DEPARTMENT OF THE ARMY
UNITED STATES ARMY CADET COMMAND AND FORT KNOX
204 1ST CAVALRY REGIMENT ROAD
FORT KNOX, KY 40121

ATCC-ST 30 April 2026

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Cadet Summer Training (CST) Policy Memorandum 8 - Guidelines for Prevention, Evaluation and Treatment of Casualties with Potential Heat Illnesses

1. References:

a. TRADOC, Regulation 350-29, Prevention of Heat and Cold Casualties, 15 June 2023.

b. Technical Bulletin MED 507, Heat Stress Control and Heat Casualty Management, 12 April 2022.

c. MEDCOM Memorandum, Subject: Heat Illness Prevention Program 2011, 15 April 2011.

d. TRADOC, Heat Illness Prevention Program, 2019.

e. O'Connor, F. G., Nye, N. S., DeGroot, D., & Deuster, P. A. (2024). Clinical Practice Guideline for the Prevention, Diagnosis, and management of Exertional Heat Illness. Consortium for Health and Military Performance (CHAMP), Bethesda, MD.

2. Purpose. To establish policies and procedures for the initial evaluation and management of hot weather-related casualties within the Ft. Knox CST area of responsibility.

3. Scope. These guidelines are applicable to all CST Cadre, Combat Lifesavers, first responders (Army 68W Combat Medics), and healthcare team members in the Fort Knox CST area of responsibility.

4. Background.

a. Fort Knox weather during CST can be extremely hot and humid. Average daily high temperatures during the summer months range from mid to upper 80s. It is common to have multiple days reaching low to mid 90s and even into the low 100s. Along with hot temperatures humidity levels reach 100% early in the training day. Hot temperatures combined with high humidity increases the risk for heat injuries for all Cadets, cadre and support staff.

b. Cadre and staff play a key role in heat injury prevention during CST. Leader supervision and the implementation of key mitigations strategies have proven to be very successful resulting in a decrease in heat injuries.

5. Prevention.

a. Acclimatization, proper diet, hygiene, and adequate hydration are key to preventing a heat injury. Acclimatization can often take 1-2 weeks for individuals coming from areas of low

humidity. Proper diet ensures that the individual has a proper energy store and electrolyte balance before exertional activities. Adequate hydration ensures an individual can properly utilize the energy store. At CST, we can only influence acclimatization but can control proper diet and hydration with cadre supervision. Proper diet includes consuming a full meal at the dining facility and consuming a full MRE when in the field and drinking a full canteen of water with each MRE. If limited time is available in the field, Cadets should eat the main course instead of ancillary items. This will ensure the Cadet has a proper energy store of electrolytes throughout the day. Allowing Cadets to "graze" on their MREs throughout the day is also a great way to ensure Cadets have an adequate energy store. Following these work/rest cycles and fluid replacement guidelines is a great initial step to preventing heat injuries (See enclosure 1, Work/Rest times and Fluid Replacement Guide).

b. The most important factor in heat illness is the rate of metabolic heat production and the ability to offload heat. When heat load is greater than heat loss, the risk for heat illness increases. Humidity, even at lower temperatures, limits the body's ability to offload heat. NOTE: When the dew point and the current temperature are +/- 5 degrees of each other is when a Cadet it as the highest risk for an exertional heat injury. At this temperature range, sweat will not evaporate, increasing the heat load and depleting energy stores as the body tries to cool itself. Leaders must consider these facts during the planning and preparation of training and the development of the daily Deliberate Risk Assessment Worksheet (DRAW) (See enclosure 2, DRAW).

c. Any individual may succumb to a heat illness without proper preventive measures. Some individuals are at greater risk, including those not adjusted to the climate, individuals with poor physical fitness and/or who are overweight, individuals with certain medical conditions/taking certain medications, and individuals with a history of prior heat illness. Another major factor is the cumulative effect of strenuous activity in conjunction with hot climates.

d. Heat dumping can be an excellent tool in preventing heat injuries. Heat dumping is achieved by taking measures to increase the transfer of heat from the body to the environment. Physical exertion will raise a Cadets body temperature. A healthy Cadet's body will be able to handle this rise naturally but it will take time. Heat dumping will decrease the time required and assist the Cadet in returning their core temperature to a normal range. Arm Immersion Cooling System (AICS) filled with cold water are the best rapid heat dumps we have available. For best effect, use the AICS before and after a known exertional event. The warmer the water, the longer the Cadet will be required to use the tank. Placing a Cadet in an air conditioned vehicle or building is an example of heat dumping. Ice sheets are another example of heat dumping but our goal is to heat dump before needing ice sheets. See enclosure 3 (Arm immersion cooling instructions) for proper use and duration of the AICS.

e. Drip Drop is a medical grade oral rehydration solution that can be used before, during, or after a known exertional event to help prevent dehydration. It is designed to replenish electrolytes in the body without un-necessary sugars. Drip Drop is provided before road marches or when dehydration is suspected.

f. HOIST is a commercial grade electrolyte mix that can also be used before, during, or after known exertional events. HOIST will be provided to the regiments as they pick up Class I supplies.

g. Good hygiene plays an understated role in heat injury prevention. Regular showers, clean clothes, and proper field hygiene can prevent “prickly heat” essentially a clogging of the pores with diminished sweat response. Soiled uniforms will retain more body heat and breathe less than clean uniforms. Regular showers and laundry can limit these risks

h. There is no evidence that over-hydration is protective against heat illness. In fact, over-hydration can be more dangerous as it is often mistaken for a heat injury and treated with forced hydration, worsening the condition. Over-hydration and heat injury have overlapping symptoms but a key differentiator is core temperature. Any Cadet with a suspected heat injury presenting with confusion/mental status changes must have a core temperature assessed.

6. Evaluation.

a. An individual who collapses, “falls out”, or is debilitated during exercise (dizziness, headache, etc.) without known trauma or musculoskeletal injury should be evaluated in a standardized approach for the health and welfare of the individual based on the best available evidence. Treatment with ice sheets should not be delayed waiting for a rectal temperature or 68W to evaluate the Cadet. See enclosure 4: Treatment algorithm for Cadre, enclosure 5: Treatment algorithm for 68W, and enclosure 6: Treatment algorithm for Role 1 providers.

b. Individuals who collapse during an exertional event must be rapidly assessed to identify any airway or cardiac compromise and to differentiate between exercise associated collapse, heat exhaustion without injury, heat injury (severe heat exhaustion with organ injury), heat stroke, and exercise associated hyponatremia (low blood sodium). See paragraph 12 of this policy for detailed heat definitions.

c. Individuals with mental status changes (including CONFUSION or short term memory loss), a recent history of observed loss of consciousness or seizure, inability to drink fluids, or who present with repetitive vomiting should be considered a medical emergency. Rapid identification and treatment may be lifesaving and a rectal temperature should be obtained by trained individuals immediately.

d. It is important to distinguish between heat stroke and exercise associated hyponatremia (low blood sodium [salt]), another severe illness that often occurs with exertion in hot climates (see paragraph 11.g. for the definition of hyponatremia and further guidance). Although these conditions exhibit similar symptoms, the underlying pathology and treatments differ. A key factor in differentiating exercise associated hyponatremia from heat stroke is core body temperature; therefore, any casualty with confusion/mental status changes must have a core temperature assessed. A rectal temperature assessment is the only field expedient method for measuring core body temperature. Every effort should be made by trained medical professionals to obtain a rectal temperature prior to initiating ice sheets; however, cooling efforts should never be delayed due to the inability to obtain a core temperature reading in a timely manner.

e. If a heat injury is suspected, the following questions should be used to assess mental status changes.

(1) What is your name?

(2) What month is it? What year is it?

(3) Where are you?

(4) What were you doing before you became ill?

7. Treatment. The following guidelines pertain to the evaluation, treatment, and medical evacuation of CST Cadets or cadre members who are suspected of having a heat related illness (see Enclosures 4-6 for heat illness evaluation/ treatment algorithms).

a. Rapid Cooling. The most effective measure for reduction of core temperature is via cold water immersion (ice baths). Ice packs and application of ice sheets with fanning can also be utilized to effectively lower core temperature (see paragraph 10 and Enclosures 7 and 8 of this policy for directions on application of the Ice Sheets and the Polar Life Pod® [portable immersion system]). Cooled intravenous (IV) fluid infusion of normal saline (32-36ºF) by trained medical professionals is also effective in reducing core temperature in heat illness patients and may prevent progression of further organ injury. However, caution must be utilized if there is concern for hyponatremia, as it may exacerbate the illness and put casualties at risk for increased morbidity and mortality.

b. When trained medical personnel are present at the scene of the illness, the most highly trained medical specialist in the following order (physician, physician assistant/nurse practitioner, registered nurse, licensed practical nurse (LPN), 68W Medic, combat lifesaver) will have operational control of treatment and evacuation until properly relieved or patient is handed over to evacuation or higher level of care.

c. Medical personnel will immediately assess the casualty's airway and mental status and attempt to obtain a core (rectal) temperature assessment followed by rapid initiation of cooling with Iced Sheets. Cooling will not be delayed if the medical professional is unable to obtain a core (rectal) temperature reading in a timely manner. If Ice Sheets are available during moderate to severe presentations, ice sheets will be used during initial treatment with the Polar Life Pod® being deployed immediately upon arrival of resources (i.e. 60 gallons of iced water). All Cadets and cadre treated with ice sheets or the Polar Life Pod® will be evacuated to the Role 1 at LSA Densberger (if located in that training area) or the Role 1 Medical Company at LSA Baker, unless a trained medical professional recommends transport by EMS to an offsite medical facility for a higher level of care (e.g. suspected heat stroke or hyponatremia). If transfer to an offsite medical facility is recommended, EMS will be activated by calling 911 within the cantonment area or by calling Range Control within the training area (see paragraph 10 for evacuation guidance).

d. The use of ice sheets or the Polar Life Pod® on a casualty must be documented on a casualty card or SF 600 and promptly turned into the TF MED Chief Medical Officer (CMO) or designated TF MED POC.

e. The casualty must be removed from direct sunlight as feasible, unless a separate injury prevents immediate movement of the casualty.

f. Expose skin (do not remove underwear, and do not remove the bra or t-shirt from females).

g. Initial treatment with ice sheets should not be delayed. Treatment utilizing the Polar Life Pod® (ice water full body immersion system) will be initiated as indicated upon arrival of the system and resources.

h. Activate EMS by calling 911 within the cantonment area and Range Control within training areas outside of the cantonment area.

8. Proper use of Ice sheets and Polar Life Pods. These pieces of equipment are critical components in the treatment of moderate to severe heat-related illness during CST (see enclosures 7 and 8 for details on the contents, application, and proper use of the Ice Sheets, Polar Life Pod®, and Data Therm II).

a. POLAR SKIN Comprehensive Cooling System will be carried by all 68W Combat Medics within their regiments and at their respective committee training sites or where the onsite medical authority deems necessary.

b. Polar Life Pods® will be maintained at the LSA Densberger Forward Aid Station (FAS), as well as, with 68W Combat Medics during critical training events (e.g. 12-mile road march) and any other site where the onsite medical authority deems necessary. Ice Sheets and/or the Polar Life Pods® will be utilized any time a Cadet or cadre has a change in their mental status and it is believed that environmental heat exposure is the cause of this change. Mental status changes include confusion, inability to properly follow commands, and loss of consciousness. If a change in mental status is noted, immediately contact the onsite 68W Combat Medic and/or medical provider.

9. Evacuation of Heat Casualties. When suspected moderate to severe heat illness requires evacuation to higher level of care, the following applies.

a. Training site within the Fort Knox cantonment area:

(1) Transport to the Role 1 medical company required: Transport via HMMWV ambulance

(2) Transport to offsite medical facility required: Activate EMS via 911

b. Training sites outside of the Fort Knox cantonment area:

(1) Transport to the Role 1 or Role 2 Medical Company required: Transport via HMMWV ambulance.

(2) Transport to the offsite medical facility required: Activate EMS via Range Control.

c. The chain of command on site is authorized to upgrade the 68W Combat Medic's determination of level of evacuation from unnecessary/routine to immediate but is not authorized to downgrade it. For example, if the 68W Combat Medic on site determines that evacuation is necessary, the chain of command can still decide to evacuate the casualty to the Role 2 medical company at LSA Baker or to an offsite medical facility. **However, if the 68W Combat Medic on site directs that the casualty will be evacuated, the evacuation must be performed**. If the patient responds appropriately to cooling measure, they should be evacuated to Nelson TMC before RTD. If the patient is NOT responding to cooling measures, DO NOT EVACUATE TO NELSON TMC/IRELAND, activate EMS. (see paragraphs 7a.b. and 10 for evacuation guidance).

d. All field evacuations require immediate situational reporting to the CST TOC. When submitting the report, only state the actual symptoms. Until the Chief Medical Officer (CMO) has made a formal diagnosis, do not report the diagnosis of heat illness or suspected heat illness. Report only the symptoms of the casualty (e.g. change in mental status, confusion, nausea and vomiting, headache, etc.).

e. For disposition and limitation of Cadets diagnosed/suspected of having a heat injury. See enclosure 9, Limitations/Disposition for Heat Related Illness

10. Heat Illness Reporting. If a reportable heat illness occurs (i.e., heat stroke, heat exhaustion, hyponatremia, or rhabdomyolysis), the Chief Medical Officer (CMO) will coordinate with TF MED preventive medicine personnel, the USACC safety POC, and the USACC Deputy Command Nurse to ensure applicable reporting is completed.

a. Serious Incident Report (SIR). A SIR will be completed on all suspected and confirmed heat illnesses as outlined in paragraph 11.

b. Disease Reportable Surveillance Internet (DRSi). The TF MED public health nurse or designated representative will enter all reportable heat illnesses in DRSi during the week of their occurrence for the collection and timely reporting of Reportable Medical Events (RMEs).

c. Disease Non-battle Injury (DNBI). The USACC Deputy Command Nurse will track all reportable heat illnesses on the DNBI report and work directly with the CMO to confirm all suspected heat diagnoses.

d. Ensure the cadet is properly diagnosed and the appropriate ICD 10 code is applied (see enclosure 10 for ICD codes).

11. Safety Inspections. Safety inspections should include checking of the following items as utilized in training: manual and/or digital WBGTs, Arm Immersion Cooling System (AICS), ice sheets, cooler, Polar Life Pods®, hydration status markers, leader cards, and current risk assessments for training. See CST EXECUTION (HEAT INJURY MITIGATION) and associated annexes for Safety's guidance on heat mitigation as it pertains to DRAWs, the Cold-Heat Injury Prevention Leader Card, sequencing of training events, and heat dumping in hot climates.

12. Heat Illness Definitions.

a. The World Health Organization (WHO) categorizes four common exertional heat illnesses as follows: heat cramps, heat syncope (exercise associated collapse), heat exhaustion, and heat stroke. The WHO does not recognize heat injury, another common heat illness, termed by the US military to describe a condition more severe than heat exhaustion but that does not meet the neurological criteria required for heat stroke.

b. Early symptoms of dehydration include the inability to keep pace with the training, fatigue, nausea, headache, and dry mouth. Leaders, 68W Combat Medics, and combat lifesavers (CLS) must maintain time awareness, because these symptoms can quickly progress to a heat illness. Do not delay appropriate treatment. Have persons exhibiting these symptoms drink water and sit in the shade. Decisive action, once symptoms are being exhibited, is critical to reducing the risk of a heat illness.

c. Mild heat illnesses include heat cramps (exercise associated muscle cramps) and exercise associated collapse. Heat cramps are often associated with exercise; yet, the underlying cause is still up for debate. This condition may be related to dehydration, blood sodium (salt) reduction, and/or muscle fatigue associated with exertion. Exercise associated collapse is a benign condition that usually occurs at the end of an event and is related to inadequate return of blood to the heart. Symptoms for both illnesses typically resolve quickly with cooling, rest, appropriate oral rehydration, and, in the event of exercise associated collapse, elevating the feet 12-24 inches above the heart when lying supine.

d. Heat exhaustion is a mild to moderate form of heat illness. Individuals with heat exhaustion have an elevated core (rectal) temperature typically greater than 100.5ºF/38ºC and less than 104ºF/40ºC at the time of or shortly after the event. Heat exhaustion does not result in organ injury. Symptoms may include mild headache, dizziness, abdominal cramps, nausea, vomiting, diarrhea, profuse sweating, extreme weakness, and/or muscle cramps. With early recognition, individuals may recover with rest, appropriate oral rehydration, and heat dumping techniques.

e. Heat injury presents as a more severe form of heat exhaustion with an elevated core temperature, often greater than 104ºF/40ºC at the time of event. Heat injury results in organ injury (e.g. kidneys, liver, and/or skeletal muscle [rhabdomyolysis]). Individuals may have a mild headache and dizziness but no lengthy altered mental status or loss of consciousness. Other possible symptoms are comparable to those seen in heat exhaustion. Rapid recognition and cooling intervention remain critical in slowing or stopping the progression to heat stroke.

f. Heat stroke is a potentially life-threatening condition that constitutes the most severe form of heat illness. Affected individuals will often have an elevated core temperature above 104°F/40°C that is measured immediately following collapse during strenuous activity; however, some individuals diagnosed with heat stroke may have lower temperature elevations recorded. These individuals will also have evidence of central nervous system dysfunction, such as disorientation, irrational behavior, confusion, emotional instability, combativeness, altered mental state, coma, and/or seizure. Heat stroke typically causes injury to other organs, such as the kidneys, liver, and skeletal muscle (rhabdomyolysis). Rapid recognition and cooling intervention remain critical in slowing or stopping the progression of organ injury.

g. Hyponatremia (water intoxication) can mimic heat illness. Hyponatremia is caused by fluid overload (i.e. drinking more than 12 quarts of water/fluid per day) and under-replacement of salt losses (e.g. not consuming enough salted food). This condition can be fatal. It is important that individuals regulate their fluid and dietary intake. Battle buddies and supervisors should be generally aware of their fellow trainees'/Cadets' fluid and dietary intake. Repeated vomiting is a sign that suggests over-hydration in the presence of heat illness. Any individual who is vomiting repeatedly and possibly has a heat illness should be evacuated to emergency care. If hyponatremia, in conjunction with heat illness, is suspected, external cooling measures should be initiated/continued. Oral rehydration and intravenous fluids should be restricted until further assessment can be performed. Intravenous (IV) access may still be obtained for future intravenous hydration once hyponatremia has been ruled out by a medical provider (i.e. physician, physician assistant, nurse practitioner).

h. Sudden Cardiac Arrest (SCA). SCA from cardiovascular collapse is generally abrupt with an immediate loss of consciousness, sometimes with brief seizure-like movements. After confirming a lack of responsiveness and absence of a pulse, it is critical to begin high-quality cardiopulmonary resuscitation (CPR), deploy an Automated Electronic Defibrillator (AED) and activate Emergency Medical Services (EMS).

i. Exertional Collapse Associated with Sickle Cell Trait (ECAST). An ECAST victim may have been a front runner, or off to a strong start, but will be noted somewhere before the collapse as slowing down, falling behind, and struggling. They begin to lose smooth coordination, they evolve into an awkward running posture and gait, with legs that may look wooden or wobbly. The victim may complain of progressive weakness, pain, cramping, or shortness of breath. Distinct from the cramping of exercise associated muscle cramping, in ECAST, there is generally no visible muscle twitching and the muscles do not "lock up." The pain of muscle cramping is generally excruciating, whereas the predominate symptom of ECAST is weakness over pain. The ECAST victim will initially be mentally clear, before the onset of confusion and loss of consciousness.

j. Exertional Heat Stroke. Heat stroke can have a similar progression to ECAST, but the hallmark that defines heat stroke is not only an elevated temperature, but an altered mental status.

k. Continued exertional effort in both ECAST and heat stroke will eventually lead to collapse, that in the absence of prompt intervention can be life threatening.

13. Any deviations from this policy must be approved by the CST CMO. Questions relating to this policy may be directed to the USACC Deputy Surgeon, LTC Andrew R. Kennedy (502) 626-1441, or CST Medical Planners: MAJ Patrick E. Hensel (210) 823-6799 and Mr. James (Tom) Campbell (502) 624-5957.

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SHERMAN C. WATSON
COL, FA
CST Commandant

Encls
1. Work/Rest time/Fluid replacement guide
2. Sample DRAW
3. AICS Instructions and Card
4. Heat Algorithm Cadre/CLS
5. Heat Algorithm Medic
6. Heat Algorithm Role 2 Provider
7. Polar Skin™ Comprehensive Cooling System
8. Polar Life Pod® and Data Therm II
9. Limitations/Disposition for Heat Related Illness
10. Diagnostic Codes

DISTRIBUTION:
CA

Enclosure 1. WORK/REST TIMES AND FLUID REPLACEMENT GUIDE

Work/Rest Times and Fluid Replacement Guide

		Easy Work Weapons maintenance, marksmanship training, drill & ceremony		**Moderate Work** Patrolling with 30 lb load, low & high crawl, dig defensive position		**Heavy Work** Patrolling with 45 lb load, hour person litter carry, run/jog 5 mph		**Very Heavy Work** Two person litter carry, move under direct fire, obstacle course	
Heat Category	WBGT Index (°F)	Work-Rest	Water Intake (qt/hr)	Work-Rest	Water Intake (qt/hr)	Work-Rest	Water Intake (qt/hr)	Work-Rest	Water Intake (qt/hr)
1	78-81.9	NL	½	NL	¾	40/20	¾	20/40	1
2 (green)	82-84.9	NL	½	NL	¾	30/30	1	15/45	1
3 (yellow)	85-87.9	NL	¾	NL	¾	30/30	1	10/50	1
4 (red)	88-89.9	NL	¾	50/10	¾	20/40	1	10/50	1
5 (black)	>90	NL	1	20/40	1	15/45	1	10/50	1

Notes:
1. The work-rest times and fluid replacement volumes will sustain performance and hydration for at least 4 hours of work in the specified heat category. Fluid needs can vary based on individual differences (± ¼ qt/hr) and exposure to full sun or full shade (± ¼ qt/hr).
2. NL equals no limit to work time per hour (up to 4 continuous hours).
3. Rest means minimal physical activity (sitting or standing), accomplished in shade if possible.
4. CAUTION: Hourly fluid intake should not exceed 1 ½ qt.
5. CAUTION: Daily fluid intake should not exceed 12 qt.
6. If wearing heavy protective clothing (CBRN, JSLIST), add 10ºF to WBGT index for easy work, and 20ºF to WBGT index for moderate and hard work.

*Applies for average sized, heat acclimatized Service Member wearing OCP uniform or service Uniform equivalent.

Enclosure 2. Sample DRAW

DELIBERATE RISK ASSESSMENT WORKSHEET

1. MISSION/TASK DESCRIPTION AND EXECUTION DATE(S)	2. DATE PREPARED

3. PREPARED BY

a. NAME *(Last, First, Middle Initial)*	b. RANK/GRADE	c. DUTY TITLE/POSITION

d. UNIT	e. WORK EMAIL	f. TELEPHONE *(DSN, Commercial (Include Area Code))*

g. UIC/CIN *(as required)*	h. TRAINING SUPPORT/LESSON PLAN OR OPORD *(as required)*	i. SIGNATURE OF PREPARER

Five steps of Risk Management: (1) Identify the hazards (2) Assess the hazards (3) Develop controls & makes decisions (4) Implement controls (5) Supervise and evaluate *(Step numbers not equal to numbered items on form)*

	4. SUBTASK/SUBSTEP OF MISSION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
+ -					How: Who:	

10. OVERALL RESIDUAL RISK LEVEL *(All controls implemented):*

☐ EXTREMELY HIGH ☐ HIGH ☐ MEDIUM ☐ LOW

11. OVERALL SUPERVISION PLAN AND RECOMMENDED COURSE OF ACTION

12. APPROVAL OR DISAPPROVAL OF MISSION OR TASK ☐ APPROVE ☐ DISAPPROVE

a. NAME *(Last, First, Middle Initial)*	b. RANK/GRADE	c. DUTY TITLE/POSITION	d. SIGNATURE OF APPROVAL AUTHORITY

e. ADDITIONAL GUIDANCE:

Enclosure 3. AICS instructions and card

- The Arm Immersion Cooling System (AICS) should be used before and after training in hot environments to maximize its effectiveness.

- During CST, the most common configuration for an AICS is a standard cooler filled with a slurry of water and ice. The ratio of ice to water will never exceed ¼ ice to ¾ water. Cadre are responsible for ensuring that ice is always present in the slurry.

- The preferred cooler size is 52 quarts or larger. The cooler should be designated for AICS only and should be separate from coolers used for the purpose of providing cold drinking water.

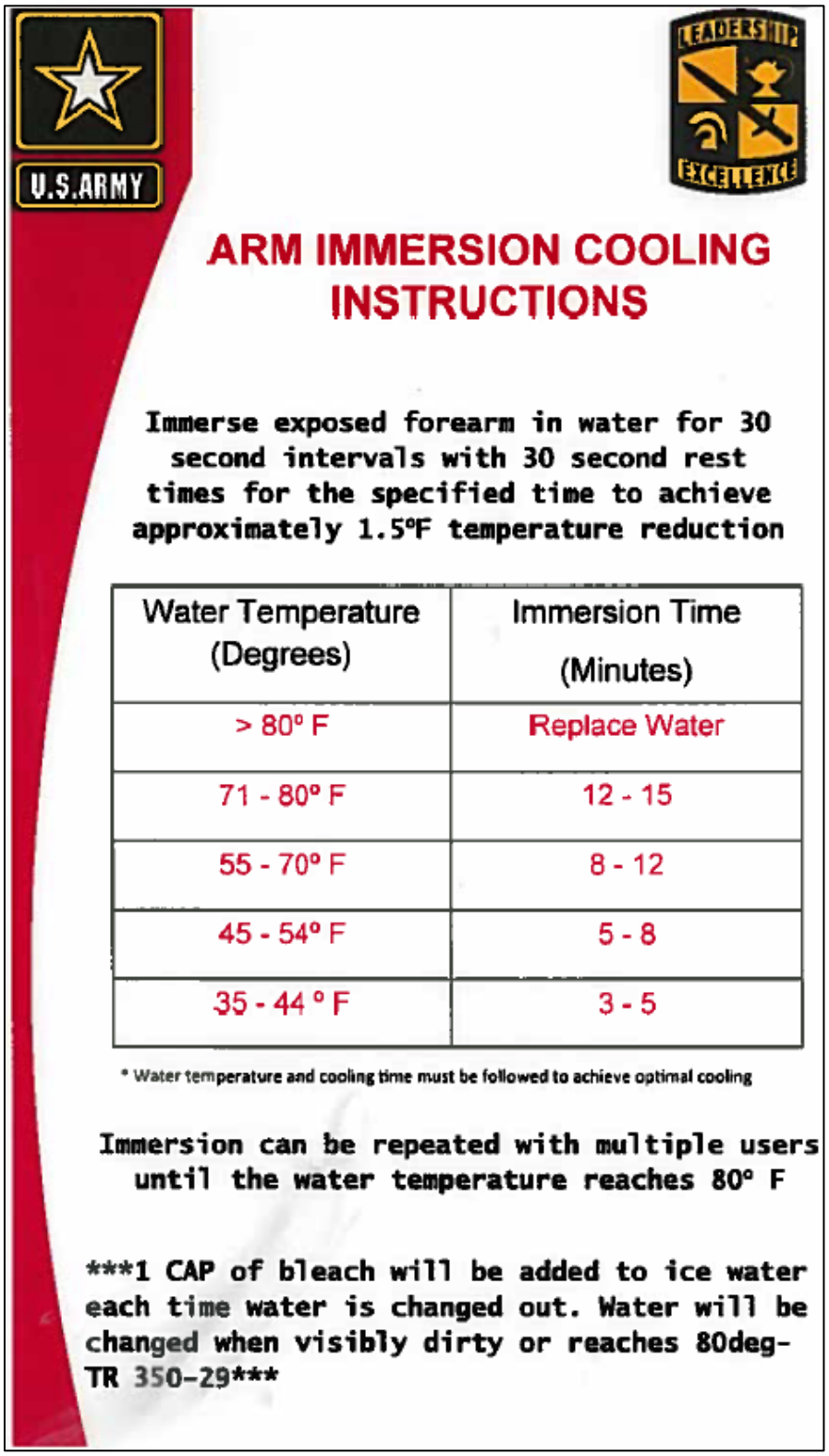
- To minimize the risk of cross-contamination, 1 teaspoon of bleach (obtainable at the CST warehouse) should be added to each AICS. Each AICS should be emptied, rinsed, and refilled every 24 hours.

- In cases in which a pre-designated AICS is not available, any cooler, to include the standard, round, 5-quart cooler, may be used. However, it should not be reutilized for drinking water until emptied and properly sanitized.

- When utilizing an AICS, the individual should fully expose his/her upper arms to the shoulders. The individual should simultaneously immerse his/her forearms (up to the elbow) in the AICS for periods of 20-30 seconds at a time over a specified length of time, depending on the temperature of the water (see picture in this enclosure for details).

- When performed properly, the AICS method of cooling may reduce an individual's core temperature by approximately 1.5ºF (TRADOC Regulation 350-29, 2016).

- If a severe heat illness is suspected, the aggressive use of iced sheets or the Polar Life Pods®, when available, should not be delayed.



U.S.ARMY

LEADERSHIP EXCELLENCE

ARM IMMERSION COOLING INSTRUCTIONS

Immerse exposed forearm in water for 30 second intervals with 30 second rest times for the specified time to achieve approximately 1.5°F temperature reduction

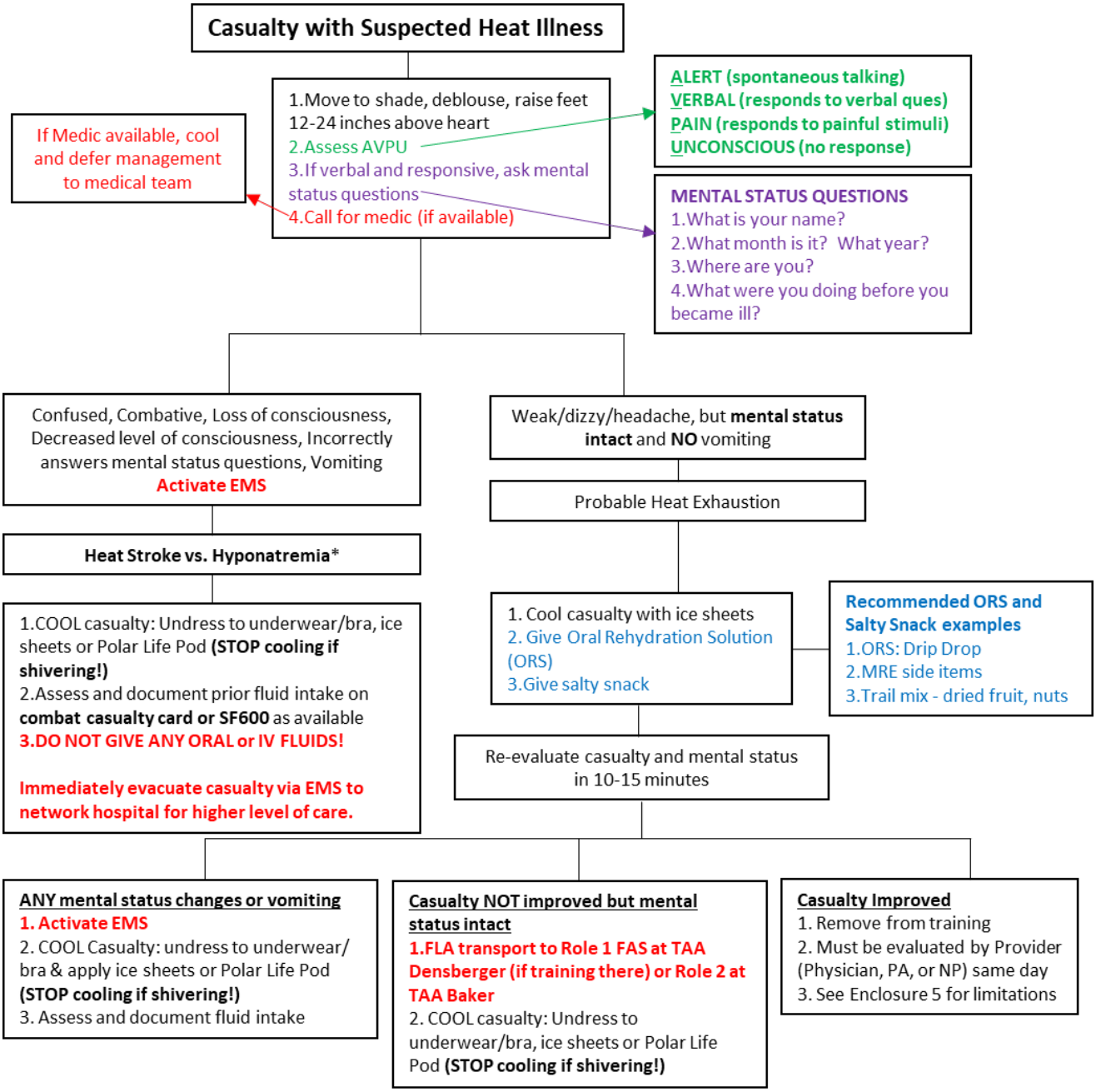
Water Temperature (Degrees)	Immersion Time (Minutes)
> 80° F	Replace Water
71 - 80° F	12 - 15
55 - 70° F	8 - 12
45 - 54° F	5 - 8
35 - 44 ° F	3 - 5

* Water temperature and cooling time must be followed to achieve optimal cooling

Immersion can be repeated with multiple users until the water temperature reaches 80° F

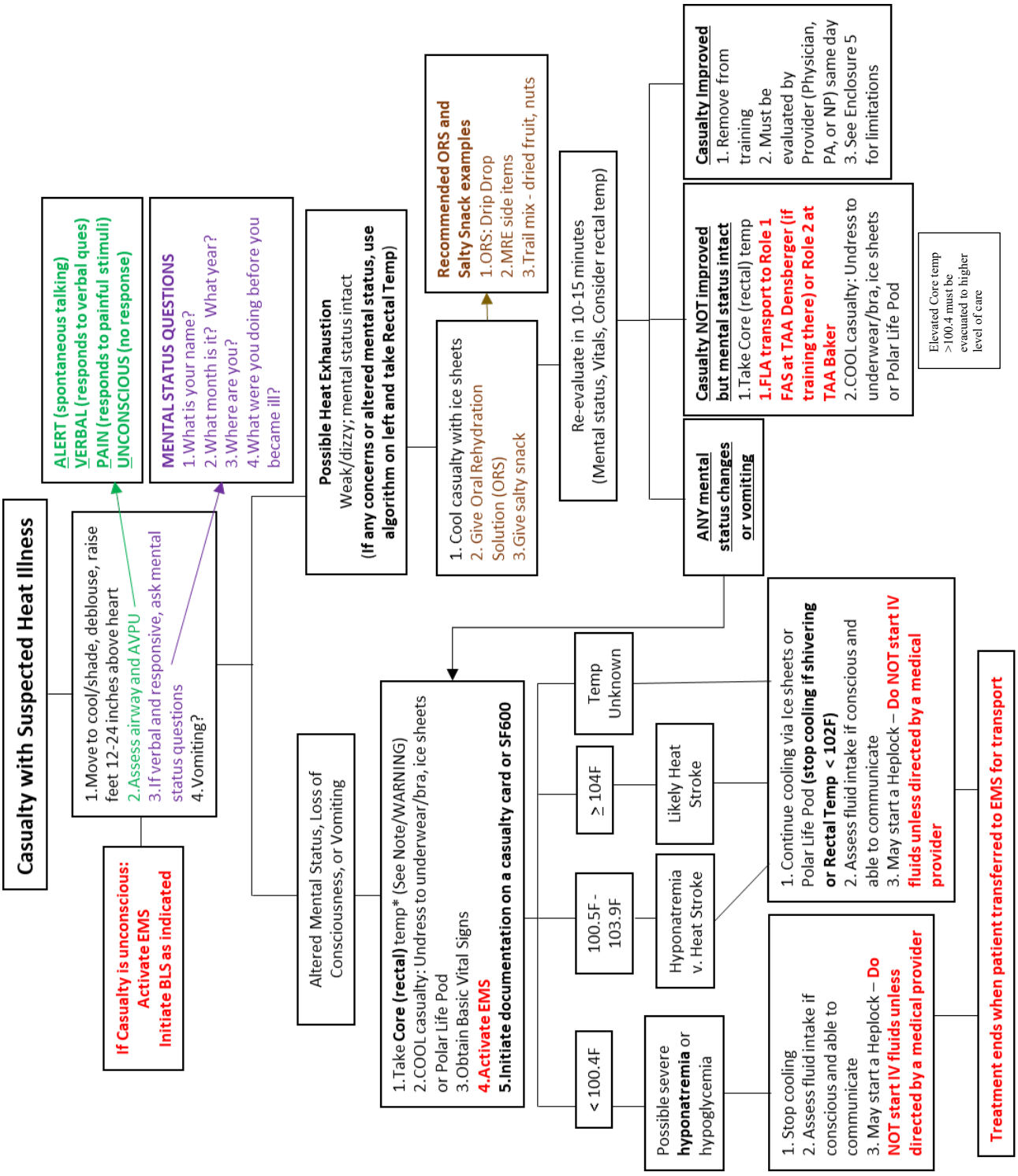
*****1 CAP of bleach will be added to ice water each time water is changed out. Water will be changed when visibly dirty or reaches 80deg-TR 350-29*****

Enclosure 4. HEAT ALGORITHM FOR CST CADRE/CLS WHEN SUSPECTED HEAT ILLNESS



Additional Notes:
1. Only trained medical personnel (68W Combat Medic, physician, PA/ NP, RN, LPN) are authorized to take a rectal temperature, which is the only approved method of measuring the core temperature.
2. **WARNING:** Do NOT use alternate methods of obtaining a core temperature and **do NOT delay cooling if unable to obtain a core temperature in a timely manner.**
3. Combat Medics may only start a Heplock (saline lock). Medics will not initiate IV fluids unless directed by a medical provider (e.g. Physician, PA, NP)
4. All care at point of injury must be documented on a combat casualty card or SF 600 and submitted to the TF MED CMO or designated POC and EMS personnel.
5. Evacuate via EMS if casualty remains unconscious or has mental status changes regardless of temperature. Never drive a casualty to the hospital yourself!

Enclosure 5. HEAT ALGORITHM FOR CST MEDIC (68W) WHEN SUSPECTED HEAT ILLNESS



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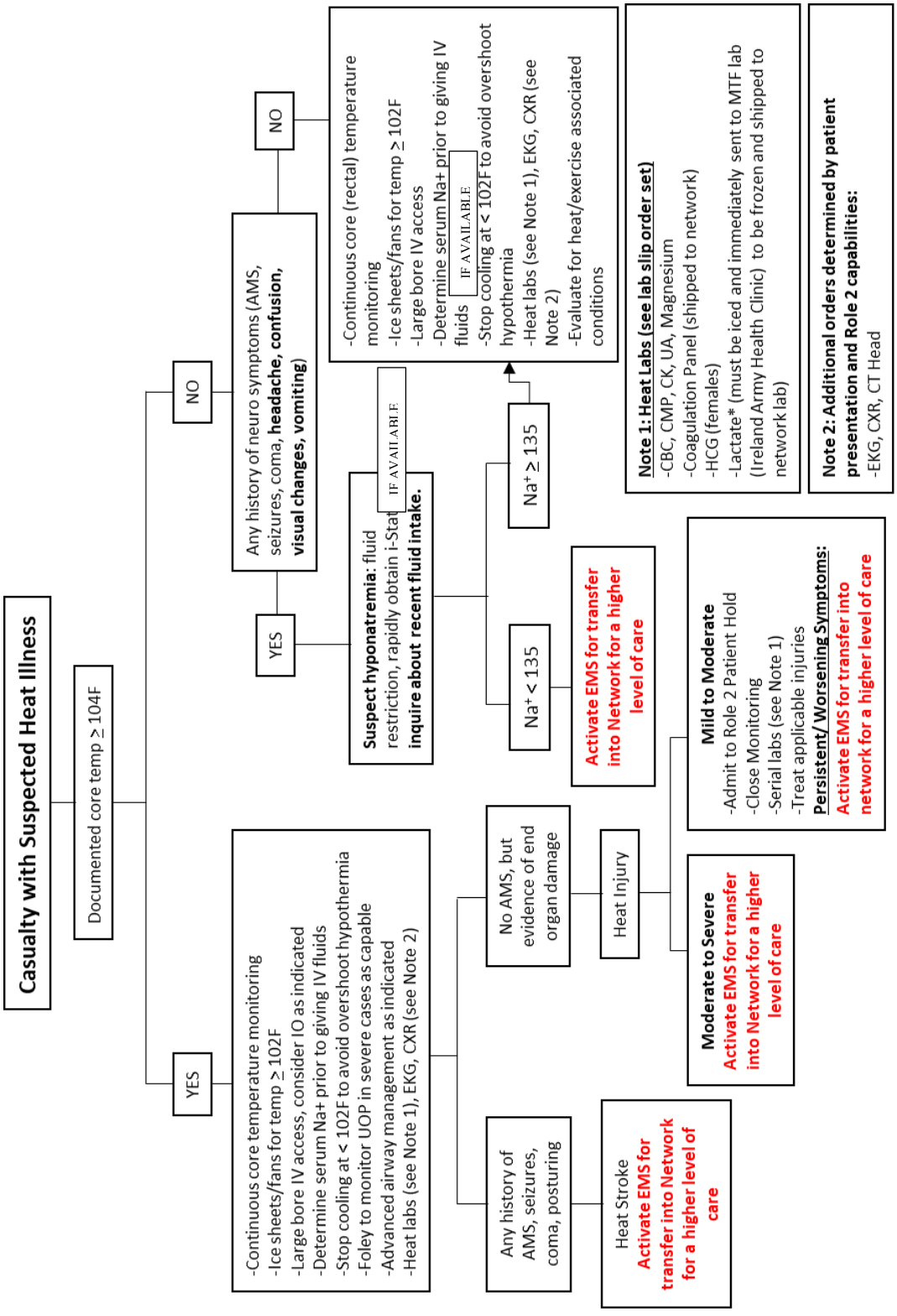
3. Combat Medics may only start a Heplock (saline lock). Medics will not initiate IV fluids unless directed by a medical provider (e.g. Physician, PA, NP)
4. All care at point of injury must be documented on a combat casualty card or SF 600 and submitted to the TF MED CMO or designated POC and EMS personnel.
5. Evacuate via EMS if casualty remains unconscious or has mental status changes regardless of temperature. Never drive a casualty to the hospital yourself!

Enclosure 6. HEAT ALGORITHM FOR CST Role 1 (Providers) WHEN SUSPECTED HEAT ILLNESS/HYPONATREMIA



Additional Notes:
1. Only trained medical personnel (68W Combat Medic, physician, PA/NP, RN, LPN) are authorized to take a rectal temperature, which is the only approved method of measuring the core temperature.
2. **WARNING:** Do NOT use alternate methods of obtaining a core temperature, and **do NOT delay cooling if unable to obtain a core temperature in a timely manner.**
3. Combat Medics may only start a Heplock (saline lock) at site of injury. Medics will not initiate IV fluids unless directed by a medical provider (e.g. Physician, PA, NP)
4. All care at point of injury must be documented on a combat casualty card or SF 600 and submitted to the TF MED CMO or designated POC and EMS personnel.
5. All care in the Role 2 must be documented in EMR or via SF 600 and scanned into GENESIS at NTMC if connectivity not established.
6. Evacuate via EMS if casualty remains unconscious or has mental status changes regardless of temperature. Never drive a casualty to the hospital yourself!

Enclosure 7. Polar Skin Comprehensive Cooling System

The following standardized guidelines pertain to the utilization/application of the **Polar Skin Comprehensive Cooling System**

- Cadet Summer Training personnel will utilize the POLAR SKIN Comprehensive Cooling System. Each single use pack consist of six saturated sheets and four gel packs (see pictures included in this enclosure)
  .
- The Polar Skin Comprehensive Cooling System requires pre-freezing for proper effectiveness. Each pack will be stored in a freezer at 0deg F for a minimum of six hours prior to deployment. When removed from the freezer, they will be placed in portable coolers where they will remain during transport to and while available at all active training sites. **Note. The Polar Skin Comprehensive Cooling System will only be opened when use is deemed necessary. No one is authorized to "filed strip" this item due to reduced efficacy and cost.**

- Approved freezers will be located at the CST TF Medical TOC, BLDG 5914

- Committee and Regimental leadership, in conjunction with the 68W Combat Medic or designated CLS Soldier on site, will be responsible to determine the best placement of the cooler and will ensure all cadre are aware of its location.

- The 68W Combat Medic will be responsible for ensuring all on-site cadre are familiar with the Polar Skin Comprehensive Cooling System.

- At the conclusion of each training day, any unused ice sheets will be returned to the deep freezers located at TF Med TOC and exchanged for a fresh freezer conditioned Polar Skin Comprehensive Cooling System.

- Committee/Regimental leaders will establish a rotation plan, allowing 68W Combat Medics to complete ice sheet exchange ensuring frozen ice sheets are on site at the beginning of each training day.

The following **Polar Skin Comprehensive Cooling System** instructions will be implemented to ensure safe and effective treatment.

- Remove a single Ice Sheet from the silver packaging. Place it unfolded on the ground, or preferably on a stretcher if available, and place the casualty on top of the sheet.

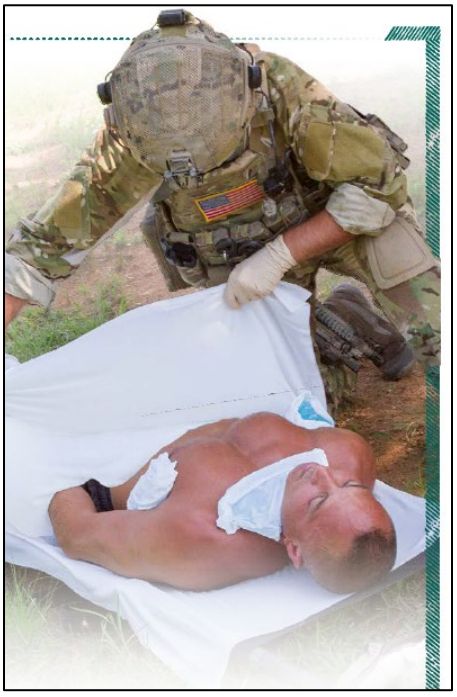
- Remove ice packs form silver packaging and place one specially-sized ice pack in each armpit and on the top, inner thigh region.

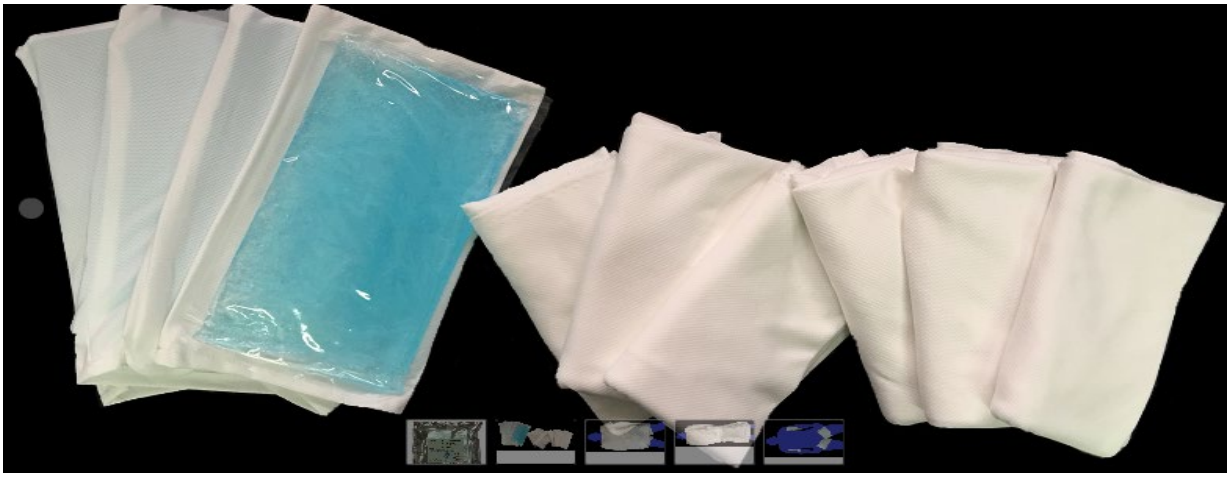
- Remove a single ice sheet from the silver packaging and cover the casualty's' torso and arms from the neck down with the unfolded sheet.

- Each minute, replace the top ice sheet with a fresh ice sheet, and place the used sheet in a cooler filled with ice water (as available) until all have been used (5–6 minute process).

- After all six Polar Skin ice sheets have been used, begin to deploy Polar Skin ice sheets that have been soaking in the ice water and reapply to the casualty two at a time - one to the upper body and one on the legs. If an ice cooler was not available to soak the sheets, break open a new Polar Skin Comprehensive Cooling System (as available) and apply the ice sheets to the casualty two at a time – one to the upper body and one on the legs.

- Continue treatment, and do not interrupt the cooling process until the high mobility multipurpose wheeled vehicle (HMMWV) ambulance (formerly FLA)/EMS transport arrives, the casualty begins to shiver, the temperature has dropped below 102ºF, or when advised by a trained medical provider (i.e. physician, physician assistant, or nurse practitioner). Do not disrupt cooling when performing a temperature measurement. The 68W Combat Medic will continue to monitor the status of the patient until the evacuation process is complete.





Do not field strip (cut open and take apart) the Polar Skin Comprehansive Cooling System in advance. The product will lose effectiveness if not used immediately after opening.

Go to http://www.narescue.com/polar-skin-cooling-system-comprehensive to obtain more information in the Polar Skin Comprehansive Cooling System.

Enclosure 8. Polar Life Pod® and Data Therm II

The following standardized guidelines pertain to the utilization/application of the **Polar Life Pod®** (see pictures and link included in this enclosure).

- Always make sure there is adequate water and ice (no less than 60 gallons of iced water on site) available for use with the Polar Life Pod®.

- Always have a person monitoring and holding the Cadet/cadre's head and pillow to assure a clear airway.

- The trained medical specialist (i.e. 68W Combat Medic, nurse, physician assistant, nurse practitioner, or physician) at the scene will ensure the proper use of the Polar Life Pod®.

- Due to the risk of electrocution, all electrical equipment must be removed from the area before using the Polar Life Pod®.

- Any patient who is immersed during treatment could be a potential drowning victim. A few precautions must be followed to assure this does not occur.

    - Supervise the Cadet/cadre at all times.

    - Ensure multiple personnel are available to assist with treatment and monitoring.

    - Dedicate an individual responsible for holding the Cadet/cadre's head to ensure the head does not go under water.

The following **Polar Life Pod®** instructions will be implemented to ensure safe and effective treatment.

- Transport the Polar Life Pod® to the Cadet/cadre, remove from bag, and unroll it next to Cadet/cadre with the hood next to the Cadet/cadre's head.

- Roll the Cadet/cadre onto his/her side away from the Polar Life Pod® and slide the pod underneath the Cadet/cadre. Repeat this, rolling the Cadet/cadre in the other direction and centering the Cadet/cadre in the Polar Life Pod®.

- Ensure the Cadet/cadre's head is up inside the hood.

- Place the Polar Life Pod® flotation pillow inside the hood with the raised neck support underneath the Cadet/cadre's neck and the curve side towards the top of the hood. Carefully insert earplugs into the Cadet/cadre's ear canals.
- Zip the Polar Life Pod® up halfway, securing the straps as you go. For smaller Cadets/cadre, fold the foot of the Polar Life Pod® under to adjust to their height, allowing for more effective water distribution.

- Begin pouring ice water into the Polar Life Pod® just to the side of the Cadet/cadre's body. Avoid pouring ice water near the head or directly on the chest, if possible, to prevent airway complications. Pour enough ice water to immerse the Cadet/cadre until there is chest, neck, and partial head coverage (approximately 40 to 60 gallons depending on size of Cadet/cadre). Note: A small amount of leakage around opening and zipper is to be expected.

- While pouring water in to the Polar Life Pod®, supervise the Cadet/cadre continuously. Always have an individual monitoring the Cadet/cadre's head and pillow to assure a clear airway.

- Secure the two remaining straps and zip up the Polar Life Pod® the rest of the way. Note: In the rare case that the girth of the Cadet/cadre is such that the zipper cannot be secured, simply place the side of the Polar Life Pod® close to the Cadet/cadre, secure them in place with the straps, and proceed with the standard filling instructions.

- During cooling, water should be continuously circulated or stirred to enhance the water-to-skin temperature gradient, which optimizes cooling. Have an assistant stir the water during cooling by gently rocking the bag.

- Monitor water temperature using the included water temperature gauge to ensure the water stays between 35-59°F. Add ice or cold water as required by simply unzipping the Polar Life Pod® and adding water a safe distance from the Cadet/cadre's head. Warmer water may be drained off through the hose connections.

- Polar Life Pod® arm ports allow for easy access to the Cadet/cadre's arms in order to monitor vital signs and/or obtain IV access if necessary.

- It is important to continuously monitor the Cadet/cadre during treatment with the Polar Life Pod®. Discontinue treatment if the Cadet/cadre begins to shiver and/or if a core temperature of 102°F is obtained. A continuous core rectal temperature may be obtained by trained medical personnel by using the DataTherm II Continuous Temperature Monitor that is collocated with the Polar Life Pod®.

- Evacuate water quickly from the Polar Life Pod by removing the port cap at the foot of the Polar Life Pod®, as required.

- Upon arrival of the evacuation asset, remove the Cadet/cadre from the Polar Life Pod® before placing him/her on a litter or gurney. If necessary, continue cooling via another means, such as disposable ice sheets.

Go to https://www.polarproducts.com/polarshop/pc/Polar-Life-Pod-p2105.htm to learn more and view a demonstration.
Medical personnel must be trained properly prior to deploying the Polar Life Pod®

DataTherm II Continuous Temperature Monitor: to be used in conjunction with the Polar Life Pod® and at other designated medical facilities.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DataTherm®II

Enclosure 9. Limitations/Disposition for Heat Related Illness

Upon discharge from medical care, the following guidelines should be followed to determine residual risk level, prevent return of symptoms (organ injury) or recurrence of another heat illness, and manage return to duty activities or restrictions

Clinical Criteria/ Variables	Minimal Risk (must meet all criteria below)	Low Risk (must meet all criteria below)	High Risk (if meets any 1 or more criteria)
Max T_{Core}	< 39°C (102.0°F)	See note*	≥ 42.2°C (108.0°F)
Time from symptoms to treatment/cooling	≤ 10 min	≤ 10 min	> 30 min
Initial CNS dysfunction	n/a	Resolved < 45 min	≥ 60 min of initial CNS dysfunction
Total time T_{Core} > 39°C (102.0°F)	n/a	< 30 min	≥ 60 min
Total time from injury to complete resolution of symptoms	< 50 min	< 3 days	Varies with individual case
Initial Labs (if obtained)	No evidence of EHS/no end organ damage	Normal or elevated	Elevated
Active cooling required?	No	+/–	Yes
Comorbid conditions	None	None	Present
Concussion-like symptoms related to heat illness	Resolved < 48 hr	Resolved < 48 hr	> 14 days
Follow-up appointment(s)	Within 72 hr	Minimum every 48 hr	As clinically indicated
Follow-up labs	Normal within 72 hr	Downtrending to clinically reasonable levels within 72 hr	Varies with individual case
Complicating factors (ICU admission, sickle cell trait, prior EHS, Fam Hx of MH)	No	No	Yes

*Note: No specific core temperature range was assigned to both low and moderate risk due to the variability of core temperature in EHI and the individualization of each heat injury. Both low and moderate risk may exhibit core temperatures between 39°C (102.0°F) and 42.2°C (108.0°F). Other characteristics of moderate risk are intermediate between low and high risk.

Minimal-Risk RTD Protocol (for minimal risk patients)

Stage	Activity	Profile / Duty Status
0	No physical activity for minimum of 1 day. Activities of daily living are okay.	Limited/light duty
1	Light-moderate activity, < 70% age-adjusted max HR, 60 min limit (e.g., jog at ½ speed)	Limited/light duty
2	Moderate activity, < 80% age-adjusted max HR, 60 min limit (e.g., slow run at ¾ speed)	Limited/light duty
3	Full participation, including any fitness test/competition	Full duty

Note: Each stage is a minimum of 24 hours.

Low-Risk protocol (for low risk patients)

Stage	Activity	Profile / Duty Status
0	No physical activity for minimum of 2 days. Activities of daily living are okay.	Limited/light duty
1	Exposure to warm environment, light stretching, 60 min limit	Limited/light duty
2	Light aerobic activity, < 50% age-adjusted max HR, 20–60 min (e.g., brisk walk)	Limited/light duty
3	Light-moderate activity, < 70% age-adjusted max HR, 60 min limit (e.g., jog at ½ speed)	Limited/light duty
4	Moderate activity, < 80% age-adjusted max HR, 60 min limit (e.g., slow run at ¾ speed)	Limited/light duty
5	Complete participation in training/practice settings, excluding any type of maximum-effort test or full competition	Limited/light duty
6	Full participation, including any fitness test/competition	Full duty

Note: Each stage is a minimum of 24 hours. The stage length may be longer depending on both operational and clinical needs, with patient safety being the utmost consideration.

Moderate-or High-Risk RTD Protocol (for moderate or high-risk patients

Stage	Activity	Profile / Duty Status
0	Individualized length of ADLs for 7–14 days	Limited/light duty or LIMDU
1	Mild activity/stretching in a low-heat stress condition (mild outdoor temperature/air-conditioned area)	Limited/light duty or LIMDU
2	Light aerobic activity, < 50% age-adjusted max HR, 20–60 min (e.g., brisk walk) in a low-heat stress condition	Limited/light duty or LIMDU
3	Light-moderate activity, < 70% age-adjusted max HR, 60 min limit (e.g., jog at ½ speed) in a low-heat stress condition	Limited/light duty or LIMDU
4	Heat acclimatization, < 70% age-adjusted max HR, 60 min limit (e.g., jog at ½ speed) in a warm/hot condition	Limited/light duty or LIMDU
5	Moderate activity, < 80% age-adjusted max HR, 60 min limit (e.g., slow run at ¾ speed) in a warm/hot condition	Limited/light duty or LIMDU
6	Complete practice participation, excluding any type of test/competition in ambient conditions	Limited/light duty or LIMDU
7	Full participation, including any fitness test/competition (minimum 4 weeks prior to this stage)	Full duty

Notes:

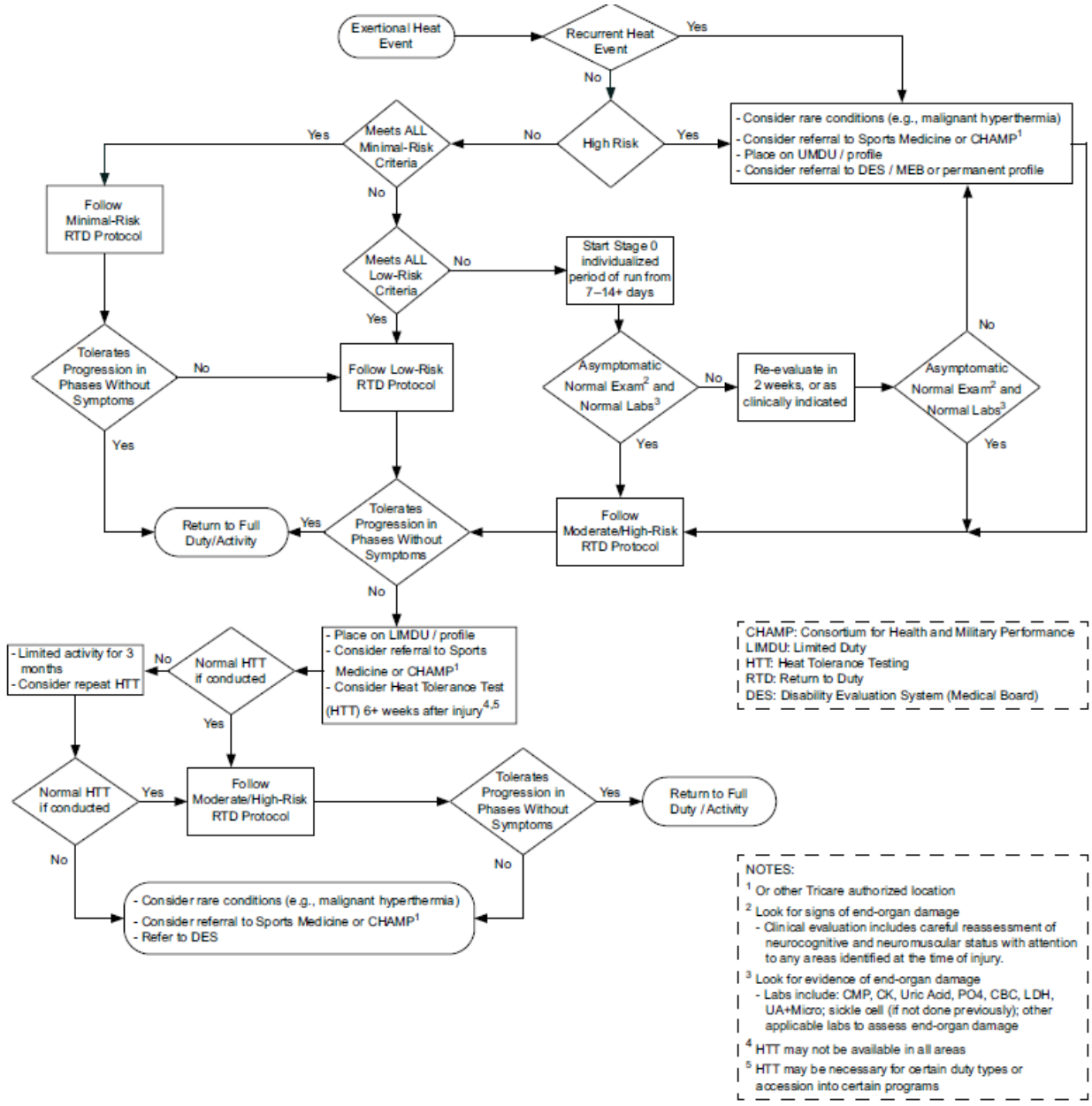
Required minimum 4 days per stage, so stage 7 is no sooner than 4 weeks from initiation of return-to-activity.

Each stage is individualized and may take up to 2 weeks to complete.

Low-risk patients who fail low-risk protocol estimate: 4–7 days per stage.

Moderate-risk patients estimate: 7–10 days per stage.

High-risk patients estimate: 10–14 days per stage.



NOTE. Add following language to all profiles: Cadet/Soldier has sustained a heat illness and should be recognized indefinitely as an elevated risk by unit leadership and visibly marked as at risk IAW TF MED SOP.

*Medical determinations will be completed by the USACC Surgeon's office or BDE Medical officers in accordance with DODI 63130.03 and established protocols.

Enclosure 10. Diagnostic Codes (ICD-10) for Heat Related Illnesses and Associated Illnesses/Injuries

Heat Exhaustion T67.3
Heat Injury T67.3, plus additional code(s) for the persistent condition(s)
Heat Stroke T67.0
Hyponatremia E87.1
Rhabdomyolysis M62.82
Dehydration E86.0
Parade Syncope T67.1
Heat Edema T67.7
Heat Cramps T67.2
Miliaria Rubra L74.0
Sunburn L55.0

*The Chief Medical Officer (CMO) will be the final diagnostic authority for all suspected heat illness casualties after a thorough review of the history from initial presentation through advanced medical evaluation and care. The CMO will annotate the appropriate diagnostic code in an administrative note in MHS GENESIS for record.