Joint Trauma System

Introduction to Prolonged Field Care (PFC)

Joint Trauma System Battlefield Trauma Educational Program
EWS Prolonged Field Care
Case Study: Marjah, Jan 2016

Situation

- Special Forces Team in firefight sustains casualty (patient #1) with gunshot wound (GSW) to thigh.
- Tourniquet eventually placed. Patient in shock.
- MEDEVAC called but initial attempts at landing fail due to hot LZ.
- Team sustains additional casualty with penetrating head injury (pt #2) while marking LZ outside the compound.
- MEDEVAC UH-60 touches down inside compound but rotors strike walls and helo is grounded.

Audio From Flight Medic?
Treatment Recap

- MEDEVAC crew brings monitor and blood products to patient #1 who has altered mental status due to blood loss.
- Reserve Flight Medic (also an RN) attempts converting TQ to combat gauze pressure dressing but fails.
- Removes 5-hour energy drink out from underneath TQ which was causing extreme pain.
- Transfuses a unit of blood.
- Retrieves Propaq monitor from helo and again attempts TQ conversion, fails.
Treatment (continued)

- Team medic working on patient #2 with head injury. Patient passes at some point despite heroic efforts.
- Transfuses second unit of blood to patient #1.
- 3rd attempt at tourniquet conversion fails.
- Additional MEDEVACs sustain casualties from heavy ground fire. Cannot land.
- Running low on pain medication.
- 4th attempt at TQ conversion failed
- Out of pain meds.
- 5th attempt at TQ conversion failed
- Hour 17 - 6th attempt at TQ conversion successful.

Casualties evacuated to ROLE 2: Foley placed at Role 2. Evacuated to Role 3

No injury noted to Femoral Artery. Limb salvaged intact.
Questions

1. What additional assets did the MEDEVAC bring to the situation?

2. Why did it take 6 attempts over 17 hours to convert a tourniquet with hemostatic dressings?

3. What would indicate that a casualty was adequately resuscitated?
Enabling Learning Objective (ELO) : Describe PFC

- **ELO 1**: Define PFC definitions and operational context.
- **ELO 2**: Identify the capabilities and limitations Role 1 providers are using to help mitigate mortality and morbidity.
- **ELO 3**: Describe the limits of PFC contingency planning and training.
- **ELO 4**: Identify specific Role 1 PFC Clinical Practice Guidelines (CPGs) with emphasis on “Min, Better, Best” construct.
- **ELO 5**: Describe telemedical consult techniques and assets.
- **ELO 6**: Identify future direction and research gaps.
PFC is NOT...

...a skill set.
...only trauma.
...a certification.
...JUST nursing care.
...a replacement for Tactical Combat Casualty Care (TCCC).
...a 72-hour security blanket.
...mitigation for all medical risk.
...a replacement for a surgical team.
So what is PFC?

“Holding on to a sicker patient than you can care for, for longer than you want, with fewer resources than needed, in a place you don’t want to be.”
~LTC Doug Powell

“Management of complex patients over extended periods of time in an austere or resource constrained environment.”
~COL(Ret) Sean Keenan

“Contingency strategies beyond tactical combat casualty care to reduce morbidity and mortality in the absence of appropriate surgical or medical care.”
~SFC Paul Loos
EWS Prolonged Field Care
PFC Defined

PFC Working Group Definition

Field medical care, applied beyond “doctrinal planning time-lines,” by a Special Operations Combat Medic or higher, in order to decrease patient mortality and morbidity. Utilizes limited resources, and is sustained until the patient arrives at an appropriate level of care.

- Special Operations Forces (SOF) Commanders often accept more medical risk than conventional counterparts due to the higher level of training of SOF Medics.

- Training for a prolonged field care situation is contingency training like mass casualty (MASCAL) training.
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PFC versus MASCAL

PFC is similar to MASCAL

- Worst case scenario
- Provider likely overwhelmed
- Resources likely overwhelmed
- Never “certified” for MASCAL
- Having a plan can mitigate some morbidity and mortality

MASCAL
Inadequate evacuation and treatment capacity

Prolonged Field Care
- Required treatment capacity is limited or unavailable at point of need
- Evacuation capability is limited due to timing, distance, enemy action, etc.
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AMEDD CBA Definition

Army Medical Department (AMEDD) Capabilities-based Assessment (CBA) Proposed Prolonged Care Definition

It is reasonable to conclude that any patient who has yet to reach an medical treatment facility (MTF) which provides a true hospitalization capability within the time constraints for their particular clinical scenario, would be facing a “prolonged field care” situation. Similarly, a patient, who has reached an MTF, received initial treatment, but cannot be evacuated for further required treatment or evaluation, would also be facing a “prolonged hospitalization care” scenario. Therefore, the following definition of “prolonged care” is proposed:

_Prolonged Care:_ The need to provide patient care for extended periods of time when evacuation or mission requirements surpass available capabilities and/or capacity to provide that care._
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Operational Context

Graphic courtesy of Dr. Kasia Hampton

Photo courtesy of COL (Ret) Sean Keenan
PFC builds upon mastery of tactical combat casualty care.

RUCK-TRUCK-HOUSE-PLANE

- **RUCK**: What a medic carries to their farthest point of the mission.
- **TRUCK**: Conveyance that gets the medic to the farthest point.
- **HOUSE**: Permanent/semi-permanent structure with all equipment organic to team (team house, FST site, hotel room, etc.
- **PLANE**: Any aviation platform that will carry patient.

Medical personnel may need to accompany patient through all levels of CASEVAC

*Provides operational framework to cross-level capabilities.*
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Core PFC Capabilities

- **Capabilities** combines basic diagnostic and patient treatment skills with medical equipment to define a framework for education and training.
- Presented in a “Good-Better-Best” format: Broadly defined categories applicable to all skill levels

1. Monitor the patient
2. Resuscitate the patient
3. Ventilate/oxygenate
4. Maintain an airway
5. Sedation/pain control
6. Physical Exam/diagnostic measures
7. Provide nursing/hygiene/comfort measures
8. Perform advanced surgical interventions
9. Telemedicine
10. Prepare the patient for flight
Monitor the patient in order to create a useful vital sign trend.

- **Minimum** – Blood pressure cuff, stethoscope, pulse oximetry, **Foley catheter** (measure urine output) and an understanding of vital signs interpretation. Use a method to accurately **document vital signs** trends.

- **Better** - Add **capnometry**

- **Best** - **Vital signs monitor** in order to provide hands-free vitals at regular intervals

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**Example Packing List for Capability 1- Patient Monitoring**

- ✔ Ruck/Aidbag - Pulse Ox, Emma Capnograph, PFC Vitals trend chart, Foley Catheter
- ✔ Truck Bag – BP Cuff, Stethoscope, Compact Foley Catheter Kit
- ✔ House – Propaq vital signs monitor,
- ✔ Plane – List of items to take in case of STRATEVAC (no med team or CCATT on C-17 to Landstuhl)
3 Components of Prolonged Field Care

All Require Training!

Medical Care

Teleconsult
Evacuation

Figure courtesy SFC Paul Loos
EWS Prolonged Field Care

Historic Data

Historic Combat Data Translated to Include PFC

Empiric Probability Combat Death

Mortality Penetrating Trauma

Ballamy, J Trauma, 1984

Images Courtesy USAISR
Patients with documented prehospital care, who either survived 4-72 hours of PFC or died en route to a surgical hospital in Iraq or Afghanistan 2007-2015.

PFC survivors were compared with prehospital decedents on injury characteristics

Of 3,222 patients identified,
- 691 (21%) died prehospital
- 2,531 survived PFC.

Of 804 deaths, 738 (92%) occurred within 24 hours.

Median time to death was 1.2 hours (IQR=0.8,8.9).

Conclusions: 1) PFC should target resources, technology and training to prevent death from hemorrhage. 2) Resources to provide advanced airway and ventilator support are also needed in the PFC environment.
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PFC Risk Mitigation Strategies

- Proper planning and briefing true risk to Commanders
- Proper TCCC MARCH-E-PAWS-B trauma sequence
- Whole blood
- Team training
  - Members of a platoon or team integrated
  - Sleep-Rest-Food Cycles

<table>
<thead>
<tr>
<th>M</th>
<th>Massive hemorrhage</th>
</tr>
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<tbody>
<tr>
<td>E</td>
<td>Eyes</td>
</tr>
<tr>
<td>A</td>
<td>Airway</td>
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<td>P</td>
<td>Pain</td>
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<td>R</td>
<td>Respiration</td>
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<td>Antibiotics</td>
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<td>Circulation</td>
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<td>W</td>
<td>Wounds</td>
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<td>H</td>
<td>Hypothermia prevention</td>
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<td>S</td>
<td>Splinting</td>
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<tr>
<td>B</td>
<td>Burns</td>
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</tbody>
</table>
EWS Prolonged Field Care
PFC Risk Mitigation Strategies

- **PFC RAVINES Mnemonic**
- Exhaustive secondary survey
  - Comprehensive problem list
  - Corresponding care plan
- Trending vital signs on a dedicated flow sheet.

<table>
<thead>
<tr>
<th>R</th>
<th>Resuscitate with whole blood/Reduce tourniquet use ASAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Airway and cricothyroidotomy care package</td>
</tr>
<tr>
<td>V</td>
<td>Ventilate and oxygenate</td>
</tr>
<tr>
<td>I</td>
<td>Initiate telemedicine consult and early evacuation</td>
</tr>
<tr>
<td>N</td>
<td>Nursing care, I&amp;O’s, oral hygiene, turn casualty</td>
</tr>
<tr>
<td>E</td>
<td>Environmental considerations, pad pressure points on litter, ear protection and medication for motion sickness for flight</td>
</tr>
<tr>
<td>S</td>
<td>Surgical procedures</td>
</tr>
</tbody>
</table>
EWS Prolonged Field Care
Limitations & Remaining Risk

- No damage control surgery capability
- No formal critical care training or experience
- Limited blood products
- Limited IV fluids
- Limited medications and supplies
- Small teams
- Convoluted and complicated evacuation chains
Briefing Medical Risk to Line Commanders

- A 72-hour blanket is not possible for any medic.
- Some people will **die** no matter what. Uncontrolled bleeding in head, chest or abdomen usually leads to death.
- Some people will **live** no matter what.
- The Golden Hour was a made up construct for a specific, mature combat theater.

![Sliding Red/Green Risk Scale](image)

**Figure Courtesy SFC Paul Loos**
EWS Prolonged Field Care
Assessment/Monitoring

“ICU in a Ruck”

Photo courtesy of LTC Doug Powell
ID mechanism

Make a plan for monitoring, treating, resuscitating.

- Monitor trends w/interventions: flowsheet.
- Follow checklist for assessing/reassessing (e.g., HITMAN, MARCHE, RAVINE, HITMAN).
- Develop a problem list.
- Write a therapeutic plan.
- What you are doing for everything on your problem list.

Employ telemedicine early.

Bring the “team” to help your patient. Can help prioritize and anticipate.
Telemedical Consult Script for **AD.VI.S.OR**: **AD**vanced **VI**rtual **S**upport for **OpeR**ational forces system  
(https://prolongedfieldcare.org/telemed-resources-for-us-mil/)

<table>
<thead>
<tr>
<th><strong>Plans/Recommendations</strong></th>
<th><strong>Priority</strong></th>
<th><strong>VITALS</strong></th>
<th><strong>RECOMMENDATION</strong></th>
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</thead>
<tbody>
<tr>
<td>Neuro or problem #1</td>
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<td></td>
<td>CV or problem #2</td>
</tr>
<tr>
<td>CV or problem #2</td>
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<td>Pulm or problem #3</td>
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<td>GI or problem #4</td>
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<td>Renal or problem #5</td>
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<td>Renal or problem #5</td>
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<td>Endocrine or problem #6</td>
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<td>Endocrine or problem #6</td>
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<td>MSA/ Wound or problem #7</td>
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<tr>
<td>MSA/ Wound or problem #7</td>
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<td></td>
<td>Tubes, lines, drains or problem #8</td>
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<tr>
<td>Tubes, lines, drains or problem #8</td>
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<td>Prophylaxis/prevention or probeg</td>
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<tr>
<td>Prophylaxis/prevention or probeg</td>
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<td>Other</td>
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</tbody>
</table>

**TO-DO/ FOLLOW-UP/TO-STOP**  

1.  
2.  
3.  
4.  
5.  
6.  

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**VIRTUAL CRITICAL CARE CONSULTATION (VCC) GUIDE – 8 July 2017**  

**1. Before calling. E-mail image of the casualty (wounds, environment, etc.), “capabilities” (lack of page), & vital signs trends**  

**2. If call not answered: a) call next number on PACE or call back in 5 – 10 min.**  

**3. If unable to provide information due to operational security, state so.**

<table>
<thead>
<tr>
<th><strong>P: A: C: E:</strong></th>
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</thead>
<tbody>
<tr>
<td>This is: I am a (job/ position)</td>
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<tr>
<td>My best contact info is</td>
</tr>
</tbody>
</table>

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**VITALS (current & trend as of 1:00PM)**  

<table>
<thead>
<tr>
<th><strong>HR</strong></th>
<th><strong>BP</strong></th>
<th><strong>RR</strong></th>
<th><strong>SpO2</strong></th>
<th><strong>ECG</strong></th>
</tr>
</thead>
</table>

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**Labs:**  

<table>
<thead>
<tr>
<th><strong>ABG</strong></th>
<th><strong>Lactate</strong></th>
<th><strong>Other</strong></th>
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</thead>
</table>

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**Airway/breathing:**  

<table>
<thead>
<tr>
<th><strong>ETT</strong></th>
<th><strong>Cric XIX</strong></th>
<th><strong>LMA</strong></th>
<th><strong>IBW</strong></th>
<th><strong>Suction (type):</strong></th>
<th><strong>Ventilator (model):</strong></th>
</tr>
</thead>
</table>

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**Miscellaneous:**

---
Patients will follow 1 of 3 paths:

1. Responders
2. Transient responders
   ▪ Eventually respond or not
3. Non-responders
   ▪ Is initial mechanism correct? Is there an additional mechanism?

Best way to assess:

- Trend of Interventions – responses
EWS Prolonged Field Care
Unique Documentation Needs
EWS Prolonged Field Care
Identify Trends Early

Image courtesy Maj Eric DeSoucy
# EWS Prolonged Field Care

## Nursing Care Grid Checklist

![Image courtesy CPT Dawn Ostberg](image_url)

<table>
<thead>
<tr>
<th>Patient ID: JD7837 &quot;John&quot; (#1)</th>
<th>Time</th>
<th>T+1hr</th>
<th>T+2hr</th>
<th>T+3hr</th>
<th>T+4hr</th>
<th>T+5hr</th>
<th>T+6hr</th>
<th>T+7hr</th>
<th>T+8hr</th>
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<tbody>
<tr>
<td><strong>Vitals</strong></td>
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<tr>
<td>Check BP/HR/RR/T/SPO2/ETCO2 (Q1H)</td>
<td>1</td>
<td>CC</td>
<td>DJ</td>
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<td>PL</td>
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<td>Check Peripheral Pulses (Q1H)</td>
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<td>Check Skin Temp and Color (Q1H)</td>
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<td>Check Lactate (Q4H)</td>
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<td>Check Blood Glucose (Q8H)</td>
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<td>CC</td>
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<td><strong>Ins/ Outs</strong></td>
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<td>Check Drip Rates/Fluids In (Q1H)</td>
<td>1</td>
<td>CC</td>
<td>DJ</td>
<td>DJ</td>
<td>DJ</td>
<td>DJ</td>
<td>PL</td>
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<td>Check Urine Output (Q1H)</td>
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<td>Check Urine Dipstick (Q1H)</td>
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<td>Perform NG/OG Tube Care (Q2H)</td>
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<td>Perform Foley Care (Q24H)</td>
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<td>Flush PRN Locks (Q8H)</td>
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<td><strong>Pain/Sedation</strong></td>
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<tr>
<td>Check GCS/RASS/PAIN (Q1H)</td>
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<td>CC</td>
<td>DJ</td>
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<td>DJ</td>
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<td>PL</td>
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<tr>
<td>Give Pain Rx (per Rx)</td>
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<td>Give Sedation Rx (per Rx)</td>
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<td><strong>Perform Tube Suctioning (PRN)</strong></td>
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<td>Perform Oral Suctioning (PRN)</td>
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<tr>
<td>Perform Nasal Care/Moisten (Q4H)</td>
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Transitions in care are highest risk.

Good hand – offs reduce risk, mortality.

Format:

- Patient ID, chief complaint/problem
- Military uses MIST report. MIST:
  - Mechanism of Injury
  - Injuries or Illness
  - Stable or Unstable
  - Treatments
- Anticipate needs (e.g., next pain meds, upcoming scheduled meds).
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Notable PFC Cases

■ Timbuctou, Mali 2008
  ❏ 36-hour evacuation 1 KIA, Junior Medic Critical and decompensated during flight
  ❏ Sand storm flipped team tents
  ❏ Local blood transfused and local surgeon used

■ North Africa SEAL Team
  ❏ CAT III Interpreter MVC
    ▪ Mangled upper extremity, Broken back
    ▪ Medic in over his head... did not want to do Foley, could not do fasciotomy

■ Afghanistan Jan 2015
  ❏ 12 Hours with GSW to chest
  ❏ Managed with help of telemedicine

■ Arlit, Niger
  ❏ ATV rollover
  ❏ Insidious abdominal bleeding, Initial EFAST Negative
  ❏ MFST with TCCET response from capitol
# EWS Prolonged Field Care

## PFC Research Priorities

<table>
<thead>
<tr>
<th>TABLE 2. Lines of Research and Development Established From the More Clinical Definition of PFC Shown in Table 1</th>
</tr>
</thead>
</table>
| **1. Research to enable performance of acute lifesaving interventions**  
  - Hemorrhage control (extremity, junctional, torso, head and cervical)  
  - Establish, confirm, secure, and maintain an endotracheal airway  
  - Vascular and/or osseous access to enable all forms of resuscitation  
  - Relief of tension physiology in the thorax  
  - Acute pain management and methods of transition to prolonged sedation  |
| **2. Research to enable diagnostic/detection and physiologic monitoring**  
  - Monitoring of hemodynamics and recording of hemodynamic trends  
  - Detection of hydration and intravascular volume status and physiologic reserve  
  - Detection of fracture and compartment syndrome (extremity, pelvis, cranial)  
  - Chest imaging (i.e., tube placement and detection of effusion or collapse)  
  - Detection of intracranial and or intraperitoneal fluid (i.e., blood)  |
| **3. Oxygen carrying capacity circulating volume**  
  - Blood and blood components (available, stable, reduced logistical footprint)  
  - Oxygen carrying blood substitutes  
  - Crystalloid or colloid fluids  |
| **4. Damage-control interventions**  
  - Debride and dress soft tissue injury including thermal  
  - Extremity fasciotomy and or amputation and dressing  
  - Extremity stabilization and reperfusion techniques (vascular shunt)  
  - Procedural sepsis control (abdominal, thoracic)  
  - Debride, decompress, and manage intracranial injury  |
| **5. Automation, tele-enabling, and data exchange**  
  - Automated, including closed loop, ventilation and oxygenation  
  - Total intravenous anesthesia, including closed loop  
  - Recording of care scenarios (data capture and performance improvement)  
  - Information delivery to enable care scenarios  
  - Information from care scenarios to enable teleconsultation and diagnostics  |
| **6. Early organ support and replacement**  
  - Neuropreservation and stabilization (optimization of cerebral perfusion pressure)  
  - Passive filtration (electrolytes and other)  
  - Extracorporeal membrane oxygenation  
  - Renal and or hepatic replacement therapy  |
| **7. En route care (land, sea, and air)**  
  - Physiologic impact of prolonged transport of critically injured patient  
  - Level of damage-control and resuscitative capability for varied scenarios  
  - Smart disposition of scaled en route care capability/automated and unmanned  |
| **8. Smart and targeted resupply of PFC scenarios**  
  - Elements of PFC most critical and feasible for targeted resupply  
  - Temporal course of care scenarios in which resupply is most valuable  
  - Methods of resupply to sustain scenarios of PFC  |

This inventory links the clinical definition to more specific scientific topics to be studied with planned, hypothesis-driven research. This process is designed to deliver knowledge and materiel solutions that are clinically relevant, feasible, and effective. Together, solutions provided by this “bedside to bench to bedside” approach aim to enhance PFC and long-range critical care transport capability.

*Source: Rasmussen, T J Trauma Acute Care Surg. Volume 79, Number 4, Supplement 1*
EWS Prolonged Field Care
ProlongedFieldCare.org

- Gets information directly to medics and other Role 1 providers on mediums they commonly use.
- Common medical educational tools
  - FOAMed = Free open-access Medical Education
- Podcasts
  - Subject matter experts discuss current topics
  - Mostly opinion
  - 43 published with 8-10 in development at any one time
  - Hosted by senior Special Forces Medics
- Share tactical trauma protocols and standard operating procedures across the force.
- Crowdsource solutions to common problems
EWS Prolonged Field Care

References

  - Anesthesia for Trauma Patients, 23 Jun 2016
  - Burn Care, 11 May 2016
  - Crush Syndrome – Prolonged Field Care, 28 Dec 2016
  - Damage Control Resuscitation in Prolonged Field Care, 01 Oct 2018
  - Nursing Intervention in Prolonged Field Care 22 Jul 2018
  - Ocular Injuries Vision-Threatening Conditions in Prolonged Field Care, PFC 01 Dec 2017
  - Traumatic Brain Injury Management in Prolonged Field Care, 6 Dec 2017
  - Wound Management in Prolonged Field Care Setting, 24 Jul 2017


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