natural prostaglandins of the gastrointestinal tract, that causes increased smooth muscle tone and reduced motility.

**Class:** Miscellaneous drugs

- **Indications:**
  - Abdominal pain
  - Dyschezia
  - Dyschezia
  - Gas formation
  - Asymptomatic carriers of Helicobacter pylori to eliminate Helicobacter pylori from the stomach

- **Contraindications:**
  - Use in pregnancy

- **Precautions:**
- Use in pregnancy

- **Side-effects:**
  - Headache
  - Abdominal pain
  - Nausea
  - Vomiting

- **Adverse effects:**
  - Diarrhea
  - Rectal bleeding
  - Nausea and vomiting of cyclic

- **Warnings:**
  - Continuous administration may reduce the absorption of misoprostol. Daily doses of misoprostol should be given at least 5 hours before the expected ingestion of aspirin.

---

Journal of Special Operations Medicine
Salmeterol (Serevent®)

- **Description:** Long-acting inhaled beta-2 agonist, relaxes bronchi to smooth muscle (bronchodilator)
- **Indications:**
  - Asthma
  - Maintenance treatment of airways-induced bronchospasm
  - Treatment for chronic obstructive pulmonary disease (COPD)
  - Maintenance asthma
  - HAP</p>

- **Adult Dose:**
  - 1 inhalation every 12 hrs (twice daily)
- **Pediatric dose:**
  - If more than 4 years of age, same as adult dose
- **Contraindications:**
  - Hypersensitivity to salmeterol or other beta-2 agonists
- **Pregnancy Category C**
- **Side Effects:**
  - Dry mouth/throat (suggest use hard candy or lozenges to relieve symptoms)
- **Adverse Reactions:**
  - Cardiovascular: tachycardia, palpitations
  - Neurologic: dizziness, headache, insomnia
  - Respiratory: throat irritation, exacerbation of asthma (worse)
  - **Contraindications:**
    - This medication **DOES NOT** give immediate relief in the event of asthma attack or bronchospasm
    - This medication **SHOULD NOT** be used in combination with other long-acting beta-2 agonists (e.g., formoterol, salmeterol, etacrine)
    - Minoxidil - milk protein in the inhalation powder formulation
- **Side Effects:**
  - Atopic asthma (protocol)

Serevent® (see above)

Salmeterol - Dose Submission
- **Actions:**
  - Sodium bicarbonate combines with hydrogen ions to form water and carbon dioxide
  - Reduces stomach acidity
  - Fosters an alkaline shift of ammonia from serum in hypoammonemia
  - Increases pH

- **Indications:**
  - Severe metabolic acidosis in clients with a respiratory insufficiency
  - Tricyclic antidepressant overdose
  - Hypokalemia
  - Alkalization agent for specific toxins (Bakalabol, Phosphonate)

- **Dose:**
  - IM/IV

- **Contraindications:**
  - Metabolic or respiratory alkalosis
  - Hypokalemia
  - Hypernatremia
  - Hypocalcemia

- **Pregnancy Category:** C

- **Side-Effects/Adverse Reactions:**
  - Metabolic alkalosis can occur
  - Potassium levels should be monitored
  - May precipitate arrhythmias when mixed with sodium bicarbonate

- **Precautions:**
  - May cause intravascular volume overload
  - May precipitate arrhythmias
  - Large volume load may lead to fluid overload

- **TNBP:**
  - Crash Hyponatremia Protocol
  - Budeo-SR (USP Pseudophedrine)

**Precautions (VII/IV/C):**

- **WARNING:** Do not use medication for personnel flight status.

- **Indications:** Treatment of HFV

- **Dosage:**
  - 1 tablet daily

- **Contraindications:** Known allergy to medication

- **Pregnancy Category:** B

- **Side Effects:**
  - Respiratory system disorders
  - Allergic reactions
  - Miscellaneous and systemic disorders
  - Upper respiratory
  - Hypophosphatemia
  - Hypokalemia
  - Hypocalcemia
  - Respiratory, thoracic, and cardiovascular disorders
  - Diaphoresis
  - Cardiovascular disorders
  - Paresthesia
**Trends and Emotions**

- See Trends

**Trends and Emotions and EBusiness**

- See Analysis

**Trends**

- Critical (less serious)

**Trends (5%) Drugs**

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avian personnel are prohibited for 12 hours after the use of local anesthesia and until symptoms have lessened enough to allow safe performance of duties.</td>
</tr>
</tbody>
</table>

**Description:** Local anesthetic

**Indication:** As a topical or systemic anesthetic to reduce pain or discomfort caused by foreign objects

**Dose:**
- 1 or 2 doses, 2 to 3 minutes before procedure
- See appropriate TMEP

**Contraindications:**
- Not for prolonged use

**Pregnancy Category C**

**Side Effects:**
- Slapping
- Tearing
- Swelling
- Sensitivity to light

**Adverse Reactions:**
- Congenital defects
### Tramadol (Cephalon and Teva)

**WARNING**
- Avoid concurrent use with monoamine oxidase inhibitors (MAOIs), as serious, potentially fatal hyperpyrexia and/or coma may occur.

<table>
<thead>
<tr>
<th>Indications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute moderate to severe pain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contraindications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe uncontrolled bleeding</td>
</tr>
<tr>
<td>Severe hepatic impairment</td>
</tr>
<tr>
<td>Severe renal impairment</td>
</tr>
</tbody>
</table>

**Precautions**
- Use with caution in elderly patients and those with hepatic or renal impairment.

**Adverse effects**
- Nausea, vomiting
- Dizziness, lightheadedness
- Sedation
- Dry mouth

**Dosage**
- Oral: 100 mg every 6 hours
- Intravenous: 100 mg over 10 minutes

**Side effects**
- Drowsiness
- Nausea
- Diarrhea

**Interactions**
- Increased bleeding risk with NSAIDs, aspirin, warfarin
- Decreased tramadol plasma levels with rifampin, barbiturates, phenytoin

---

### Trimethoprim-Sulfamethoxazole (TMP-SMZ, Bactrim, Septra)

**WARNING**
- Do not use for travel to countries where trimethoprim-resistant strains of P. falciparum are common.

<table>
<thead>
<tr>
<th>Indications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated urinary tract infections</td>
</tr>
<tr>
<td>Prophylaxis for P. falciparum malaria</td>
</tr>
</tbody>
</table>

**Contraindications:**
- Hypersensitivity to TMP, SMZ, sulfa, or penicillin
- Severe renal impairment
- Severe hepatic impairment

**Precautions**
- Use with caution in pregnant and breastfeeding women.

**Adverse effects**
- Nausea, vomiting
- Abdominal pain
- Diarrhea

**Dosage**
- Oral: 100 mg TMP/800 mg SMZ twice daily
- Intravenous: 100 mg TMP/800 mg SMZ over 2-4 hours

**Side effects**
- Headache
- Rash

**Interactions**
- Increased risk of bone marrow suppression with cyclosporine
- Decreased blood levels of digoxin, warfarin

---

### Tropisetron (Emeticin and Tersetron)

**WARNING**
- Do not use in patients with a history of sickle cell trait or sickle cell disease.

<table>
<thead>
<tr>
<th>Indications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemotherapy-induced nausea and vomiting</td>
</tr>
</tbody>
</table>

**Contraindications:**
- Hypersensitivity to tropisetron
- Severe hepatic impairment

**Precautions**
- Use with caution in elderly patients.

**Adverse effects**
- Constipation
- Diarrhea

**Dosage**
- Oral: 1 mg every 8 hours
- Intravenous: 1 mg over 10 minutes

**Side effects**
- Headache
- Nausea

---

**Journal of Special Operations Medicine**

A-48
- Skin/Electric
  - General
    - Fulguration
  - Infections
    - Skin
    - Upper respiratory infections
    - Neoplasms/lymphomas
  - CNS
    - Headache
    - Diarrhea
  - Gastrointestinal disorders
    - Depression
    - Insomnia
  - Immune system disorders
    - Allergic reactions
  - Metabolism and nutrition disorders
    - Lactic acidosis
    - Hypoglycemia
    - Hyperglycemia
  - Respiratory, thoracic, and mediastinal disorders
    - Dyspnea
  - Gastrointestinal disorders
    - Pancreatitis
    - Increased intraluminal pressure
    - Abdominal pain
    - Nausea
    - Vomiting
    - Diarrhea
  - Hemic and lymphatic disorders
    - Hemophilia
    - Thrombocytopenia
    - Increased liver enzymes (most commonly AST, ALT [formerly SGPT])
    - Anemia
  - Skin and subcutaneous tissue disorders
    - Urtis
  - Musculoskeletal and connective tissue disorders
    - Rhabdomyolysis
    - Osteoporosis (increased bone pain which may contribute to fractures), muscle weakness, myopathy
  - Renal and urinary disorders
    - Acute renal failure
    - Nephrotic syndrome/insufficiency
    - Renal insufficiency
    - Polyuria
  - Gastrointestinal disorders and administration site conditions
    - Fatigue
  - Other adverse effects
    - Sore at 22°C (72°F) exposure permitted to 16–30°C (60–86°F).
    - TNAF
    - HIV positive exposures
    - Protocol

Tylenol® – See Antipyretics

Spring 2009 Training Supplement Drug List
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Trade Name</th>
<th>API</th>
<th>Category</th>
<th>&lt;100mg</th>
<th>100-500mg</th>
<th>&gt;500mg</th>
<th>Recommended</th>
<th>OPC</th>
<th>Contributed</th>
<th>Not Contributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascorbic acid</td>
<td>Vit C</td>
<td>ascorbic acid</td>
<td>Nutrient &amp; Coenzyme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>Tums, OTC</td>
<td>calcium carbonate</td>
<td>Nutrient &amp; Coenzyme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Iron</td>
<td>FerroPath</td>
<td>ferrous sulfate</td>
<td>Nutrient &amp; Coenzyme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Magnesium oxide</td>
<td>MagneSol</td>
<td>magnesium oxide</td>
<td>Nutrient &amp; Coenzyme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Zinc</td>
<td>ZincGlo</td>
<td>zinc acetate</td>
<td>Nutrient &amp; Coenzyme</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

A-90
<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Brand Name</th>
<th>Strength</th>
<th>Formulation</th>
<th>Dosage</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>25 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>50 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>100 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>200 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>5 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atenolol HCL</td>
<td>Tenormin</td>
<td>10 mg</td>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The table above provides a summary of the Spring 2009 Training Supplement Drug List. Each row represents a different drug or formulation, along with its brand name, strength, and dosage form.*
<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Formulation</th>
<th>Dosage</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>Tablets (100mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Baclofen</td>
<td>Tablets (10mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Benadryl</td>
<td>Tablets (25mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Busulfan</td>
<td>Tablets (2mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Cimetidine</td>
<td>Tablets (300mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Clonazepam</td>
<td>Tablets (0.5mg-2mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Diclofenac</td>
<td>Tablets (50mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>Tablets (25mg)</td>
<td>1 Tablet</td>
<td>No</td>
</tr>
<tr>
<td>Diltiazem</td>
<td>Tablets (90mg)</td>
<td>1 Tablet</td>
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</tr>
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Note: The table above lists common medications used in special operations medicine. Always consult with a healthcare professional for personalized medical advice.
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<tr>
<th>Brand Name</th>
<th>Generic Name</th>
<th>Strength</th>
<th>Formulation</th>
<th>Dose</th>
<th>Maximum Dose</th>
<th>FDA Approved</th>
<th>Reportable</th>
<th>Use by 2016</th>
<th>Use by 2017</th>
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*Note: This table represents a portion of the Drug List for Spring 2009 Training Supplement.*
<table>
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<tr>
<th>Name</th>
<th>Strength (mg)</th>
<th>Size</th>
<th>Strength (mg)</th>
<th>Size</th>
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**Phenazone**

A-43

Spring 2009 Training Supplement Drug List
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<th>48m</th>
<th>60m</th>
<th>72m</th>
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**PEDIATRIC EMERGENCY MEDICATIONS**

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**DOSE (in mg)**

Spring 2009 Training Supplement Drug List

123
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<th>VITAL SIGNS</th>
<th>Respiratory Rate</th>
<th>Heart Rate</th>
<th>Systolic Blood Pressure</th>
<th>Weight in Kilograms</th>
<th>Weight in Pounds</th>
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<td>50-70</td>
<td>2-3</td>
<td>4.5-7</td>
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<td>Infant (1-12 mos)</td>
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<td>80-140</td>
<td>70-140</td>
<td>4-10</td>
<td>9.2-22</td>
</tr>
<tr>
<td>Toddler (1-3 yrs)</td>
<td>20-30</td>
<td>80-130</td>
<td>80-110</td>
<td>10-14</td>
<td>22-31</td>
</tr>
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<td>80-120</td>
<td>80-110</td>
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<td>31-40</td>
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<td>School Age (6-12)</td>
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<td>70-110</td>
<td>80-120</td>
<td>20-42</td>
<td>41-92</td>
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<td>Adolescent (13+)</td>
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<td>55-105</td>
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<td>&gt;50</td>
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**CONVERSIONS**

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<th>LIQUID</th>
<th>WEIGHT</th>
</tr>
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<tr>
<td>F=(1.8) C + 32</td>
<td>1 oz = 30 ml</td>
<td>1 kg = 2.2 lbs</td>
</tr>
<tr>
<td>C=(F-32) / (1.8)</td>
<td>1 tsp= 5 ml</td>
<td>1 oz = 30 gm</td>
</tr>
<tr>
<td></td>
<td>1 tbsp= 15 ml</td>
<td>1 gr = 65 mg</td>
</tr>
</tbody>
</table>

SENIOR TACTICAL MEDIC DUTIES AND RESPONSIBILITIES

The senior tactical Medic duty description will be used to define the responsibilities of the highest ranking and most experienced Medic present at any given location and time. This Medic is designated as the “Senior Medic” at that specific location and thus is responsible for the duties and responsibilities as listed below.

♦ Principal medical advisor to the unit commander and senior enlisted advisor
♦ Provide and supervise advanced trauma management within protocols and limits set within scope of practice
♦ Lead, supervise, and train junior Medics
  ➢ Individual training
  ➢ Health and wellness
  ➢ Development and counseling
  ➢ Troop leading procedures and pre-combat inspections (PCIs)
♦ Plan, supervise, and conduct casualty response training for Unit Members and Leaders
  ➢ First Responder training
  ➢ Casualty response training for tactical leaders (CRTHL)
  ➢ Opportunity training / rapid check
♦ Maintain company level medical equipment and supplies
  ➢ Accountability/inventory
  ➢ Maintenance/servoability
  ➢ PCl of individual first aid kits
  ➢ PCI of squad/team casualty response kits
  ➢ Requisition and receive medical supplies from appropriate source
♦ Plan, coordinate, and execute medical planning for unit level operations
  ➢ On-target casualty response plan
  ➢ CASUALTY evacuation from target to next higher medical capability
  ➢ Task organization of company Medics
♦ Conduct after action reviews and report and archive medical lessons learned
♦ Monitor the status of health in the unit / element
  ➢ Physically limiting profiles (known health histories of unit members)
  ➢ Immunization status of unit members

MEDICAL & CASUALTY RESPONSE PLANNING

Initial Planning / WARNING MEDICAL THREAT ASSESSMENT

The unit medical planner must assess all the possible health and medical threats present to the unit. This assessment includes all aspects of environmental health hazards as well as specific threats from enemy weapons
systems. Through the medical threat assessment, the medical planner will assess all possible preventive measures the unit can employ to minimize those threats. Medical planners must be prepared to make recommendations to unit commanders, leaders, and members on how to take appropriate precautions or measures prevent injuries and illnesses. The overall goal is to have healthy operators ready to perform a mission, keep them healthy during the mission, and to bring healthy operators back home.

☐ Identify Area of Operations (country, region, environment)
  + Host Country (Staging Base) – This is the friendly region you may be operating from as a basis of operations. The threats may be the same as where the mission targets are located or can be completely different.
  + Target country – This is the area or region in which the unit will be conducting tactical missions.

☐ Determine known health threats & risks – one must identify through all possible sources what the known health threats and risks are. The planner can utilize many aspects of the internet, publications, country studios, or products from World Health Organization or national intelligence organizations to gain access to required information.
  + Diseases / illnesses of significance that could be a risk to unit members before, during, or after the mission.
  + Environmental Threats (plants, animals, climate, terrain) can be a daunting task, but must be assessed to prevent injuries and illnesses that can cause mission mishaps.

☐ Current Unit Medical Readiness status – the planner must have knowledge of the unit’s current immunization status.

☐ Preventive Medicine guidelines (what is required before, during, and after) – Many organizations publish guidelines for preventive medicine measures for different regions around the world. Typically, regional command operations centers (CPORD) will contain specific guidelines on preventive measures.

☐ Enemy weapons, munitions, and tactics, to include chemical and biological weapons – The medical planner must assess the types of enemy weapons and the types of injuries they can inflict on the unit. The planner must make recommendations to prevent these injuries such as the use of body armor or protective masks.

☐ Key questions the planner must ask to assess the unit’s preparedness. How ready is the unit if it encounters diseases / illnesses?
  What preparation is needed by the unit?
  Do unit members need special preventive medicine items issued?

HIGHER MEDICAL GUIDELINES & REQUIREMENTS

☐ Chemoprophylaxis – the planner must determine if unit members are required to take medications for the duration of the mission to prevent illnesses.
  + Anti-Malarial Drugs
  + Other preventive measures

☐ Do we need to change anything in the way we normally do business?
REQUESTS FOR INFORMATION (RFI)
- Request updates to dated information from available sources about disease or environmental threats. Those sources may be within the chain of command or may be international health organization.
- Maps / Imagery
- Host Nation (SN) Medical Capabilities – The planner must be prepared to assess the medical facilities and infrastructure of the region where missions will be staged and executed.
  - Hospitals / medical facilities
  - Nationwide medical training / competencies

DETERMINE MEDICAL ASSETS
- The medical planner must have a clear understanding of the medical assets available to support the mission.
- Organic (part of the unit), Attached, Air, Ground, Theater, TFT, Host Nation, IEB, FSB, etc.
- CAS/DEVAC: MEDEVAC Support
  - How many and what type?
  - Capabilities and limitations?
  - Helitack and high angle extraction?
  - Medical Personnel and Equipment on board? Level of Training?
- Determine nearest surgical capability:
  - Where are your casualties being evacuated to?
- What are the capabilities / limitations?
- What is their MASCAL or overloaded for their system?
- Determine staging Base area medical support
  - Can they provide labs, x-rays, medications, preventive medicine, etc?

FAMILIARIZATION WITH MEDICAL ASSETS
- Published References: Look it up in the appropriate reference manual to gain understanding of capabilities and organization
  - What is a Combat Support Hospital?
  - What is a Forward Surgical Team?
  - What is an Area Support Medical Unit?
- Can you see their layout / equipment?
- Can you conduct familiarization training as required?
- What are their capabilities and limitations?
- Can you talk to them and what can they know about you and your mission?

Tactical Operation Development

CASUALTY ESTIMATION
- Look at the target and the template of enemy positions
- Look at the commander’s assault plan
- The medical planner must determine where casualties are likely to occur and ensure there is a management and evacuation plan in place for all phases of the operation.
Plan to take casualties during every phase of the operation (infiltration, assault, clear/hold, consolidate, defend, exfiltration).
+ Where do you foresee taking casualties?
+ Where is it most critical for the Medics to be located?
+ Do you need to task organize your medical teams?
+ Where does the unit need to establish casualty collection points (CCPs)?
+ What evacuation methods need to be considered?
+ Where is the closest helicopter landing zone (HLCZ) or ambulance exchange point (AXP)?
+ Where do you place on site S/OPs' (Air Force) and augmentation?

Review Preventive Medicine issues and anticipate Disease Non-Battle Injuries (DNBI)
+ What are the health threats?
+ What actions will prevent or decrease disease and non-battle injuries?

DETERMINE KEY LOCATIONS
+ Based on your casualty estimation and the tactical assault plan...
  + Where should the CCP be located?
  + Where should patient exchanges be located? (CCP, HLCZ, AXP)
  + Where are the projected blocking positions, firing positions, etc...?
  + Where is the Command & Control going to be located?
  + Who is in charge of each key location?
  + Establish both Primary and Alternate Locations for all medical points of the plan?
  + What are the ground movement routes? Evacuation channels must flow with the flow of the unit's tactical plan.

DETERMINE CASUALTY FLOW
+ The medical planner must always plan evacuation from Point-of-Illness to a Fixed Facility and all of the steps in between.
+ Where are your casualties being evacuated to?
  + Are you evacuating by ground or air to a casualty collection point?
  + Are you evacuating by ground or air to an casualty transport point?
  + What are the distances and time of travel?
  + Can your patients make it that far? What needs to be corrected?
  + Who is evacuating your casualties?
  + Do you need to modify the placement of medical assets to ensure a continuity of care?

AIR TACEVAC PLAN
+ What is the type of Air TACEVAC mission?
  + Dedicated — an air asset whose purpose after infiltration is casualty evacuation. It is outfitted and manned for casualty management.
**Example:**

- Designated – an air asset that will be the aircraft instructed to evacuate casualties. May be equipped for casualties if requested.
- On-Call – air assets that are held in reserve or must be launched to respond to casualty evacuation. May also apply to MEDEVAC covering fire area.

**Aircraft type?**
- Maximum casualty load?
  + How are casualties to be loaded?
    + Packaging requirements: Litters, Skedco, etc.?
    + Is the aircraft equipped with litter shelters?
    + Loading procedures? Approach procedures?
  + What medical capability is on the aircraft?
    + Flight medic, paramedic, nurse, physician?
    + Any special casualty management equipment required?
    + Medical resupply bundles?
  + Request Procedures?
    + Procedures for requesting CASEVAC? What are the channels for requesting evacuation assets?
    + B-Line MEDEVAC request versus modified format?
    + Communication requirements? How do you talk with evacuation assets?
  + Launch Authority?
    + Who is the launch authority for the aircraft?
    + What is the impact on unit’s TACEVAC operations?
  + Landing requirements?
    + Special HZE considerations?
    + Special markings required?
    + Special equipment required?

**GROUND CASEVAC PLAN—TWO PHASES:**

1. Actions required on the target.
   - How should unit members move casualties on the target to the CCP?
     + All AF Little Teams
     + Skedco, litter, etc...
     + Ground Mobility Vehicles (Quad, HIMM, Vehicular)
   - What is the type of ground CASEVAC mission?
     + Dedicated – a ground asset whose purpose after infiltration is casualty evacuation. It is outfitted and manned for casualty management.
     + Designated – a ground asset that will be the vehicle instructed to evacuate casualties. May be equipped for casualties if requested.
     + On-Call – ground assets that are held in reserve or must be launched to respond to casualty evacuation. This may be vehicles of opportunity (local or captured).
   - Vehicle type and maximum casualty load?
   - How are casualties to be loaded?
     + Packaging requirements: Litters, Skedco, etc.?
**Communications Requirements**
- Do all Medics have radios?
- Can a Medic contact a higher care provider for guidance?
- Types of radios / communications security requirements?
- Medical Command & Control (MCC) & Communication:
  - Calling frequencies / SIDI
  - Evacuation request frequencies?
  - Casualty reporting / accountability?
- Re-Supply requests

**Medical Re-Supply Requirements & Methods**
- How do you request re-supply?
- What are the re-supply methods?
  - Drop bundles?
  - Door-to-door bundles?
- Medical packing lists? Do you need to reconfigure / re-pack (kitbag, cases)?
- How do you request specific line items?

**Coordination & Synchronization**
**Planning Interaction (Who to Talk & Coordinate With)**
- Commander & Operations Officer (Tactical Plan)
- Executive Officer (Support & Resources)
- First Sergeant (CCP Operations, Manifests, Aid & Letter Teams)
- Battalion Medical Planner (Medical Aspects)
- Platoon Sgtns (Squad Casualty Response & CCPs)
- Junior Medics (Understanding of the Plan)
- Battalion Staff Planners
  - S1 Personnel (Casualty Tracking & Accountability)
  - S2 Intel (Health Threat & Intelligence Information)
  - S3 Air (Air TACEVAC Operations)
  - S4 Logistics (Ground TACEVAC & Re-Supply)
MEDICAL & CASUALTY RESPONSE OPORD BRIEFING AGENDA

- Health Threat
- Casualty Response Concept of the Operation
- Casualty Flow
- Key Locations (CCPs, HILZs, AHPs, etc.)
- Evacuation Procedures (ladder evacuation, MEDEVAC, assistance, Re-Supply)
- Medical call signs / frequencies
- Casualty Accountability

BACK-BRIEF WITH JUNIOR MEDICS

- Ensure junior medics understand tactical plan AND casualty response plan
- Understand packaging requirements
- Understand casualty marking procedures
- Understand communications methods

REHEARSALS

- First Responder Drills
- Casualty Response Drills (caso under fire, TACEVAC request/loading)
- Aerial & Ether Team Drills
- CCP Operations (Assembly, security & movement, casualty movement, CCP markings, vehicle parking, link-up procedures, casualty tracking & recording, staging, treatment and management of casualties)
- Evacuation Request and Loading Procedures
- COMMEX - communications exercise/com test
- Casualty Tracking / Accountability

PRE-COMBAT INSPECTIONS

- Individual Unit Members
  - First Aid Kits
  - Prophylactic Medications (iodine tabs, Dantacyclin, Diamox, etc.)
- Squad Casualty Response Kit
  - Team First Responder Bags
  - Evacuation Equipment (Shovelo, Ullers, etc.)
- Vehicle mounted airbags
- Medics Aidsbags (Pack and/or reconfigure as required)
  - Select appropriate airdrop system per mission requirements
  - Ensure packing list in accordance with recommended stockage
- Re-Supply Packages (Pack and/or reconfigure per mission requirements)
  - Reconfigure per mission specifics (ground, air, etc.)
  - Utilize bundles, or pull-off configured as required
  - Pre-position as required with aircraft and vehicles at staging areas with logics teams
After Action Review in Training or Combat

- Was the mission executed as planned?
- What went right?
- What went wrong?
- What could have been done better?
- What could be fixed by planning / preparation?
- What could be fixed by training?
- What could be fixed by equipment modification?
- Identify and record sustaining & improving ideas for the future.

CASUALTY COLLECTION POINT (CCP) OPERATIONS

Duties and Responsibilities

UNIT MEDICS

- Planning Phase
  - Provide recommendations and advice to leadership on medical support
  - Medical Support Planning by phase of the operation
  - Casualty Care Plan by phase of the operation
  - Recommend to the Unit Leadership & Coordinate as required:
    - CCP Locations by phase
    - Medical Task Organization & Distribution
    - Ground (on the target) Evacuation Plan & Assets
    - Air/Ground (off the target) Evacuation Plan & Assets
    - CCP, H&L, and Evacuation Asset Security
  - Pre-Combat Inspections of junior Medics, squad casualty response kits, and individual first aid tasks

- Execution Phase
  - Triage, Treatment, Monitoring, and Packaging
  - Delegation of Treatment
  - Request Assistance from other medical or unit assets
  - Provide guidance and recommendations to leadership on casualty management & evacuation

UNIT MEDICAL PERSONNEL & MEDICAL PLANNERS

- Planning Phase
  - Provide recommendations and advice to leadership on medical support
  - Recommend to the Unit Leadership & Coordinate as required:
    - CCP Locations of subordinate units by phase
    - Medical Task Organization & Distribution
- Ground (on the target) Evacuation Plan & Assets for all targets
- Air/Ground (off the target) Evacuation Plan & Assets for all targets
- CCP, HLZ, and Evacuation Asset Security for all targets
- Augmentation requirements of subordinate units
- Link-in with tactical operations

 executions
- Triage, Treatment, Monitoring, and Packaging
- Delegation of Treatment
- Request Assistance from other medical or platoon assets
- Provide guidance and recommendations to leadership on casualty management

 UNIT LEADERSHIP

 Planning Phase
- Evaluation Plan by phase of the operation
- CCP locations, HLZ/AXP locations,
- Security of CCP, Security of HLZ/AXP
- Allocate Aid & Litter teams and carry evacuation equipment
- Accountability / Reporting Plan
- Distribution/Task Organization of Medical Personnel
- Pre-Combat Inspections of Junior Medics, Squad Casualty Response Kits, and Individual First Aid Tasks
- Conduct Casualty Response Rehearsals

 Execution Phase
- Establish and Secure Casualty Collection Point (CCP)
- Provide assistance to Medics with augmentation and directing aid & litter teams
- Gather and Distribute casualty equipment and sensitive items
- Accountability and Reporting to Higher
- Request Evacuation and Establish TACEVAC link-up point
- Manage KIA remains

 Casualty Response Rehearsals
- Critical in pre-mission planning and overall unit rehearsals
- Each element should rehearse clearing aid & litter teams and movement of a casualty
- Alert, and movement
- Reassurance equipment prep
- Clearing / securing areas
- CCP members rehearse the following:
  - Clear and Secure CCP Location
  - Triage Point / Triage
  - Marking & Tagging
  - Accountability & Reporting
  - Equipment removal (tagging)/consolidation
CCP Site Selection

- Reasonably close to the fight
- Near template areas of expected high casualties
- Cover and Concealment from the enemy
- In building or on hardstand (to avoid CCP building limit confusion)
- Access to evacuation routes (foot, vehicle, aircraft)
- Proximity to Lines of Effort on the objective
- Adjacent to Tactical Choke Points (trenches, HLB's, etc...)
- Avoid natural or enemy choke points
- Area allowing passive security (inside the perimeter)
- Good Drainage
- Trafficable to evacuation assets
- Expandable if casualty load increases

CCP Operational Guidelines

- 1SG/MSG is responsible for casualty flow and everything outside the CCP
  - Provides for CCP structure and organization (color coded with chemlights)
  - Maintains command & control and battlefield situational awareness
  - Controls act & litter teams, and provides security
  - Strips, bags, tags, organizes, and maintains casualty equipment outside of
    treatment area as possible
  - Accountable for tracking casualties and equipment into and out of CCP
  - Provides reports to higher
  - Casualties move through CCP entrance/rear choke point which should be
    marked with an IR Chemlight
- Medical personnel are responsible for everything inside the CCP
  - Triage officer sets up and organizes casualties at choke point into
    appropriate treatment categories
  - Medical officers and Medics organize medical equipment and supplies and
    render treatment to casualties
  - EMTs, RFRs, A&L Teams assist with treatment and packaging of
    casualties
  - Minimal casualties should remain with original element or assist with CCP
    security if possible
  - KIA's should remain with original element

CCP Building Guidelines

- Ensure building is cleaned and secured
- Enter and assess building prior to receiving casualties
- Use largest rooms
- Consider HLB and choke movement (can you do it in time?)
- Separate zones for treatment categories
Evacuation Guidelines

- Know the Evacuation Asset
  - Medical provider on board?
  - Monitoring equipment on board?
  - How many CAS can evacuate an asset?
- Packaging requirements for asset
  - Type litter?
  - Are there straps? Floor-loading?
- Determine flow of casualties to the asset
  - Large Asset (Multiple CAS)
    - Routine on first
    - Critical (Urgent) on last, so they are first off at destination
  - Small Asset
    - Critical (Urgent) and Priority evacuated first

CCP Layout Templates

- Use as a TEMPLATE
- Use as a Guideline
- Modify based on the objective and circumstances

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General Guidelines for CCP Personnel

- Maintain Security
- Maintain Command & Control
- Maintain Adequate Treatment
- Maintain Situational Awareness
- Maintain Organization
- Maintain Control of Equipment & Supplies
- Maintain Accountability

Casualty Marking and Tagging

- COLOR CODING FOR TRAIGE & EVACUATION
  - Chémolight, colored engineer tape, or triage tags will be used to color code as follows:
    - RED: Immediate / Critical (Urgent & Urgent Surgical)
    - GREEN: Delayed / Priority
    - BLUE: Expectant / Routine
    - NONE: Minimal / Convenience

Hazardous Training Medical Coverage Checklist

- DEFINITION
  - Planning, coordination, and execution of backside administrative medical coverage for high-risk or hazardous training events conducted by SOF units

- TYPICAL EVENTS REQUIRING MEDICAL COVERAGE
  - Airborne operations
  - Fast-roping operations (FRI/ES)
  - Road March (greater than 12 miles)
  - Maneuver Live Fires
  - Demolition/Explosives
  - Other events deemed hazardous / dangerous or risk assessment

- MEDICAL COVERAGE DUTIES & RESPONSIBILITIES

  1. Senior Coverage Medic
     - Plan & coordinate medical support requirements & considerations
     - Conduct Hospital Site Survey as required
     - Conduct face-to-face with hospital ER
     - Establish target medical coverage plan and casualty flow
     - Brief OR medics medical support plan
       - Clarify GONOMIC responsibilities and guidance
     - EXECUTION Orders.
- Patient Treatment & Monitoring on target and en route
- Advise OIC/CINC as required
- Update OIC/CINC/Higher HQ on condition of evacuated casualties
- Inform unit/medical officer of all casualties

2. OIC / NCOIC of Event
   - Overall responsible for administrative coverage (including medics)
   - Request / track essential medical support requirements
   - Ensure appropriate type and number of vehicles with assigned drivers are dedicated to medical coverage
   - Ensure appropriate communications equipment is allocated to medical personnel
   - Link medical coverage plan with overall administrative coverage plan
   - EXECUTION duties
     - Collect casualty data and report to higher HQs
     - Request MEDEVAC
     - Identify and establish MEDEVAC HLT

3. DETERMINE COVERAGE REQUIREMENTS
   - Determine medical support requirements based on type of training and appropriate SOP/Regulation
     - Your element's 250-2 Airborne SOP
     - Your element's 350-9 PRISSOP
     - Local Installation and Range Control Regulations / Guidelines
     - Training Area specific requirements
   - Coordinate and request appropriate equipment, vehicles, personnel, and support assets

DROP ZONE REQUIREMENTS

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- Request/Purchase appropriate maps of training areas, adjacent military installations, and cities
  - Military Grid Reference System (MGRS)
  - Civilian Maps (Rand McNally, Delorme, etc.)
  - Strip Maps / Site Published Maps
- Conduct map and ground review of training areas (specifically key entrance & exit points)
- Note map problems/errors
- Identify hospital/EMS locations

### IDENTIFY SPECIAL COVERAGE CONSIDERATIONS
- Weather
- Animals
- Plants
- Terrain hazards (high angle or high altitude)

### IDENTIFY HOSPITALS
- Primary and Alternate evacuation hospital
- One should be a Level 1 Trauma Center
- Conduct hospital site survey and face-to-face
- Determine Hospital Communications:
  - ER Phone Line
  - ER Ambulance Line
  - Patient Admin Phone Line
  - Security Line Phone Line
- Determine Routes and Directions to hospitals
- Where are special injuries evacuated?
  - Neurosurgical
    - Burn
    - Trauma Centers
      - Level 1 Neurosurgeon on staff 24 hours
      - Level 2
        - Neurosurgeon on call, but not on site 24/7

### VEHICLE REQUIREMENTS
- Driver: A dedicated driver NOT the Medic covering the event. Must be familiar with training area and evacuation routes.
- Ambulance: A covered vehicle capable of carrying at least 1 litter with spine-board attached. The vehicle must provide environmental control and adequate space for medical equipment. Mark vehicle as appropriate (ambulance symbols or lights).
  - Certified Vehicles:
    - Van (15+ Pax only)
    - Large SUV (Expedition, Tahoe, etc...)
    - FLD (M998/997)
  - Suboptimal Vehicles
• Open HMMWV / GMT
• Unit specific assault vehicles (tactical operations only – not for admin coverage)
• Small SIV (Rebwar, Durango, Cherokee, etc...)
• Small Van (TPAX)

➢ EQUIPMENT REQUIREMENTS
  • Standard Medical Equipment
    o Spinal Immobilization/Stabilization
    o Split Set (Quick Splints)
    o O2 Mask/IV
    o Suction, Electro
    o KEDs/Ohmeda Spina Splints
    o Tracheal Splint
    o Vital Signs Monitor (Propaq, PIC, LifePak)
    o Litters (Patient/Equipment/Transport)
    o Blankets
    o MAET
    o Pain Control
  • Special Equipment Considerations
    o Cold Weather
    • REPS (Rescue Wrap & Patient Heaters)
    • Thermal Angles
    o Hot Weather
    • Fans (battery operated)
    • Cold Packs
    • Burns

➢ COMMUNICATION REQUIREMENTS
  • Equipment
    o FM & VHF frequency capable radios
    o Cell Phone
  • Radio Notes
    o Administrative Coverage (DSSC Net)
    o Exercise Target Control (XTC Net)
  • Tactical Notes
  • En route Communications
    o Cell phone to notify receiving facilities

➢ MEDEVAC REQUEST PROCEDURES
  • Military Instructions
    o MEDEVAC unit and location
    o Request Procedures
      • Range Control?
      • MEDEVAC Freq?
      • Request format (other than 5-Lines)
    • Aircraft / IHL2 requirements/considerations
  • Civilian Life Flight

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o) Contact Numbers & Procedures
   • Direct Line and Alternate Contacts (State Police)
   • Special Aircraft Considerations
   • Aircraft Capabilities / Limitations
   • Aircraft / HIZ requirements/considerations

➢ HLZ Marking Requirements

➢ ADMIN CASUALTY FLOW
   • Point-of-Injury to最后 訴
   • Casualty Flow on the Target / OZ to CCP or HIZ
   • Tactical to admin link-up and patient turnover
   • From the target to hospital
   • From hospital to home station

**General Rule:** All casualties go through tactical medical channels unless life, limb, or eyesight is threatened.

➢ TACTICAL DROP ZONE COVERAGE FOR EXERCISES
   • All casualties go through tactical evacuation channels unless life, limb or eyesight is threatened.
   • No vehicles enter the drop zone without DZSO permission and tactical commanders notification
   • Maintains white lights
   • Minimize impact on tactical operations remaining off the DZ unless directed otherwise
   • If possible, use tactical vehicles/assets to transport to admin CCP sites

➢ PRE-COVERAGE INSPECTIONS
   • ALWAYS CHECK YOURSELF AND INSPECT SUBORDINATES
     • Inventory / Inventory Medical equipment:
       - Inventory against Hazardous Operations Checklist
     • Function check of mechanical devices & Monitors
     • Check Batteries
     • Airbags
     • Check Vehicle(s):
       - PCs
       - Fuel Level
       - Dipstick
       - Tires/Brakes
     • Support Equipment:
       - Communications Equipment
       - Strobe lights / Flashlights / Head lamps
       - Night vision
       - GPS

➢ REHEARSALS
   • Drive routes to hospitals
     o During daytime and nighttime
     o Determines time from target to hospital
Consider civilian traffic interference.
- Conduct target casualty flow to CCP.
- Conduct OCP reassessment.
- Conduct COMMEX when all sites established.

TREATMENT DURING EXERCISES
- On target
  o U.S. Standard of Care per unit protocols (there is no excuse)
  o Package casualties for evacuation
- En route
  o Patient Monitoring and re-evaluation of treatment and interventions
  o Notify receiving hospital
  o Inform unit medical officer of casualties

Keep DIG/SCRC informed of patient status with routine updates.

Reference:
BURN QUICK REFERENCE GUIDE

TYPE OF INJURY

- First Degree: superficial, involving only epidermal damage
  - pain, redness, and minimal discomfort
  - heals in 4-10 days, pain resolves within 2 days
  - no residual scarring

- Second Degree: partial thickness, involving the epidermis and dermis
  - more superficial burns are moist and blister; deeper burns are white and dry, have more pain
  - heals in 10 to 21 days
  - can develop into third degree burns with infection, edema, inflammation and subcutis
  - treatment varies with degree of involvement - grafting is indicated for deep burns

- Third Degree: full thickness, destroys deep tissue
  - results in necrosis and avascular areas
  - tough, waxy, brownish scabbery surface with eschar, numb to touch
  - grafting required
  - usually have permanent impairment

- Fourth Degree: full-thickness as well as adjacent structures such as fat, fascia, muscle or bone
  - reconstructive surgery is indicated
  - severe disfigurement is common

BODY SURFACE AREA (BSA)

- Adult
  - "rule of nines": each arm is 9% of BSA, leg is 18%, anterior trunk is 18%, posterior trunk is 18%, neck is 9%, and perineum is 1% (base coat)

- Children
  - BSA varies with age (children have a larger percentage of body surface area which exaggerates fluid losses)
  - children under 10 score chart should be evaluated by the Lund-Browder burn chart (base chart)
  - quick method: the patient’s palm is 1% of the total body surface area

SEVERITY

- Minor:
  - partial thickness, < 15% BSA in adults, < 10% BSA in children
  - full thickness, < 2% BSA

- Moderate:
  - partial thickness, 15%—25% BSA in adults, 10%—20% BSA in children
  - full thickness, 25%—35% BSA

- Major:
  - partial thickness, > 25% BSA in adults, > 20% BSA in children
  - full thickness, > 10% BSA
  - burns of hands, face, eyes, ears, feet or perineum
  - associated injuries, such as inhalation injury, fracture, other trauma
  - poor risk patients with underlying disease or suspicion of child abuse

(http://www.soco.uwm.edu/divisions/pcm/sochi/burns.html)
Modified Brooke formula for adults: 2csh/g%TBSA. Plan to give ½ of the estimated fluid in the first 8 hr.

In children weighing less than 30kg the infusion rate is estimated at 3csh/g%TBSA. Plan to give ½ of the estimated fluid over the first 8 hr. Children will also need maintenance fluids of 5% dextrose in 0.5% normal saline. This should be given using a rule such as the 4:2:1 rule: 4csh/kg/hr for the first 10 kg, 2csh/kg/hr for the next 10 kg, and 1csh/kg/hr for the next 10 kg. If a patient's resuscitation has been delayed by a few hours, then give fluid more rapidly.

Adjust the initial fluid infusion rate to the urine output. Failure to monitor and record the urine output (catheter or bedpan) and adjust the fluid rate hourly may result in death or in severe complications. Adequate urine output is 30-50cc/hr in an adult and 10-20cc/hr in a child who weighs less than 30kg. If the output is greater, or less than, the target for 2 consecutive hours, decrease, or increase, the IV rate by 20% respectively until the rate is satisfactory.

(Special Operations Forces Medical Handbook; 3rd Edition)
Fig 2

The Lund and Browder chart for accurate assessment of the % BSA

### Lumbosacral Nerve Root Compression

<table>
<thead>
<tr>
<th>ROOT</th>
<th>MOTOR</th>
<th>SENSORY</th>
<th>REFLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4</td>
<td>Quadriceps</td>
<td>Medial foot</td>
<td>Knee jerk</td>
</tr>
<tr>
<td>L5</td>
<td>Dorsiflexors</td>
<td>Dorsum of foot</td>
<td>Medial hamstring</td>
</tr>
<tr>
<td>S1</td>
<td>Plantarflexors</td>
<td>Lateral foot</td>
<td>Ankle jerk</td>
</tr>
</tbody>
</table>

### Glasgow Coma Scale

<table>
<thead>
<tr>
<th>EYE OPENING</th>
<th>VERBAL ACTIVITY</th>
<th>MOTOR ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 None</td>
<td>1 None</td>
<td>1 None</td>
</tr>
<tr>
<td>2 To pain</td>
<td>2 Incomprehensible</td>
<td>2 Extension to pain</td>
</tr>
<tr>
<td>3 To command</td>
<td>3 Inappropriate</td>
<td>3 Flexion to pain</td>
</tr>
<tr>
<td>4 Spontaneous</td>
<td>4 Confused</td>
<td>4 Withdraws to pain</td>
</tr>
<tr>
<td>5 Oriented</td>
<td>5 Localizes pain</td>
<td></td>
</tr>
<tr>
<td>6 Obeys commands</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patient Name: ____________________________

SS#: ____________________________ Unit: ____________________________

Date of injury: ______ / ______ / ______ Time of injury: ______

Examiner: ____________________________

Date of Evaluation: ______ / ______ / ______ Time of Evaluation: ______

History: (I – VIII)

I. Description of Incident
   Ask:
   a) What happened?
   b) Tell me what you remember.
   c) Where were you, on what date, "surroundings"? ● Yes ● No
   d) Did you hit your head? ● Yes ● No

II. Cause of Injury (Circle all that apply):
   1) Explosion/Blast
   2) Blunt object
   3) Motor Vehicle Crash
   4) Gunshot wound
   5) Other

III. Was a helmet worn? ● Yes ● No ● Type: ____________________________

IV. Amnesia Before: Are there any events just BEFORE the injury that are not remembered? (Assess for continuous memory prior to injury)
   ● Yes ● No. If yes, how long ______

V. Amnesia After: Are there any events just AFTER the injury that are not remembered? (Assess time until continuous memory after the injury)
   ● Yes ● No. If yes, how long ______

VI. Did the individual report loss of consciousness or "blacking out"? ● Yes ● No. If yes, how long ______

VII. Did anyone observe a period of loss of consciousness or unresponsiveness? ● Yes ● No. If yes, how long ______

VIII. Symptoms (Circle all that apply):
   1) Headache
   2) Dizziness
   3) Memory Problems
   4) Balance problems
   5) Nausea/Vomiting
   6) Difficulty Concentrating
   7) Irritability
   8) Visual Disturbances
   9) Ringing in the ears
   10) Other ____________________________

Page 1 of 5

Military Acute Concussion Evaluation (MACE)
Defense and Veterans Brain Injury Center

Spring 2009 Training Supplement MACE Cards

05/2009  DVBIC.org  300-070-0244

This form may be copied for clinical use.
Examination: (IX – XIII)

Evaluate each domain. Total possible score is 30.

IX. Orientation: (1 point each)

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Day of Week</th>
<th>Year</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Orientation Total Score ______/6

X. Immediate Memory:
Read all 5 words and ask the patient to recall them in any order.
Repeat two more times for a total of three trials. (1 point for each correct, total over 3 trials)

<table>
<thead>
<tr>
<th>List</th>
<th>Trial 1</th>
<th>Trial 2</th>
<th>Trial 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appl</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Corp</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Swit</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rori</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Immediate Memory Total Score ______/15

XI. Neurological Screening

As the clinical condition permits, check:

- **Eye:** pupillary reaction and tracking
- **Speech:** speech fluency and word finding
- **Motor:** motor drift, gait coordination

Report any abnormalities. No points are given for this.
XII. Concentration
Reversal Digitie (go to next string length if correct on final trial. Stop if incorrect on both trials) 1 pt. for each string length.

<table>
<thead>
<tr>
<th>String Length</th>
<th>4-0-3</th>
<th>6-2-0</th>
<th>8-0-1</th>
<th>10-1-0</th>
<th>12-1-0</th>
<th>14-1-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Months in reverse order (1 pt. for entire sequence correct)
Dec-Nov-Oct-Sep-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan
0 1

Concentration Total Score ____/5

XIII. Delayed Recall (1 pt. each)
Add the patient to recall the 5 words from the earlier memory test.
(Do NOT penalize the word list.)

<table>
<thead>
<tr>
<th>Word</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbow</td>
<td>0</td>
</tr>
<tr>
<td>Rape</td>
<td>0</td>
</tr>
<tr>
<td>Comet</td>
<td>0</td>
</tr>
<tr>
<td>Suicide</td>
<td>0</td>
</tr>
<tr>
<td>Budle</td>
<td>0</td>
</tr>
</tbody>
</table>

Delayed Recall Total Score ____/5
TOTAL SCORE ____/20

Notes:

Diagnosis: (circle one or write in diagnosis)
No concussion
950.0 Concussion without Loss of Consciousness (LOC)
950.1 Concussion with Loss of Consciousness (LOC)
Other diagnoses __________

Defense & Veterans Brain Injury Center
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Spring 2009 Training Supplement MACE Cards 151
Instruction Sheet

Purpose and Use of the MACE
A concussion is a mild traumatic brain injury (TBI). The purpose of the MACE is to evaluate a person in whom a concussion is suspected. The MACE is used to confirm the diagnosis and assess the current clinical status.

Tool Development
The MACE has been collaboratively reviewed by leading civilian and military experts in the field of concussion assessment and management. While the MACE is not yet a validated tool, the examination section is derived from the Standardized Assessment of Concussion (SAC) (McCrea, M., Kelly, J., & Rapdolph, C. (2009). Standardized Assessment of Concussion (SAC). Manual for Administration, Scoring, and Interpretation. 2nd ed. Williams & Wilkins. Authors.) which is a validated, widely used tool in sports medicine. Additionally, on the SAC correlate with formal comprehensive neuropsychological testing during the first 48 hours following a concussion.

Who to Evaluate
Any one who appears dazed, confused, "fuzzy" or lost consciousness, even momentarily, as a result of an avalanche/avalanche, fall, motor vehicle crash, or other event involving abrupt head movement, a direct blow to the head, or other head injury is an appropriate person for evaluation using the MACE.

Evaluation of Concussion
History: (1-8)
I. Ask for a description of the incident that resulted in the injury; how the injury occurred, type of force; Ask questions A-D.
II. Indicate the cause of injury
III. Assess for helmet use: Military, Keil or ACH (Advanced Combat Helmet), Sports helmet, motorcycle helmet, etc.
IV. V Determine whether and length of time the person was registering continuous memory both prior to injury and after the injury. Approximate the amount of time in seconds, minutes or hours, whichever time increment is most appropriate. For example, if the assessment of the patient yields a possible time of 20 minutes, then 30 minutes should be documented in the "how long?" section.
VI. VII Determine whether and length of time of self reported loss of consciousness (LOC) or witnessed/observed LOC. Again, approximate the amount of time in seconds, minutes or hours, whichever time increment is most appropriate.
VIII Ask the person to report their experience of each specific symptom since injury.

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Examination: (IX – XII)

*Standardized Assessment of Concussion (SAC)*

Total possible score = 30

- Orientation = 5
- Immediate Memory = 15
- Concentration = 5
- Memory Recall = 5

IX Orientation: Assess patient's awareness of the current time

Ask: *WHAT MONTH IS IT?*

WHAT IS THE DATE OR DAY OF THE MONTH?

WHAT DAY OF THE WEEK IS IT?

WHAT YEAR IS IT?

WHAT TIME DO YOU THINK IT IS?

One point for each correct response for a total of 5 possible points. It should be noted that a correct response on time of day must be within 1 hour of the actual time.

X Immediate memory: assessed using a brief repeated task learning test. Read the patient the list of 6 words once and then ask them to repeat it back to you, as many as they can recall in any order. Repeat this procedure 2 more times for a total of 3 trials.

Trial 1: I AM GOING TO TEST YOUR MEMORY. I WILL READ YOU A LIST OF WORDS AND WHEN I AM DONE, REPEAT BACK AS MANY WORDS AS YOU CAN REMEMBER IN ANY ORDER.

Trial 2 & 3: I AM GOING TO REPEAT THAT LIST AGAIN AND AGAIN. REPEAT BACK AS MANY AS YOU CAN REMEMBER IN ANY ORDER, EVEN IF YOU MISSED THEM BEFORE.

One point is given for each correct answer for a total of 10 possible points.

XI Neurological screening

- Eyes: check pupils size and reactivity
- Verbal: notice speech fluency and word finding
- Motor provider with: ask patient to lift arms with palms up, ask patient to then close their eyes, assess for either arms to “roll” down. Assess gait and coordination if possible. Document any abnormalities.

No points are given for this section.
XII. Concentration: Inform the patient:

I'm going to read you a string of numbers and when I am finished, repeat them back to me backwards. That is, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.

If the patient is correct on the first trial of each string length, proceed to the next string length. If incorrect, administer the second trial of the same string length. Proceed to the next string length if correct on the second trial. Discontinue after failure on both trials of the same string length. Total of 4 different string lengths: 1 point for each string length for a total of 8 points.

NOW TELL ME THE MONTHS IN REVERSE ORDER, THAT IS, START WITH DECEMBER AND END IN JANUARY:

* 1 point if able to recall ALL months in reverse order
* 0 points if not able to recall ALL of them in reverse order

Total possible score for concentration portion 6.

XIII. Delayed Recall:

Assesses the patient's ability to retain previously learned information by asking him to recall as many words as possible from the initial word list, without having the word list read again for the trial. DO YOU REMEMBER THAT LIST OF WORDS I READ A FEW MINUTES EARLIER? I WANT YOU TO TELL ME AS MANY WORDS FROM THE LIST AS YOU CAN REMEMBER IN ANY ORDER.

One point for each word remembered for a total of 5 possible points.

Total score: Add up from the 4 assessed domains: immediate memory, orientation, concentration and memory recall.

Significance of Scoring:

In studies of non-concussed patients, the mean total score was 28. Therefore, a score less than 30 does not imply that a concussion has occurred. Definitive normative data for a "cut-off" score are not available. However, scores below 25 may represent clinically relevant neurocognitive impairment and require further evaluation for the possibility of a more serious brain injury. The scoring system also takes on particular clinical significance during serial assessment where it can be used to document either a decline or an improvement in cognitive function.

Diagnosis:

Circle the ICD-9 code that corresponds to the evaluation. If loss of consciousness was present, then circle 800.1. If no LOC, then document 800.0. If another diagnosis is made, write it in.

05/2005

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