

# **It's Getting Hot Out Here: The Threat of Heat-Related Illness to the Health and Wellbeing of Immigrant Farmworkers**

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## **INTRODUCTION**

The United States is home to around 40 million immigrants.<sup>1</sup> Although they only comprise around 16.9% of the US labor force, immigrants are exposed to higher rates of occupational injuries and fatalities compared to native-born Americans, largely due to the nature of the jobs they tend to hold.<sup>2</sup> One particularly striking example of this phenomenon is the prevalence of highly-preventable heat-related illness (HRI) among immigrant agricultural workers.

There are a variety of factors that contribute to these adverse health outcomes, ranging from the quality of occupational safety training to the accessibility of water and shade. Although some states have taken the first steps in protecting immigrant agriculture workers from HRI by providing water and shade or presenting workers with informational pamphlets, recent studies have shown that this may not be enough.<sup>3</sup>

Overarching structural and psychological pressures, such as pay structures and the role of cultural values, may influence workers' decisions about taking preventative measures.

This brief provides an overview of the ongoing research regarding the causes of HRI and the effectiveness of preventative measures, a discussion of important cultural and structural considerations that are often overlooked, a summary of the current policies in place, and finally a set of policy recommendations based on our literature review.

## **BACKGROUND**

### ***Current Statistics***

According to the CDC, there were approximately 423 deaths from occupational heat exposure between 1992 and 2006.<sup>4</sup> The fatality rate of agricultural workers is twenty times the fatality rate of all industries, with most of the deaths occurring among immigrant workers.<sup>2</sup> Looking forward, scientists are concerned about how climate change will inevitably increase agricultural workers' risk of HRIs, as there has already been a noticeable increase of heat stress deaths in recent years.<sup>5</sup>

### ***Preventative Measures***

Some of the simplest preventative measures agricultural workers can take to protect themselves against HRIs are staying hydrated and seeking shade during especially hot days. If workers were to take breaks in the shade, the prevalence of three or more symptoms of HRI could be reduced

by 9.2%.<sup>6</sup> Additionally, drinking plenty of water is essential to replacing the fluids and electrolytes that are lost in excessive heat due to increased perspiration.<sup>7</sup> Staying well-hydrated is particularly important in maintaining a healthy internal body temperature, especially considering the labor-intensive nature of the job.

Although straightforward on paper, in practice, misconceptions about the kinds of fluid appropriate for rehydration and skepticism about the quality of water provided by employers often discourage agricultural workers from practicing adequate hydration measures.<sup>8</sup> Some workers are apprehensive about drinking cold water in hot temperatures, fearing that a sudden change in extremes of internal temperature can have harmful consequences to the body.<sup>5</sup>

Additionally, the kinds of fluids that agricultural workers seek in place of water (i.e. beer and soda) can potentially lead to even higher risks of HRIs. Avoiding drinking soda in hot and humid weather could reduce HRI symptoms by 6.7%.<sup>6</sup>

### ***Hourly vs Piece-Rate Pay Structures***

A key observation in the literature is the difference in worker behavior between those who are paid in hourly wages (hourly) and those who are paid in rates that fluctuate with how much product they are able to produce (piece-rate).

The average farmworker is younger, less educated, more likely to be foreign-born, less likely to speak English, and less likely to have citizenship or legal authorization to work.<sup>3</sup> As such, they are more vulnerable to job insecurity and economic instability.

Whether intentionally or not, employers take advantage of their workers' financial instability by offering the (supposedly) higher-paying piece-rate pay structure. However, piece-rate pay structures increase productivity at the expense of farmworker's health.<sup>8</sup> In fact, piece-rate farmworkers are less likely to take breaks for shade and water than their hourly counterparts.<sup>9</sup> When workers are paid by piece, they often succumb to the internal pressure to maximize their economic gains and minimize the social costs associated with taking water or shade breaks.

### ***Cultural Considerations***

Considering the high prevalence of people of color and particularly Latinx immigrants in the agricultural workforce, it is important not to overlook the role of cultural values in this discussion.

The workers who occupy these jobs often come from what cultural psychologists would refer to as interdependent contexts. This means that they tend to center their relationships to others, value adjusting to their situations, and are especially sensitive to hierarchical structures.<sup>10</sup>

Their cultural context is reflected in the internal pressure they feel to work diligently even in the presence of HRI symptoms. Workers express their desire to be seen as a “good worker, with great fortitude,” who refuse to let their bosses and their co-workers down.<sup>8</sup> *Machismo*, in which men go to great lengths to assert their masculine traits, also manifests itself in a reluctance to report physical symptoms, with men only reporting the most severe of HRI symptoms.<sup>5</sup>

### ***Current Policies***

Currently, only three states have passed legislation designed to protect its farmworkers from HRIs: California, Washington, and Minnesota. Of the three, California arguably offers the most protections by requiring employers to provide their employees with HRI safety training, water, shade, and an HRI emergency response plan.<sup>11</sup>

Vice President-Elect Kamala Harris recently introduced the *Asuncion Valdivia Heat Illness and Fatality Prevention Act* to the Senate for consideration. If passed, this bill would extend the protections that California offers its farmworkers to all farmworkers across the country.

## **POLICY RECOMMENDATIONS**

While this is a good first step, we have seen that simply offering farmworkers water, shade, and training is not enough. Even when offered water and shade breaks, even with HRI symptoms, workers paid by piece-rate often still refuse self-care because

of economic and psychosocial pressure. Thus, future legislation should address piece-rate pay structures in addition to requiring employers to provide water, shade, and an HRI emergency plan.

Additionally, not just any training will do. Because of the composure of the farmworker population, HRI safety training should be culturally-responsive, accessible, and, if possible, developed with the help of farmworkers.

Of course, legislators must also ensure that these protective measures are enforced. It would also be wise to provide funding so that researchers are able to track outcomes.

## LINKS TO ADDITIONAL RESOURCES

- ❖ UC Davis Western Center for Agricultural Health and Safety on Heat-Related Illness:  
<https://aghealth.ucdavis.edu/research/heat-illness>
- ❖ The CDC's Infographic on Heat-Related Illness:  
[https://today.cofc.edu/wp-content/uploads/2019/06/Heat\\_Related\\_Illness2.jpg](https://today.cofc.edu/wp-content/uploads/2019/06/Heat_Related_Illness2.jpg)
- ❖ Asuncion Valdivia Heat Illness and Fatality Prevention Act One-Pager:  
<https://www.harris.senate.gov/imo/media/doc/Asuncion%20Valdivia%20Heat%20Illness%20and%20Fatality%20Prevention%20Act%20One%20Pager.pdf>

## REFERENCES

1. Budiman A. Key findings about U.S. immigrants. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/08/20/key-findings-about-u-s-immigrants/>. Published August 20, 2020. Accessed November 16, 2020.
2. Schenker M. Occupational Health of Immigrant Workers: and now COVID-19. Lecture presented at: Stanford University; October 21, 2020; Stanford, CA.
3. Culp K, Tonelli S, Ramey SL, Donham K, & Fuortes L. Preventing Heat-Related Illness Among Hispanic Farmworkers. *AAOHN Journal*. 2011; 59(1): 23-36. doi: <https://doi.org/10.1177/216507991105900104>
4. Centers for Disease Control and Prevention. Heat-related Deaths Among Crop Workers --- United States, 1992–2006. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm>. Accessed November 16, 2020.
5. Courville MD, Wadsworth G, & Schenker M. “We Just Have To Continue Working”: Farmworker Self-care and Heat-related Illness. *Journal of Agriculture, Food Systems, and Community Development*. 2016; 6(2): 143-163  
<https://doi.org/10.5304/jafscd.2016.062.014>
6. Fleischer NL, Tiesman HM, Sumitani J, et al. Public Health Impact of Heat-Related Illness Among Migrant Farmworkers. *American Journal of Preventive Medicine*. 2013; 44(3): 199–206. doi: <https://doi.org/10.1016/j.amepre.2012.10.020>
7. Jackson LL, Rosenberg HR. Preventing heat-related illness among agricultural workers. *J Agromedicine*. 2010; 15(3): 200-215.  
doi:10.1080/1059924X.2010.487021
8. Wadsworth G, Courville M, Schenker M. Pay, Power, and Health: HRI and the Agricultural Conundrum. *Labor Studies Journal*. 2019; 44(3): 214-235.  
doi:10.1177/0160449X18767749
9. Bethel JW, Harger R. Heat-related illness among Oregon farmworkers. *Int J Environ Res Public Health*. 2014;11(9):9273-9285. Published 2014 Sep 5. doi:10.3390/ijerph110909273
10. Markus HR, Conner A. *Clash!: How to thrive in a multicultural world*. New York, NY: Plume; 2014.
11. United States Department of Labor. Safety and Health Topics | Heat - Standards | Occupational Safety and Health Administration. <https://www.osha.gov/SLTC/heatstress/standards.html>. Accessed November 16, 2020.