

Combating Heat Stress: Keeping Residents Cool and Well-Hydrated as Temperatures Rise

As warmer weather approaches, aging services leaders must take action to protect residents from seasonal illnesses such as heat stroke, heat exhaustion and dehydration. According to the Agency for Healthcare Research and Quality, approximately 6,200 Americans – disproportionately over 65 years of age – are hospitalized each year due to exposure to excessive heat.¹ As heat waves become more frequent and intense, administrators, even in temperate regions, should be aware of these risks and their corresponding responsibilities.

Heat stroke is the deadliest form of heat stress, occurring when the body loses its ability to perspire or otherwise regulate core temperature, which can rise to dangerous levels in minutes. Symptoms may include bright red and dry skin, strong and rapid pulse, severe headache, ringing ears, nausea, dizziness, weakness and respiratory problems. Heat stroke can lead to death or permanent disability if not treated immediately.

Heat exhaustion is a less severe condition that develops after extended exposure to high heat and humidity without adequate hydration. Warning signs are similar to those of shock, including faintness, confusion, cool and clammy skin, weak and rapid pulse, shallow respiration, muscle cramps, vomiting and fever. It can be a forerunner of heat stroke and must be addressed promptly.

Heat sickness and dehydration are preventable problems and can result in significant liability exposure for aging services providers. This issue of *AlertBulletin*® examines major risk factors and offers strategies to help keep residents cool, hydrated and safe during the hot days ahead.

AGE-RELATED VULNERABILITIES

As the mercury rises, so does risk. According to a study of nursing home residents in Germany, a severe heat wave caused more than 400 additional deaths in the observed population during August of 2003, and mortality rates remained significantly elevated over the course of subsequent months.² Residents aged 90 or over and those with higher care needs were most affected.

The study demonstrated that the ability to adapt to temperature extremes tends to decline with age. In general, the elderly are slower to become aware of thirst, so the urge to drink may be felt after dehydration has already set in. Therefore, aging services staff

must be on the alert for danger signs – including lethargy or confusion, dry mouth, cracked lips, furrowed tongue and darkened urine – and encourage residents to remain hydrated.

In addition, certain drugs – including diuretics, anti-depressants, tranquilizers, antihistamines and anti-Parkinsonian agents – may diminish sweating and increase susceptibility to high heat. Residents taking these medications require special attention during heat waves, as do residents with diabetes, high blood pressure, stroke history, heart conditions or other chronic ailments.

COOLING MEASURES

Federal law does not require aging care settings to be air-conditioned. However, nursing homes certified for Medicare and/or Medicaid after October 1, 1990 are obligated to maintain the temperature at 71 to 82 degrees. Organizations located in areas subject to extreme heat should consider installing central air conditioning, which is the single most effective safeguard against heat stress.

Facilities without air conditioning should implement alternative emergency cooling measures, including using fans and open windows (within the limits set by window restrictors) to produce cross ventilation, closing drapes and blinds, and providing ice water and frozen treats. Climate-controlled facilities should establish similar contingency plans in the event of a breakdown or power outage.

Federal regulations – as well as sound risk control protocols – mandate regular maintenance of air-conditioning equipment in order to prevent service interruptions during periods of high utilization. In addition, certified aging care settings are required to have backup electrical systems to protect residents in case of a blackout. To ensure reliability, emergency generators should be tested on a biweekly basis under full load for at least half an hour.

The following additional measures, if consistently implemented and documented, can also help protect residents and reduce liability exposure:

Consider the full range of climate conditions when assessing summer weather hazards. Besides heat and humidity, such factors as cloud cover, wind speed and direction, air pollution and allergens can affect comfort level and magnify risk. Be prepared to initiate a heat-wave response plan following a heat alert or when indicated by weather conditions.

¹ "Thousands Are Struck Down by Summer Heat and Most Are Poor." *Agency News and Notes*, September 2008. Available at <http://www.ahrq.gov/research/sep08/0908RA41.htm>.

² Becker, C. et al. "Heat-related Mortality in Residents of Nursing Homes." *Age and Ageing*, March 2010, Volume 39:2, pp. 245-252. Available at <http://ageing.oxfordjournals.org/content/39/2/245.full>.

Limit physical exertion and exposure to sun. Because heat sickness frequently begins with fatigue and/or sunburn, exercise sessions and other strenuous activities should be limited in periods of high heat. If residents insist on going outside during the heat of the day, ensure that they remain in the shade and have constant access to water or other drinks.

Utilize beverage stations and carts to encourage hydration. Stations and carts should be stocked with cold water, fruit juices and other non-caffeinated beverages. Ensure that staff members are aware of the special needs of residents with water-retention issues.

Encourage sponge baths and cool showers. These can help protect against both overheating and dehydration. Ice packs and wet towels can also help reduce body temperature.

SEASONAL SAFEGUARDS

The following seasonal risk control strategies can help keep residents safe and comfortable even when temperatures soar:

Consult with physicians. When hot weather threatens, request medication reviews for patients taking diuretics, anticholinergics or other drugs that affect adjustment to heat. In addition, incorporate heat-stress risks and protective measures into the care plans of residents with diabetes, heart or circulatory conditions, hypertension, Parkinson's disease, previous stroke or other risk factors.

Emphasize monitoring, assessment and interaction. Reinforce to staff the dangers and warning signs of heat sickness and dehydration, and stress the importance of

- *identifying residents who are especially at risk* and require additional care measures
- *encouraging residents to drink frequently* and to notify staff of any problems
- *observing all residents for symptoms* of heat-related ailments and asking them how they feel
- *reporting in a timely manner* any possible danger signs

Establish emergency response protocols. Train staff members to recognize the signs of incipient heat exhaustion and heat stroke, and to perform first aid – including cooling and monitoring the

victim – until medical assistance arrives. Emphasize that in the case of heat stroke, every moment of delay increases the chance of serious injury or death.

Ensure that residents are properly protected. In hot weather, residents should wear loose-fitting, light-colored clothing that covers their extremities. To minimize the effects of bright sunshine, have residents who go outside *slip* on appropriate clothes, *slather* on sunscreen, *slap* on a hat and *slide* on sunglasses.

Provide suitable meals. Avoid serving heavy meals and very hot foods and beverages during torrid weather, and limit residents' intake of salt and caffeine, which have dehydrating properties.

The bright sun and long days of summer are a source of both pleasure and risk. By creating an enterprise-wide response plan, aging care providers can help protect even their most vulnerable residents from the dangers associated with high heat.

RESOURCES

- "Heat Stress in the Elderly." Centers for Disease Control and Prevention, updated July 31, 2009. Available at <http://www.bt.cdc.gov/disasters/extremeheat/elderlyheat.asp>.
- "Heat Stress – Preventing Heat Stroke." *Better Health Channel*, Victorian Government (Australia) Department of Health, reviewed December 2010. Available at http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Heat_stress_preventing_heat_stroke?open.
- "Hot Weather Concerns for Nursing Home Residents." *Citizens for Better Care Fact Sheet*, reviewed 2004. Available at http://www.cbcmi.org/index.php?module=pagemaster&PAGE_user_op=view_page&PAGE_id=143.
- Weir, E. "Heat Wave: First, Protect the Vulnerable." *Canadian Medical Association Journal*, July 23, 2002. Volume 167:2, p. 169. Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC117098/>.



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