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LIGHTNING SAFETY GUIDELINES FOR YMCAS

The information in this material (formerly provided through YMCA Services Corporation) are recommendations and should be used as a resource for managing safety risks. These guidelines and suggestions are for informational purposes only. This material is not intended to be a substitute for professional risk management advice and evaluation.

GENERAL GUIDELINES

There are a number of risks associated with YMCA activities. One of these is lightning. Lightning can affect programs whether they are indoor or outdoors. All YMCAs must plan ahead for lightning storms and strikes by including lightning safety procedures in their emergency plan. Summer is the primary risk season for lightning strikes with Florida regularly experiencing the highest rate of strikes.

On average, lightning causes more casualties annually in the US than any other storm related phenomena, except floods. Many people incur injuries or are killed due to misinformation and inappropriate behavior during thunderstorms. A few simple precautions can reduce many of the dangers posed by lightning.

The National Lightning Safety Institute recommends the following practices to reduce the risk of being struck by lightning:

- Plan in advance — when you first hear thunder or see lightning take immediate action. Go into a building or inside a vehicle. Lightning typically precedes rain, so don't wait for the rain to start to suspend your activities.
- If you are outdoors — avoid water, stay off high ground, and avoid open spaces. Stay away from all metal objects, including electric wires, fences, machinery, motors, power tools, etc. Unsafe places include underneath canopies, open air pavilions, small picnic or rain shelters, or near trees. Where possible find shelter in a substantial building or in a fully enclosed metal vehicle, such as a car, truck, or van. Keep the windows completely shut. Avoid touching any metal in the vehicle.
- If indoors — avoid water. Stay away from doors and windows. Do not use telephones with cords. Take off headsets. Turn off and stay away from appliances, computers, power tools, and TV sets. Lightning may strike outside electric and phone wires causing shocks to travel inside.
- Suspend activities for thirty minutes after the last observed lightning or thunder.
- Injured persons do not carry an electrical charge and can be handled safely. Render first aid if qualified to do so. Call 911.
- Know your emergency telephone numbers.

There is no safe place outdoors in a lightning storm. When a safe place in a building or in a vehicle is not nearby, the National Weather Service recommends the following last resort actions to lessen the threat of being struck by lightning:

- Do not seek shelter under tall isolated trees! Stay away from all tall isolated objects. Lightning typically strikes the tallest object; that could be you in an open field or clearing.
- Do not seek shelter under partially enclosed buildings.
- Know the weather patterns of the area. For example, in mountainous areas lightning storms develop in early afternoon, so plan your hike early in the day and be off the mountain before then.
- Know the forecast for your area. If a high chance of lightning storms is predicted curtail your plans or reschedule (avoid the risk).

- Do not place your campsite in an open field or on the top of a hill or ridge. A tent offers no protection from lightning. If you are in a forest stay in a lower stand of trees. If you are camping in an open area, locate your site in a ravine or valley.
- If lightning is striking nearby and you are outdoors you should: Crouch down, put feet together and put hands over your ears to minimize hearing damage from thunder.

DEVELOPING AN EMERGENCY ACTION PLAN

The following steps should be included in a YMCAs emergency plan:

1. Designate a chain of command as to who monitors threatening weather and who makes the decision to move a program or event. An emergency plan should include planned instructions for participants, staff, parents, and bystanders.
2. Obtain a weather report each day during lightning season. Be aware of potential thunderstorms that may form during YMCA facility hours or activities.
3. Be aware of National Weather Service-issued thunderstorm "watches" and "warnings" as well as the signs of thunderstorms developing nearby. A "watch" means conditions are favorable for severe weather to develop in an area; a "warning" means that severe weather has been reported in an area and for everyone to take proper precautions.
4. Know where the closest safe area, structure, or location is in the facility or outdoors. Know how long it takes to get to that safe area structure or location. Safe area, structure, or location is defined as:
 - a. Any building or indoor area normally occupied or frequently used by people. Avoid using wet areas for safe shelter and do not use the phones, showers, or plumbing facilities during a thunderstorm.
 - b. In the absence of a sturdy, frequently inhabited building, any vehicle (cars, vans, or busses) with a hard metal roof and rolled-up windows can provide a measure of safety. It is not the rubber tires that make a vehicle a safe shelter, but the hard metal roof which dissipates the lightning strike around the vehicle. **DO NOT TOUCH THE SIDES OF THE VEHICLE!**
5. Be aware of how close lightning is occurring. If the leader sees a flash or hears thunder, the activities should be terminated until thirty minutes after the last flash or sound of thunder.

CLOSING INDOOR POOLS DUE TO LIGHTNING

As most of us know, lightning is part of a severe weather storm where electrical surges head from the clouds towards the earth or from the ground towards the sky. Lightning is generally thought of as a threat to outdoor facilities, but inside the building there is also a threat of electrocution. Simply put, if there is an electrical storm outside - you should evacuate the indoor pool and other wet areas of the facility.

What are some of the precautions that must be made? Your facility must be totally grounded and bonded. A licensed electrician this must certify this through an inspection that result in a letter or certificate being sent to the YMCA stating that the pool is certified bonded and grounded. What do these things mean?

Bonded - All of the metal parts, motors, brackets, cable, and remote panels should be connected (bonded) together to provide a grid.

Grounded - this grid, along with any other machinery, should be grounded to allow the electric surge to escape the facility without disrupting any systems or injuring anyone.

There may be some resistance from any members and guests who are using the pool and other wet areas at the time of the lightning storm, but it is for their own protection to evacuate. Your YMCA should make a policy to evacuate the pool and other wet areas when lightning is present, threatening, or when the conditions are right. The pool and shower areas should be evacuated until 30 minutes after the last evidence of lightning is present. While bonding and grounding may add a level of protection, there is no way to completely reduce the risk so the YMCA should still evacuate the pool and other wet areas to ensure safety.

SUMMARY

Avoid unnecessary exposure to the lightning threat during thunderstorm activity. Follow the safety recommendations listed in this document to reduce the opportunity for lightning related incidents. Teachers, camp counselors, coaches, lifeguards, and other adults must take responsibility for the safety of children in their care. A weather radio, lightning detector, and the use of weather reports can help to warn and inform program leaders. A pre-established and practiced written emergency plan is the best way to manage the risk of lightning strikes.

If lightning occurs in the area, then outdoor pools, indoor pools, whirlpools, steam rooms, saunas, and showers should be vacated. Lightning should be considered to be in the area when one or more of the following occurs:

1. Lightning is seen
2. Thunder is heard
3. A severe thunderstorm or tornado warning has been issued for the local area
4. Notification from a lightning detection network are detected within a few miles or appear to be approaching the local area

The National Weather service recommends using the 30/30 rule when considering the suspension of activities or the evacuation of wet areas and pools.

The "30/30" lightning safety rule is defined as the following:

1. It is strongly recommended that you should seek safe shelter when you first hear thunder, observe lightning or see dark threatening clouds developing overhead. You should already be in a safe location when the time between the lightning flash and the rumble of thunder is 30 seconds or less.
2. You should not resume activities until after 30 minutes after the last audible thunder.

NOTUS - An Interactive and Personalized Weather Alerting Engine:

NOTUS alerts you of lightning and many weather warnings via cell phone, mobile device and e-mail. The program is available to non-profit organizations through Struck by Lightning. A unique feature of NOTUS is its interactive capability to manage your weather alerting on the Internet via an intuitive interactive Google Map interface allowing you to move the location for alerting and choose between a variety of alerting and forecast options. This service is available to YMCAs for as low as \$48 per year. More information is available from: www.struckbylightning.org

ADDITIONAL RESOURCES:

Additional information on lightning can be found on the Internet at:
National Lightning Safety Institute - <http://www.lightningsafety.com>
National Weather Service - <http://www.noaa.gov/>
Struck by Lightning - www.struckbylightning.org

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