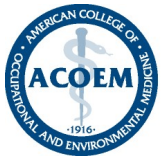

AMERICAN COLLEGE OF
OCCUPATIONAL AND
ENVIRONMENTAL MEDICINE

Statement of

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American College of Occupational and Environmental Medicine

and Concentra

Subcommittee on Workforce Protections

U.S. House of Representatives

"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat"

July 11, 2019

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My name is Dr. Ronda McCarthy. I am testifying for myself, the American College Occupational and Environmental Medicine and my employer, Concentra, a national occupational health care provider. We serve thousands of employers and treat millions of US workers annually. It is this extensive contact with employers and workers that brings me here today. In the past 20 years I have treated too many workers for heat-related illnesses, which are 100% preventable, and today I would like to share my professional experience in support of this Bill to protect workers against excessive heat.

My testimony is grounded upon 9 years of developing and administering an heat-related illness prevention program in central Texas that is comparable to the requirements in the Bill presented today. Because of the significant and striking results of this program, I believe this Bill will protect the health and lives of countless workers. Moreover, employers will benefit from decreased costs from injuries and illness and will experience increased productivity from their workers.

As a Texas occupational physician, I spent the first part of my career trying to convince multiple employers to implement National Institute for Occupational Health and Safety (NIOSH) recommendations related to heat exposure without much success. I frequently implored plant and health and safety managers to consider implementing worker training, hydration, rest breaks and access to shade to avoid costly and perilous accidents and injuries and illnesses from excessive heat exposure. Many employers declined my offer to educate workers on heat stress because of the time necessary for education, the concern that workers would be more likely to report a work injury, and the idea of compromising worker productivity with rest breaks. In the early 2000's there was little research on occupational

heat exposure to support my claims that workers and employers would benefit from these simple preventive measures.

In 2006 I became the medical director for a Central Texas Municipality in Texas. At an onsite Employee Health Clinic, I treated municipal workers for occupational injuries and illness. During the summer months I noted an increase in accidents, injuries and heat-related illness in many departments including Streets, Traffic, Parks and Recreation, Solid Waste and Utilities. After speaking with the supervisors of several departments it became clear that little to no prevention measures existed for municipal workers at risk for heat-related illness.

Even though the City does not fall under OSHA, the City Manager agreed to a heat-related illness prevention program in an effort to protect municipal outdoor workers. I used information from OSHA's *Technical Manual, Chapter III: Heat Stress*, utilized by OSHA inspectors for worker safety inspections, and NIOSH's *Criteria for a Standard: Occupational Exposure to Heat and Hot Environments* to create the municipality's Heat Stress Awareness Program.[1] This program included unlimited access to cold water or sports drinks close to work site; providing canopies or other access to shade; supervisor and worker training, first aid and emergency response procedures ; establishing 3-4 day gradual heat acclimatization schedules for new workers or established workers returning from an absence during the hot season; altered work schedules to prevent physically demanding labor in the heat of the afternoon; heat-related emergency procedures; first aid protocols for immediate aid to employees displaying symptoms of heat-related illness in the field; worker education on how to communicate to supervisors and co-workers if help was needed; and medical monitoring.[1] This program was specifically for outdoor workers whose job descriptions described requirements to work with exposure to extreme heat and humidity and included

Moderate to Very Heavy physical demands as described by the Department of Labor Classification.[1]

From 2011 through 2017, we annually distributed a confidential, self-administered questionnaire to at-risk workers assessing personal risk factors for heat-related illness during February and March. This allowed for medical monitoring before the hot season (May 15 to September 15). [1] The questionnaire identified the following risk factors: medications, chronic illnesses, body mass index, history of prior heat-related illness, employment in a second hot job, and others. [1] Workers with increased risk for heat-related illness were offered medical monitoring, that included individualized education on the worker's personal risk factors, at the employee health clinic. [1]The medical monitoring was performed in the spring so that workers were able to resolve unstable medical issues that placed them at high risk for a heat-related illness prior to work with excessive heat exposure. [1]

In 2016 NIOSH published a *Revised Criteria for a Standard: Occupational Exposure to Heat and Hot Environments* and called for research on occupational heat exposure. I worked with two faculty members from the University of Pennsylvania Health System to analyze the data collected from the Heat Stress Awareness Program. The study data revealed two salient points relevant to today's topic: median workers' compensation costs went down by 50% per heat-related illness, and the total number of heat-related cases decreased after implementation of the Heat Stress Awareness Program. [1]

There are two possible factors that lead to this reduction in workers' compensation cost. The intervention increased supervisors' and workers' awareness of the signs and symptoms of heat-related illness, and their knowledge of when to seek medical attention. [1] These factors may have allowed for earlier intervention, leading to lower workers' compensation costs. Indeed, in the last two years there was no associated cost.[1] Decreased costs reflect the reality of less severe health effects from this harmful and potentially fatal illness.[1]

Over the course of the Heat Stress Awareness Program, the frequency of heat-related illnesses decreased per year, and by the last two years, there were no reported heat-related illnesses during the hot season. [1] (Please refer to figure 1) [1]. 604 workers participated in the 7 year Heat Stress Awareness Program from 2011-2017. [1] Over the 9 year study period the odds of worker having a heat-related injury in 2015 to 2017 decreased by 91% compared with 2009 to 2011 and decreased 66% compared to 2012 -2014. [1] Notably, the *average* high temperature remained consistently over 90 ^{0} F during the summer months from 2009 – 2017. [1] The only temperature deviation was 2011 which was a hotter, drier year on record per National Oceanic Atmospheric Administration. [1]

The Heat Stress Awareness Program that I implemented at a Central Texas municipality consists of simple and inexpensive measures and appears to be effective in preventing occupational heat-related illnesses. [1] My research on the outcome data of this program was approved by the University of Pennsylvania's Internal Review Board and analyzed by a

statistician on the faculty, and my article was peer reviewed and accepted for publication in the Journal of Occupational and Environmental Medicine.

It is my expert opinion that all workers exposed to excessive heat should be protected by regulations mandating that employers maintain a plan to prevent heat-related injuries and illnesses that includes the recommendations in NIOSH's *Criteria for a Standard: Occupational Exposure to Heat and Hot Environments*. The plan should include provision of water; scheduled and paid rest breaks; shade or climate -controlled spaces; supervisor and worker training on heat stress and heat-related illness signs and symptoms; first aid and emergency response procedures; emergency communication procedures; an acclimatization plan, initial and annual medical monitoring prior to work in hot environment; exposure monitoring to determine when to implement administrative and worksite controls; and annual audit of excessive heat plan.

In light of the research presented, and as an occupational medicine physician with 16 years of experience supervising Texas workers exposed to hot environments, it is again in my expert opinion that if these recommendations are promulgated into law, this Bill will protect the lives and health of workers, and employers will benefit by increased worker productivity as well as decreased accident, injury and illness costs.

Figure 1

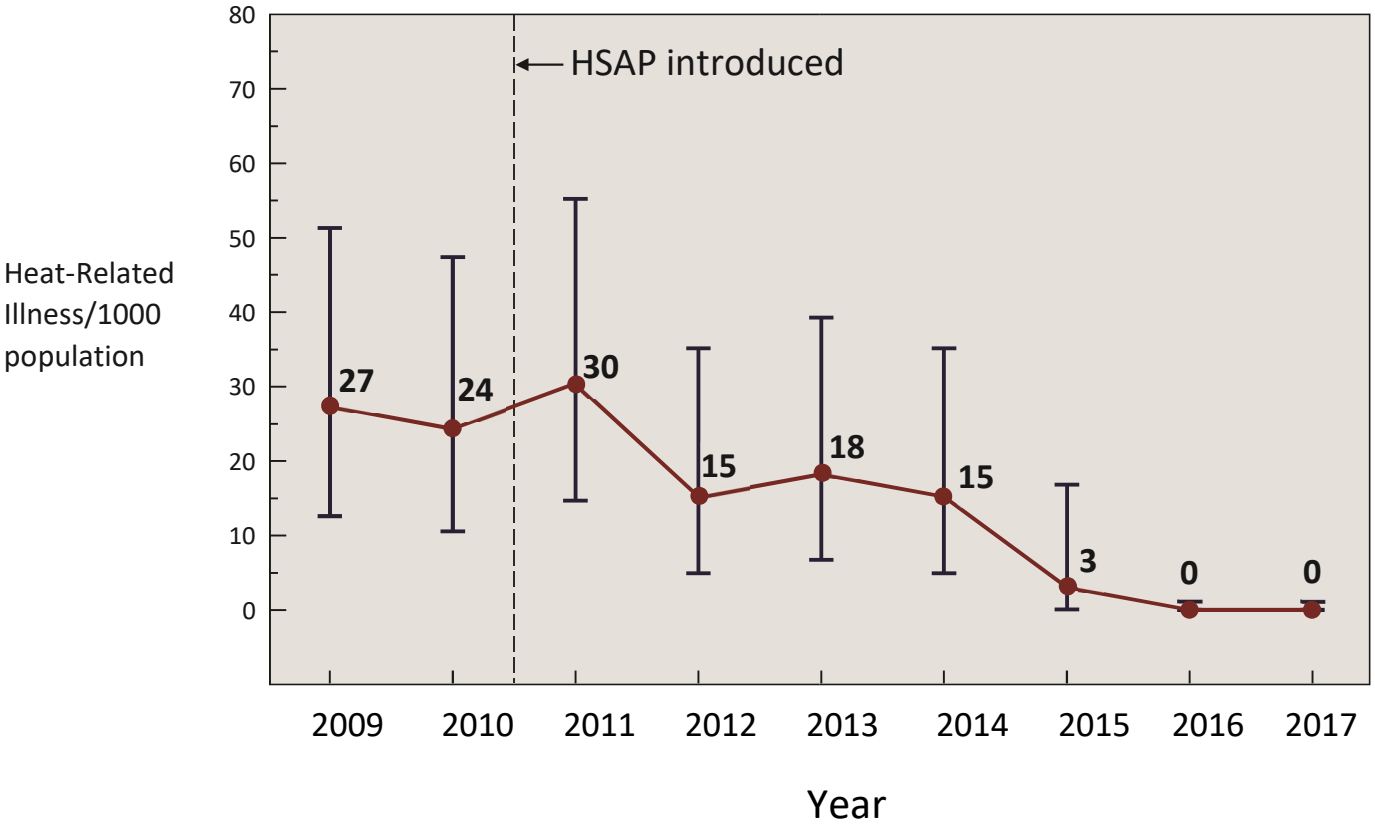

FIGURE 1. Heat-related illness frequency before and after implementation of the heat stress awareness program.

[1]Reference: McCarthy R, Shofer F, Green-McKenzie J, Outcomes of a Heat Stress Awareness Program on Heat-Related Illness in Outdoor Municipal Workers. *Journal of Occupational and Environmental Medicine:* July 7, 2019 - Volume Publish Ahead of Print - Issue - p doi: 10.1097/JOM.0000000000