Training Module 5

Building and Physical Premises Safety, including Identification of and Protection from Hazards that can cause Bodily Injury such as Electrical Hazards, Bodies of Water, and Vehicular Traffic
Building and Physical Premises Safety, including Identification of and Protection from Hazards that can cause Bodily Injury such as Electrical Hazards, Bodies of Water, and Vehicular Traffic

Electrical Hazards

The most likely cause of electric shock for young children happens when they bite into electrical cords, or try to poke metal objects into outlets or appliances. Some outlet covers can be pried off easily by children. Cords that hang down from appliances are especially attractive for children to pull on. All electrical cords should be examined end-to-end, especially at the plug, to be sure that wires are not exposed. Lightning is a powerful electrical hazard – if you can hear thunder, lightning is in the area.

Caring for our Children (CFOC) standards that have been attached in conjunction with this section:

- 5.2.4.1 Electrical service
- 5.2.4.2 Safety covers and shock protection devices for electrical outlets
- 5.2.4.6 Electrical cords

Centers Located Near Bodies of Water

Drowning is the 2nd leading cause of unintentional injury-related death for children ages one to fourteen. Drowning usually occurs in familiar surroundings, and happens quickly, usually after being out of sight for less than 5 minutes. If the center is located near a pool, creek, or other body of water, you can’t depend on the fences to totally protect children. They must be under direct supervision at all times. Containers with liquid are also a drowning hazard: Young children who fall head first into a 5-gallon bucket with straight sides are rarely able to get out without help.

CFOC standards that have been attached in conjunction with this section:

- 1.1.1.5 Ratios and supervision for swimming, wading, and water play
- 2.2.0.4 Supervision near bodies of water
- 6.1.0.6 Location of play areas near bodies of water
- 6.3.1.1 Enclosure of bodies of water
- 6.3.1.7 Pool safety rules
Chapter 5: Facilities, Supplies, Equipment, and Environmental Health

5.2 Quality of the Outdoor and Indoor Environment

5.2.4 Electrical Fixtures and Outlets

Standard 5.2.4.1: Electrical Service

Facilities should be supplied with electric service. Outlets and fixtures should be installed and connected to the source of electric energy in a manner that meets the National Electrical Code, as amended by local electrical codes (if any), and as certified by an electrical code inspector.

RATIONALE:

Proper installation of outlets and fixtures helps to prevent injury.

COMMENTS:

State or local electrical codes may apply. For further information, see the National Fire Protection Association's (NFPA) National Electrical Code and the NFPA 101: Life Safety Code from the NFPA (1).

TYPE OF FACILITY:

Small Family Child Care Home, Center, Large Family Child Care Home

REFERENCES:

Chapter 5: Facilities, Supplies, Equipment, and Environmental Health

5.2 Quality of the Outdoor and Indoor Environment

5.2.4 Electrical Fixtures and Outlets

Standard 5.2.4.2: Safety Covers and Shock Protection Devices for Electrical Outlets

All electrical outlets accessible to children who are not yet developmentally at a kindergarten grade level of learning should be a type called "tamper-resistant electrical outlets." These types of outlets look like standard wall outlets but contain an internal shutter mechanism that prevents children from sticking objects like hairpins, keys, and paperclips into the receptacle (2). This spring-loaded shutter mechanism only opens when equal pressure is applied to both shutters such as when an electrical plug is inserted (2,3).

In existing child care facilities that do not have "tamper-resistant electrical outlets," outlets should have "safety covers" that are attached to the electrical outlet by a screw or other means to prevent easy removal by a child. "Safety plugs" should not be used since they can be removed from an electrical outlet by children (2,3).

All newly installed or replaced electrical outlets that are accessible to children should use "tamper-resistant electrical outlets."

In areas where electrical products might come into contact with water, a special type of outlet called Ground Fault Circuit Interrupters (GFCIs) should be installed (2). A GFCI is designed to trip before a deadly electrical shock can occur (1). To ensure that GFCIs are functioning correctly, they should be tested at least monthly (2). GFCIs are also available in a tamper-resistant design.

RATIONALE:

Tamper-resistant electrical outlets or securely attached safety covers prevent children from placing fingers or sticking objects into exposed electrical outlets and reduce the risk of electrical shock, electrical burns, and potential fires (2). GFCIs provide protection from electrocution when an electric outlet or electric product may come into contact with water (1).

Approximately 2,400 children are injured annually by inserting objects into the slots of electrical outlets (2,3). The majority of these injuries involve children under the age of six (2,3).

Plastic safety plugs inserted into electric outlets are not the safest option since they can easily be removed by children and, depending on their size, present a potential choking hazard if placed in a child's mouth (3).

COMMENTS:

One type of outlet cover replaces the outlet face plate with a plate that has a spring-loaded outlet cover, which will stay in place when the receptacle is not in use. For receptacles where the facility does not intend to unplug the appliance, a more permanent cap-type cover that screws into the outlet receptacle is available. Several effective outlet safety devices are available in home hardware and infant/children stores (4).

TYPE OF FACILITY:
Small Family Child Care Home, Center, Large Family Child Care Home

RELATED STANDARDS:

5.2.4.3 Ground-Fault Circuit-Interrupter for Outlets Near Water

REFERENCES:


Chapter 5: Facilities, Supplies, Equipment, and Environmental Health

5.2 Quality of the Outdoor and Indoor Environment

5.2.4 Electrical Fixtures and Outlets

Standard 5.2.4.6: Electrical Cords

Electrical cords should be placed beyond children's reach.

RATIONALE:

Severe injuries have occurred in child care when children have pulled appliances like crock-pots down onto themselves by pulling on the cord (1). Injuries have occurred in child care when children pulled appliances such as tape players down on themselves by pulling on the cord (2). When children chew on an appliance cord, they can reach the wires and suffer severe disfiguring mouth injuries (3).

TYPE OF FACILITY:

Small Family Child Care Home, Center, Large Family Child Care Home

REFERENCES:


Chapter 1: Staffing

1.1 Child:Staff Ratio, Group Size, and Minimum Age

1.1.1 Child:Staff Ratio and Group Size

Standard 1.1.1.5: Ratios and Supervision for Swimming, Wading, and Water Play

The following child:staff ratios should apply while children are swimming, wading, or engaged in water play:

<table>
<thead>
<tr>
<th>Developmental Levels</th>
<th>Child:Staff Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants</td>
<td>1:1</td>
</tr>
<tr>
<td>Toddlers</td>
<td>1:1</td>
</tr>
<tr>
<td>Preschoolers</td>
<td>4:1</td>
</tr>
<tr>
<td>School-age Children</td>
<td>6:1</td>
</tr>
</tbody>
</table>

Constant and active supervision should be maintained when any child is in or around water (4). During any swimming/wading/water play activities where either an infant or a toddler is present, the ratio should always be one adult to one infant/toddler. The required ratio of adults to older children should be met without including the adults who are required for supervision of infants and/or toddlers. An adult should remain in direct physical contact with an infant at all times during swimming or water play (4). Whenever children thirteen months and up to five years of age are in or around water, the supervising adult should be within an arm’s length providing “touch supervision” (6). The attention of an adult who is supervising children of any age should be focused on the child, and the adult should never be engaged in other distracting activities (4), such as talking on the telephone, socializing, or tending to chores.

A lifeguard should not be counted in the child:staff ratio.

RATIONALE:

The circumstances surrounding drownings and water-related injuries of young children suggest that staffing requirements and environmental modifications may reduce the risk of this type of injury. Essential elements are close continuous supervision (1,4), four-sided fencing and self-locking gates around all swimming pools, hot tubs, and spas, and special safety covers on pools when they are not in use (2,7). Five-gallon buckets should not be used for water play (4). Water play using small (one quart) plastic pitchers and plastic containers for pouring water and plastic dish pans or bowls allow children to practice pouring skills. Between 2003 and 2005, a study of drowning deaths of children younger than five years of age attributed the highest percentage of drowning reports to an adult losing contact or knowledge of the whereabouts of the child (5). During the time of lost contact, the child managed to gain access to the pool (3).

COMMENTS:

Water play includes wading. Touch supervision means keeping swimming children within arm’s reach and in
sight at all times. Drowning is a "silent killer" and children may slip into the water silently without any splashing or screaming.

Ratios for supervision of swimming, wading and water play do not include personnel who have other duties that might preclude their involvement in supervision during swimming/wading/water play activities while they are performing those duties. This ratio excludes cooks, maintenance workers, or lifeguards from being counted in the child:staff ratio if they are involved in specialized duties at the same time. Proper ratios during swimming activities with infants are important. Infant swimming programs have led to water intoxication and seizures because infants may swallow excessive water when they are engaged in any submersion activities (1).

TYPE OF FACILITY:
Small Family Child Care Home, Center, Large Family Child Care Home

RELATED STANDARDS:
2.2.0.4 Supervision Near Bodies of Water
6.3.1.3 Sensors or Remote Monitors
6.3.1.4 Safety Covers for Swimming Pools
6.3.1.7 Pool Safety Rules
6.3.2.1 Lifesaving Equipment
6.3.2.2 Lifeline in Pool
6.3.5.2 Water in Containers
6.3.5.3 Portable Wading Pools

REFERENCES:


Chapter 2: Program Activities for Healthy Development
2.2 Supervision and Discipline

Standard 2.2.0.4: Supervision Near Bodies of Water

Constant and active supervision should be maintained when any child is in or around water (1). During any swimming/wading/water play activities where either an infant or a toddler is present, the ratio should always be one adult to one infant/toddler. Children ages thirteen months to five years of age should not be permitted to play in areas where there is any body of water, including swimming pools, ponds and irrigation ditches, built-in wading pools, tubs, pails, sinks, or toilets unless the supervising adult is within an arm’s length providing “touch supervision”.

Caregivers/teachers should ensure that all pools meet the Virginia Graeme Baker Pool and Spa Safety Act, requiring the retrofitting of safe suction-type devices for pools and spas to prevent underwater entrapment of children in such locations with strong suction devices that have led to deaths of children of varying ages (2).

RATIONALE:

Small children can drown within thirty seconds, in as little as two inches of liquid (3).

In a comprehensive study of drowning and submersion incidents involving children under five years of age in Arizona, California, and Florida, the U.S. Consumer Product Safety Commission (CPSC) found that:

a. Submersion incidents involving children usually happen in familiar surroundings;

b. Pool submersions involving children happen quickly, 77% of the victims had been missing from sight for five minutes or less;

c. Child drowning is a silent death, and splashing may not occur to alert someone that the child is in trouble (4).

Drowning is the second leading cause of unintentional injury-related death for children ages one to fourteen (5).

In 2006, approximately 1,100 children under the age of twenty in the U.S died from drowning (11). A national study that examined where drowning most commonly takes place concluded that infants are most likely to drown in bathtubs, toddlers are most likely to drown in swimming pools and older children and adolescents are most likely to drown in freshwater (rivers, lakes, ponds) (11).

While swimming pools pose the greatest risk for toddlers, about one-quarter of drowning among toddlers are in freshwater sites, such as ponds or lakes.

The American Academy of Pediatrics (AAP) recommends:

a. Swimming lessons for children based on the child’s frequency of exposure to water, emotional maturity, physical limitations, and health concerns related to swimming pools;

b. “Touch supervision” of infants and young children through age four when they are in the bathtub or around other bodies of water;

c. Installation of four-sided fencing that completely separates homes from residential pools;

d. Use of approved personal flotation devices (PFDs) when riding on a boat or playing near a river, lake, pond, or ocean;
e. Teaching children never to swim alone or without adult supervision;

f. Stressing the need for parents/guardians and teens to learn first aid and cardiopulmonary resuscitation (CPR) (3).

Deaths and nonfatal injuries have been associated with infant bathtub “supporting ring” devices that are supposed to keep an infant safe in the tub. These rings usually contain three or four legs with suction cups that attach to the bottom of the tub. The suction cups, however, may release suddenly, allowing the bath ring and infant to tip over. An infant also may slip between the legs of the bath ring and become trapped under it. Caregivers/teachers must not rely on these devices to keep an infant safe in the bath and must never leave an infant alone in these bath support rings (1,6,7).

Thirty children under five years of age died from drowning in buckets, pails, and containers from 2003-2005 (10). Of all buckets, the five-gallon size presents the greatest hazard to young children because of its tall straight sides and its weight with even just a small amount of liquid. It is nearly impossible for top-heavy (their heads) infants and toddlers to free themselves when they fall into a five-gallon bucket head first (8).

The Centers for Disease Control (CDC) National Center for Injury Prevention and Control recommends that whenever young children are swimming, playing, or bathing in water, an adult should be watching them constantly. The supervising adult should not read, play cards, talk on the telephone, mow the lawn, or do any other distracting activity while watching children (1,9).

COMMENTS:

“Touch supervision” means keeping swimming children within arm’s reach and in sight at all times. Flotation devices should never be used as a substitute for supervision. Knowing how to swim does not make a child drown-proof.

The need for constant supervision is of particular concern in dealing with very young children and children with significant motor dysfunction or developmental delays. Supervising adults should be CPR-trained and should have a telephone accessible to the pool and water area at all times should emergency services be required.

TYPE OF FACILITY:
Small Family Child Care Home, Center, Large Family Child Care Home

RELATED STANDARDS:

1.1.1.5 Ratios and Supervision for Swimming, Wading, and Water Play
1.4.3.3 CPR Training for Swimming and Water Play
6.3.1.1 Enclosure of Bodies of Water
6.3.1.7 Pool Safety Rules

REFERENCES:


Chapter 6: Play Areas/Playgrounds and Transportation

6.1 Play Area/Playground Size and Location

NOTE: The play spaces discussed in the following standards are assumed to be those at the site and thus are the facility's responsibility. Facilities that do not have on-site play areas but that use playgrounds and equipment in adjacent parks and/or schools may not be able to ensure that children in their facility are playing on equipment or in play space in absolute conformance with the standards presented here.

Standard 6.1.0.6: Location of Play Areas Near Bodies of Water

Outside play areas should be free from the following bodies of water:

a. Unfenced swimming and wading pools;
b. Ditches;
c. Quarries;
d. Canals;
e. Excavations;
f. Fish ponds;
g. Water retention or detention basins;
h. Other bodies of water.

RATIONALE:
Drowning is one of the leading causes of unintentional death in children one to fourteen years of age (1).

TYPE OF FACILITY:
Small Family Child Care Home, Center, Large Family Child Care Home

REFERENCES:
Chapter 6: Play Areas/Playgrounds and Transportation

6.3 Water Play Areas (Pools, Etc.)

6.3.1 Access to and Safety Around Bodies of Water

**Standard 6.3.1.1: Enclosure of Bodies of Water**

All water hazards, such as pools, swimming pools, stationary wading pools, ditches, fish ponds, and water retention or detention basins should be enclosed with a fence that is four to six feet high or higher and comes within three and one-half inches of the ground. Openings in the fence should be no greater than three and one-half inches. The fence should be constructed to discourage climbing and kept in good repair.

If the fence is made of horizontal and vertical members (like a typical wooden fence) and the distance between the tops of the horizontal parts of the fence is less than forty-five inches, the horizontal parts should be on the swimming pool side of the fence. The spacing of the vertical members should not exceed one and three-quarters inches.

For a chain link fence, the mesh size should not exceed one and one-quarter square inches.

Exit and entrance points should have self-closing, positive latching gates with locking devices a minimum of fifty-five inches from the ground.

A wall of the child care facility should not constitute one side of the fence unless the wall has no openings capable of providing direct access to the pool (such as doors, windows, or other openings).

If the facility has a water play area, the following requirements should be met:

a. Water play areas should conform to all state and local health regulations;

b. Water play areas should not include hidden or enclosed spaces;

c. Spray areas and water-collecting areas should have a non-slip surface, such as asphalt;

d. Water play areas, particularly those that have standing water, should not have sudden changes in depth of water;

e. Drains, streams, water spouts, and hydrants should not create strong suction effects or water-jet forces;

f. All toys and other equipment used in and around the water play area should be made of sturdy plastic or metal (no glass should be permitted);

g. Water play areas in which standing water is maintained for more than twenty-four hours should be treated according to Standard 6.3.4.1. and inspected for glass, trash, animal excrement, and other foreign material.

**RATIONALE:**

Most drownings happen in fresh water, often in home swimming pools (1). Most children drown within a few feet of safety and in the presence of a supervising adult (1). Small fence openings (three and one-half inches or smaller) prevent children from passing through the fence (4). All areas must be visible to allow adequate supervision.

An effective fence is one that prevents a child from getting over, under, or through it and keeps the child from gaining access to the pool or body of water except when supervising adults are present. Fences are not...
childproof, but they provide a layer of protection for a child who strays from supervision.

Fence heights are a matter of local ordinance but it is recommended that it should be at least five feet. A house exterior wall can constitute one side of a fence if the wall has no openings providing direct access to the pool.

With fences made up of horizontal and vertical members, children should not be allowed to use the horizontal members as a form of ladder to climb into a swimming pool area. If the distance between horizontal members is less than forty-five inches, placing the horizontal members on the pool side of the fence will prevent children using this to climb over and into the pool area. However, if the horizontal members are greater than forty-five inches apart, it is more difficult for a child to climb and therefore the horizontal members could be placed on the side of the fence facing away from the pool (2).

**COMMENTS:**

See the American National Standards Institute (ANSI) and ASTM International standards for pool safety (2.3).

**TYPE OF FACILITY:**

Small Family Child Care Home, Center, Large Family Child Care Home

**RELATED STANDARDS:**

6.2.5.1 Inspection of Indoor and Outdoor Play Areas and Equipment
6.2.5.2 Inspection of Play Area Surfacing
6.3.1.2 Accessibility to Above-Ground Pools

**REFERENCES:**


Chapter 6: Play Areas/Playgrounds and Transportation

6.3 Water Play Areas (Pools, Etc.)

6.3.1 Access to and Safety Around Bodies of Water

Standard 6.3.1.7: Pool Safety Rules

Legible safety rules for the use of swimming and built-in wading pools should be posted in a conspicuous location, and each caregiver/teacher responsible for the supervision of children should read and review them often enough so s/he is able to cite the rules when asked. The facility should develop and review an emergency plan, as specified in Written Plan and Training for Handling Urgent Medical Care or Threatening Incidents, Standard 9.2.4.1.

RATIONALE:

This standard is based on state and local regulations and ASTM International (ASTM) standard “F2518-06: Standard Guide for Use of a Residential Swimming Pool, Spa, and Hot Tub Safety” (1).

COMMENTS:

Compliance can be assessed by interviewing caregivers/teachers to determine if they know the rules and by observing if the rules are followed.

TYPE OF FACILITY:

Small Family Child Care Home, Center, Large Family Child Care Home

RELATED STANDARDS:

1.1.1.5 Ratios and Supervision for Swimming, Wading, and Water Play
2.2.0.4 Supervision Near Bodies of Water
2.2.0.5 Behavior Around a Pool
9.2.4.1 Written Plan and Training for Handling Urgent Medical Care or Threatening Incidents

REFERENCES: