POSITION STATEMENT

The Occupational Health Nurse's Role in Protecting Workers from Heat-related Illness

INTRODUCTION

The American Association of Occupational Health Nurses (AAOHN) strongly supports practices and policies that protect workers from heat-related illness. Heat-related illness may include, among others: heat-related exposures and exertional heat illness such as heat rash, sunburn, heat cramps, heat syncope, heat stress, heat exhaustion, rhabdomyolysis, seizures, heat stroke, and death (National Institute for Occupational Safety and Health (NIOSH), 2016; Perkison et al., 2018). Occupational Health Nurses (OHNs) serve as advocates for a healthier workforce by promoting the health, safety, and wellbeing of employees, their families, their employers, and the environments in which they live and practice. As the professional association of licensed nurses engaged in the practice of occupational and environmental health nursing, AAOHN (2019) envisions that work and workplace community environments will be healthy and safe. As such, AAOHN endorses policies and practices that create a culture of health through professional and leadership development activities, advocating for legislation and public policy as well as regulatory and legislative compliance, and recognizing the value OHNs can provide. These practices include the use of heat safety guidelines, policies, and practices that protect workers from heat-related illness, and collaborative efforts through alliances with other organizations such as NIOSH, the Occupational Safety and Health Administration (OSHA), and the American College of Occupational and Environmental Medicine to institute heat-related safeguards for all workers.

RATIONALE

Exposure to extreme heat or work in hot environments may increase the workers' risk of heat stress and can result in occupational illness and injuries (NIOSH, 2018). Excessive heat exposure may lead to illness and injuries resulting from: sweaty palms, fogged-up safety glasses, dizziness, and burns. When combined with exertion, this may lead to exertional heat illness and exertional heat stroke, potentially endangering workers. Heat related illness and exertional heat illness can occur among indoor and outdoor workers and may be particularly problematic among workers who exert themselves in the heat and work in enclosed spaces with minimal air circulation (e.g., firefighters, the military and police, athletes and coaches, construction workers, farmers, agricultural laborers, bakers, miners, healthcare workers, and boiler room workers). Vulnerable populations, such as individuals who are unacclimated workers, overweight, pregnant, have comorbidities, advanced age (65 years of age or older), or take medications that may be affected by extreme heat, are particularly susceptible to illness (NIOSH, 2018; Perkison et al.; O'Connor & Casa, 2019). The frequency and severity of extreme heat events and the subsequent risk of increased morbidity and mortality from heat related illness resulting from global climate change are only expected to increase in the coming decades (Riley, Wilhalme, Delp & Eisenman, 2018: Perkison et al.). As such, OHNs must be prepared to proactively address climate change-related health effects in workers and mitigate their risks to support a safe and healthy environment for all workers.

The General Duty Clause of the Occupational Safety and Health Act (OSHA, 1970) requires employers to provide a place of employment that is free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees. While there is no specific standard addressing hot environments, this General Duty Clause is referred to when considering heat-related hazards. In 2022, OSHA provided guidance on a National Emphasis Program focusing on Outdoor and Indoor Heat-related Hazards. The goal of this program is that employers will intervene early to prevent heat-related illness and death. OSHA has taken measures to address the risk of heat stress hazards in workplaces and has endorsed the development of an overall heat stress program which includes measures to abate heat stress hazards in workplaces. OSHA and NIOSH jointly developed a Heat Safety Tool App (NIOSH, 2022) which is a resource to help plan outdoor activities and provides real time heat index based on location,

allowing for early identification and intervention of problematic conditions. OSHA has also recognized the risk to outdoor workers by sponsoring campaigns to prevent heat illness (Phillips, 2019; OSHA 2010, 2014). Several state OSHA plans, including those in California, Washington, and Minnesota, have gone further to enact protective heat standards (California Division of Occupational Health and Safety (2019); Minnesota Office of the Revisor of Statutes (2014); Phillips; Washington State Department of Labor & Industries (n.d.)).

Protective heat programs in workplaces safeguard workers and save money by reducing the rates of work-related illnesses and injuries, the risk of accident, exacerbation of underlying health problems, heat related hospitalizations, and by improving productivity. OHNs possess the skills and training to evaluate and treat heat-related injury and illness and mitigate the health effects of heat on workers through education and implementation of heat protection programs. There are various measures to combat heat-related illness that can be included in a health protection program. These measures may vary based on the nature of the business and the type of work performed and may include a multi-disciplinary team. The measures may include (Phillips; NIOSH 2018; NIOSH 2015):

- implementing mandatory work breaks, limiting time in the heat and/or increasing recovery time spent in a cool environment,
- ensuring hydration with access to sufficient quantities of drinking water and electrolytes (if workers are sweating for more than two hours),
- having places to rest in the shade/cool environment,
- avoiding pay practices that discourage workers from taking rest breaks or stopping to hydrate,
- ensuring use of personal protective equipment such as garments that are light-colored and breathable, using reflective or heat-absorbing shields or barriers, or cooling vests,
- reducing steam leaks, wet floors, or humidity,
- exposure scrutiny and medical monitoring to recognize heat capture,
- ambient temperature measurement,
- calculation of heat index
- education, health and safety training on prevention of heat-related injuries and illness,
- education of both workers and leaders on the early signs of heat-related illness

- educate leaders and managers on first aid measures for heat related illnesses, and knowing when to seek emergency care (CDC, 2017)
- increasing the number of workers per task or rotating personnel,
- reducing the metabolic demands of the job,
- implementing a buddy system where workers observe each other for signs of heat intolerance,
- requiring workers to conduct self-monitoring and create work groups (i.e., workers, a qualified healthcare provider, and a safety manager) to make decisions on self-monitoring options and standard operating procedures,
- implementing a heat alert program whenever the weather service forecasts that a heat wave is likely to occur,
- increasing physical fitness,
- heat acclimatization plans ensuring gradual acclimatization to work over a period of at least 7-14 days, and
- ensuring safety plans follow the hierarchy of controls and that emergency response plans include first aid and medical response for heat-related illnesses.

Additional information is provided by NIOSH (2016) in the Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments.

RECOMMENDATIONS

OHNs play an important role in keeping workers and workplace community environments healthy and safe. They are important advocates in creating a culture of health and safety, as well as forming strategic alliances with other organizations to impact education, legislation, regulatory compliance, and public policy. AAOHN recognizes the value OHNs can provide as clinicians, leaders, advocates, and collaborators to protect workers and the environment. As the professional association of licensed nurses engaged in the practice of occupational and environmental health nursing, AAOHN supports the incorporation of heat safety guidelines, policies, and practices that protect workers from heat-related illness. AAOHN also endorses the use of existing heat safety guidelines, regulatory compliance, education, advocacy, and public policy pertaining to heat safety measures to protect all workers and the environments in which they live and practice .

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