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ADVISORY BULLETIN

DATE: June 2016

TO: Illinois Long Term Care Facilities and other interested parties

FROM: Debra Bryars, Deputy Director
Office of Health Care Regulation

SUBJECT: **HOT WEATHER**

During the hot weather of summer, when outdoor temperatures climb into the 80's, 90's and 100's, long term care facilities may need to evaluate their ability to maintain a reasonably comfortable temperature inside of the facility. In facilities which have air conditioning as an integral part of the building design and equipment, or have individual room or window units, residents may not experience heat stress during excessively high outside air temperatures. Buildings without air conditioning, however, may have to employ special measures to assure the comfort and safety of residents in the facility during these periods of time.

The Illinois Department of Public Health encourages all facilities to act now to avoid heat-related emergencies during the summer. Now is the time to review facility procedures for hot weather emergencies and to perform routine maintenance on all air-conditioning systems, ventilating systems, fans, and other heat modifying equipment or structures, and be sure that staff is aware of their roles and responsibilities during hot weather situations.

Enclosed with this advisory bulletin is information that may assist facility staff to avoid hot weather related emergencies in long term care facilities. This information concerns procedures to be included in the facility's policies related to: Disaster Preparedness, Preventative Maintenance, Identification of High Risk Residents, Monitoring of Residents' Physical Condition (including signs and symptoms of heat stroke and heat exhaustion), and Increasing Residents' Comfort.

During serious heat emergencies having a significant effect on the residents (e.g. when residents must be relocated or hospitalized), the facility is required to notify the Illinois Department of Public Health by telephone within twenty-four (24) hours and to submit a narrative summary of the incident within seven (7) days. Staff of the regional offices of the Department is available to provide assistance to the facility, if necessary, during any heat-related emergency. Please feel free to call them at the locations listed on the next page.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

ACTIONS FOR AVOIDING HOT-WEATHER RELATED EMERGENCIES
IN LONG-TERM CARE FACILITIES

I. DISASTER PREPAREDNESS PLAN:

Review and update the facility's Disaster Preparedness Plan to assure that it addresses hot-weather related emergencies in the facility. At a minimum, the hot-weather plan should include:

- A. Procedures of monitoring residents for signs and symptoms of heat-related stress;
- B. Procedures for the relocation of residents to air-conditioned, or cooler areas, of the facility;
- C. Procedures for transfer of residents to other health care facilities during periods of acute heat stress;
- D. Procedures to monitor the physical environment of the facility (including temperature, humidity, sun screening, ventilation, etc.); and to recognize temperature and humidity values where the hot weather plan must be implemented.
- E. Procedures for substituting hot-weather menus for regular meals and for additional fluids to be provided to maintain proper hydration of residents.

TO REPORT A HOT-WEATHER RELATED EMERGENCY, CONTACT
THE 24-HOUR NURSING HOME HOTLINE
1-800-252-4343

II. PREVENTATIVE MAINTENANCE PROGRAM

A. Provide preventative maintenance of air-conditioning and ventilation systems according to the manufacturer's recommendations.

B. General Recommendations:

1. Do not over-extend or over-utilize the system by attempting to cool larger areas than the unit is designed to accommodate.
2. Keep the area around air-conditioning units clear of vegetation, debris, and structures that inhibit proper air circulation around the unit.
3. Insulate the coolant lines on control units.
4. As plans for building renovations are developed, consider adding new or additional air-conditioning units, and increasing artificial and natural shade for the windows and building exterior through landscaping, awnings, grills, roof overhangs, and other sun screens.

C. Monthly Preventative Maintenance:

1. Clean all filters.
2. Check bearings for noise or excessive temperature.
3. Check belt tension and condition.
4. Check fluid level of coolant.
5. Check for leaks in unit around pipes.
6. Clean area of dirt, paper, grass, leaves, and rubbish.
7. Check condition of knobs and switches.
8. Start the unit. Check starting and stopping of unit by operation of the thermostat.
9. Check unit for unusual vibrations or noises.
10. Look for unusual compressor operation such as continuous running or frequent stopping and starting.
11. Check intake and output air temperatures to assure air conditioning unit is chilling.

D. Quarterly Maintenance:

Clean dirt and oily accumulation from motors, compressors, condenser coils, fin tubes, etc.

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E. Semi-annual Maintenance:

1. Lubricate fans and motors making sure to wipe up excessive lubricant.
2. Change filters if required.
3. Check wiring for damaged or frayed insulation or loose connections.

F. Annual Maintenance:

1. Shut down the unit or system for inspection and cleaning.
2. If belt-driven, remove protective guard, take tension off of the belts and check belts for wear.
3. Replace belts if necessary and restore proper tension. If new belts are installed, re-adjust them in 24 hours to take up any stretch.
4. Check sleeve alignment and correct if required.
5. Check bearing condition.
6. Replace the protective guard and thoroughly clean the unit.

G. Service Contracts:

1. Utilize the services of a trained repair professional if necessary.
2. A priority service agreement or contract should be obtained with a local air-conditioning and heating contractor. Agreements should specify the response time by the local service company.

H. Information concerning alterations to existing cooling and ventilating systems or the installation of new systems or units should be directed to the plan review architects of the Division of Long-Term Care Quality Assurance, of the Illinois Department of Public Health.

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III. IDENTIFICATION OF HIGH RISK RESIDENTS

- A. Some residents in long-term care facilities may be more susceptible to adverse health effects of hot weather than other persons. These residents may include:
 - 1. Persons with circulatory and respiratory problems;
 - 2. the very young and the very old;
 - 3. persons receiving certain medications including:
alcohol, diuretics, anti-hypertensive medications, sedatives, hypnotics, tricyclics, anticholinergics, phenothiazines, antihistamines, and belladonna alkaloids.
- B. These high-risk residents should be identified and monitored closely during periods of extreme temperatures.
- C. Guidance should be sought from the resident's physician for any special supportive measures to be applied to high-risk residents. The resident's physician should be notified immediately of any negative health effect due to hot weather.

IV. MONITORING OF RESIDENTS' PHYSICAL CONDITION

Depending upon the resident's physical condition, the following should be implemented:

- A. Take resident's temperature and vital signs more often (e.g. every 2-4 hours).
- B. Monitor fluid intake and output.
- C. Evaluate residents for symptoms of heat stroke and heat exhaustion.

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COMPARISON OF HEAT STROKE AND HEAT EXHAUSTION

HEAT STROKE		HEAT EXHAUSTION
<p>The result of direct exposure to high temperatures or sun. It affects those who are debilitated or fatigued.</p>		<p>State of weakness produced by the loss of normal fluids and salts of the body. It is a result of exposure to heat.</p>
<p><u>Symptoms:</u> Dizziness, Weakness, Nausea, Spots before the eyes, Ringing in the ears, Bright red skin, Rapid, strong pulse, Unconsciousness usually follows; Temperature: May reach 108°F.</p>		<p><u>Symptoms:</u> Face: pale, cool, moist. Skin: cool, clammy and with profuse perspiration. Temperature: slight elevation Pulse: weak, thread, and rapid. Respiration: shallow and quiet. Muscles: tense and contracted. Eyes: pupils are normal.</p>
<p><u>Treatment:</u> Cool off resident, Remove clothing, Apply cold cloths, Give sponge bath, Inform physician, Begin emergency treatment, Transport to acute care facility immediately.</p>		<p><u>Treatment:</u> Keep resident quiet. Head should be lowered. Inform physician. Increase fluids or start I.V. fluids. Begin emergency treatment. Transfer to an acute care facility may be indicated.</p>

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V. INCREASING RESIDENT'S COMFORT

A. Monitor indoor air temperature for comparison with the attached "Heat Index/Apparent Temperature Table" extracted from Illinois' long-term care licensing codes. This comparison will help to determine the severity of the heat-related problem in the facility.

1. It is recommended that the temperature be measured every two hours between 8:00 a.m. and 10:00 p.m. in all areas occupied by residents. Compare the indoor temperature with the temperature and humidity reports available from the news media.
2. Temperatures inside of the building will usually be lower than outside temperatures.
3. Humidity is usually higher inside of a facility because of resident bathing, dietary operations, laundry operations, and mopping floors.
4. Daily comparisons of indoor and outdoor temperatures and humidity will assist in evaluating the threat of heat stress to residents and implementation of appropriate emergency measures to relieve that threat.
5. If the combination of indoor temperature and humidity results in a heat index temperature in the shaded area on the "Heat Index/Apparent Temperature" table, OR IF RESIDENT NEEDS REQUIRE, the following actions should be taken, depending upon the building design and residents' needs:
 - a. Relocate residents who are ambulatory or semi-ambulatory to the coolest parts of the building. These may be air-conditioned areas or, in multiple story buildings, the lower floors. Residents' physical conditions should be evaluated to assure that relocation of the resident is not more harmful than providing supportive care in his or her room.
 - b. Monitor fluid intake and output, and increase fluid intake if necessary.
 - c. Encourage residents to wear loose-fitting, lightweight clothing.
 - d. Monitor resident activities to reduce or eliminate strenuous activities in hot areas.

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- e. Increase ventilation by operating exhaust fans in bathing, kitchen, and laundry areas. Additional portable fans may help air flow. Natural ventilation should be used too, if possible. If windows can be opened, the top should be opened to permit escape of hot air near the ceiling. Windows on opposite sides of the building should also be opened to increase cross-ventilation.
- f. Shade windows exposed to direct sunlight. Windows exposed to direct sunlight should be closed when wind direction is toward the window. Make temperature checks of these rooms for comparison with rooms not in direct sunlight. If air temperatures are increasing compared to other rooms, these windows should be closed.
- g. Turn off all unnecessary electrical equipment and lights that produce heat.
- h. Depending on the design of a building, special measures may be needed to reduce building temperature. Before implementing extraordinary measures, however, the regional office of the Illinois Department of Public Health should be contacted for advisement.
 - (1) Buildings with flat roofs may be wetted down (not ponded) to cool the space between the roof and the interior ceiling. Repeat as the water evaporates.
 - (2) Pitched roofs may be equipped with roof or attic exhaust fans. These fans should be tied into the fire alarm system to automatically shut down if the fire alarm is activated. This recommendation applies to any fan that provides 2000 cubic ft./min. or more.
 - (3) Masonry buildings will retain heat for many hours after the hottest part of the day. During periods of excessive heat, water sprays applied to the exterior walls exposed to direct sunlight may reduce the heat gain.

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