Interfacility Transport of Patients Between Theater Medical Treatment Facilities
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**Please review the complete, most up to date, CPG for detailed information on this guideline. The information contained in this presentation is only a guideline and not a substitute for clinical judgment. Opinions, interpretations, conclusions, and recommendations are those of the authors and are not necessarily endorsed by the Services or DOD.**
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Purpose

This CPG provides evidence–based guidance for the intratheater transportation of patients.
Key Principles of CPG

- Patient Prior to Transfer
- Requesting Transport of Patients
- Transport of the Patient
- Supervision of En Route Care (ERC)
- Performance Improvement (PI) Monitoring
- System Reporting and Frequency
- Responsibilities
- References*
- Appendices*

*See original CPG for complete background, citations and references as applicable. CPG references listed at the end of presentation.
Background

- Reducing time to medical or surgical interventions improves patient outcomes
- It starts on the battlefield and ends at definitive care facilities in the United States
- Some descriptions can be different between branches, but unity of command is critical for ultimate success
# Service Comparison

## Notional United States Military Roles of Medical Care

### Service Comparison

<table>
<thead>
<tr>
<th>Role</th>
<th>Army</th>
<th>Navy</th>
<th>Marine Corps</th>
<th>Air Force</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. First Responder</strong></td>
<td>Self Aid Buddy Aid</td>
<td>Self Aid Buddy Aid</td>
<td>Self Aid Buddy Aid</td>
<td>Self Aid Buddy Aid</td>
</tr>
<tr>
<td></td>
<td>Combat Lifesaver</td>
<td>Navy Corpsman</td>
<td>Navy Corpsman</td>
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<tr>
<td></td>
<td>Combat Medic</td>
<td>Surface Combatant Ship</td>
<td>Battle and Station</td>
<td>Medical Technician</td>
</tr>
<tr>
<td></td>
<td>Bullion Aid Station</td>
<td>Submarine</td>
<td>Manpower Wing Support Squadron</td>
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<td></td>
<td>Dock Landing Ship</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Forward Resuscitative Care</strong></td>
<td><em>Forward Surgical Team</em></td>
<td>Fleet Surgical Team</td>
<td>Mobile Forward Surgical Teams</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Forward Resuscitative Surgical Team</strong></td>
<td></td>
<td>Expendatory Medical Support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medical Company (Area Support)</td>
<td>Medical Battalion Surgical Company</td>
<td></td>
<td>Expendatory Medical Support</td>
</tr>
<tr>
<td></td>
<td>Medical Company (Frigate Support)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Expendatory Medical Support</td>
</tr>
<tr>
<td><strong>3. Theater Hospitalization</strong></td>
<td>Combat Support Hospital/Field Hospital</td>
<td>Hospital Ship</td>
<td>Theater Hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expendatory Medical Facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Definitive Care</strong></td>
<td>Veterans’ Hospitals</td>
<td>United States and Overseas Medical Treatment Facilities</td>
<td>Civilian Hospitals</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Army Forward Surgical Team and Forward Resuscitative Surgical Team are a Role 3 capability used to expand care available at Role 2 by providing resuscitative surgical care.

**Marine Corps Shock Trauma Platoon are a Role 2 capability that can be used to expand care available at Role 1 by providing advanced reuscitative care.*
Movement of patients is a medical intervention with associated risks and benefits

Clinical parameters that suggest normal physiology:
- Heart rate < 120 beats/minute
- Systolic blood pressure > 90 mmHg
- Hematocrit > 24%
- Platelet count > 50/mm3
- INR < 2.0
- pH > 7.3
- Base deficit < 5 mEq/L
- Temperature > 35 C
When any one or more of these criteria are not met, continued care should be rendered at the current facility unless institutional capabilities are exceeded.

- Best outcomes occur when physiology is closest to normal.
- Resuscitation may be ongoing in route, but should not require dynamic, complex, or life-preserving adjustments en route.
- Packing and anticipation of patients needs is important and require careful planning.
- Documentation of interventions important.
Request Transport

- Dedicated dispatch center allocate resources based on:
  - Resources based on mission requirements
  - Requests of transferring provider
  - Expected en route needs
  - Capabilities of en route care (ERC) units

- Dispatch centers generally co-located with command and control

- 9-Line provides a standardized messaging format for communication
# NATO 9 Line MEDEVAC Request

<table>
<thead>
<tr>
<th>Line</th>
<th>Title</th>
<th>Explanation</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Location/Pick up site</td>
<td>Eight or ten digit grid coordinates of pick up site</td>
<td>Required to know where to pick up the patient</td>
</tr>
<tr>
<td>2</td>
<td>Radio frequency, call sign</td>
<td>Frequency of radio at the pickup site Call sign of the person to be contacted at the pickup site</td>
<td>Evacuation vehicle can contact requesting unit while en route</td>
</tr>
<tr>
<td>3</td>
<td>Number of patients by precedence</td>
<td>A—URGENT B—URGENT-SURG C—PRIORITY D—ROUTINE E—CONVENIENCE</td>
<td>Assist command and control in prioritizing evacuation unit missions</td>
</tr>
<tr>
<td>4</td>
<td>Special equipment required</td>
<td>A—None B—Hoist C—Extraction equipment D—Ventilator</td>
<td>Required to have needed equipment loaded prior to mission start</td>
</tr>
<tr>
<td>5</td>
<td>Number of patients by type</td>
<td>L+# of patients–Litter A+# of patients—Ambulatory (sitting)</td>
<td>Needed to have appropriate number of vehicles dispatched</td>
</tr>
<tr>
<td>6</td>
<td>Security of pick-up site (wartime)</td>
<td>N—No enemy troops in area P—Possibly enemy troops in area (approach with caution) E—Enemy troops in area (approach with caution) X—Enemy troops in area (armed escort required)</td>
<td>For situational awareness and planning</td>
</tr>
<tr>
<td>7</td>
<td>Number and type of wound, injury or illness (peacetime)</td>
<td>Specific patient information on wound type (gunshot, blunt force, or explosive device) Serious bleeding and patient blood type if known</td>
<td>Assists evacuation personnel in determining required treatment and special equipment needed</td>
</tr>
<tr>
<td>8</td>
<td>Method of marking pickup site</td>
<td>A—Panels B—Pyrotechnic signal C—Smoke signal D—None E—Other</td>
<td>Assists the evacuation crew in identifying the specific location of the pick up</td>
</tr>
<tr>
<td>9</td>
<td>Chemical, biological, radiological, and nuclear contamination (wartime)</td>
<td>Include this line only when applicable C—Chemical Biological</td>
<td>Assists in planning for the mission.</td>
</tr>
<tr>
<td>9</td>
<td>Terrain description (peace time)</td>
<td>Identify terrain features in and around proposed landing or pickup site (lake, tower, ridge, mountain).</td>
<td>Recently incorporated into use. May include adult or child notification.</td>
</tr>
</tbody>
</table>

**Table Notes:**
- **Line 01:** Mechanism of injury
- **Line 02:** Type of injury
- **Line 03:** Treatment given
Transport of the Patient

- Requires proficient personnel and people familiar with theater standards

- Two levels of capability recognized:
  - Critical Care Transport
    Required when critical illness or injury impairs one or more vital organ system with threat to life during transport
  - Intermediate Care
    - Required if dedicated medical attendant with skills equivalent to a paramedic needed
    - Not expected to deteriorate
Transport of the Patient

- Transport platforms are also required
  - Vehicle selection can directly impact care
  - Weight and space restrictions dependent on vehicle used at time
  - Expendable supplies (e.g. blood, gauze, oxygen) of transferring location should be used until last possible moment given limitations on vehicles

01 Oct 2018
# Pre-flight Checklist
(for Critical Care and Post-Surgical Transfers)

<table>
<thead>
<tr>
<th>Initials</th>
<th>Evaluation Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Anesthesia called: intubation if indicated. ETT secured/marked</td>
</tr>
<tr>
<td></td>
<td>3. Patient meets criteria for en route critical care transport: risk documented by sending physician (POST-OPERATIVE and CC INTRAFACILITY TRANSFER, Pre-Transfer Patient Status Requirements)</td>
</tr>
</tbody>
</table>

## Preparation Steps

### Position and Proper Monitoring

1. Patient moved to litter (collapsible handles), positioned, padded, strapped, equipment (with necessary attachments) added and secured.
2. For head-injured patients, a pre-sedation neurologic examination will be performed. GCS and neurological exam documented on the en route care form, suggest placing patient sitting at 30°-45°. (For eye injured patients, fox shield in place. For burn patients, JTT burn sheet initiated.)
3. Ventilator switched to PMI vent at least 20-30 min prior to flight and set with transfer settings ordered by physician.
4. IV / IO access verified, patent, and secured
5. Arterial line inserted and secured, if indicated. Transducer accessible.
6. Ventilator tubing checked to be free from obstruction, with ETCO₂ and secondary lines attached.
7. Orogastric or nasogastric tube is inserted (unless contraindicated), placement verified with chest x-ray, and attached to low-intermittent suction.
8. Chest tubes to water seal/suction (place Heimlich valve for non-atrium chest drainage systems).
9. Wound vacuum disconnected and stowed.
10. Foley catheter secured, urine output measured and documented.

### Equipment, Medication, Chart, and Personnel Preparation:

11. Medications needed for flight prepared and organized.
13. Complete chart photocopied (including x-ray cd), patient belongings bagged and tagged. Transfer Document, or other theater / unit approved transfer document, has been initiated.
14. Earplugs and eye protection for patient and flight nurse.
15. If facility sends medical attendant, attendant must have relevant personal protective equipment. In a combat environment this includes: Uniform, Kevlar, IBA, Weapon, ID Card, and equipment for transport.

### Ventilator Management:

16. Blood gas (preferably ABG) obtained, 15 min after initial settings and ventilator changes. All efforts will be made to have a documented blood gas within 30 min prior to flight time.
17. Adjust ventilator settings and check O₂ tank for length of flight. Resuscitator bag under patient’s head with tubing connected to O₂ source, vent tubing free from obstruction.

### Final Verification:

18. Transferring Physician, Flight Paramedic, ECCN (or Flight Provider) verbally agrees to flight care plan.
19. Critical Care Transfer Orders reviewed and signed by transferring physician. (STANDARD ORDER SET for CRITICAL CARE TRANSFERS)
20. En route CC Transfer Document with completed preflight and en route care data handed over to and confirmed by receiving provider / facility. (CENTCOM Transfer Document)

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Transport of the Patient

- Inter-facility patients transports must be documented on an approved patient record (PCR)
- **JTS Approved Records Include (not limited to):**
  - DD Form 1380 Tactical Combat Casualty Care Care: Point of Injury or interfacility transport
  - DA 4700 Tactical Evacuation Patient Care Record: History of injury, treatment and transportation
  - AF IMT 3899 Patient Movement Record: Used in Aeromedical Evacuation
  - Medical Rescue Report SAR Form 3-50.1A: Search and rescue involving Navy
- **At handovers, ERC teams will provide a MIST (Mechanism, Injuries, Vital Signs, and Treatments)**
- **Documentation ensures accuracy of care through multiple hand-offs in the continuity of care**
Supervision of En Route Care

- Medical direction ensures delivery of an expected capability of care
- At the ERC Unit level, commanders must assign a unit medical director
  - Must be familiar with en route care
  - Trained in treatment protocols, CPGs, etc.
  - Can be offline (chart review, protocol development) and online (on-site supervision, clinical guidance)
- Regional level ensures quality of care during intra-theater transport
  - Advised commanders on medical common operating picture and allocation of resources for transport
  - Provides technical supervision

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Intent (Expected Outcomes)

- Casualties will be flown with an ERC team commensurate with the clinical condition of the casualty.
- Casualties and equipment will be thoroughly assessed for flight worthiness to the next level of care.

Data Source

- Patient Record
- Department of Defense Trauma Registry
PI Monitoring

Performance/Adherence Measures

- Casualties will be flown with an ERC team commensurate with the clinical condition of the casualty.

- Casualties and equipment will be thoroughly assessed for flight worthiness to the next level of care.

- A ventilated patient will be placed on the transport ventilator, all monitors in place and stabilized for 30 minutes prior to departure from the current role of care to the aircraft. Additionally a final check for stability will be performed prior to wheels up and departure from that role of care.

- Hard copy of the medical record accompanied the patient.

- Ventilator settings documented with tidal volume 6-8 mL/kg.


References (4 of 5)


Appendices in CPG

- Appendix A: Patient Transport Preparation Checklist
- Appendix B: Additional Information Regarding Off-Label Uses in CPGs