

YOSEMITE COMMUNITY COLLEGE DISTRICT
MODESTO JUNIOR COLLEGE
COLUMBIA COLLEGE



IIPP APPENDIX—E

HEAT ILLNESS PREVENTION PLAN

Risk Management
June 2016

HEAT ILLNESS PREVENTION PLAN

1.0 INTRODUCTION

YCCD makes every attempt to control and reduce the hazards of heat illness. The YCCD Heat Illness Prevention Program is intended to prevent heat illness by establishing procedures, training supervisors, providing access to water and shade, and training employees who are at risk for environmental heat.

The elements reflected within this Heat Illness Prevention plan are those contained in Title 8 of the California code of Regulations, Section 3395 (T8 CCR 3395). These guidelines apply to all employees and volunteers whose primary job assignment involve outdoor work and may be exposed to environmental risk factors that could place the individual at risk of heat-related illness.

2.0 GENERAL PROCEDURES

- 2.1 New employees will be trained on these procedures before exposing them to environmental heat.
- 2.2 Employees will be conditioned to working in hot environments through acclimatization. As outdoor temperatures rise in the spring, employees will follow the acclimatization guidelines mentioned below in this appendix. Supervisors will ensure that new employees are acclimatized prior to assigning them to working a full shift in hot temperatures.
- 2.3 For employees who are regularly working outdoors, there will be short, “tailgate” meetings to remind them about the importance of frequent water consumption throughout the shift, seeking shade appropriately, and watching for heat illness in themselves and other employees.
- 2.4 Supervisors are responsible for ensuring that all employees who are at risk for heat illness are trained annually on this program.

Emergency Response Procedures

- 2.5 If an employee has any symptoms of heat illness, first-aid procedures should be initiated without delay. Common early signs and symptoms of heat illness include headache, muscle cramps, and unusual fatigue. However, progression to more serious illness can be rapid, and can include loss of consciousness, seizures, mental confusion, unusual behavior,

nausea or vomiting, hot dry skin, or unusually profuse sweating (see Section 7.0 Heat Illness Symptoms and First Aid for additional information).

Any employee exhibiting any of the above mentioned symptoms requires immediate attention. Even the initial symptoms may indicate serious heat exposure. If medical personnel are not immediately available on-site and serious heat illness is suspected, emergency medical personnel should be immediately contacted and on-site first aid undertaken. No employee with symptoms of possible serious heat illness should be left unattended or sent home without medical assessment and authorization.

- 2.6 All supervisors and employees must be trained to recognize and respond to symptoms of possible heat illness.
- 2.7 If any employee exhibits signs or symptoms of heat stroke emergency medical services must be contacted. Supervisors must be able to provide clear and precise directions to the worksite and should carry cell phones or other means of communication to ensure the emergency services can be called.

High Heat Procedures

- 2.8 High heat procedures are additional preventative measures taken when the temperature equals or exceeds 95 degrees Fahrenheit. These procedures will include the following:
 - 2.8.1 When temperatures equal or exceed 95 degrees Fahrenheit supervisors will implement high heat procedures and modify work times and/or allow for more access to water and shade. Supervisors will continually check on employees and stay alert to the presence of heat related symptoms.
 - 2.8.2 The supervisor will ensure effective employee observation/monitoring by implementing one or more of the following:
 - a. Supervisor or designee observation of 20 or fewer employees, or
 - b. Mandatory buddy system, or
 - c. Regular communication with sole employee such as by radio or cellular phone, or
 - d. Other effective means of observation.
 - 2.8.3 Designate one or more employees on each worksite as authorized to call for emergency medical services, and allowing other employees to

- call for emergency services when no designated employee is available.
- 2.8.4 Remind employees throughout the work shift to drink plenty of water.
- 2.8.5 Pre-shift meeting before employees to drink plenty of water, and remind employees of their right to take a cool-down rest when necessary.

- 2.9 Employees will be encouraged to wear head gear when temperatures equal or exceed 95 degrees.

3.0 DEFINITIONS:

- 3.1 Acclimatization: Temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.
- 3.2 Heat Illness: A serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.
- 3.3 Environmental Risk Factors for Heat Illness: Working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.
- 3.4 Personal Risk Factors for Heat Illness: Factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medication that affect the body's water retention or other physiological responses to heat.
- 3.5 Preventative Recovery Period: A period of time to recover from the heat in order to prevent heat illness.
- 3.6 Shade: Blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning. The shade should not expose employees to unsafe or unhealthy conditions and does not deter or discourage access or use.

4.0 ACCLIMATIZATION:

The ability to acclimatize varies among workers. Generally, individuals in good physical condition acclimatize more rapidly than those in poor condition. Approximately one

week of gradually increasing the workload and time spent in the hot environment will usually lead to full acclimatization. On the first day the individual performs 50 percent of the normal workload and spends 50 percent of the time in the hot environment. Each day, an additional 10 percent of the normal workload and time is added so that by day six, the worker is performing the full workload for an entire day. The exposure time should be at least two hours per day for acclimatization to occur. It should be noted that new employees are among those most at risk of suffering the consequences of inadequate acclimatization and will be closely observed for their first two weeks on the job. Supervisors with new employees should be extra-vigilant during the acclimatization period, and respond immediately to signs and symptoms of possible heat illness. Also, employees should be closely observed by a supervisor or designee during a heat wave. For purposes of this section only, “heat wave” means any day in which it is predicted high temperature for the day will be at least 80 degrees Fahrenheit and at least ten degrees Fahrenheit higher than the average high daily temperature in the preceding five days.

5.0 PROVISION OF WATER:

The unit managers will provide access to fresh, pure and suitably cool, potable drinking water for employees. The water is provided to employees free of charge located as close as practicable to where the employees are working, with exception when it is demonstrated that it is infeasible. When environmental risk factors for heat illness exist, and in those areas where water is not plumbed or otherwise continuously supplied, water shall be provided in sufficient quantity at the beginning of the work shift to provide one quart per employee per hour for drinking for the entire shift (one gallon every four hours). Employees may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water shall be encouraged. Employees are also encouraged to begin drinking water prior to work.

Unit managers will take the following steps to ensure employees have access to water:

- A. Provide access to drinking fountains
- B. Supply water cooler/dispenser and single service cups
- C. Supply sealed one time use water containers

Drinking water and water dispensers will meet the following requirements:

- All sources of drinking water will be clean and in a sanitary condition
- Drinking water must always be kept cool. When temperatures exceed 90 degrees it is recommended that ice be provided to keep the water cool
- Potable drinking water dispensers used to provide water to more than one person will be equipped with a spigot or faucet
- Any container used to store or dispense drinking water will be clearly marked as to the nature of its contents and will not be used for any other purpose

- Dipping or pouring drinking water from containers, such as barrels, pails or tanks, is prohibited regardless of whether or not the containers are fitted with a covers
- The use of shared cups, glasses or other vessels for drinking purposes is prohibited
- Non-potable water will not be used for drinking
- Outlets for non-potable water will be posted in a manner understandable to all employees that the water is unsafe for drinking

6.0 ACCESS TO SHADE:

Supervisors are responsible to ensure that employees have access to a shaded area when the temperature reaches 80 degrees. Even if temperatures do not exceed 80 degrees, shade must still be available. Shaded areas shall accommodate all employees on recovery periods and meal periods and allow employees to sit in the shade without touching each other.

The nearest shaded area must be close and practicable. Usually this means that the shade must be reachable within 2 1/2 minute walk, but in no case more than ¼ mile or a five-minute walk away, whichever is shorter.

Employees suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes in addition to the time needed to access the shade Such access to shade shall be permitted at all times. Examples of shade areas are offices or shop buildings or vehicles with air conditioning. When working in remote areas where shade is not readily available, supervisors shall ensure that vehicles with operative air conditioners are available at the remote worksite or an alternative device (canopy, umbrella) is available at the remote worksite. An individual employee who takes a preventative cool-down rest should be monitored and asked if experiencing symptoms of heat illness. They should be encouraged to remain in the shade and not ordered back to work until any signs or symptoms of heat illness have abated.

If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the supervisor will provide appropriate first aid or emergency response.

If the National Weather Service, as of 5pm the previous day, forecasts the temperature to be over 80 degrees Fahrenheit, shade structures must be available at the beginning of the shift and present throughout the day. Regardless of predicted temperatures, supervisors must always have the capability to provide shade promptly if it is requested by an employee. If the temperatures exceed 90 degrees Fahrenheit, shade must actually be present regardless of the previous day's predicted temperature high.

7.0 HEAT ILLNESS SYMPTOMS AND FIRST AID:

7.1 HEAT CRAMPS

- 7.1.1 Symptoms: Heat cramps are the most common type of heat related injury and probably have been experienced by nearly everyone at one time or another. Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Frequently, they do not occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is not replaced quickly enough. Although heat cramps can be quite painful, they usually do not result in permanent damage.
- 7.1.2 Prevention: Drink electrolyte solutions such as Gatorade or plenty of water during the day to help keep your body hydrated during hot weather and try eating more fruits such as bananas to maintain electrolyte levels in the body.
- 7.1.3 First Aid: Get the victim to a cooler location. Lightly stretch and gently massage affected muscles to relieve spasms. Give sips of up to a half glass of cool water every 15 minutes (do not give liquids with caffeine or alcohol). Discontinue liquids if victim is nauseated.

7.2 HEAT SYNCOPE

- 7.2.1 Symptoms: Faintness, dizziness, headache, increased pulse rate, restlessness, nausea, vomiting, and brief loss of consciousness.
- 7.2.2 First Aid: Get the victim to lie down in the shade or cool area, elevate the feet, drink fluids, and refrain from vigorous activities.

7.3 HEAT EXHAUSTION:

- 7.3.1 Symptoms: Heat exhaustion is more serious than heat cramps. Headache, heavy sweating, intense thirst, fainting or dizziness, fatigue, loss of coordination, nausea, vomiting, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, skin may be cool, pale or flushed, weak and rapid pulse (120-200), and low to normal blood pressure. Normal body temperature is possible, but temperature will likely rise.
- 7.3.2 First Aid: The employee suffering these symptoms should be moved to a cool location such as a shaded area or air-conditioned building. Treat them for shock; have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks if they are mentally aware and capable. Be sure water is consumed slowly. Give half a glass of cool water every 15 minutes. Discontinue water if victim is nauseated. Try to cool them down, and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink appropriate fluids to replace lost body fluids.

Call 911 if the person becomes non-responsive, refuses water, vomits, or loses consciousness.

7.4 HEAT STROKE:

7.4.1 Symptoms: Heat stroke is a life threatening illness with a high death rate. High body temperature (105+); hot, red, dry skin; a distinct absence of sweating (usually); rapid, weak pulse; and rapid shallow breathing. Possible unconsciousness; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, and possibly more severe systems including; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over **108 degrees F!**

A heat stroke victim may first suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage, but this is not always the case. Victim will probably not sweat unless victim was sweating from recent strenuous activity. It should be noted that, on the job, heat stroke may be mistaken for a heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke, and to check for them anytime an employee collapses while working in a hot environment.

7.4.2 First Aid: Call 911 or emergency medical services immediately or immediately get the victim to a hospital. Delay can be fatal. It is vital to lower a heat stroke victim's body temperature. Quick actions can mean the difference between life and death. Move victim to a cooler environment. Remove clothing. Pour water on them, fan them, or apply cold packs, behind the neck, in armpits, in the groin area. Watch for breathing problems.

8.0 PRECAUTIONS FOR PREVENTING HEAT ILLNESS

Awareness of heat illness symptoms can save your life or the life of a co-worker

- 8.1 If you are coming back to work from an illness or an extended break or you are just starting a job working in the heat, it is important to be aware that you are more vulnerable to heat stress until your body has time to adjust. Let your employer know you are not used to the heat. It takes about 5 – 7 days for your body to adjust.
- 8.2 Drinking plenty of water frequently is vital to workers exposed to the heat. An individual may produce as much as 2 to 3 gallons of sweat per day. In order to replenish that fluid the worker should drink 3 to 4 cups of water every hour starting at the beginning of your shift.
- 8.3 Taking frequent breaks in a cool shaded area and allow time for recovery from the heat during the day, especially if you notice you're getting a headache or

- you start feeling overheated. Assure that adequate water and shade are available at the job site before work begins.
- 8.4 Avoid or limit the use of alcohol and caffeine during periods of extreme heat. Both dehydrate the body. Electrolyte drinks are good for replacing both water and minerals lost through sweating.
 - 8.5 When working in the heat, be sure to pay extra attention to your co-workers and be sure you know how to call for medical attention. If you or a co-worker start to feel symptoms such as nausea, dizziness, weakness or unusual fatigue, let your supervisor know and rest in a cool shaded area. If symptoms persist or worsen seek immediate medical attention.
 - 8.6 Whenever possible, wear clothing that provides protection from the sun but allows airflow to the body. Protect your head and shade your eyes if working outdoors. Use sunscreen with a sun protection factor (SPF) of 15 or more. Relocate working areas to the shade if possible.
 - 8.7 Schedule vigorous outdoor activity for cooler times of the day, such as early morning, when possible. Work/rest schedules should be adjusted in correlation to increasing temperatures. Cycles of shorter work shifts and more frequent rest periods are preferable.
 - 8.8 Check the forecast and review the Heat Index. The Heat Index chart will indicate when combinations of heat and humidity can be dangerous for employees. Realize that direct sun can add as much as 15 degrees to the heat index.
 - 8.9 You should immediately report all unsafe conditions and/or concerns to your supervisor or area manager.

9.0 TRAINING

Training is critical to help reduce the risk of heat related illnesses and to assist with obtaining emergency assistance without delay.

9.1 EMPLOYEE TRAINING:

Training in the following topics shall be provided to all supervisory and non-supervisory employees who have exposure to environmental risk factors for heat illness:

- 9.1.1 Environmental and personal risk factors for heat illness;
- 9.1.2 The YCCD policy for dealing with heat illness, including but not limited to responsibility to provide water, shade, cool-down rests, emergency response and access to first aid;
- 9.1.3 The importance of frequent consumption of small quantities of water, up to four (4) cups per hour under extreme conditions of work and heat;
- 9.1.4 The concept, importance and methods of acclimatization pursuant to YCCD procedures;
- 9.1.5 The different types of heat illness and the common signs and symptoms of heat illness, and appropriate first aid and/or emergency responses to the different types of heat illness, and in addition that heat illness may

progress quickly from mild symptoms and signs to serious and life threatening illness;

- 9.1.6 The importance of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves or in co-workers;
- 9.1.7 The procedures for responding to symptoms of possible heat illness;
- 9.1.8 Procedures for contacting emergency medical services and if necessary for transporting employees to a point where they can be reached by emergency medical services;
- 9.1.9 How to provide clear and precise directions to the worksite.

9.2 SUPERVISOR TRAINING:

Prior to assignment to supervision of employees working in the heat, training on the following topics shall be provided.

- 9.2.1 The information required to be provided by section 9.1 above.
- 9.2.2 The procedures the supervisor is to follow to implement the heat illness policy.
- 9.2.3 The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.