



*School of Nursing & Health Studies  
Department of Human Science*

October 15, 2021

Jay Withrow, JD  
Director  
Division of Legal Support, ORA, OPPPI, and OWP  
Virginia Department of Labor and Industry

Dear Mr. Withrow:

Thank you for providing me the opportunity to serve on the advisory panel for the proposed heat illness prevention standard and for the opportunity to submit these comments. The draft proposal is a very strong start and promises to improve working conditions significantly for a wide variety of Virginia's workers. I have cared for patients with heatstroke, reviewed and supported OSHA compliance efforts when workers died from heatstroke, and co-authored an epidemiologic study demonstrating an increase in heatstroke mortality among construction workers associated with increases in summer temperatures (Dong et al). These experiences have shaped the following recommendations, with a specific focus on preventing heatstroke mortality:

First, the Virginia standard is urgently needed and should not wait for federal OSHA to act. Virginia is much farther along, has a much more nimble process, and has the ability to address the full range of workers, including agricultural workers.

The existing language concerning heat-related illness has been complicated in a number of foundational documents and could be simplified here. The 2007 Navy Environmental Health Technical Manual places the cut-off core temperature for heatstroke at 40<sup>0</sup> C (104<sup>0</sup> F) (p 84). As noted in my earlier edits, this is a level supported by recent peer reviewed publications and by my own experience. However, I would simplify the definition of heatstroke for training, first aid, and emergency response to include any form of confusion – this could range from confused responses to simple questions about place or date to other forms of central nervous system dysfunction described in the draft, including bizarre behavior, seizures or convulsions, coma, or any loss of consciousness longer than a brief fainting spell (heat syncope, a brief fainting spell with complete recovery, is not included). Confusion is the key point, and requires immediate response with immediate first aid with rapid cooling, preferably with ice and water, and immediate transportation to emergency medical care. Similarly, anyone who has stopped sweating – is “hot and dry” – by definition has heatstroke and requires the same immediate care. Note that either confusion or cessation of sweating are enough, you do not need both. As described in the draft document, other heat related symptoms, such as headache, fatigue, muscle

cramps, warrant removal from heat, provision of cool water and close monitoring, but please highlight the urgency for responding to confusion as the hallmark of heatstroke. The suggested edits in the draft Mr. Clark forwarded to you are my attempts to incorporate wording changes to address this.

Exposure to additional stressors, including high levels of exertion, work in direct sunlight, and work requiring protective clothing should be factored into control measures, both by lowering the heat index level at which protections are implemented and by including work/rest requirements.

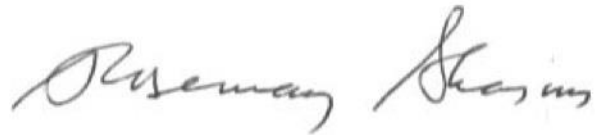
Most of the heatstroke fatalities investigated by OSHA occur among workers who have not appropriately acclimatized or who have other underlying factors. These are difficult challenges, since “working into” the job to acclimatize requires both performing the level of work expected in the heat but, at the same time, significantly limiting the duration of that level of work. It would be useful to specify some amount of gradual increase over the first week of work. The question of underlying conditions is even more challenging.

In the NIOSH Updated Criteria Document (2016), the recommendation is to provide medical monitoring, which I believe should be offered, but is likely to be perceived as infeasible. An alternative would be to provide extensive guidance for worker and supervisor training as well as for workers to provide to their health care professionals. This guidance needs to be very detailed and complete, including both chronic and acute illnesses and conditions, OTC and prescription and recreational drugs, etc. While the condition itself should remain confidential, workers should be encouraged to notify supervisors of the presence of chronic or acute conditions that increase risk, and this should be treated with the same modifications made for working in direct sunlight or other additional environmental stressors noted above. Non-mandatory guidance, similar to the nonmandatory sections in the OSHA lead standard appendix C, might also include the preferred option of having pre-placement medical evaluations to provide the information about whether modified acclimatization or work schedules are warranted for an individual, and whether the limitations are temporary and the anticipated duration (CFR 1910.1025. App C: “Recommendations may be more stringent than the specific provisions of the standard.” <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1025AppC> ). A copy of the standard should be provided to the health care professional and a template for reporting short term or long-term restrictions.

While the provision of adequate quantities of cool, clean drinking water is extremely important, workers should be encouraged to drink smaller amounts (8 oz) up to four times an hour, rather than attempting to drink all at once. This pacing, as well as the need to modify work schedules at high heat levels or with exacerbating environmental or individual factors, will be more difficult to implement in situations where workers are financially penalized for taking these measures, such as under piece-rate pay systems. Approaches to prevent this are needed.

Please don't hesitate to contact me if you have any questions, and thank you once again for your leadership in protecting Virginia's workers.

Sincerely,

A handwritten signature in cursive script that reads "Rosemary Sokas".

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