



MASON COUNTY FIRE DISTRICT #4

TITLE: INCIDENT REHABILITATION

CHAPTER: 4000 NUMBER: 4082 DATE: 10-07-08

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Purpose

To ensure that the physical and mental condition of members operating at the scene of an emergency or a training exercise does not deteriorate to a point that affects the safety of each firefighter/responder or that jeopardizes the safety and integrity of the operation.

Scope

This procedure shall apply to all emergency operations and training exercises where strenuous physical activity or exposure to heat or cold exists.

Physiological Considerations

One liter per hour of water loss is common during strenuous activity.

Firefighting protective clothing reduces the ability to maintain thermo-regulation by:

- Increasing core temperatures.

- Increasing the risk of heat-related emergencies.

High intensity activity, heat stress, and dehydration all reduce the rate of gastric emptying.

Even mild dehydration will affect simple motor skills.

Thirst is an indication of poor hydration levels.

Lack of hydration will cause persistent tachycardia and headaches.

Urine output is important. Changes in color, odor and lack of, are all important signs of hydration problems.

The gastric intestinal system can only empty 1 to 1.5 liters of fluid per hour. Care should be taken not to ingest more than that amount. Members should also take care in not ingesting extreme cold beverages, caffeine, carbonation, and alcohol.



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Responsibilities

The Incident Commander shall consider the circumstances of each incident and make adequate provisions early in the incident for the rest and rehabilitation for all personnel operating at the scene.

The establishment of rehab is critical during the summertime months of high heat.

The provisions shall include medical evaluation, treatment and monitoring, food conditions and the other environmental parameters of the incident.

The rehabilitation shall include the provision of “Angels 4” – Rehab Group, Emergency Medical Services (EMS) at the Basic Life Support (BLS) level or higher.

Supervisors

All supervisors shall maintain an awareness of the condition of all personnel operating within their span of control and ensure that adequate steps are taken to provide for each firefighter's safety and health.

Team Leaders must recognize the level of fatigue in each member of their crew. It is the responsibility of the Team Leader to remove any member of their crew that may be exhibiting signs of fatigue to prevent possible further injury. If one member of the crew is in need of rehab, the Team Leader should consider removing the whole crew and reporting to Rehab. When possible, crews should be sent to Rehab as a whole unit and not individually. This will allow Command to be aware of exact staffing and accountability during the incident.

The Command structure shall be utilized to request relief and reassignment of fatigued crew.

Personnel

During periods of hot weather, personnel shall be encouraged to drink water and activity beverages throughout the workday.

During any emergency incident or training evolution, all personnel shall advise their supervisor when they believe that their level of fatigue or exposure to heat or cold is approaching a level that could affect themselves, their crew, or the operation in which they are involved.

Personnel shall also remain aware of the health and safety of other members of their crew.



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Establishment of Rehabilitation Sector

Responsibility

The Incident Commander will establish a Rehabilitation Sector when conditions indicate that rest and rehabilitation is needed for personnel operating at an incident scene. The Lead Instructor is responsible for establishing a Rehab Sector during the training evolution (if needed).

A supervisor will be placed in charge of the sector and shall be known as the Rehab Officer.

The Rehab Officer will typically report to Command (or their designee) in the framework of the incident command system.

Location

The location for the Rehabilitation Area will normally be designated by the Incident Commander.

If a specific location has not been designated, the Rehab Officer shall select an appropriate location based on the site characteristics and designations below.

Site Characteristics

It should be a location that will provide physical rest by allowing the body to recuperate from the demands and hazards of the emergency operation or training evolution.

It should be far enough away from the scene that personnel may safely remove their turnout gear and SCBA and be afforded mental rest from the stress and pressure of the emergency operation or training evolution.

It should provide suitable protection from the prevailing environmental condition.

During hot weather, it should be in a cool, shaded area.

During cold weather, it should be in a warm, dry area.

It should enable personnel to be free of exhaust fumes from apparatus, vehicles or equipment (including those involved in the Rehabilitation Sector operations).

It should be large enough to accommodate multiple crews, based on the size of the incident.

It should be easily accessible by EMS units.

It should allow prompt reentry back into the emergency operation upon complete recuperation.



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Command should consider establishing the Rehab sector near the SCBA air operations. This will allow crews to drop off depleted bottles prior to entering Rehab, and pick up recharged bottles upon release from Rehab.

Site Designations

A nearby garage, building lobby, or other structure.

Several floors below a fire in a high-rise building.

A school bus, municipal bus, or bookmobile.

Fire apparatus, ambulance, or other emergency vehicles at the scene or called to the scene.

An open area in which a Rehab Area can be created using tarps, fans, etc.

Resources

The Rehab Officer shall secure all necessary resources required to adequately staff and supply the Rehabilitation Area.

The supplies should include the items listed below:

Fluids - water, activity beverage, oral electrolyte solutions, and ice.

Food - soup, broth, or stew in hot/cold cups (during long extended operations).

Medical - blood pressure cuffs, stethoscopes, oxygen administration devices, cardiac monitors, intravenous solutions and thermometers.

Other - awnings, fans, tarps, smoke ejectors, heaters, dry clothing, extra equipment, floodlights, blankets and towels, traffic cones, and fireline tape (to identify the entrance and exit of the Rehabilitation Area).

Guidelines

Rehabilitation Sector Establishment

Rehabilitation should be considered by staff officers during the initial planning stages of an emergency response.

The climatic or environmental conditions of the emergency scene should not be the sole justification for establishing a Rehabilitation Area.

Any activity/incident that is large in size, long in duration, and/or labor intensive will rapidly deplete the energy and strength of personnel and therefore merits consideration for rehabilitation.



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Climatic or environmental conditions that indicate the need to establish a Rehabilitation Area are a heat stress index above 90 F (see table 1-1) or wind-chill index below 10°F (see table 1-2). This is almost a daily occurrence in the summer-time months.

Hydration

A critical factor in the prevention of heat injury is the maintenance of water and electrolytes.

Water must be replaced during exercise periods and at emergency incidents.

During heat stress, personnel should consume at least 1 to 1-1/2 liters of water per hour.

The rehydration solution should be a 50/50 mixture of water and a commercially prepared activity beverage and administered at about 40°F.

Rehydration is important even during cold weather operations where, despite the outside temperature, heat stress may occur during firefighting or other strenuous activity when protective equipment is worn.

Alcohol and caffeine beverages should be avoided before and during heat stress because both interfere with the body's water conservation mechanisms.

Carbonated beverages should also be avoided.

Nourishment

The department shall provide food at the scene of an extended incident when units are engaged for two or more hours.

A cup of soup, broth, or stew is highly recommended because it is digested much faster than sandwiches and fast food products.

In addition, foods such as apples, oranges, and bananas provide supplemental forms of energy replacement.

Fatty and/or salty foods should be avoided.

Rest

The "two air bottle rule," 30-work time, is recommended as an acceptable level prior to mandatory rehabilitation.



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Personnel shall rehydrate (at least 8 ounces) while SCBA cylinders are being changed.

Firefighters having worked for two full 45-minute rated bottles, or 30 to 45 minutes of continuous work in full turnout gear, shall be immediately placed in the Rehabilitation Area for rest and evaluation. During summer months this time may be reduced based on the daily temperature and humidity factors.

In all cases, the objective evaluation of a firefighter's fatigue level shall be the criteria for rehab time.

Firefighters in rehab should remove turnout clothing and allow the body to naturally cool itself.

Rest shall not be less than ten minutes and may exceed an hour as determined by the Rehab Officer.

Fresh crews, or crews released from the Rehabilitation Sector, shall be available in the Staging Area to ensure that fatigued personnel are not required to return to duty before they are rested, evaluated, and released by the Rehab Officer.

Recovery

Personnel in the Rehabilitation Area should maintain a high level of hydration.

Personnel should not be moved from a hot environment directly into an air conditioned area because the body's cooling system can shut down in response to the external cooling.

An air-conditioned environment is acceptable after a cool-down period at ambient temperature with sufficient air movement.

Certain drugs impair the body's ability to sweat and extreme caution must be exercised if the Firefighter has taken antihistamines, such as "Actifed" or "Benadryl," or has taken diuretics or stimulants.

Medical Evaluation

An EMS crew should staff the Rehab Sector with at least one paramedic to oversee any possible medical treatment that may be needed. Command should be aware that if Firefighters are in need of treatment, additional personnel might have to be assigned to support the Rehab Sector.

Upon entry into rehab, the assigned rehab crew shall record the following:

Crew I.D./member name.

Baseline vitals consisting of pulse, B/P and temp.



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Time entering rehab.

Rehab sector crews should be aware of the possible need of immediate treatment and possible transport of personnel who exhibit the following signs:

Signs of heat stroke.

Temperatures greater than 101 degree F.

Pulses greater than 150 at anytime.

Pulses greater than 140 after cool down period.

Systolic B/P greater than 200 at any time.

Diastolic B/P greater than 120 at any time.

Chest pains.

Shortness of breath.

Altered mental status.

Note: Personnel with protracted nausea, or who have already vomited, will likely require IV rehydration and should be transported to a hospital for medical evaluation.

After a rest period, crews shall reevaluate vital signs, examine personnel, and make proper disposition (return to duty, continued rehabilitation, or medical treatment and transport to medical facility).

Continued rehabilitation should consist of additional monitoring of vital signs, providing rest, and providing fluids for rehydration.

Medical treatment for personnel, whose signs and/or symptoms indicate potential problems, should be provided in accordance with Mason County EMS Protocols.

EMS personnel shall be assertive in an effort to find potential medical problems early.

Heart Rate and Temperature - The heart rate should be measured for 30 - seconds as early as possible in the rest period.

If a Firefighter's heart rate exceeds 110 beats per minute, a tympanic temperature should be taken.

If the Firefighter's temperature exceeds 100.6 F, he should not be permitted to wear protective equipment.



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If it is below 100.6°F and the heart rate remains above 110 beats per minute, rehabilitation time should be increased.

If the heart rate is less than 110 beats per minute, the chance of heat stress is negligible.

Documentation - All medical evaluations shall be recorded on the Rehabilitation Form along with the personnel's name and complaints. Each entry on the form be signed, dated and timed by the Rehab Officer or his designee.

Accountability

Personnel assigned to the Rehabilitation sector shall enter and exit the Rehabilitation Area as a crew.

The crew designation, number of crewmembers, and the times of entry to and exit from the Rehabilitation Area shall be documented by the Rehab Officer or his/her designee on the Team Check-In/Out Sheet. Crews shall not leave the Rehabilitation Area until authorized to do so by the Rehab Officer. The Rehab Officer shall notify Command of any personnel who have not rotated through the Rehabilitation Area.

All completed forms shall be included in the incident documentation.

