



KOOTENAI COUNTY FIRE MODEL PROCEDURE

SECTION 7 – Firefighter Rehabilitation

1.0 PURPOSE

- 1.1 This model procedure is endorsed by the Kootenai County Fire Chiefs Association (KCFCA) as a template for planning and training for all fire departments and districts in Kootenai County.
- 1.2 To encourage Incident Commanders to employ incident rehab as a common practice thus enhancing responder safety.
- 1.3 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 jeopardizes the safety of each member or the safety and integrity of the operations.
- 1.4 To provide a common guideline for interagency operations.

2.0 RESPONSIBILITY

- 2.1 Kootenai County fire agencies are encouraged to review the document on an annual basis and provide any suggested changes to the Kootenai County Fire Chiefs Association for review.

3.0 REFERENCES

- 3.1 NFPA 1584 Standard on the Rehabilitation of Members Operating at Incident Scene Operations and Training Exercises

4.0 Scope

- 4.1 This procedure applies to emergency operations and training exercises where strenuous physical activity or exposure to heat or cold exists.

5.0 MODEL PROCEDURE

5.1 Responsibilities

- 5.1.1 Incident Commander: The Incident Commander (IC) 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. Provisions should include medical evaluation, monitoring, treatment, food and fluid replenishment, mental rest, and relief from extreme climatic conditions and other environmental parameters of the incident. The rehabilitation includes the provision of Emergency Medical Services (EMS) at the Basic Life Support (BLS) level or higher.

5.1.2 Supervisors: All supervisors are to maintain an awareness of the condition of each member operating within their span of control and ensure that adequate steps are taken to provide for each member's safety and health. The command structure shall be utilized to request relief and the reassignment of fatigued crews.

5.1.3 Personnel: During periods of hot weather, members are encouraged to drink water and activity beverages (sports drinks with electrolyte replacement, energy drinks should be discouraged) throughout the workday. During any emergency incident or training evolution, all members shall advise their supervisor when they believe 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. Members should also remain aware of the health and safety of other members of their crew.

5.2 Establishment of Rehabilitation Area

5.2.1 Responsibility: The IC will establish a Rehabilitation Unit/Group/Division when conditions indicate that rest and rehabilitation is needed. An officer, or chief, of a member (KCFCA) department shall be placed in charge of the area and shall be titled using the appropriate NIMS/ICS terminology. The Rehab Unit Leader will typically report to the Logistics Section Chief in the framework of the incident management system on a large (Type I, II or III) incident. However, in most Kootenai County incidents requiring Rehab, the Logistics Section is rarely activated. If no Logistics Section is activated Rehab should fall under the Medical Branch Director or Medical Group Supervisor (based on the established NIMS/ICS structure) responsible to the Incident Commander or Operations Section Chief (if activated).

5.2.2 It may be necessary, depending on available resources and sudden changes in the incident, to shift resources between Rehab, Triage, Treatment and Transport under the auspices of "Medical"

5.2.3 During a large incident (Type I, II or III) "Rehab" should be separate (under the Logistics Section) of "Medical" however, work closely together for the purposes of transporting rehab patients if the need arises.

5.3 Location

- 5.3.1 The officer responsible for Medical and/or Rehab (“Medical”) should designate a location for the Rehabilitation Area. If a specific location has not been designated, said officer shall select an appropriate location based on the site characteristics and designations below.
- 5.3.2 It should be in 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.
- 5.3.3 It should be far enough away from the scene that members may safely remove their turnout gear and SCBA and be afforded rest from the stress and pressure of the emergency operation or training evolution.
- 5.3.4 It should provide suitable protection from the prevailing environmental conditions. During hot weather, it should be in a cool, shaded area. During cold weather, it should be in a warm, dry area.
- 5.3.5 It should enable members to be free of exhaust fumes from apparatus, vehicles, or equipment (including those involved in the rehabilitation operations).
- 5.3.6 It should be large enough to accommodate multiple crews, based on the size of the incident.
- 5.3.7 It should be easily accessible by EMS units.
- 5.3.8 It should allow prompt re-entry back into the emergency operation upon complete recuperation.

5.4 Resources

- 5.4.1 “Medical” shall secure all necessary resources required to adequately staff and supply the Rehabilitation Area. The following supplies are some items that may be necessary, depending on incident needs:
- 5.4.2 Fluids - water, activity beverage, oral electrolyte solutions, and ice activity beverages (sports drinks with electrolyte replacement, energy drinks should be discouraged).
- 5.4.3 Food - soup, stew, sandwiches, etc.
- 5.4.4 Medical – BLS and ALS equipment
- 5.4.5 Other - awnings, fans, tarps, heaters, dry clothing, floodlights, blankets, towels, traffic cones, and fire line tape (to identify the entrance and exit of the Rehabilitation Area).

5.5 Guidelines

- 5.5.1 Rehabilitation Area Establishment: Rehabilitation should be considered during the initial planning stages of an emergency response. 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. Environmental conditions that indicate the need to establish a Rehabilitation Area are heat stress index above 80o F or wind chill index below 20o F.

- 5.5.2 Hydration: It is critical that water and electrolytes be replaced during exercise periods and at emergency incidents. During heat stress, the member should consume at least one quart of water per hour. Recommended rate is 1-2 quarts over a 15-minute time span. Hydration 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. energy drinks should be discouraged.
- 5.5.3 Nourishment: The district shall provide food at the scene of an extended incident when units are engaged for three or more hours; i.e. soup, stew or sandwiches. In addition, apples, oranges, and bananas provide supplemental forms of energy replacement. Fatty and/or salty foods should be avoided. Prior to ingesting anything orally, it is recommended that personnel clean their hands and face with water and a cleaning agent or an approved waterless hand cleaner.
- 5.5.4 Rest: The “two air bottle rule” if using 30 minute bottles, one bottle if using 45 minute bottles, or 40 minutes of intense work without an SCBA is recommended as an acceptable level prior to mandatory rehabilitation. Members should hydrate (at least eight ounces) while SCBA cylinders are being changed. Firefighters having worked for two full 30 minute rated bottles, or 40 minutes, should be placed in the Rehabilitation Area for rest and evaluation. In all cases, the objective evaluation of member’s fatigue level shall be the criteria for rehab time. Rest should not be less than ten minutes and may exceed an hour as determined by the Rehab Officer.
- 5.5.5 Recovery: Members in the Rehabilitation Area should maintain a high level of hydration. Members 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 member has taken antihistamines, diuretics, or stimulants. energy drinks should be discouraged)

- 5.5.6 Medical Evaluations: EMS should be provided and staffed by the most highly trained and qualified EMS personnel on the scene (at a minimum of BLS level). They should examine members, evaluate vital signs, and make a proper decision concerning the member's return to duty, continued rehabilitation, or medical treatment and transport to a medical facility. Continued rehabilitation should consist of additional monitoring of vital signs, providing rest, and fluids for hydration.
- 5.5.7 Medical treatment for members whose signs and/or symptoms indicate potential problems should be provided in accordance with EMS protocols. EMS personnel should:
- 5.5.8 Be assertive in an effort to find potential medical problems early
- 5.5.9 Check Heart Rate and Temperature- the heart rate should be measured for 30 seconds as early as possible in the rest period. If a member's heart rate exceeds 110 beats per minute, an oral temperature should be taken if possible. If the member's temperature exceeds 100.6°F, he/she should not be permitted to wear protective equipment. If it is below 100.6°F and the heart rate remains above 110 beats per minutes after a 20 minute rehabilitation period, rehabilitation time should be increased, and the firefighter should be further monitored. Part of additional monitoring would include orthostatic pulse and blood pressure. If the heart rate is less than 110 beats per minute, the chance of heat stress is negligible.
- 5.5.10 Check Blood Pressure- A member whose blood pressure is greater than 160 systolic and/or 100 diastolic should not be released from rehabilitation until further evaluation. These members should continue to be monitored and treated if necessary.
- 5.5.11 Any firefighter exposed to carbon monoxide (CO) or presenting with headache, nausea, shortness of breath, or gastrointestinal symptoms at an incident where CO is present should be assessed for carbon monoxide poisoning. If available a CO-oximeter (ex: RAD57) should be utilized to measure the levels of carboxyhemoglobin (COHb) in a person's blood stream. Nonsmokers' COHb levels are normally 0-5% and smokers' are from 5-10%. Any readings in excess of those numbers and the person should undergo immediate medical attention.
- 5.5.12 If conditions persist following 20-minutes of further rest, the individual should further evaluated and immediately receive additional treatment if necessary. Those complaining of chest pain, difficulty breathing, and/or altered mental status must receive immediate ALS treatment and transport to definitive care following EMS protocols.

5.5.13 Documentation- All medical evaluations shall be recorded and include the member's name and complaints and must be signed, dated, and timed by the Rehab Officer or his/her designee.

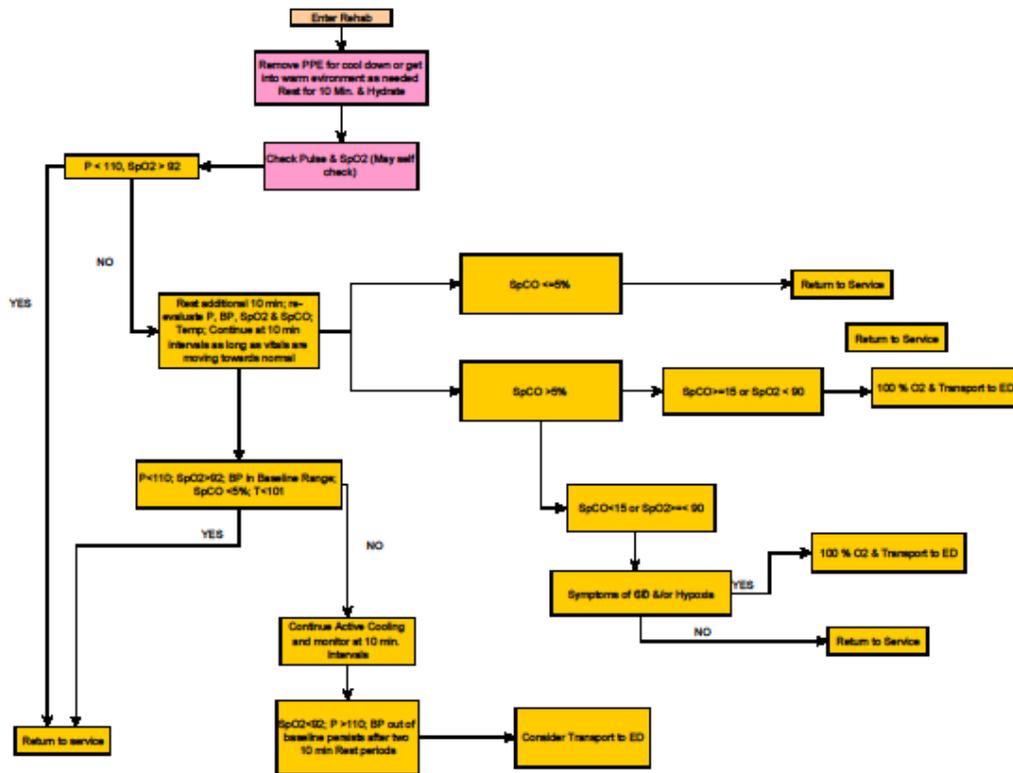
5.6 Accountability

5.6.1 Members assigned to the Rehabilitation Area shall enter the Rehabilitation Area as a crew. The crew designation, number of crewmembers, and the times of entry to and exit from the Rehabilitation Area are to be documented by "Rehab" or his/her designee. Crews are not to leave the Rehabilitation Area until authorized to do so by "Rehab" and/or "Medical". Fresh crews, or crews released from the Rehabilitation Area shall be available in the Staging Area to ensure the fatigued members are not required to return to duty before they are rested, evaluated, and released by the "Rehab". If one or more members of a crew are unable to return to service with the rest of the crew, "Rehab" shall notify the appropriate person(s) within the NIMS/ICS structure and then release the remaining crewmembers for service.

5.7 Checklists and job aids.

Firefighter Rehab Form

Incident #							Date	/ /		Unit		
Name							Time In	:		Time Out	:	
Time	B/P	Pulse	Resp	SaO2	CO	Skin	Temp	Cap Refill	GCS	Lung Sounds	Pupils	
:	/			%	%							
:	/			%	%							
:	/			%	%							
Name							Time In	:		Time Out	:	
Time	B/P	Pulse	RR	SaO2	CO	Skin	Temp	Cap Refill	GCS	Lung Sounds	Pupils	
:	/			%	%							
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Name							Time In	:		Time Out	:	
Time	B/P	Pulse	RR	SaO2	CO	Skin	Temp	Cap Refill	GCS	Lung Sounds	Pupils	
:	/			%	%							
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Name							Time In	:		Time Out	:	
Time	B/P	Pulse	RR	SaO2	CO	Skin	Temp	Cap Refill	GCS	Lung Sounds	Pupils	
:	/			%	%							
:	/			%	%							
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rehab flow chart.pdf

SUGGESTED REHAB KIT CONTENTS

- 1. "REHAB" Signs**
- 2. Drinking water and/or sport drink**
- 3. Three buckets for wetting towels (1-bleach rinse, 1-water rinse, 1-cooling water)**
- 4. Towels (to use for wetting to provide cooling)**
- 5. Bleach**
- 6. Portable heater (winter operations)**