



**RAGGED EDGE**  
SOLUTIONS



# DARK+WOODS

**SPECIAL OPERATIONS MEDICINE**

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**RAGGED EDGE SOLUTIONS**  
ADAPTIVE | AGILE | ANYWHERE



**RAGGED EDGE SOLUTIONS (RES)** was established as a collaborative for true subject matter experts to build solutions for operational problems. After years of attending mediocre “check the box” medical training courses, we aim to disrupt the observed complacency within the training industry. We believe that Special Operations Forces deserve higher quality education at an exceptional value. What began as a small group of experienced special operations medics and providers is now the premiere collective for ideas, innovation, and education.



**DARK+WOODS** is the premier team centric medical training course, designed and executed by the pioneers of Prolonged Field Care. With a focus on establishing a standardized baseline of team medical training and capabilities. This program is delivered at the RES Military Education and Research Center (MERC) and builds upon the FOUNDATIONS curriculum with Special Operations Physician Mentors, Specialty SME instructors, and a Tailorable Full Mission Profile Medical Culmination Exercise. This program is designed to accomplish multiple high value objectives while streamlining efficiency and maintaining adaptability for unique SOF unit/team requirements. The program covers TCCC/PCC/IW/UW critical tasks for both medics and non-medics, Joint Trauma System PFC Clinical Practice Guidelines.

This program is the Gold Standard of medical training for units who are expected to conduct high-risk operations in medically austere environments that must be prepared to provide patient care for extended evacuation times. Individuals may attend this course but training with your team is highly recommended.

## THE PROGRAM



### Distance Learning

- Ragged Edge Solutions eLearning platform
- Pre/Post Course Assessments
- Reference Materials and Recorded Lectures
- Interactive Learning Modules



### Didactics and Practical Skills Labs

- Standardized and Scalable Curriculum created by the world's foremost experts
- TCCC/PCC Critical Skills
- SOF Physician Instructors
- SME-Guided Interactive Scenarios
- Course Manuals and Cheat Sheets
- State of the art high-fidelity task trainers



### Prolonged Casualty Simulation

- SOF Physicians paired with SOF Medic SME Mentors/Cadre
- Tailorable Full Mission Profile Medical Exercise utilizing RES' vast network of scenario sites across the state of North Carolina.





# DARK+WOODS

## Special Operations Medicine

**Length:** Four (4) Days

+Optional One(1) Day Tissue Lab Add-on

**Purpose:** Prepare Special Operations unit/team providers, medics, and non-medical team members for treating critical casualties on the modern battlefield through Point of Injury, TCCC, PFC, and evacuation to higher echelon care.

**Objectives:** The DARK+WOODS Program was designed by the world's leading experts to mitigate risks and fill knowledge gaps identified in the medical readiness requirements of DoD units.

Provides a standardized medical training curriculum and realistic extended casualty simulation scenario.

- Tactical Combat Casualty Care (TCCC) Refresher Exceeds Prolonged Casualty Care (PCC)
- Training Requirements (USSOCOM 350-29)
- Austere Emergency Care (AEC) Certification

Refresh civilian certifications: NREMT-B, NREMT-P

- 40+ hours CAPCE credit
- Students receive the Austere Emergency Care Certification (ALS/BLS)
- The AEC-Advanced (Medic) is approved for up to 40 hours towards the Fellowship in the Academy of Wilderness Medicine (FAWM), sponsored by the Wilderness Medical Society (WMS). This course satisfies SOFACC/SO+EMT Refresher Requirements This course satisfies TCCC Refresher Requirements

Course hours applicable towards ARSOF Non-Trauma Module (NTM) Requirements

Cross-train SOF medics and non-medical team members to function as an efficient trauma team and provides knowledge to unit medical providers to enhance their ability to train and support medics and non-medical team members.

Expand unit medical capabilities, specific to environments and situations without robust medical supervision or support.





# MEDIC CURRICULUM

The medic curriculum is designed to refresh medical capabilities and to introduce advanced practice Knowledge, Skills and Abilities (KSA.) The curriculum adheres to Joint Trauma System protocols and the Prolonged Field Care Working Group guidelines and position papers. Upon completion of the course, students will be able to implement skills and protocols established in the PFC Critical Task list.

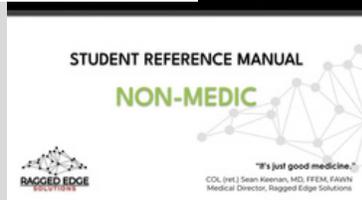
- Telemedicine, Trending, and Documentation Critical Care Team Dynamics
- Advanced Airway Management Ventilator Theory and Practicals
- In-depth PFC Clinical Practice Guideline review and Practicals
- Responsible Improvisation
- FWB/FDP Labs
- Austere Surgical Interventions
- Field Ultrasound
- Medical Technology and Diagnostics (BatDok, T-6)
- Advanced Pharmacology
- Unconventional Medical Planning and logistics
- Pre/Post testing, and learner analytics



# NON-MEDIC CURRICULUM

The non-medic curriculum is tailored for non-medical team members and is designed to fill the gap between TCCC and higher trained PFC providers to provide care between the "Golden Hour" and higher level care. Upon completion of the course, students will be able to implement skills and protocols established in the Non-Medic PFC Critical Task list and to work efficiently with medics in casualty care situations.

- MARCH/TCCC refresher
- Resuscitation/IV/IO Fresh Whole
- Blood/FDP lab
- Airway Management
- Critical Care Team Dynamics Basic
- Pharmacology Nursing Care Sterile
- Procedures Telemedicine and
- Documentation Assist with Surgical
- Interventions Long Term Patient Care
- Primary/secondary trauma assessments
- SO+EMT/SOFACC refresher Pre/Post testing and learner analytics



**AFTER ACTION ASSESSMENT**

**COURSE SUMMARY**  
Foundation | Tissue Lab | ECS  
Medic Students: # \_\_\_\_\_  
Non-Medic Students: # \_\_\_\_\_

**DIDACTIC ANALYTICS**

**TESTING ANALYTICS | MEDIC**

	PRE-TEST Average	POST-TEST
MEDIC TCCC	87%	96%
MEDIC PFC	53%	92%

**TESTING ANALYTICS | NON-MEDIC**

	PRE-TEST Average	POST-TEST
NON-MEDIC TCCC	76%	89%
NON-MEDIC PFC	51%	86%

**DASHBOARD**  
Competitive Analysis: Level 1 vs Level 2  
Performance Over Time: 10 wks

**AFTER ACTION ASSESSMENT**

**CADRE SUMMARY**  
**INSTRUCTOR: S. Keenan, MD - Team 22**  
Please describe at least one improvement point they needed to improve their IV access skills. Blood clots and slowing the flow of blood, they should get it long time. Blood draws need to be 'automatic'. Need to be more prepared and inspected equipment.  
**Strongest attribute the team displayed during:** Very good communication and teamwork. Their Soma Caddy was excellent with his communication and carried mid-lane. No one was arguing or presenting contrary.

**General Feedback:** Everyone was motivated and great team players. If you effective 'medical team' to take on some difficult patients to get down their 'battle drills' to operate on it excellent job!

**INSTRUCTOR: V. Wall, MD - Team 33**  
**Strongest attribute the team displayed during:** All participants were engaged and assisted one another backgrounds assisting.  
Please describe at least one improvement point: Once senior medic left, junior medic took a little bit more.  
**General Feedback:** The willingness of the non-medics to learn and truly to train. Pre-training for non-medics was evident. The unfamiliar with the material.

**CRITICAL SKILLS ASSESSMENT**  
Adapted to meet Joint Trauma System - Modified Medicine Standards  
**INDIVIDUAL SKILLS ASSESSMENT**  
MODULE 10: Shock Recognition and Management

DATE: \_\_\_\_\_  
STUDENT NAME: \_\_\_\_\_ RANK: \_\_\_\_\_  
TRAINER NAME: \_\_\_\_\_ ROSTER#: \_\_\_\_\_

**INSTRUCTION:** This Skills Assessment Checklist should be used by a trainer to grade a student's ability to perform the individual SKILLS for the Tactical Combat Casualty Care Combat Paramedic/Provider (TCCC-CPP) Course. A trainer should use this form when performing the optional individual skills assessment associated with completing a skills station. To successfully demonstrate proficiency, the student should "PASS (P)" all the critical tasks (marked as "C") on the checklist.

This checklist may also be used as a teaching tool at the skills station if the trainer chooses to grade students only during the culminating exercise tactical trauma assessment. Grading during the culminating exercise is mandatory for successful course completion, while grading individual skills during the skill stations is optional.

PERFORMANCE STEPS	To Attempt	2nd Attempt
<b>SALINE LOCK (FIELD-RIGGED)</b>	P	F
1. Gathered, prepared, and inspected equipment.		
2. Explained the procedure to the casualty.		
3. Determined known allergies, either checked the medical tag or asked the casualty, if conscious.		
4. Applied an IV constricting band at least 2 inches above the probable venipuncture site.	C	
5. Selected a desirable vein for IV placement.	C	
6. Cleaned the site with alcohol or a povidone-iodine pad.		
7. Opened the 18-gauge or 16-gauge needle/catheter and inspected it.		
8. Held the needle/catheter at a 20- to 30-degree angle, bevel up, over the top of the chosen vein.	C	
9. Pierced the skin and advanced the needle/catheter until blood was visualized in the flash chamber.	C	
10. Decreased the angle of the needle/catheter to 10-15 degrees and advanced it 1/8 of an inch.	C	
11. Advanced the catheter over the needle until the hub touched the skin or until significant resistance was felt.	C	
12. Placed a finger (nondominant hand) over the vein at the catheter tip, occluded the vein, and prevented blood from flowing out of the catheter.	C	
13. Removed the needle and secured it in a sharp's container.	C	
14. Attached the saline lock connector (with their dominant hand) to the catheter hub.	C	
15. Released the tamponade from the occluded vein.	C	

TCCC CPP SKILLS ASSESSMENT CHECKLIST - INDIVIDUAL SKILLS #TCCC-CPP-18-01 18 DEC 2013  
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# TCCC/PCC SKILL ASSESSMENTS VALIDATED

Tier 4 - MEDIC

Tiers 1-3 - NON-MEDIC

## TCCC SKILLS

- Care Under Fire -CUF Principles of TCCC Massive
- Hemorrhage Airway Management in TFC
- Respiration Assessment and Management in TFC
- Circulation: Hemorrhage Control in TFC
- Shock
- Recognition and Management Hemorrhagic Shock and Resus in TFC
- Hypothermia Preventions and
- Treatment Eye Injuries Pain Medication (Analgesia)
- TFC Antibiotics Administration
- Wound Management
- Burns Fractures Casualty Monitoring
- Communication Procedures Cardiopulmonary
- Resus in TFC Documentation in TFC Prepare for Evacuation

## PFC/PCC SKILLS

- Mechanical suction devices in PCC Manual suction in PCC
- verbal report and casualty handoff in PCC
- Documentation of casualty management on the DD Form 1380 or JTS recommended PCC flowsheet
- Digital Documentation - BATDOK, TAC Hypothermia Management in PCC
- Manual and Digital Patient Temperatures in PCC
- Glasgow Coma Scale IAW Service-approved reference card
- Monitoring of a sedated casualty in PCC
- pain medication in Expectant Care in PCC
- Sepsis Resuscitation in PCC
- Fluid resuscitation burn casualties in PCC
- Wound irrigation in PCC
- Casualty preparation for transport in PCC
- Tactical Timeout Nursing Care Plan Problem List and Plan
- Perform advanced airway care
- MSMAID
- Implement a ketamine drip
- RASS
- Optimize ventilation and oxygenation - MOVE pneumatic
- Patient Restraints
- Finger Thoracostomy
- Manage a chest tube
- Pleur evac Management
- Wake Alert Rule of 5s
- Fasciotomy
- Debridement
- Delayed Primary Closure
- Amputation (Deliberate)
- Insert and maintain NG/OG tube
- Amputation (Extraction)
- Manage complications of En Route Care
- Mascal Extended Triage in PCCC
- Prolonged Care Documentation
- Conduct Telemedicine utilizing PCC Script and ADVISOR
- Palliative Care Plan
- Prepare patient for flight Handover - STRINGS
- Circle of Awareness





# OUR INSTRUCTORS WROTE THE BOOK...

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Documentation in Prolonged Field Care (CPG ID:72)**  
This CPG is meant to provide medical professionals who treat severely injured or sick patients in austere environments with recommendations for documentation that will allow them and subsequent providers along the evacuation chain to optimally manage complex, often unstable casualties.

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Publication Date: 13 Nov 2018

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Nursing Intervention in Prolonged Field Care (CPG ID: 70)**  
The intent of this guideline is to provide medical professionals who encounter extended casualty evacuation times in austere environments the evidence-based guidance for nursing interventions necessary to improve patient outcome.

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Publication Date: 22 Jul 2018

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE**

**Traumatic Brain Injury Management in Prolonged Field Care (CPG ID: 63)**  
This CPG provide medical professionals who encounter traumatic brain injury (TBI) in austere environments with evidence-based guidance.

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Publication Date: 06 Dec 2017

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Sepsis Management in Prolonged Field Care**  
This CPG focuses on the most common etiologies of sepsis, and the treatments of those forms of sepsis that the austere provider can reasonably manage.

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**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Prolonged Casualty Care Guidelines (CPG ID:91)**  
The Prolonged Casualty Care (PCC) guidelines are a consolidated list of casualty-centric knowledge, skills, and best practices intended to serve as the DoD baseline clinical practice guidance to guide casualty management over a prolonged amount of time in austere, remote, or expeditionary settings and/or during long-distance movements.

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**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Damage Control Resuscitation (DCR) in Prolonged Field Care (PFC)**  
The purpose of this guideline is to improve implementation of DCR in the Role 1 PFC environment.

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Publication Date: 01 Oct 2018

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE**

**Burn Wound Management in Prolonged Field Care (CPG ID: 57)**  
This Role 1 prolonged field care (PFC) guideline is intended to be used after Tactical Combat Casualty Care (TCCC) Guidelines, when evacuation to higher level of care is not immediately possible.

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Publication Date 13 Jan 2017

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\* Denotes a sub-working group chair

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Airway Management in Prolonged Field Care**  
This Role 1 prolonged field care (PFC) CPG is intended to be used after Tactical Combat Casualty Care (TCCC) Guidelines, when evacuation to higher level of care is not immediately possible.

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Updated 01 Sep 2023: SAveO2 oxygen parameters and device data regarding video laryngoscope.

Publication Date: 01 May 2020

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE**

**Crush Syndrome - Prolonged Field Care (CPG ID: 66)**  
This Role 1 prolonged field care (PFC) guideline is meant to provide medical professionals who encounter crush syndrome in austere environments with evidence-based guidance for how to manage the various aspects of care and monitoring.

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Publication Date: 28 December 2016

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Analgesia and Sedation Management during Prolonged Field Care**  
The intent of this guideline is to identify potential issues one must consider when providing analgesia with or without sedation for an extended time. This guideline begins where Tactical Combat Casualty Care (TCCC) guidelines end.

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Publication Date: 11 May 2017

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Ocular Injuries and Vision-Threatening Conditions in Prolonged Field Care (CPG ID: 66)**  
This guide provides medical professionals with essential information on the recognition and treatment of ocular conditions when evacuation to an eye specialist is delayed.

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Publication Date: 01 Dec 2017

**JOINT TRAUMA SYSTEM CLINICAL PRACTICE GUIDELINE (JTS CPG)**

**Acute Traumatic Wound Management in the Prolonged Field Care Setting (CPG ID: 62)**  
The intent of this guideline is to provide evidence- and experience-based solutions to those who manage both simple and complex wounds in an austere environment.

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Publication Date: 24 Jul 2017

# TRAINING FROM THE SOURCE



## Extended Casualty Scenario

The culmination scenario is designed to integrate medics and non-medical team members to refine skills and knowledge gained in their respective tracks. This creates a realistic representation of a critically injured patient under real world circumstances. Scenarios represent the spectrum of battlefield medicine, Irregular/Unconventional Medicine (IW/UW) fundamentals, as well as Urban and Austere environments. Medics will have to rely on their non-medical teammates in order to reduce risk and ensure the best possible outcome for a complex patient.

Critical care is a team sport and we focus on creating a confident, well oiled team of responders. The Prolonged Casualty Scenario is derived from real world prolonged casualty evacuation cases combined with one on one instruction from expert instructors make this scenario the perfect test bed for applying new skills, fielding medical equipment, and testing protocols. RES utilizes a multitude of movement platforms, unique facilities, and scripted events to challenge SOF teams with increasingly difficult operational problems while managing critically injured casualties. With purpose at their core, each of our scenarios are carefully constructed utilizing state of the art task trainers, professional moulage, and phase based training objectives for both Medic and Non-Medic participants. Students will exercise every level and facet of their training in this culminating event.





## LAB OVERVIEW

The RES Cadaver Tissue Lab was specifically designed to enhance participants understanding of emergency and surgical procedures used in today's emergent arena. Our program, which is constantly updated with the newest evidence and materials, is developed and refined by nationally recognized experts in the field of Military Medicine, Critical Care Medicine, and Emergency Medicine applied to a pre-hospital environment.

Ragged Edge Solutions Tissue Lab is conducted in a class/lab environment with donors placed on stretchers in an environmentally controlled atmosphere. Donors may also be utilized, in full or in part, during scenario training to enhance realism and allow participants to perform skills in real-world scenarios.

### Orientation to relevant anatomy

- Guided participation - procedural assessment
- Procedural (Gross Anatomy) Structural Identification

### Immediate life-threatening conditions

- Immediate risk(s) to provider or patient(s)
- Uncontrolled Hemorrhage
- Open chest injury (sucking chest wound)
- Anaphylaxis (Severe Allergic Reaction)
- Tourniquet application and usage
- Procedural dissection (femoral and brachial regions as well as "junctional" hemorrhage control)

### Ventilation Management

- Positioning
- OPA/NPA usage
- Bag Valve Mask Ventilation
- LMA / King / Combi / iGel / SALT usage
- Oral intubation (multiple positions)
- Video Assisted Intubation
- Obstruction Removal
- Nasal Intubation
- Retrograde Access & Exchange
- Cricothyroidotomy (standard, modified and TTJ)

### Thoracic Interventions & Management

- Needle Thoracostomy
- Finger Thoracostomy
- Chest Tube Placement and Usage
- Pericardiocentesis

### Vascular access

- Peripheral Vascular Approaches
  - Saphenous cut-down
  - Rolling bevel
  - Innovations/modifications
- Intraosseous Approaches
  - Proximal tibia
  - Distal tibia
  - Proximal humerus
  - Distal femur
  - Anterior Pelvis
  - Sternum
  - Other locations

### Field Ultrasound

- eFAST
- Ocular
- Foreign Object Detection
- Vascular Access
- Nerve Blocks

### Surgical Suturing/Closures

- Long Term Wound Care
- Emergency Surgical Interventions
- REBOA Discussion
- Open Discussion and Deep Dive



INTERPROFESSIONAL  
**CLINICAL  
SIMULATION**  
PROGRAM

[medicine.ecu.edu/clinicalsimulation](http://medicine.ecu.edu/clinicalsimulation)





## ABOUT OUR ANATOMY

Anatomic tissue supplied through the Whole Body Donation Program, and surpasses the Uniform Anatomical Gift Act Guidelines to provide the most valuable educational experience possible.

Adheres to the highest quality control procedures established by the American Association of Tissue Banks (AATB).

Donors are acquired, maintained, transported, and distributed per all Uniform Anatomical Gift Act guidelines as well as all local, state, and federal laws.

All donors are screened and serologically tested per AATB guidelines for HIV/Hep B/Hep C; results accompany each tissue donor and are available upon request.



Stored, prepared, packaged, and transported under the IATA/DOT Regulations

Every donor has elected to donate their bodies for the specific purpose to support critical care education and training for emergency medical professionals, first responders, and military personnel.

Donors are acquired, maintained, transported, and distributed per all Uniform Anatomical Gift Act guidelines as well as all local, state, and federal laws.

RES Staff and participants are expected to treat each donor with the utmost respect; Tissue will not be desecrated or utilized for unnecessary activities outside of intended use or established protocols.





The DARK+WOODS course is delivered at the RES Medical Education and Research Center (MERC).

The Ragged Edge Military Education and Research Center is a world class training facility purpose built to deliver advanced medical education to special operations units and is located near Greenville, NC. The site is surrounded by 500-acres of training areas complete with designated helicopter landing zones (HLZs), medical training sites, rescue and extrication sites, a fully stocked gym, running trails, and dining facility. Chef staff provide home cooked meals for breakfast, lunch, and dinner in order to facilitate compressed training requirements.

RES maintains a vast network of partnered Scenario Support Sites including multiple airports, marinas, warehouses, industrial facilities, urban and austere safe houses, fire/rescue training facilities, and specially designed battlefield simulation environments including trench networks, frontline hospitals, and guerilla operating bases. Scenario Sites support any desired Mil/DoD facilitated assets to include mobility platforms, fixed/rotary wing, drone operations, and communication/technology platforms.



RES HQ - Medical Education and Research Center (MERC) and Lodge  
Greenville, NC



East Carolina University (ECU)- Brody School of Medicine  
Greenville, NC





# **RAGGED EDGE**

## **SOLUTIONS**

**ADAPTIVE | AGILE | ANYWHERE**

RES programs can be delivered anywhere in the world.  
Contact us to get started!



**- QUALIFIED; SMALL BUSINESS**

**UEI: SLMCQ6W8B8C7**

**CAGE: 7RQV1**

**Primary NAICS Codes: 611430 Professional and Management Development Training**

**Additional NAICS Codes: 611699 All Other Miscellaneous Schools and Instruction**

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