AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

FROM THE FIELDS TO THE FACTORIES: PREVENTING WORKPLACE INJURY AND DEATH FROM EXCESSIVE HEAT

HEARING

BEFORE THE

SUBCOMMITTEE ON WORKFORCE PROTECTIONS

COMMITTEE ON EDUCATION AND LABOR
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, JULY 11, 2019

Serial No. 116–33

Printed for the use of the Committee on Education and Labor

Available via the World Wide Web: www.govinfo.gov
or
Committee address: https://edlabor.house.gov

U.S. GOVERNMENT PUBLISHING OFFICE
37–319 PDF WASHINGTON : 2021

COMMITTEE ON EDUCATION AND LABOR

ROBERT C. "BOBBY" SCOTT, Virginia, *Chairman*

Susan A. Davis, California
Raúl M. Grijalva, Arizona
Joe Courtney, Connecticut
Marcia L. Fudge, Ohio
Gregorio Kilili Camacho Sablan, Northern Mariana Islands
Frederica S. Wilson, Florida
Suzanne Bonamici, Oregon
Mark Takano, California
Alma S. Adams, North Carolina
Mark DeSaulnier, California
Donald Norcross, New Jersey
Pramila Jayapal, Washington
Joseph D. Morelle, New York
Susan Wild, Pennsylvania
Josh Harder, California
Lucy McBath, Georgia
Kim Schrier, Washington
Lauren Underwood, Illinois
Jahana Hayes, Connecticut
Donna E. Shalala, Florida
Andy Levin, Michigan*
Ilhan Omar, Minnesota
David J. Trone, Maryland
Haley M. Stevens, Michigan
Susie Lee, Nevada
Lori Trahan, Massachusetts
Joaquin Castro, Texas
* Vice-Chair

Virginia Foxx, North Carolina, *Ranking Member*
David P. Roe, Tennessee
Glenn Thompson, Pennsylvania
Tim Walberg, Michigan
Brett Guthrie, Kentucky
Bradley Byrne, Alabama
Glenn Grothman, Wisconsin
Elise M. Stefanik, New York
Rick W. Allen, Georgia
Lloyd Smucker, Pennsylvania
Jim Banks, Indiana
Mark Walker, North Carolina
James Comer, Kentucky
Ben Cline, Virginia
Russ Fulcher, Idaho
Van Taylor, Texas
Steve Watkins, Kansas
Ron Wright, Texas
Daniel Meuser, Pennsylvania
William R. Timmons, IV, South Carolina
Dusty Johnson, South Dakota
Fred Keller, Pennsylvania

Véronique Pluviose, *Staff Director*
Brandon Renz, *Minority Staff Director*

SUBCOMMITTEE ON WORKFORCE PROTECTIONS

ALMA S. ADAMS, North Carolina, *Chairwoman*

Mark DeSaulnier, California
Mark Takano, California
Pramila Jayapal, Washington
Susan Wild, Pennsylvania
Lucy McBath, Georgia
Ilhan Omar, Minnesota
Haley M. Stevens, Michigan

Bradley Byrne, Alabama, *Ranking Member*
Mark Walker, North Carolina
Ben Cline, Virginia
Ron Wright, Texas

C O N T E N T S

	Page
Hearing held on July 11, 2019	1
Statement of Members:	
Adams, Hon. Alma S., Chairwoman, Subcommittee on Workforce Protections	1
Prepared statement of	3
Byrne, Hon. Bradley, Ranking Member, Subcommittee on Workforce Protections	5
Prepared statement of	5
Statement of Witnesses:	
Cannon, Mr. Kevin, Attorney, CSP, Senior Director, Safety and Health Services, Associated General Contractors of America	31
Prepared statement of	33
Chu, Hon. Judy, a Representative in Congress form the State of California	7
Prepared statement of	9
Bernard, Mr. Thomas E., Ph.D, Professor, College of Public Health, University of South Florida	12
Prepared statement of	14
Little, Mr. Bryan, Director of Labor Affairs, California Farm Bureau Federation	49
Prepared statement of	51
McCarthy, Dr. Ronda, Attorney, MD, MPH, American College of Occupational and Environmental Medicine and Concentra	40
Prepared statement of	42
Rodriguez, Mr. Arturo S., President Emeritus, United Farm Workers	62
Prepared statement of	64
Rodriguez, Mr. Javier, Warehouse Worker, Worker Resource Center	22
Prepared statement of	24
Additional Submissions:	
Ms. Adams:	
Prepared statement and study from Public Citizen	100
Questions submitted for the record	137, 139, 141, 143
Mr. Byrne:	
Letter dated August 2, 2019 from the American Farm Bureau Federation	124
Letter dated August 8, 2019 from the Construction Industry Safety Coalition	126
Dr. McCarthy:	
Slide: Heat-Related Illness Frequency Before and After Implementation of the Heat Stress Awareness Program	133
Mr. Javier Rodriguez:	
Slide: Assignment Goals Per Hour Safely	134
Slide: WWU Leaders David Garcia and Manolo Fernandez Document 100+ Temp In NFI Warehouse	135
Responses to questions submitted for the record:	
Mr. Bernard	144
Dr. McCarthy	147
Mr. Arturo S. Rodriguez	154
Mr. Javier Rodriguez	159

FROM THE FIELDS TO THE FACTORIES: PREVENTING WORKPLACE INJURY AND DEATH FROM EXCESSIVE HEAT
Thursday, July 11, 2019

House of Representatives,
Subcommittee on Workforce Protections,
Committee on Education and Labor,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:20 a.m., in Room 2175, Rayburn House Office Building, Hon. Alma Adams [chairwoman of the subcommittee] presiding.

Present: Representatives Adams, DeSaulnier, Jayapal, Wild, McBath, Omar, Stevens, Byrne, Cline, and Foxx (ex officio).

Also Present: Representatives Scott, Grijalva, and Keller.

Staff Present: Jordan Barab, Senior Labor Policy Advisor; Nekea Brown, Deputy Clerk; Ilana Brunner, General Counsel; Kyle DeCant, Labor Policy Counsel; Emma Eatman, Press Assistant; Eli Hovland, Staff Assistant; Stephanie Lalle, Deputy Communications Director; Andre Lindsay, Staff Assistant; Richard Miller, Director of Labor Policy; Max Moore, Office Aide; Merrick Nelson, Digital Manager; Veronique Pluviose, Staff Director; Banyon Vassar, Deputy Director of Information Technology; Jonathan Walter, Labor Policy Fellow; Cyrus Artz, Minority Parliamentarian; Courtney Butcher, Minority Director of Coalitions and Members Services; Akash Chougule, Minority Professional Staff Member; Cate Dillon, Minority Staff Assistant; Rob Green, Minority Director of Workforce Policy; Bridget Handy, Minority Communications Assistant; Dean Johnson, Minority Staff Assistant; John Martin, Minority Workforce Policy Counsel; Hannah Matesic, Minority Director of Operations; Audra McGeorge, Minority Communications Director; Carlton Norwood, Minority Press Secretary; Brandon Renz, Minority Staff Director; Ben Ridder, Minority Professional Staff Member; and Lauren Williams, Minority Professional Staff Member.

Chairwoman ADAMS. Good morning. The Subcommittee on Workforce Protections will come to order. Let me welcome everyone who is present today. I do note that we have a quorum.

The Committee is meeting today for a legislative hearing to receive testimony regarding "From the Fields to the Factories, Preventing Workplace Injury and Death from Excessive Heat." I note for the Subcommittee that Congressman Grijalva from Arizona, a member of the full committee, and Congressman Keller of Pennsyl-

vania, be permitted to participate in today's hearing with the understanding that their questions will come only after members of the Workforce Protection Subcommittee and the full committee on both sides of the aisle who are present have an opportunity to question the witnesses.

Pursuant to Committee Rule 7(c), opening statements are limited to the Chair and the Ranking Member. This allows us to hear from our witnesses sooner, and it provides all members with adequate time to ask questions. I recognize myself now for the purpose of making an opening statement.

Today, we are here to discuss the serious hazards of excessive heat exposure in the workplace and the need for the Occupational Safety and Health Administration, or OSHA, to protect American workers. We are not talking about being uncomfortable on a hot day. We are talking about excessive heat, combined with heavy clothing and high humidity that can incapacitate our body's natural cooling mechanisms, and lead to injury, organ failure, and sometimes death. This hearing will explore commonsense measures that employers can take to prevent these tragedies.

The Bureau of Labor Statistics reports that from 1992 through 2016, workplace exposure to excessive environmental heat killed 783 U.S. workers, and seriously injured 69,374. The problem is getting worse. And while those working in air-conditioned offices may not notice, climate change is all too real for the roofer, the warehouse worker, the farm worker, and the highway worker who worked for 8 to 10 or 12 hours a day in record-breaking heat.

According to the fourth U.S. National Climate Assessment, this warming trend is likely to only accelerate. The year 2017 was the second hottest year on record, surpassed by only 2016. Last week, we even saw record-breaking heat in Alaska. Who would have ever thought that workers in Alaska would have to worry about the risks of heat-related illness?

The real impact of excessive heat on our country's workers is tragic. Just last summer, a Florida landscaper suffered multiple organ failures, severe dehydration, and hypothermia, and died from heat stroke after using a lawn edger for 6 hours in 100-degree heat. Georgia farm worker Miguel Angel Gomez Chavez, 24, died of heat stroke after picking tomatoes in direct sunlight with temperatures up to 97.5 degrees. And just a few years ago, in my home state of North Carolina, a 56-year-old farm worker died of heat stroke after spending 3 days harvesting tobacco with a core body temperature of 108 degrees.

The good news is that we now know how to protect these tragedies for workers on farms, highways, construction sites, and other outdoor workplaces. Providing water and rest and cool shaded areas can save lives. And for indoor workers in factories and laundries and steel mills and lead smelters, there are practical measures that can keep workers healthy.

These are not radical requirements, and as we will hear today, the U.S. Army already maintains a rigorous heat standard to keep our servicemembers healthy and ready to carry out their missions. The National Institute for Occupational Safety and Health has also issued workplace safety guidance and a recommended standard addressing excessive heat.

And finally, three states have adopted their own heat protection standards. Yet, there is still no nationwide safety standard for excessive heat, leaving millions of workers without basic workplace protections. That is why during this hearing, we will also assess H.R. 3668, the Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019, introduced by Representative Judy Chu, who will testify today. This legislation will require OSHA to issue a standard within 42 months that would mandate employers to provide both indoor and outdoor workers exposed to excessive heat with the protections they need.

Specifically, the bill would require the implementation of well-organized safety measures, taking into consideration recommendations of the National Institute for Occupational Safety and Health, and ensure that the heat standards that is no less protective than those already in place in states like California.

OSHA may object that it doesn't have the resources to quickly complete a standard. However, we must remember that Congress cut OSHA's budget for standards by 10 percent in fiscal year 2017, a short-sighted decrease that the Democratic majority is fighting to reverse. And it is currently squandering its scarce resources on rule-making efforts that roll back the protections that workers already have instead of moving forward on new protections that workers need.

At its heart, this hearing is about basic workplace safety protections that all workers need to do their jobs. If our military servicemembers, arguably our toughest, most in shape workforce, rely on protections against excessive heat every day to ensure they can defend our country, then surely we can agree that the millions of workers who also endure intense heat to ensure our country runs smoothly deserve those protections as well.

I want to thank the witnesses for their testimony, and Congresswoman Chu, thank you so much for being here. I express my appreciation to those who have traveled long distances to be with us today. I now recognize the Ranking Member, Mr. Byrne, for an opening statement.

[The statement of Chairwoman Adams follows:]

Prepared Statement of Hon. Alma S. Adams, Chairwoman, Subcommittee on Workforce Protections

Today, we are here to discuss the serious hazards of excessive heat exposure in the workplace and the need for the Occupational Safety and Health Administration, or OSHA, to protect American workers.

We are not talking about being uncomfortable on a hot day. We are talking about excessive heat, combined with heavy clothing and high humidity, that can incapacitate our body's natural cooling mechanisms and lead to injury and sometimes death. This hearing will explore common-sense measures that employers can take to prevent these tragedies.

In fact, the Bureau of Labor Statistics reports that, from 1992 through 2016, exposure to excessive environmental heat killed 783 U.S. workers and seriously injured 69,374.

And the problem is getting worse. While those working in air-conditioned offices may not notice, climate change is all too real for the roofer, the warehouse worker, the farm worker, and the highway worker who works for 8, 10, or 12 hours a day in record-breaking heat.

According to the Fourth U.S. National Climate Assessment, this warming trend is likely to only accelerate. 2017 was the second-hottest year on record, surpassed only by 2016. Last week, we even saw record-breaking heat in Alaska. Who would

ever have thought that workers in Alaska would have to worry about the risks of heat-related illness?

The real impact of excessive heat on our country's workers is tragic. Just last summer:

A Florida landscaper suffered multiple organ failures, severe dehydration, and hyperthermia and died from heat stroke after using a lawn-edger for 6 hours in 100-degree heat.

Georgia farmworker Miguel Angel Guzman Chavez, 24, died of heat stroke after picking tomatoes in direct sunlight with temperatures up to 97.5 degrees.

And, just a few years ago, in my own state of North Carolina, a 56-year-old farm worker died of heat stroke after spending three days harvesting tobacco with a core body temperature of 108 degrees.

The good news is that we know how to prevent these tragedies. For workers on farms, highways, construction sites, and other outdoor workers, providing water and rest in cool, shaded areas can save lives. And, for indoor workers in factories, laundries, steel mills and lead smelters, there are practical measures that can keep workers healthy.

These are not radical requirements. As we will hear today, the U.S. Army already maintains a rigorous heat standard to keep our servicemembers healthy and ready to carry out their missions. The National Institute for

Occupational Safety and Health has also issued workplace safety guidance and a recommended standard addressing excessive heat. Finally, three states have adopted their own standards.

Yet, there is still no nationwide safety standard for excessive heat, leaving millions of workers without basic workplace protections.

That is why, during this hearing, we will also assess H.R. , the Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019, introduced by Representative Judy Chu, who will testify today. This legislation would require OSHA to issue a standard within 42 months that would mandate employers to provide both indoor and outdoor workers exposed to excessive heat with the protections they need. Specifically, the bill would require the implementation of well-recognized safety measures, taking into consideration the National Institute for Occupational Safety and Health's recommendations, as well as a heat standard that is no less protective than those already in-place in states like California.

OSHA may object that it doesn't have the resources to quickly complete a standard. However, we must remember that Congress cut OSHA's budget for standards by 10 percent in FY17 – a short-sighted decrease that the Democratic majority is fighting to reverse. And it is currently squandering its scare resources on rulemaking efforts that roll back the protections that workers already have instead of moving forward on new protections that workers need.

At its heart, this hearing is about basic workplace safety protections that all workers need do their jobs and stay safe. Each day, our military servicemembers—arguably our toughest, most in-shape workforce—rely on protections against excessive heat to ensure they can defend our country. Surely, we can agree that the millions of workers, who also endure intense heat each day to ensure our country runs smoothly, deserve those protections as well.

I want to thank the witnesses for their testimony and express my appreciation for those of you who have traveled long distances to be with us today.

I now yield to the distinguished Ranking Member, Mr Byrne for an opening statement.

Mr. BYRNE. Thank you for yielding.

We all have a common goal of keeping American workers healthy and safe. When they flourish and prosper, so does our Nation. Safety and health in the workplace must be a priority, and it is important that the government work with employers to prevent related injuries and illnesses.

We are here today to discuss occupational exposure to heat, a significant issue in many states, like my home state of Alabama, even beyond the summer months. I have worked with an industrial painting crew sandblasting storage tanks and painting them in the Alabama hot summer. I have worked on a used car lot maintaining the used cars on the car lot, keeping them clean, never left the car lot, in the Alabama hot summer. I have worked in a specialty

woodworking plant making shutters. Even though we were inside, we can't have any temperature control in those type of plants. I worked there in the Alabama hot summer. I know something about heat exposure in the workplace.

Heat exposure is currently regulated under the General Duty clause of the Occupational Safety and Health Act of 1970. Employers are already required to take definitive steps to protect employees and provide a safe work environment, and that includes preventing workers from being exposed to heat that results in illness.

Additionally, as we will hear today, several states have taken action and created their own standards on heat illness prevention that reflect their own unique economies, climates, and workplace challenges. Heat safety should be given careful deliberation so that we, as lawmakers, can make educated, well-informed decisions.

Unfortunately, our colleagues on the other side of the aisle appear to be scrambling to force the Occupational Safety and Health Administration to impose another one-size-fits-all Federal mandate for occupational heat exposure. We should look at the history of this issue to understand where we are before a new national regulation is considered.

In 2012, the Obama administration denied a petition to establish a heat standard. In fact, at the time, OSHA's head said their increased focus on enforcement and robust education and outreach campaigns adequately addressed the hazard. Nevertheless, committee Democrats are now moving forward with legislation to mandate a national standard without fully understanding if that is an appropriate and necessary course of action. Additionally, the majority is, once again, holding a legislative hearing on short notice on a bill that was introduced only a day before this hearing. This unfortunate habit, which we have seen time and time again this year, doesn't give members the opportunity to properly examine the issue or the bill text fully, and it demonstrates a lack of seriousness about the issue at hand.

Before this Committee or the House rushes to mandate yet another Federal regulation, members should strive to gain a better understanding of how OSHA is currently preventing heat illnesses and what impact a regulation would have at the national level. More mandates from Washington do not necessarily equal better policies to help workers, and rushed partisan policies rarely yield efficient, effective, or permanent solutions. We can and ought to be working together to prioritize the interest of the American worker through thoughtful deliberation, rather than hastily written press relates about partisan legislation.

Regardless of the circumstances of today's hearing, I thank the witnesses for being here today. I look forward to their testimony so that we can begin to gain a better understanding of how existing measures are preventing heat illness. And with that, Madam Chairwoman, I yield back.

[The statement by Mr. Byrne follows:]

Prepared Statement of Hon. Bradley Byrne, Ranking Member, Subcommittee on Subcommittee on Workforce Protections

Thank you for yielding.

We all share a common goal of keeping American workers healthy and safe. When they flourish and prosper, so does our nation. Safety and health in the workplace

must be a priority, and it's important that the government work with employers to prevent related injuries and illnesses.

We are here today to discuss occupational exposure to heat a significant issue in many states like Alabama even beyond the summer months. Heat exposure is currently regulated under the general duty clause of the Occupational Safety and Health Act of 1970. Employers are already required to take definitive steps to protect employees and provide a safe work environment, and that includes preventing workers from being exposed to heat that results in illness. Additionally, as we will hear today, several states have taken action and created their own standards on heat-illness prevention that reflect their own unique economies, climates, and workplace challenges.

Heat safety should be given careful deliberation so that we, as lawmakers, can make educated, well-informed decisions. Unfortunately, our colleagues on the other side of the aisle appear to be scrambling to force the Occupational Safety and Health Administration (OSHA) to impose another one-size-fits-all federal mandate for occupational heat exposure. We should look at the history of this issue to understand where we are before a new national regulation is considered. In 2012, the Obama administration denied a petition to establish a heat standard. In fact, at the time, OSHA's head said their increased focus on enforcement and robust educational and outreach campaigns adequately addressed the hazard. Nevertheless, Committee Democrats are now moving forward with legislation to mandate a national standard without fully understanding if that is an appropriate and necessary course of action.

Additionally, the majority is once again holding a legislative hearing on short notice on a bill that was introduced only a day before this hearing. This unfortunate habit, which we have seen time and time again this year, doesn't give Members the opportunity to properly examine the issue or the bill text fully, and demonstrates a lack of seriousness about the issue at hand.

Before this Committee or the House rushes to mandate yet another federal regulation, Members should strive to gain a better understanding of how OSHA is currently preventing heat illnesses and what impact a regulation would have at the national level. More mandates from Washington do not necessarily equal better policies to help workers. And rushed, partisan policies rarely yield efficient, effective, or permanent solutions.

We can and ought to be working together to prioritize the interests of the American worker through thoughtful deliberation rather than hastily written press releases about partisan legislation.

Regardless of the circumstances of today's hearing, I thank the witnesses for being here today and look forward to their testimony so that we can begin to gain a better understanding of how existing measures are preventing heat illness.

Thank you, I yield back.

Chairwoman ADAMS. Thank you, Mr. Byrne. I will now introduce our witnesses for panel one. Our first witness will be Representative Judy Chu from the great state of California. Representative Chu has a longstanding concern about the health illness risk that workers face, and yesterday, introduced H.R. 3668. I would also note that Representative Chu formerly served on this Committee during the 111th Congress.

We appreciate your being here today, Representative Chu, and look forward to your testimony. Let me remind you that we have read your written statement, and it will appear in full in the hearing record. Pursuant to Committee Rule 7(d) and Committee practice, you are asked to limit your oral presentation to a 5-minute summary of your written statement. And before you begin your testimony, please remember to press the button on the microphone in front of you so that it will turn on, and we can hear you.

As you begin to speak, the light in front of you will turn green. After 4 minutes, the light will turn yellow to signal that you have 1 minute remaining. And when the light turns red, your 5 minutes have expired, and we ask that you please wrap up at that time.

Congresswoman Chu, you may proceed.

STATEMENT OF THE HON. JUDY CHU, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. CHU. Chairman Scott, Chairwoman Adams, Ranking Member Byrne, and Members of the Subcommittee, thank you for inviting me to speak about the importance of Federal heat standards to protect workers. I have been passionate about this issue for well over a decade when I first carried a heat protection bill in the California legislature in 2005. I am thrilled that the Subcommittee is now holding a hearing on this topic.

Yesterday I introduced the Asuncion Valdivia Heat Illness and Fatality Prevention Act. Asuncion was a farm worker, and his story was brought to me by the United Farm Workers while I was in the California State Assembly. It was a story that I could never forget.

One day, Asuncion picked grapes for 10 hours straight in 105-degree temperatures. Then he fell over unconscious. Instead of calling an ambulance, his employer, Giumarra Vineyards, instructed Mr. Valdivia's son to drive him back home. On the way home, the father started foaming at the mouth and ultimately died of a heat stroke. A son had to witness his father die, a preventable death, at the age of 53.

I met his son. His grief was deep, especially because he knew that his father's death was 100 percent preventable, and that what the employer did was perfectly legal, despite 15 years of farm workers fighting for protections. So I carried a bill in the California legislature to require water, shade, and rest periods to protect all outdoor workers, and I am gratified that thanks to my bill, California became the first State in the country to protect farm workers and all outdoor workers from the heat elements, and has now been in operation for 14 years.

The bill we introduced yesterday similarly establishes a Federal standard for heat stress protections by directing OSHA to adopt a final standard on the prevention of occupational exposure to excessive heat, both in indoor and outdoor environments. A number of these measures are commonsense precautions, like ensuring that workers who are in high heat environments have paid breaks and cool environments, access to water for proper hydration, and limitations on how long workers can be in high heat areas. The bill also directs the standard to include training for employers and employees on heat stress illness and prevention, and requires employers to implement acclimatization plans to ensure workers can adjust to their working conditions to reduce injury.

Washington and Minnesota currently have heat protections for workers in place, and the U.S. military also has its own heat protection standards. It is time that the rest of the country's workers are equally protected.

Working in hot conditions raises the body's internal temperature to dangerous levels. Without rest or cooling, workers suffer from heat stroke or heat exhaustion. That can bring on dizziness, nausea, or fainting. Eventually, their kidneys break down, and in just the span of one 8- to 10-hour shift, a worker can fall into a coma and die.

According to a 2015 study by the Occupational Safety and Health Administration, exposure to heat led to 37 work-related deaths, and 2,830 non-fatal occupational injuries and illnesses. Not only do

we know that this is happening each year, but we also know it is getting worse. Just last week, a new report by Moody's Analytics found that rising temperatures from global warming could cost the global economy as much as $69 trillion by 2100, thanks in part to the impact on workers' health. And yet, OSHA does not have a Federal standard that requires the breaks, shade, or water that we know can prevent this, and OSHA merely suggests these provisions.

I am pleased that the Committee is taking the first important step to shine a light on this problem, and I hope the Committee will continue to move the Asuncion Valdivia Heat Illness and Fatality Prevention Act forward so that we can be one step closer to protecting workers from heat stress in all 50 States. Thank you again for allowing me to testify on this important issue.

[The statement of Ms. Chu follows:]

Testimony of Congresswoman Judy Chu
The House Education and Labor, Subcommittee on Workforce Protections
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat
July 11, 2019

Chairwoman Adams, Ranking Member Byrne, and members of the Subcommittee:

Thank you for inviting me to speak about the importance of federal heat standards to protect workers. I have been passionate about this issue for well over a decade, when I first carried a heat protection bill in the California Legislature in 2005. I am thrilled that this subcommittee is now holding a hearing on this topic.

Yesterday, I introduced the "Asuncion Valdivia Heat Illness and Fatality Prevention Act". Asuncion was a farmworker, and his story is one I can never forget. One day, Asuncion picked grapes for 10 hours straight - in 105-degree temperatures; then he fell over, unconscious. Instead of calling an ambulance, his employer, Giumarra Vineyards, instructed Mr. Valdivia's son to drive him back home. On the way home, the father starting foaming at the mouth, and ultimately died of heat stroke. A son had to witness his father die a preventable death at the age of 53.

It's important to note that while Asuncion's death was 100% preventable, his employer never broke a law, despite 15 years of farmworkers fighting for protections. Well, after Asuncion's death, I knew we had to act. So, I carried a bill in the California legislature to require water, shade and rest periods to protect all outdoor workers. And I am proud that, thanks to my bill, California became the first state in the country to protect farm workers from the elements.

The bill we introduced yesterday similarly establishes a federal standard for heat stress protections by directing OSHA to adopt a final standard on the prevention of occupational exposure to excessive heat, both in indoor and outdoor environments. A number of these measures are common sense precautions like ensuring that workers who are in high heat environments have paid breaks in cool environments, access to water for proper hydration, and limitations on how long workers can be in high heat areas. The bill also directs the standard to include training for employers and employees on heat stress illness and prevention and requires employers to implement acclimatization plans to ensure workers can adjust to their working conditions to reduce injury. Washington and Minnesota currently have heat protections for workers in place, and the U.S. Military also has its own heat protection standards. It's time that the rest of the country's workers are equally protected.

Working in hot conditions raises the body's internal temperature to dangerous levels. Without rest or cooling, workers suffer from heat stroke or heat exhaustion. That can bring on dizziness, nausea, or fainting. Eventually, their kidneys break down, and, in just the span of one 8 to 10-hour shift, a worker can fall into a coma and die. According to a 2015 study by the Occupational Safety and Health Administration (OSHA), exposure to heat led to 37 work-related deaths and 2,830 nonfatal occupation injuries and illnesses.

Now, not only do we know this is happening each year, but we also know it is getting worse. Just last week, a new report by Moody's Analytics found that rising temperatures from global warming could cost the global economy as much as $69 trillion by 2100, thanks in part to the impact on workers' health. And yet, OSHA does not have a federal standard that requires the breaks, shade, or water that we know can prevent this, they merely suggest them.

I am pleased that the committee is taking the first important step to shine a light on this problem, and I hope the committee will continue to move the Asuncion Valdivia Heat Illness and Fatality Prevention Act forward, so we can be one step closer to protecting workers from heat stress in all 50 states. Thank you again for allowing me to testify on this important issue.

Chairwoman ADAMS. I want to thank you, Congresswoman Chu, for taking the time to testify before the Committee today. Your testimony is a valuable part of the legislative record. Thank you so much for being here. Thank you for introducing this.

We will now seat the second panel, and I think everybody is out there. We are going to take about a 5-minute break and seat the next panel.

[Recess.]

Chairwoman ADAMS. I will now introduce our witnesses for the second panel. Our first witness for the second panel will be Dr. Thomas Bernard from the University of South Florida, where he teaches occupational health and safety. Dr. Bernard's primary research interest is in occupational heat stress. He serves on the ACGIH Physical Agents Committee, and on ISO, the working group on the thermal environment.

Our next witness will be Mr. Javier Rodriguez from Corona, California. Mr. Rodriguez is an organizer with the Warehouse Worker Resource Center, a non-profit advocacy organization in southern California. Before joining the center, Javier spent over 15 years as a worker in warehouses, construction, and farm work.

Following Mr. Rodriguez will be Mr. Kevin Cannon. Mr. Cannon is Senior Director, Safety and Health Services, for the Associated General Contractors of America. He is currently Chairman of the OSHA Advisory Committee on Construction Safety and Health, and he has been a member of ACCSH since 2011.

The next witness will be Dr. Ronda McCarthy. Dr. McCarthy is from Waco, Texas, is a medical doctor and board certified by the American Board of Preventive Medicine and Occupational Medicine. She also has a Master's degree in public health. Dr. McCarthy is the National Medical Director for Concentra's Medical Surveillance Services.

Following Dr. McCarthy, we will hear from Mr. Bryan Little. Mr. Little is the Director of Labor Policy for the California Farm Bureau Federation, and the Chief Operating Officer of the Farm Employers Labor Service. He served as the Deputy Assistant Secretary for Occupational Safety and Health during the George W. Bush Administration.

Our final witness will be Mr. Arturo Rodriguez, who is the recently retired President of the United Farm Workers Union. Mr. Rodriguez spent 45 years with the United Farm Workers of America, the last 25 as President, continuing to build the union Cesar Chavez began into a powerful voice for farm workers.

We appreciate all the witnesses for being here today, look forward to your testimony. Let me remind the witnesses that we have read your written statements, and they will appear in full in the hearing record. Pursuant to Committee Rule 7(d) and Committee practice, each of you is asked to limit your oral presentation to a 5-minute summary of your written statement. And let me remind the witnesses that pursuant to Title XVIII of the U.S. Code, Section 1001, it is illegal to knowingly and willfully falsify any statement, representation, writing, document, or material fact presented to Congress or otherwise conceal or cover up a material fact.

Before you begin your testimony, please remember to press the button on the microphone in front of you so that it will turn on and

members can hear you. And as you begin to speak, the light in front of you will turn green. After 4 minutes, the light will turn yellow to signal that you have 1 minute remaining. When the light turns red, your 5 minutes have expired, and we ask that you please wrap up. We will let the entire panel make their presentations before we move to member questions, and when answering a question, please remember to, once again, turn on your microphone.

I will first recognize Dr. Thomas Bernard.

STATEMENT OF THOMAS E. BERNARD, PH.D., PROFESSOR, COLLEGE OF PUBLIC HEALTH, UNIVERSITY OF SOUTH FLORIDA

Mr. BERNARD. I thank you, Chairwoman Adams, and Ranking Member Byrne and the distinguished Members of the Committee. My name is Thomas Bernard, and I am a Professor of Occupational Health in the College of Public Health at the University of South Florida. I thank you for this opportunity to talk on behalf of heat stress.

Over 40 years, I have had the chance to develop heat stress management programs over a wide range of industries. Heat stress is an underappreciated workplace hazard. We have all worked and/or played in hot environments. This common experience leads us to underappreciate the real risk for heat stress.

Heat stress is serious when the workplace is not prepared to deal with it. Heat stroke, where the body's natural cooling mechanisms shut down, can be fatal. One fatal heat stroke with which I am familiar was a young high school player, played football. He died his first day working for a landscaping company in New Hampshire. Another was a roofer in Louisiana. He threw down his tools, drove off the work site, and died in his car driving down the road. Yet another was a postal worker. He was not prepared to deal with the heat stress after a long absence.

Even if a heat stroke is not fatal, it can cause permanent damage to the brain, kidneys, and liver. Heat exhaustion sometimes leads to hospital admissions. Heat stress also leads to acute injuries and reduces productivity. All of these have costs to both employers and employees.

By asking simple questions about the environment, like the temperature and humidity, about the intensity of work, and about the clothing being worn, interventions can be selected to reduce the risk for heat illness. For instance, as mentioned earlier, the military, which has a young and physically fit population, limits the work that can be done and for how long, depending upon the level of heat stress.

Occupational health and safety professionals have learned lessons from the military. During the Deepwater Horizon response, OSHA and NIOSH prepared guidelines based on the military's for high temperatures and humidity of the Gulf Coast. BP provided training and specified work and rest cycles based on the ambient conditions. For instance, they restricted work to 20 minutes with 40 minutes of rest in a shaded area when the temperature was between 92 and 98. Considering they employed 50,000 unfit workers on long shifts, it is amazing there were few serious heat exhaustions and no heat strokes.

The evidence about the effectiveness of interventions has evolved over these last 20 years. The 2016 NIOSH criteria document on occupational exposure to heat and hot environments has captured most of these lessons. It forms an excellent starting point for an OSHA standard. Based on the NIOSH criteria document and my experience, the essential elements of a heat stress prevention program are training to understand the effects and the symptoms, practices such as drinking and taking rest in the shade, surveillance, and having an emergency plan are essential.

Other interventions that may be used as appropriate are engineering controls, which change the exposure conditions. These may be things that reduce the work demands through mechanization, reducing temperature and humidity and shading, shielding from high radiant sources.

Administrative controls would change the way the work is done. For instance, allowing for progressive increases in work schedule to allow for acclimatization, an increased tolerance, or allocating work and rest cycles. There are times where personal protection, wearing something like an ice vest or air-cooling systems under the clothing, will provide greater cooling than just simple evaporative cooling. These are mainly used in manufacturing or plant maintenance operations.

Finally, training employees and supervisors to recognize heat-related disorders and provide appropriate first aid is essential. With early identification and treatment, heat stroke can be reversed. It is my opinion, based on my experience and practice, that an enforceable OSHA standard can bring visibility and clarity to the structure and function of an effective heat stress management program.

Thank you, Madam Chairwoman.

[The statement of Mr. Bernard follows:]

Statement of Thomas E. Bernard, Professor
College of Public Health
University of South Florida

Subcommittee on Workforce Protections
Committee on Education and Labor
US House of Representatives
From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat
July 11, 2019

Chairwoman Adams, Ranking Member Byrne, and distinguished members of the Subcommittee. My name is Thomas Bernard and I am a professor in the college of public health at the University of South Florida. My Ph.D. in occupational health is from the University of Pittsburgh. Thank you for the opportunity to talk about heat stress in the workplace and to support an OSHA standard.

Over 40 years, I have had the opportunity to help develop heat stress management programs over a wide range of industries. Good heat stress management programs can be adopted to meet the needs and resources of individual employers.

Heat Stress Is Serious
First of all, heat stress is an underappreciated workplace hazard. We all have worked or played in hot environments, and may even have felt some of the symptoms of heat exhaustion. This common experience leads us to under-appreciate the real risks.

Overexposures to heat stress occur when the heat generated by the body cannot be dissipated to the ambient environment. This leads to heat accumulating in the body and rising body temperature. Heat exhaustion happens when the heart is not able to circulate enough blood to the skin to cool the body by sweat evaporation, and that failure leads to difficulty performing the work. There are times that the heat builds up rapidly enough that the body temperate exceeds 104°F. This is heat stroke. The brain ceases to function well, and the heating of tissue and the breakdown of protein cause liver and kidney damage. The longer the body stays above 104°F and the greater the elevation above 104°F, the more likely a heat stroke will become fatal. Even if a heat stroke is not fatal, it can cause permanent damage to the brain, kidneys and liver.

Heat stress exposures can be fatal when the workplace is not prepared to deal with it. One fatal heat stroke with which I am familiar was a young man, a high school football player, who died on his first day working for a landscaping company in New Hampshire. Another was a roofer in Louisiana who threw down his tools and drove off the job site to die in his car down the road. Yet another was a postal worker who was trying to do the best he could but who was not prepared to deal with heat stress due to a long absence.

Heat exhaustion sometimes leads to hospital admissions [1,2] with costs to employers and employees. Most discussions of heat stress effects center on heat-related disorders. Increasing levels of heat stress are also associated with increased frequency of accidents [3,4] and lost productivity [5]. Few people seem to appreciate the fact that heat stress is associated with accidents. There is clear evidence that heat stress is associated with acute injuries [3,4], and then by extrapolation to accidents that might involve equipment loss. Because heat stress places a physiological demand on the body, there is less capacity for work and thus it reduces

productivity [5]. Accidents and lost productivity have underappreciated costs to employers and employees.

Epidemiology Related to Heat Stress
To help establish the relationship between an exposure and a health outcome, we rely on epidemiological studies. For heat stress, there is sufficient evidence to make a strong case.

In the United States between 1992 and 2006 (15 years), the rate of heat-related fatalities among all occupational groups was 0.02/100,000 FTE. The rate during the same period for crop workers was 0.39/100,000 FTE, 18 times more. That is, those who work outside are at 18 times greater risk than those who may not work in a hot environment at all.

Compared to an overall heat-related claim rate of 1.7/100,000 FTE, there were higher incident rates among outdoor workers in Washington State for roofing construction 59.0/100,000 FTE, and highway, bridge and street construction 44.8/100,000 FTE [6], which are 35 and 26 times more likely respectively. There is no reason to suspect that Washington State is unique. That is, the incidence increases with increasing heat stress.

More direct evidence for the role of the ambient environment is seen in the following studies. The ambient conditions are expressed in terms of wet bulb globe temperature (WBGT) which includes the effects of humidity. The probability of a heat stress case among gulf clean-up workers increased steadily above comfortable (not warm or hot) conditions [4]. The association between ambient heat stress conditions and heat stress cases was also reported during football practices by comparing exposures below 73°F-WBGT (comfortable conditions) to those above [7]. Among jogging military recruits, there a 4-fold increase in the odds ratio at 90°F-WBGT (hot conditions) vs. 73°F-WBGT [8]. Looking at occupational heat exposures in outdoor environments, Spector et al. found that 75% of cases were above 82°F-WBGT [9] (warm conditions).

There Are Practical Interventions

By asking simple questions about the environment like the temperature and humidity; about the intensity of work; and about the work clothing, interventions can be selected to reduce the risks of heat illness. For instance, the military, which has a physically fit population with strict routines for eating and sleeping, limits what work can be done and for how long at different levels of heat stress. Other key elements of the military procedures are clear assignments of responsibility from the base commander down to the line enlisted personnel, training in heat stress and clear communications about the heat stress level.

Occupational health and safety professionals have learned lessons from the military. For instance, OSHA and NIOSH prepared similar guidelines for the Deepwater Horizon clean-up operations. Working along the Gulf coast in the summer means high temperatures and humidity. BP was very attuned to the risks of heat stress and provided training and specified work and rest cycles based on the ambient conditions. For instance, BP restricted work to 20 minutes followed by 40 minutes of rest in a shaded area when the temperature was between 92 and 98°F. Considering BP employed 50,000 often unfit workers on long shifts and having long commutes, it was amazing that there were few serious heat exhaustions and no heat strokes.

With the additional concerns for outdoor workers without considering climate change, thinking about interventions have evolved over the last 20 years. The 2016 *NIOSH Criteria Document on Occupational Exposure to Heat and Hot Environments* has captured most of the lessons.

Based on the NIOSH criteria document and my experience, the essential components of a heat illness prevention program that is organized and run by the employer are training to understand the effects and prevention strategies for heat stress, heat stress hygiene are practices that an individual can do to protect themselves like drinking small amounts often enough to make it a habit, surveillance, and an emergency plan. While the individual practices heat stress hygiene, the employer must facilitate them in order to make the prevention effective. For instance, providing cool water or other drink that is conveniently available.

In addition, specific interventions that are dictated by the circumstances of the work include the usual hierarchy of controls: engineering controls, administrative controls and personal protection. Not all interventions are appropriate to all workplaces. While the standard can lay out a menu of specific interventions, the employer is in the best position to know which interventions are will best protect workers in their workplace.

Engineering controls change the exposure conditions. Examples include reducing the work demands through mechanization, reducing air temperature and humidity, and shielding high radiant heat sources.

Administrative controls change the way work is done to reduce the risk. For instance, acclimatization is the natural response of the body to heat stress exposures that allows workers to better tolerate the heat. For instance, the work demands can be progressively increased over a few days to allow for acclimatization. Another administrative control is to allocate work and rest periods as done in the military, used during the Deepwater Horizon clean-up, and recommended by NIOSH.

Personal protection is useful when the heat stress is high and specially trained personnel are critical to the task. Specifically, ice vests, air or water cooling systems under the clothing, or forearm immersion in cold water during recovery provide greater cooling than sweat evaporation. Personal cooling is most likely to be used in manufacturing or plant maintenance operations.

Finally, the training of employees and supervisors in the recognition of and first aid for heat-related disorders is essential. With early identification and first aid and an emergency response plan, heat stroke can be reversed.

More information on interventions is provided in the appendix.

Conclusion

It is my opinion based on my experience and practice that an enforceable standard can bring visibility and clarity to the structure and function of an effective heat stress management program. The 2016 *NIOSH Criteria Document on Occupational Exposure to Heat and Hot Environments* is an excellent starting point.

References

1. Gubernot DM, Anderson GB, Hunting KL. Characterizing occupational heat-related mortality in the United States, 2000-2010: an analysis using the Census of Fatal Occupational Injuries database. Am J Ind Med. 2015;58(2):203-11. Epub 2015/01/22. doi: 10.1002/ajim.22381. PubMed PMID: 25603942; PMCID: PMC4657558.

2. Harduar Morano L, Bunn TL, Lackovic M, Lavender A, Dang GT, Chalmers JJ, Li Y, Zhang L, Flammia DD. Occupational heat-related illness emergency department visits and inpatient hospitalizations in the southeast region, 2007-2011. Am J Ind Med. 2015;58(10):1114-25. Epub 2015/08/26. doi: 10.1002/ajim.22504. PubMed PMID: 26305997.

3. Fogleman, M., L. Fakhrzadeh, T. E. Bernard. The relationship between outdoor thermal conditions and acute injury in an aluminum smelter. *International Journal of Industrial Ergonomics* 35:47-55, 2005

4. Garzon-Villalba, X. P., A. Mbah, S. W. Schwartz, Y. Wu, M. Hiles, H. Moore and T. E. Bernard. Exertional heat illness and acute injury related to ambient wet bulb globe temperature. *American Journal of Industrial Medicine* 59:1169-1176, 2016.

5. Andreas D Flouris, Petros C Dinas, Leonidas G Ioannou, Lars Nybo, George Havenith, Glen P Kenny, Tord Kjellstrom. Workers' health and productivity under occupational heat strain: a systematic review and meta-analysis. Lancet Planet Health 2018;2: e521–31

6. Bonauto D, Anderson R, Rauser E, Burke B. Occupational heat illness in Washington State, 1995-2005. Am J Ind Med. 2007 Dec;50(12):940-50.

7. Cooper Jr ER, Ferrara MS, Broglio SP. Exertional heat illness and environmental conditions during a single football season in the southeast. Journal of Athletic Training. 2006;41(3):332.

8. Wallace RF, Kriebel D, Punnet! L, Wegman DH, Wenger CB, Gardner JW, Gonzalez RR. The effects of continuous hot weather training on risk of exertional heat illness. Med Sci Sports Exerc. 2005;37(1):84-90. Epub 2005/01/06. PubMed PMID: 15632673.

9. Spector JT, Krenz J, Rauser E, Bonauto DK. Heat-related illness in Washington State agriculture and forestry sectors. Am J Ind Med. 2014;57(8):881-95. doi: 10.1002/ajim.22357. PubMed PMID: 24953344; PMCID: PMC5562230.

Appendix on Heat Stress Interventions
The following is a generic framework for a heat stress management. The elements are divided into General Controls and Job Specific Controls.

General Controls are those actions that should be taken once heat stress is identified as a workplace hazard.

General Controls include

- ***Heat Stress Training.*** Pre-placement and periodic training with re-enforcement.
    - *Causes of heat stress*
    - *Heat-related disorders* including causes, recognition and first aid
    - *Heat stress hygiene practices*
    - *Local risk mitigation strategies including a heat-related disorder response plan*
- ***Heat Stress Hygiene Practices.*** Heat-stress hygiene practices are the actions taken by an individual to reduce the risks of a heat disorder. The individual is responsible for practicing good heat stress hygiene. Site management informs the workers of good practices and helps the workers practice them.
    - *Self-determination.* The individual should seek relief from a heat stress exposure once extreme discomfort or the initial symptoms of a heat-related disorder are sensed. Often an employee can have significant physiological strain before they report that they are very uncomfortable or have the symptoms of heat exhaustion or stroke. Thus, the early recognition is important.
    - *Fluid replacement.* Because thermal regulation depends on sweating and the necessary loss of water, the water must be replaced at frequent intervals to maintain acceptable hydration.
    - *Lifestyle and diet.* Practicing a generally accepted healthy lifestyle (getting adequate sleep, limiting non-work exposures to heat stress, exercising, not abusing alcohol or drugs, and eating a well-balanced diet) greatly reduces the risk of heat-related disorders.
    - *Health status.* Those with any chronic disease should inform their physician of occupational exposures to heat stress and follow the recommendations. Those with an acute illness should report the condition to a supervisor, and the heat stress exposures should be restricted or reduced.
    - *Acclimatization.* Because acclimatization requires about 5 days, allowances must be made for those workers who are not acclimatized to the heat, and performance expectations should therefore be reduced. Note: Some professionals and literature would include acclimatization under administrative controls rather than a hygiene practice.
- ***Surveillance***
    - Environmental. Following a heat stress assessment that made the determination that heat stress is a potential hazard, environmental monitoring with appropriate triggers should be implemented so that workers and supervisors are aware of the risk at a given time.
        - While a WBGT or other detailed analysis of the work situation is ideal, there are other acceptable approaches that are a hybrid of a screening analysis and a detailed analysis.
    - Medical. Following NIOSH recommendations, medical surveillance encompasses physicals and monitoring of sentinel health events. Both pre-placement and periodic physicals appropriate to evaluation of an individual's capacity to deal with heat stress are recommended. The physical should include comprehensive medical and work histories, comprehensive physical examination and tests, and

assessment of prescription drug use. Good practice dictates that there be a written opinion as to the suitability of exposing the individual to heat stress. Monitoring of sentinel health events includes monitoring individuals as well as the population. Relevant events are heat-related disorders, patterns of accidents, absenteeism, and chronic fatigue.

- An alternative to the physical exams, the employer may wish to employees with chronic diseases to consult with their personal physician and to clearly convey to the physician that heat stress is part of their jobs.
- The employer should track sentinel events, which should include reports of heat exhaustion as first aid events and recordables
- If the employer finds that an employee has lower heat tolerance than others based on sentinel events or advice of personal physician, then interventions can be designed for them (e.g., adjust work requirements during high levels of heat stress or personal monitoring).

- ***First aid and emergency response plan.*** The plan should include the ability to recognize early symptoms of heat-related disorders by first line supervisors and workers. In the event of a suspected heat stroke, a method for immediate emergency cooling of the person (ice water immersion or other aggressive method) and arrangements for transport to the hospital are necessary. It is crucial to start cooling immediately and not to wait for an emergency service to arrive.
  - While the prevalence of heat stroke is very low, it is life threatening. The buddy system is important for the recognition of heat stroke, especially because the person may not have the cognitive function to understand the risk and to take any protective steps. In addition to recognizing the signs and symptoms of heat stroke, the observing employee needs to take aggressive action to cool the person experiencing symptoms and execute the emergency response plan including calling 911. These steps also require training.

Job Specific Controls are those that apply to specific situations. While not all job specific controls apply to the postal service, they are provided here as an opportunity to think about possibilities. The job specific controls follow the traditional hierarchy of engineering controls followed by administrative controls, and then personal protection, usually in the form of personal cooling.

Specific Controls follow.

- ***Engineering Controls.*** Engineering controls change the conditions so that the level of heat stress is reduced, ideally below the exposure thresholds.
  - *Reduce the metabolic rate.* A very effective means to reduce heat stress is to reduce the amount of internal heat generation.
  - *Change clothing requirements.* This generally applies to protective clothing.
  - *Reduce temperature and humidity.* Reductions of air temperature and humidity are frequently achieved through spot or dilution ventilation. This is another method to significantly reduce the level of heat stress in the workplace. The ventilation systems can be temporary or permanent and may include mechanical cooling.
  - *Increase air motion.* Increasing air speed via fans is a time-honored method to enhance evaporative cooling, but it is of limited value once air speed exceeds 2 m/s. When air temperature is greater than 40 °C (104 °F), increasing air motion may actually increase heat stress.

  - *Control radiant heat.* When radiant heat is high, the effects can be reduced through combinations of insulating exterior surfaces and reducing surface emissivity. In addition, shields can be very effective.
- ***Administrative Controls.*** Administrative controls manage the risk through work practices. They are relatively easy to implement, although they may not be the most cost-effective.
  - *Acclimatization.* Providing a schedule of work that introduces an unacclimatized person to progressively higher levels of heat stress over a week.
  - *Planned work time.* Limiting the heat stress exposure to a time period that would ensure that most workers are not overexposed is one way to limit the risk. The work time limit can be based on the WBGT or ISO methods of estimating safe exposure times.
  - *Self-determination.* Giving employees the opportunity to subjectively control the pace of work and the work time is frequently used as a means of controlling heat stress exposures. Self-pacing is a valuable means of reducing the physiological strain and improving efficiency. Subjective self-limitation, however, may not be reliable. Physiological monitoring to provide objective information on heart rate and body temperature will improve the reliability. The advantage of personal monitoring is that it allows the more heat-tolerant workers more exposure time. In this way, personal monitoring can improve productivity while controlling the risk of heat-related disorders.
  - *Recovery allowances.* It is important to provide adequate recovery from heat stress exposures. Including recovery times and locations in the analysis of overall evaluation of heat stress exposure provides insight as to whether or not the recovery allowance is adequate.
  - *Scheduling work.* To the extent possible, scheduling work to times when the heat stress levels may be lower (e.g., night) is a useful way to control exposures.
- ***Personal Protection.*** Personal protection for heat stress exposures means providing a microenvironment around the worker that allows a greater loss of heat.
  - *Circulating air systems.* Venting air from supplied-air hoods or supplying breathing grade air directly under clothing enhances evaporative and convective cooling. Many times, the cooling is sufficient to virtually eliminate heat strain. The major disadvantage is that worker mobility is restricted with the airline.
  - *Liquid cooling systems.* This type of personal cooling is based on circulating cooling liquid (e.g., water) around some portion of the body within enclosed tubes or channels. The rate of cooling depends on the surface area of the body covered. The heat is taken up by a heat sink that is usually composed of ice but could theoretically be another material. The service time depends on the size of the heat sink or the ability to replenish the heat sink. The major disadvantage to these systems is the cost.
  - *Ice cooling (phase change) garments.* Ice cooling and phase change garments cool the body by direct transfer of heat from the body to the heat sink by conduction. These are sometimes referred to as passive systems because there is no mechanical movement of air or liquid.
  - *Forearm immersion in cold water.* By placing the forearms in a cold/ice water bath, the recovery from a heat stress exposure can be accelerated.

Good safety and health program management practices include periodic review and continuous improvement.

Physiological Monitoring

The ACGIH® TLV® for Heat Stress and Strain points out that work often occurs at levels above the TLV. Under these circumstances, adequate management of heat stress can be demonstrated though physiological (heat strain) monitoring. For instance, the assessment and logging of oral temperature might be a step in this direction. To be complete the log should be recorded in an accessible database and be periodically reviewed by health and safety personnel. There should be an oversampling of hot days and random sampling by trained personnel would provide a necessary quality control check.

Chairwoman ADAMS. And thank you very much.

I will recognize now Mr. Javier Rodriguez. You are recognized for 5 minutes, sir.

STATEMENT OF JAVIER RODRIGUEZ, WAREHOUSE WORKER, WORKER RESOURCE CENTER

Mr. JAVIER RODRIGUEZ. Chairman Adams, Ranking Member Byrne, and distinguished Members of this Committee, my name is Javier Rodriguez. In the past 15 years, I have had experience working in southern California in several industries. In these workplaces, I have witnessed employers neglecting workers affected by the heat, and even retaliated against them, not providing workers dealing with extreme heat with the basic protections, like water and rest, and generally, not take this issue of heat seriously.

I am now a staff member of the Warehouse Worker Resource Center, the organization where my coworkers and I are receiving training in our rights at work. In 2011 and 2012, I worked at the NFI Cross Dock in Jurupa Valley, California, a facility moving goods for Walmart. The temperatures in Riverside County often go above 100 degrees in the summer when it is humid. We have documented the heat index at 115 degrees inside the containers.

The work pace at the work Cross Dock was extremely high. Please look at the screen. We have a slide. This is the rate sheet from NFI warehouse where I work. We had to load or unload 450 boxes per hour, boxes between 10 and 100 pounds, carry it up to 40 feet out to the container and to the warehouse floor, and stack onto the carts or pallets for 8 hours per day. You will have to load, carry, and stack a box container containing a microwave, TV every 7-1/2 seconds. I saw workers at this warehouse faint from the heat.

People will feel sick and not know how to get help. Instead of providing the rest of us with information on how to protect ourselves, the company told the workers who fainted or feel sick and were facing heat distress to rest or go home, and told the rest of us keep working at the same pace of before.

We who worked at the warehouse knew that these conditions were dangerous. We received training from educators and occupational health expert from the institutions like UCLA. We began to ask for clean water, education around heat, and more breaks. The manager refused. We ended up filing a complaint with OSHA in July of 2012, and the State issued serious citations, but the heat continued to be a problem.

We have another display. It is a picture of some coworkers with thermometers inside the warehouse showing 102 degrees that summer. Some of us who ask for protections or who take breaks, we are not brought back to work. But the NFI warehouse managers and the staffing agency leads will constantly remind us that we are temps, and that there will be not work for those who speak up or slow down.

The previous summer, in August 2011, at the warehouse operated by the same company, NFI, with the same safety manager about 10 miles away in Chino, a worker named Domingo Blancas fell ill on a hot day. He was employed by the staffing agency Tristate, whose solution to Domingo reporting dangerous health illness symptoms was to have another worker also complaining of the

heat illness symptoms, drive him to the clinic. The clinic told him go to the ER, but Domingo had no vehicle and no health insurance. He waited for hours before his son called to take him to the hospital where he was treated for the heat. He was in the hospital for 3 days, he had surgery, and the doctors say that he could have died.

With the evidence of Domingo's heat illness and NFI's inadequate response, Cal/OSHA cited both NFI and Tristate for not having an adequate injury and illness prevention plan. NFI and the staffing agency then spends much of the next 5 years fighting this case in the court, denying the clear evidence that Domingo had suffered heat-related illness.

It wasn't until July 2017 that the California Supreme Court finally found substantial evidence that Blancas suffered a serious heat illness requiring hospitalization, and NFI gave up fighting this violation.

The current system is inadequate. That experience led us to call for indoor heat standard in California which we won through Senate Bill 1167 in 2016. Cal/OSHA is currently working in this standard in rulemaking, and we hope it will go into effect soon. This is why we also support the legislation by Congresswoman Chu and Congressman Grijalva to require OSHA to create a heat stress standard, and thank you for your consideration.

[The statement of Mr. Javier Rodriguez follows:]

Statement of Javier Rodriguez, Warehouse Worker Resource Center

Subcommittee on Workforce Protections
Committee on Education and Labor
US House of Representatives
From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat
July 11, 2019

Chairman Adams, Ranking Member Byrne, and distinguished members of the Subcommittee.

My name is Javier Rodriguez. In the past 15 years, I have had experiences working in Southern California in several industries. I have experienced excessive heat both indoors and outdoors in workplaces operated by major global companies and small businesses. In all of these workplaces, I have personally witnessed employers neglecting workers affected by heat and even retaliating against them, not providing education or training, not providing workers dealing with extreme heat with basic protections like water and rest, and generally not taking the issue of heat seriously. I am now a staff member of the Warehouse Worker Resource Center, the organization where my co-workers and I received training in our rights at work.[1]

In 2011- 2012, I worked at the NFI Crossdock in Jurupa Valley, Riverside County, CA, a facility moving goods 100% for Walmart. This facility had a roof but was not enclosed with walls, and we worked moving freight in and out of the building from metal shipping containers. The temperatures in Riverside County often go above 100 degrees in the summer, and inside the steel containers, the temperature can be ten degrees higher. When it is humid, we have documented the heat index at 115 degrees.

The work pace at the cross dock was extremely high. This is the rate sheet from the NFI warehouse where I worked. We had to load or unload 450 boxes per hour, boxes between 10 and 100 pounds, carry it up to 40 feet out of the container onto the warehouse floor, stack it neatly onto carts or pallets, and walk back, for eight hours per day. (See Exhibit 1) You would have to unload, carry and stack a box containing a microwave or TV every seven and a half seconds. If you don't keep up with the rate, it is likely you won't get to work the next day. In the five minutes of my testimony, a warehouse worker will unload 45 boxes, and then continue for another 115 minutes without stopping.

Despite the fact that this warehouse was operated by NFI, a global trucking and warehouse company that brings in $2 billion per year and employs over 11,000 people, and the fact that we were loading and unloading freight for Walmart, the largest company in the world, this warehouse's managers did not provide us with any training or protections around the heat. The company took no extra precautions in the summer when the heat was above 90 or 100 degrees.

[1]The Warehouse Worker Resource Center is a non-profit organization based in Southern California that supports low-wage workers in the goods movement sector through education, advocacy and action. For more detail see www.warehouseworkers.org.

There was only one water cooler on site, far from where we were working. If you wanted to get water you had to stop working and walk over to the cooler, which the managers didn't like. The cooler was often dirty and sometimes didn't work at all. Signs on the pipes said the water was recycled.

I personally witnessed workers at this warehouse faint from the heat. People would feel ill and not know how to get help. Instead of providing the rest of us with information on how to protect ourselves, the company told workers who fainted or felt ill and were facing heat stress to rest or go home, and told the rest of us to keep working, at the same pace as before. Even worse, because most of us worked for minimum wages, many of us could not afford air conditioning at home. The toll the body undergoes in the high heat and stress periods compounds the impacts on the body when the body does not get the ability to recover completely before going back to work under these same conditions for days on end.

We who worked at the warehouse knew that these conditions were dangerous. We educated ourselves about the effects of heat on the human body and the steps that should be taken to protect ourselves. We received trainings from educators and occupational health experts from institutions like UCLA. We began to ask for heat protections like clean water, education around heat, and more breaks. The managers refused. We ended up filing a complaint with Cal/OSHA in July 2012. The complaint named, among many other things, the heat and lack of training, but there was no standard for indoor heat and the state didn't take any action. There were a lot of other violations and the state issued serious citations to NFI and the staffing agency. But the heat continued to be a problem. Here is an image of some of my co-workers with a thermometer inside the warehouse showing 102 degrees that summer. (Exhibit)

We joined together and went as a group during our breaks to ask for heat protection, as well as other safety measures. The NFI and staffing agency managers refused, told us to get back to work. Workers who educated themselves about the heat grew concerned, and some of us who had heard of other workers getting injured or dying took breaks when we felt tired -- even though the company's managers threatened and punished us for it.

Some of the workers who spoke up for their co-workers, asking for protections or who took breaks, were not brought back to work. Both the NFI warehouse managers and the staffing agency leads would constantly remind us that we were temps -- even those of us who had been there for years, and that there would be no work for those who speak up or slow down. We knew this was retaliation and we told them and we also filed complaints with the state and the NLRB. This led to further retaliation. We were being punished for speaking up about the heat.

This experience showed us how retaliation prevents many workers from being able to speak up to protect their safety and health. Protecting workers from heat means we must also have strong protections against retaliation. At NFI, we the workers knew when the conditions were dangerous and when we needed protections or to slow down to stay safe, despite managers pushing us to keep going. Although employers must take responsibility for keeping the

workplace safe, workers must have the right to take a break from dangerous heat when they feel the need to, and to help decide what protections are needed in the workplace.

* * *

The previous summer, in August 2011, at a warehouse operated by the same company, NFI, with the same safety manager, about 10 miles away in Chino, California, a worker named Domingo Blancas fell ill on a hot day. He was employed by a staffing agency, Tristate, whose solution to Blancas reporting dangerous heat illness symptoms was to have another worker also complaining of heat illness symptoms drive him to a clinic. The clinic told him to go to the Emergency Room, but Domingo had no vehicle and no health insurance, and knew an ambulance could cost him thousands of dollars. Unsure of what to do, he went home from work and went back to work the next day, still sick. He waited for hours before his son, who also worked in the warehouse, could take him to the hospital, where he was treated and had surgery on his stomach for myostis related to the heat. He spent three days in the hospital and was told that if he'd arrived much later, he would have ended up even worse.

With the clear evidence of Blancas' serious heat illness and NFI's completely inadequate response, Cal/OSHA cited both NFI and Tristate for not having an adequate injury and illness prevention plan to deal with this issue. NFI and the staffing agency then spent much of the next five years fighting this case in court, denying the clear evidence that Domingo Blancas had suffered heat-related illness. It wasn't until July 2017 that the California Superior Court finally found "substantial evidence that ... Blancas suffered a serious heat illness requiring hospitalization", and NFI gave up fighting this violation.

Employers and policymakers should be listening to workers about how to protect us from heat, but the burden of providing safety should not be placed on the worker. Employers must also be required to take specific steps, such as using air conditioning, mandatory rest breaks, or acclimatization methods, to prevent heat conditions from becoming dangerous. If workers are having to protest because they are getting sick from heat and fear for their health, the employer has already failed in its duty to provide a safe workplace.

That experience led us to call for an indoor heat standard in California, which we won through Senate Bill 1167 in 2016. Cal/OSHA is currently working on this standard in rulemaking and we hope it will go into effect soon.

* * *

In the years since my experience at NFI, I have been an organizer educating workers about their rights in the workplace, including their right to heat protection. I have seen too often that workers are not informed about the occupational clinics and the workers compensation system and the fact that they are guaranteed treatment for occupational injuries. Employers do little to inform workers of their rights to medical treatment for conditions like heat illnesses, and rarely report anything but the most direct injuries to the workers' compensation system. Workers face pressures from their employers to suppress anything that indicates they would not be able to

keep up in an intense work situation. This leads to the situation we see now in the warehouse industry, where heat illness is rarely reported and, when it is reported, is rarely the subject of an occupational medical examination or workers' compensation claim.

I have seen that this type of treatment is consistent across many warehouse operators and other sectors of the economy. They focus on the individual's inability to handle the heat, without changing their work rates, quotas or speeds to account for heat's impacts on the human body. So in the end, when the worker gets sick under these abusive conditions, the company ends up blaming the workers instead of taking responsibility for preventing the illnesses in the first place.

For example, last summer a worker I know became very sick after working in extreme heat conditions in a warehouse in Ontario, California, moving clothes for a major national fashion brand. A 40-year-old mother of three, she worked all day doing heavy and fast lifting surrounded by racks of clothing that trapped heat. There was no air conditioning in the warehouse and no ventilation in the workspace. Workers fanned themselves with cardboard, bought small handheld fans, and wrapped their heads in wet clothes to try to stay cool. The day she became sick, the worker was wearing a heat tracker she was given by a journalist, and it showed that the heat index inside the work area was 94 degrees, even well into the night.

After working in these extreme conditions, the worker felt dehydrated and complained to her supervisor who became angry and told her just to take a break. The worker nearly fainted and felt like she was going to throw up, and then noticed that her hands were starting to shake. Instead of helping her or providing any medical care or transportation, the supervisor told the worker to go home. The worker drove herself to a clinic and saw a doctor who diagnosed dehydration but refused to provide any documentation that her condition may have been caused by the conditions at work. The worker had to miss several days of work and received no sick pay, and no workers' compensation or other assistance to pay her medical bills. She still gets headaches in the heat. That worker is my wife.

This and many other experiences have shown me that workers facing deadly heat hazards would be much better protected if their supervisors were forced to recognize these dangers, and to act swiftly in addressing and implementing safety measures to protect workers from heat exposures when danger strikes. This includes keeping good records of these cases as they happen, so the company would clearly see the need to protect people.

And they would be much better off if doctors took workers more seriously when they reported feeling sick from heat. This includes doctors naming the plausible root cause of a heat related illness or injury, instead of shying away from naming a culprit because it might be related to occupational health and safety exposure.

But sadly that kind of recognition would be the exception in today's real world. Recently, OSHA's own doctors said that in almost one-quarter of the deaths they investigated in 2012 and

2013, the coroners called them heart attacks instead of heat illnesses.[2] And another recent study showed that non-US citizen workers are over 3 times more likely to die from heat-related illness, for various reasons, as compared to US citizens.[3]

Every day, workers have to put up with the doctors in the workers comp system -- often picked by the company -- who refuse to believe that they are sick from the heat at work. I know this personally.

Just last summer, I witnessed people I know who work in warehouses go home ill from heat, after going to their employers and being told it was not work-related, even workers who know well the causes and symptoms of heat illness and explained them to their supervisors or doctors. Occupational clinics are often set up to deny worker claims and workers affected by heat, already disoriented and confused about the process, rarely feel comfortable pushing back against a doctor's diagnosis.

This experience tells me there needs to be a policy solution to this problem. If employers are allowed to blame heat illness on a worker's inability to keep up, instead of taking into account that heat slows workers down and can make people sick or die, these kinds of situations will keep happening.

This is why it is so important for OSHA to create and enforce a strong heat standard to protect workers like myself, my wife, and my many coworkers who have experienced terrible and unsafe heat conditions working both outdoors and indoors. This is why I came all the way from California to speak with you today, to share my experiences so you can understand how bad the conditions are for so many workers and what it has taken for us to fight and win protections in our workplaces and our state legislature.

We support the legislation by Congresswoman Chu and Congressman Grijalva to require OSHA to create a heat stress standard. It includes many of the important things employers need to take responsibility for to protect their employees. I urge you to support this legislation, and to also remember that to truly protect workers from heat you must also ensure workers are protected against retaliation and provided with the right to speak up or take action to protect our health and our lives when heat puts them in danger.

---

[2] Arbury S, Lindsley M, Hodgson M. A critical review of OSHA heat enforcement cases: Lessons learned. J Occup Environ Med. 2016;58(4):359-363. p. 361.
[3] Taylor EV, Vaidyanathan A, Flanders D, et al. Differences in heat-related mortality by citizenship status: United States, 2005–2014. Am J Public Health. 2018;108:S131–S136.

Thank you for your consideration.

Respectfully submitted,

Javier Rodriguez
Warehouse Worker Resource Center
Ontario, CA

Attachments:

1. Assignment Goals Sheet, NFI Industries Crossdock
2. Image, David Garcia And Manolo Fernandez document 100+ temp in NFI Warehouse
3. Citation and Notification of Penalty, Cal/OSHA, Inspection 316208685, 11888 Mission Blvd, Mira Loma, CA 91752, 12/27/2012.
4. Stipulation of Appeal of National Distribution Center LP dba NFI, Docket 14-R3D3-2360
5. Citation and Notification of Penalty, Cal/OSHA, Inspection #314757121, 15835 San Antonio Ave., Chino, CA 91708, January 13, 2012.
6. Divison's Reply Brief, National Distribution Center LP and Tri-State Staffing, Docket Nos. 12-R6D2-0391, 12-R6D2-0378, December 10, 2014.
7. Decision After Reconsideration, National Distribution Center LP and Tri-State Staffing, Docket Nos. 12-R6D2-0391, 12-R6D2-0378, Oct. 5, 2015.

Chairwoman ADAMS. Thank you. Thank you very much.

Mr. Cannon, you are recognized for 5 minutes, sir.

STATEMENT OF KEVIN CANNON, CSP, SENIOR DIRECTOR, SAFETY AND HEALTH SERVICES, ASSOCIATED GENERAL CONTRACTORS OF AMERICA

Mr. CANNON. Chairwoman Adams, Ranking Member Byrne, thank you for convening today's hearing. My name is Kevin Cannon. I am a certified safety professional, and the current Chair of the Advisory Committee on Construction Safety and Health. I am testifying today in my capacity as Senior Director of Safety and Health Services for the Associated General Contractors of America.

AGC is a national organization representing more than 26,000 businesses involved in every aspect of construction in all 50 states. AGC prioritizes worker safety and health, and regularly educates, and provides services to ensure that our workforce comes home safely at the end of every day.

In my testimony, I will discuss the impact of heat exposure on workers, how the construction industry is proactively addressing heat exposure, and why a new Federal standard and/or law is unnecessary, unworkable, and impractical.

According to NIOSH, workers who are exposed to extreme heat, or work in hot environments, may be at greatest risk of heat stress. Heat stress can cause injuries and illness such as heat cramps, exhaustion, heat stroke, and even death. But as you will hear today, it is preventable with proper education and teamwork.

Construction contractors are keenly aware of the dangers of working in extreme temperatures, and have taken appropriate steps to reduce the risk of injuries and illnesses. These include scheduling work earlier or later to avoid performing tasks during the time of day when temperatures are the highest and using jobsite trailers or company vehicles on remote job sites as cool-down areas.

Some have taken a total wellness approach to educate their employees on the importance of a proper diet and properly managing their health, especially those with medical conditions who are on regularly prescribed medications. Additionally, contractors will routinely have toolbox talks prior to and during the summer months to raise awareness of the issue and reinforce the importance of proper hydration, being able to identify the symptoms of heat stress, and how to prevent it from occurring.

Existing Federal agency efforts and laws already address heat exposure. OSHA's heat illness prevention campaign has reached millions of employers and workers since 2011. Under the OSH Act, employers are responsible for providing workplaces free of known safety hazards. This includes protecting workers from extreme heat. An employer who fails to implement measures to protect workers exposed to high temperatures can be cited under the General Duty Clause of the OSH Act. As it stands, OSHA already conducts inspections related to heat. This demonstrates the agency's continued commitment to appropriately enforce its laws and protecting workplace safety.

In addition, there is no one-size-fits-all approach to address this issue. Climate varies from region to region, and what may be con-

sidered extreme temperatures in one part of the country could be the norm in another. Also, in considering the impacts of heat exposure on an individual, employers would have to take into consideration the age of the employee, their existing medical conditions, and whether an employee is taking certain medications. Essentially, an employer would need to have an individualized heat prevention program for each employee as an effective program would have to consider lifestyle habits among the workforce that an employer may have no control over.

Furthermore, under the previous administration, OSHA determined that such a standard was unwarranted, and Congress should not legislate on an issue when an agency with the authority and jurisdiction to promulgate such standards already exists.

In addition to circumventing the rulemaking process, we caution Congress against establishing an arbitrary deadline for OSHA to promulgate a standard addressing heat illness prevention. We also caution Congress from just drafting legislative text that is overly prescriptive as to warrant the rulemaking process useless by binding the agency to a specific requirement.

The rulemaking process is intentionally deliberate to allow for meaningful stakeholder input. Imposing an arbitrary and compressed deadline could compromise the ability of the regulating community to fully engage in the process and the ability of regulators to do their job in creating the most feasible standard that results in the protection of workers in extreme temperatures. There must be a fair and transparent process in the promulgation of this or any rule that would impact a significant percentage of workplaces.

In conclusion, AGC believes OSHA should continue to increase awareness by working with the regulated community to further promote their heat illness prevention campaign, and build on the success of their past efforts. OSHA should also consider developing clear and consistent guidance for all industry sectors that are impacted by hazards related to high temperatures. The development of such guidance could help identify best practices and better promote what employees and workers can do to prevent injury, illness, and death from exposure to high heat. We firmly believe that building strong partnerships is the best approach to realizing the desired results.

Madam Chairwoman, thank you again for allowing the AGC to participate in today's important discussion. I look forward to your questions.

[The statement of Mr. Cannon follows:]

Statement of

Kevin Cannon, CSP

Senior Director, Safety and Health Services

Associated General Contractors of America

To the

The U.S. House Committee on Education and Labor

Workforce Protections Subcommittee

Hearing

"From the Fields to the Factories:

Preventing Workplace Injury and Death from Excessive Heat"

July 11, 2019

The Associated General Contractors of America (AGC) is the leading association in the construction industry representing more than 26,500 firms, including America's leading general contractors and specialty-contracting firms. Many of the nation's service providers and suppliers are associated with AGC through a nationwide network of chapters. AGC contractors are engaged in the construction of the nation's commercial buildings, shopping centers, factories, warehouses, highways, bridges, tunnels, airports, waterworks facilities, waste treatment facilities, levees, locks, dams, water conservation projects, defense facilities, multi-family housing projects, and more.

2300 Wilson Boulevard, Suite 300 • Arlington, VA 22201 • Phone: (703) 548-3118

Chairwoman Adams, Ranking Member Byrne and members of the House Education and Labor Subcommittee on Workforce Protections, thank you for inviting me here today. My name is Kevin Cannon and I am the senior director of safety and health services for the Associated General Contractors of America (AGC) in Arlington, Virginia. AGC is a national organization representing over 26,500 businesses—including union and open-shop contractors—involved in every aspect of construction activity in all 50 states, Puerto Rico and Washington, D.C. AGC and its nationwide network of chapters prioritize worker safety, regularly educate and provide services to ensure that our workforce comes home safely at the end of every day.

Personally, I have been involved in all aspects of safety and health policy in the general and construction industries over the last two decades, with the last thirteen years being in the construction industry. I hold a Certified Safety Professional (CSP) certification through the Board of Certified Safety Professionals (BCSP). I have been a member of the Advisory Committee on Construction Safety and Health (ACCSH) since 2011. ACCSH is a continuing advisory body established by statute that provides advice and assistance in construction standards and policy matters to the Assistant Secretary of the U.S. Occupational Safety and Health Administration (OSHA). And, I was honored to be selected for a two-year term as Chairman of ACCSH in June of this year.

Since its inception, safety and health has been a core value of AGC and its members. In our very early stages of existence, the founders recognized that safety is critical to the success of the industry and established a safety and health committee. Today, that committee is comprised of more than 200 safety and health professionals representing all sectors of the industry and contractors of various sizes from across the nation. During our bi-annual safety and health committee meetings, contractors share best practices addressing a wide variety of safety and health hazards, oftentimes with their direct competitors because safety should not be used as a business advantage. In addition to the sharing of best practices, attendees are offered up to twenty educational sessions at each committee meeting.

In my testimony today, I will discuss:

- The impact of heat exposure on workers;
- How the construction industry, AGC and its chapters are proactively addressing the heat exposure;
- Existing federal agency efforts and law addressing heat exposure;
- As such, why a new federal standard and/or law is unnecessary, unworkable and impractical; and
- How OSHA previously found that such a standard was unwarranted.

Background on Heat Exposure

According to the National Institute for Occupational Safety and Health (NIOSH), workers who are exposed to extreme heat or work in hot environments may be at risk of heat stress. Heat stress occurs when the body's natural mechanisms for returning it to its core temperature of 98.6

degrees Fahrenheit (plus or minus 1.8 degrees) become impaired. Heat stress can cause injuries, illnesses and fatalities. Heat-related illnesses range from heat cramps to heat exhaustion to heat stroke, which can result in death. Heat stress can also result in injuries from exhaustion and other, related workplace hazards. NIOSH also identifies workers at greater risk of heat stress to include those who are 65 years of age or older, are overweight, have heart disease or high blood pressure, or take medications that may be affected by extreme heat. Heat illnesses can be deadly but is preventable with proper education and team work.

The Construction Industry, AGC of America & its Chapters are Proactively Addressing Heat

Construction contractors are keenly aware of the dangers of working in extreme temperatures and have taken appropriate steps to reduce the risk of injuries and illnesses related to extreme heat exposure. In speaking with AGC members, we have found that there are a range of policies and adjustments that are implemented to ensure workers are not overheated while performing their tasks. These include scheduling work earlier or later to avoid performing tasks during the time(s) of day when the temperatures are the highest and using jobsite trailers, or company vehicles on remote jobsites, as cool down areas. Some have taken a total wellness approach to educate their employees on the importance of a proper diet and properly managing their health, especially those with medical conditions or on regularly prescribed medications. Additionally, contractors hold routine toolbox talks prior to and during the summer months to raise awareness of the issue and reinforce the importance of proper hydration, being able to identify the symptoms of heat illness, and how to prevent it from occurring.[1]

AGC has also been proactive in addressing industry workplace safety. In 2017, AGC unveiled a study[2] designed to improve the safety of construction workers and help construction firms prevent workplace fatalities and injuries. AGC worked with the Virginia Tech Myers-Lawson School of Construction to undertake the comprehensive study of every construction fatality that took place over a three-year period including fatalities that occurred during the summer months. As a result of this analysis, recommendations offered to reduce the risk of overheating include:

1. Raising awareness about the summer seasonality of safety and health hazards, including adopting or adapting OSHA's "Water. Rest. Shade." guidance.
2. Sharing these statistics within training courses and encouraging trainees to share what they believe are the causes:
    a. Health effects (e.g. fatigue, dizziness), associated with hot conditions.
    b. Health conditions most likely to occur in summer:
        i. Dehydration
        ii. Sunburn
        iii. Lightning strikes
        iv. Burns and falls from heights (i.e. rooftop utilities get hot).
3. Considering the addition of a seasonal component to safety and health policies and procedures. For example:
    a. Making accessible and recommending workers drink four cups water/hour.

[1] A toolbox talk is an informal group discussion that focuses on a particular safety issue. These talks can be used daily to promote department safety culture as well as to facilitate health and safety discussions on job sites.
[2] https://www.agc.org/industry-priorities/safety-health/construction-fatalities-study-0

b. Wearing gloves and sunglasses while working on roofs in summer.

4. Since there are more workers in summer, requiring a buddy system for risky tasks.

AGC chapters have long identified the risk of heat stress and the industry has made awareness a priority. In Texas, a state not immune to high temperatures, a local AGC chapter – TEXO: The Construction Association – has made heat stress awareness a priority by promoting its inclusion in safety toolbox talks. And while not considered formal education, the toolbox talks serve to educate workers on the subject matter, providing basic information on how to recognize and avoid various jobsite hazards. The talks are often led by the crew leader or foreman but can also be led by the workers themselves to increase involvement in the safety and health program.

Two other states known for their summertime heat, Alabama and Georgia, have both placed a focus on preventing injuries related to exposure to extreme heat. The AGC Alabama chapter took advantage of OSHA and the National Weather Service making May 31st National Heat Awareness Day by urging jobsites and workplaces to host a safety meeting focused on heat illness prevention. They teamed up with their workers' compensation provider, CompTrust, to support OSHA's campaign to educate field employees on the dangers of heat illness and how to look for warning signs in fellow employees. On April 29 – 30, 2019, the AGC Georgia chapter held a stand down focused on heat illnesses. They too partnered with their workers' compensation provider, CompTrust, and OSHA to raise awareness of the dangers of working in extreme temperatures.

Existing Federal Agency Efforts and Law Address Heat Exposure

Since 2011, OSHA has raised awareness of the dangers associated with working in extreme temperatures through its Heat Illness Prevention Campaign. Through educational sessions, outreach events, informational sessions, publications, social media messaging and media appearances, millions of workers and employers have learned how to protect workers from heat.

Employers are still responsible for providing workplaces free of known safety hazards. This includes protecting workers from extreme heat. An employer who fails to implement measures to protect workers exposed to high temperatures can be cited under the general duty clause of the Occupational Safety and Health Act. In FY 2017, the agency conducted over 100 such inspections. Under the current administration, the agency remains active in the enforcement of their existing standards and regulations. In construction alone, in FY 2018, there were 11,985 inspections conducted and 29,837 citations issued, totaling more than $87 million in penalties. This is clear evidence that the agency remains committed to appropriately enforcing its laws.

Imposing a Federal Standard and/or Law is Unnecessary, Unworkable and Impractical

Given the fact that current law already protects workers from extreme heat and OSHA is actively conducting inspections, another federal law and/or standard is simply unnecessary. Furthermore, attempting to regulate employee exposures to extreme heat by way of a federal standard and/or law is an unworkable solution. There is no one-size-fits-all approach to address this issue, for several reasons. First, climate varies from region to region and what may be considered extreme temperatures in one part of the country could be the norm in another. For example, Alaska

recently set a heat record of 90-degrees Fahrenheit, while this can be an average summer temperature in other states, like Alabama. In addition, there are a number of secondary factors that that affect climate, such as nearness to large bodies of water, elevation, the rain shadow effect of mountains, global wind and ocean current patterns, cloud cover, and surface albedo.

On the practical side, every individual responds differently to the stresses of a hot environment. When considering the impacts of heat exposure on an individual, employers would have to take into consideration the age of the employee, pre-existing medical conditions, and whether an employee is taking certain medications. Essentially, an employer would need to have an individualized heat prevention program for each employee as an effective program would have to take into account the lifestyle habits among the workforce that the employer may not have control over. Examples include an individual's diet, the type and number of beverages consumed, and their level of physical fitness.

OSHA Previously Determined that Such a Standard Was Unwarranted

Congress should not legislate on an issue where the federal government already has an agency with the authority and jurisdiction to promulgate such a standard: OSHA. In addition to circumventing the rulemaking process, the passing of legislation requiring OSHA to issue an emergency temporary standard (ETS) with rulemaking after, unfairly subjects employers to enforcement of a rule that the public was not afforded an opportunity to review and comment on.

This position was echoed in the response issued by then-Assistant Secretary of Labor for Occupational Safety and Health, Dr. Michaels, to the July 2012 petition submitted by Public Citizens. The response went further to cite other OSHA standards that offer protections to workers from exposure to extreme heat as well as additional barriers to issuing an ETS. Specifically, the response states:

> Section 6(c) of the Occupational Safety and Health Act of 1970 (OSH Act) authorizes OSHA to issue an ETS when it finds both that employees are exposed to a grave danger from exposure to substances or agents determined to be toxic or physically harmful, and that issuance of an ETS is necessary to protect employees from that danger. The "grave danger" finding required for an ETS includes compelling evidence of a serious health impairment involving incurable, permanent or fatal consequences. "Grave danger" also involves a degree of risk that is higher than the "significant risk" that is required to statutorily support a permanent standard under Section 6(b) of the OSH Act. OSHA agrees exposure to extreme heat can lead to death; however, the majority of workers with adverse health effects from heat exposure experience dehydration, cramps, exhaustion, and other effects and are able to recover fairly quickly when the appropriate measures are taken. As you mentioned in your petition, the Morbidity and Mortality Weekly Report (MMWR) stated that the annual rate of heat-related deaths among crop workers from 1992 to 2006 was 0.39 per 100,000 workers. While OSHA acknowledges that these deaths are most likely underreported, and therefore the true mortality rate is likely higher, the mortality rate reported in the MMWR does not exceed those of other hazards OSHA has deemed to be "significant" (e.g., benzene) and therefore, would likely not meet the legal requirement of "grave."

> Furthermore, if OSHA were to determine that a grave danger was present, OSHA must have adequate evidence that an ETS is necessary because no existing OSHA requirements can substantially reduce the grave danger. Additionally, OSHA must show that the ETS would be technologically and economically feasible.[3]

AGC's believes that the rationale OSHA cited in their response in 2012 to not pursue an ETS remains valid today. If an ETS is not under consideration, we caution Congress against establishing an arbitrary deadline(s) for OSHA to promulgate a standard addressing heat illness prevention. We also caution Congress from drafting legislative text that is overly prescriptive as to warrant the rulemaking process useless by binding the agency to specific requirements. The rulemaking process is intentionally deliberate to allow for meaningful stakeholder input. Imposing an arbitrary, compressed deadline could compromise the ability of the regulated community to fully engage in the process and the ability of regulators do their job in creating the most feasible standard that results in the protection of workers in extreme temperatures. There must be a fair and transparent process in the promulgation of this or any rule that will impact a significant percentage of workplaces.

Conclusion

In conclusion, a new federal standard and/or law is not a viable approach. Instead, OSHA should continue to increase awareness by working with the regulated community to further promote their Heat Illness Prevention campaign and build on the success of their past efforts. We strongly believe that building strong partnerships is the best approach to realizing the desired results.

As such, it may be fruitful for OSHA to consider developing clear and consistent guidance for all industry sectors that are impacted by hazards related to high temperatures. Such guidance could include what constitutes a hazard and effective abatement methods. The development of such guidance could help further build alliances with the regulated community, identify best practices, and better promote what employers and workers can do to prevent injury and death from exposure to high heat.

Madam Chairwoman, thank you again for allowing AGC to participate in today's important discussion and I look forward to your questions.

[3] https://www.citizen.org/wp-content/uploads/migration/denial-of-heat-stress-petition.pdf

Chairwoman ADAMS. Thank you, Mr. Cannon.

Dr. McCarthy, you are recognized for 5 minutes.

STATEMENT OF RONDA MCCARTHY, MD, MPH, AMERICAN COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE AND CONCENTRA

Dr. MCCARTHY. Thank you all for allowing me to -- thank you for inviting me to testify today. My name is Dr. Ronda McCarthy. I am testifying for myself, the American College of Occupational and Environmental Medicine, my employer, Concentra, a national occupational healthcare provider. We serve thousands of employers, and treat millions of 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 percent preventable. My testimony is grounded upon 9 years of developing and administering a heat-related illness program in central Texas that is comparable to the requirements in the bill discussed today.

Because of the striking results of this program, I believe this bill will protect the health and lives of countless workers. Moreover, employers will benefit from decreased cost, from injuries and illnesses, and will experience increased worker productivity.

I spent the first part of my career trying to convince multiple employers to implement NIOSH recommendations related to heat exposure. I unsuccessfully implored plant and health and safety managers to implement simple measures such as worker training, hydration, rest breaks, and access to shade or cooling to avoid costly and perilous accidents, injuries, and illnesses from excessive heat exposure. Some employers even declined my offer to simply educate workers on heat stress.

In 2006, I became the Medical Director for a central Texas municipality, where I provided occupational medical care at an onsite employee health clinic. After noting increased accidents, injuries, and illnesses during the summer months in outdoor workers, and little to no preventive measures in place, I explained the benefits of a heat-related illness prevention program to the employer. The city manager agreed to the prevention program for at-risk workers in streets, traffic, parks and recreation, solid waste, and utilities departments.

I used the information from OSHA's technical manual on heat stress and NIOSH's criteria for standard occupational exposure to heat and hot environments to create the city's heat stress awareness program. This program included hydration, access to shade, supervisor and worker training on heat stress and heat-related illness, first aid and emergency response procedures, establishing a 3- to 4-day gradual heat acclimatization schedule, altered high heat work schedules, communication procedures, and medical monitoring of the at-risk workers.

I then worked with two faculty members from the University of Pennsylvania Health System to analyze the data collected from the program, and here is what we found: The total number of heat-related cases significantly decreased after implementation of the heat stress awareness program, and the workers' compensation costs went down 50 percent for heat-related illness.

There are two possible factors that led to this reduction in workers' compensation costs. The intervention increased supervisors' and workers' awareness of their signs and symptoms of heat-related illness, and their knowledge of when to seek medical attention. These factors may have allowed for earlier medical intervention, leading to lower workers' compensation costs and, indeed, the last 2 years, there were no associated costs.

Over the course of the program, the frequency of heat-related illnesses decreased over the years, and by the last 2 years, there were no reported heat-related illnesses during the season. Please refer to the graph displayed, which shows that heat-related illness cases before and after implementation of the program.

Six hundred and four workers participated in the 7-year program. Over the 9-year study period, the odds of a worker having a heat-related injury decreased 66 percent in the 2012-2014 period, and then by 91 percent for the 2015-2017 period. That was statistically significant. Notably, the average high temperatures remained consistently over 90 degrees Fahrenheit during the summer months over the 9-year study period.

In light of the research presented, and my 20 years of experience treating Texas workers in hot environments, it is my expert opinion that all workers exposed to excessive heat should be protected by regulations mandating employers implement a plan to prevent heat-related injuries and illnesses that includes the recommendations in NIOSH's criteria for a standard. And the recommendations presented today, if they are promulgated into law, many workers' lives will be saved, and employers will benefit by increased worker productivity as well as decreased accident, injury, and illness costs.

Thank you, and I will be happy to answer any questions.

[The statement of Dr. McCarthy follows:]

AMERICAN COLLEGE OF
OCCUPATIONAL AND
ENVIRONMENTAL MEDICINE

Statement of

Ronda McCarthy, MD, MPH,

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

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

25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007-1030
Phone: (847) 818-1800 – Fax: (847) 818-9266 – Web: www.acoem.org

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.

25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007-1030
Phone: (847) 818-1800 – Fax: (847) 818-9266 – Web: www.acoem.org

Figure 1

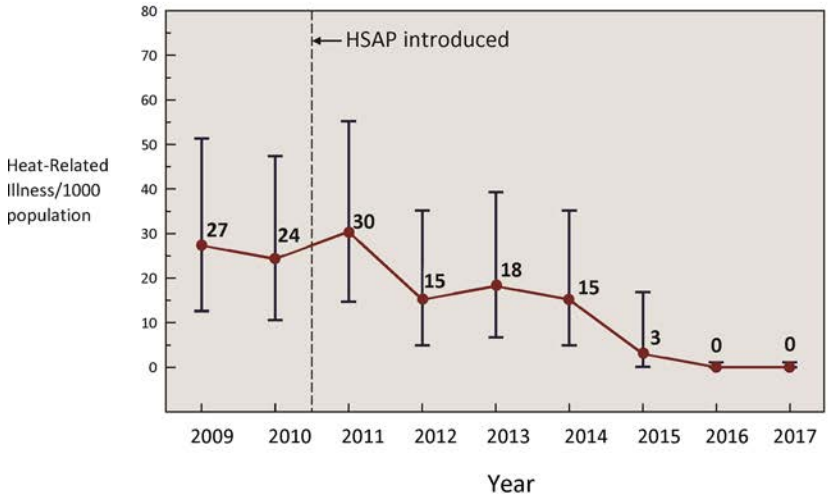


FIGURE 1. Heat-related illness frequency before and after implementation of the heat stress awareness program.

[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

Chairwoman ADAMS. Thank you, Dr. McCarthy.

Mr. Little, you are now recognized for 5 minutes, sir.

STATEMENT OF BRYAN LITTLE, DIRECTOR OF LABOR AFFAIRS, CALIFORNIA FARM BUREAU FEDERATION

Mr. LITTLE. Good morning, Chairwoman Adams, Ranking Member Byrne, and Members of the Subcommittee. Thank you for the opportunity to testify today on heat illness. My name is Bryan Little, and I am here representing the California Farm Bureau Federation as Director of Employment Policy. I also serve as the Chief Operating Officer of the Farm Employers Labor Service, which is a subscriber organization affiliated with the California Farm Bureau.

Over a 14-day period in July of 2006, California experienced a heat wave that caused an estimated 163 fatalities, as many as 600 additional heat-related deaths, 1,200 hospitalizations, and 16,000 emergency department visits among the state's overall population.

Recognition that outdoor workers are potentially vulnerable to extreme heat prompted our state's occupational safety and health agency, Cal/OSHA, to adopt the first-in-the-nation heat illness prevention standard for employers with outdoor workers.

Some aspects of our standard are applicable at all times in all seasons, particularly the requirements to provide water and to all outdoor activity with special requirements for certain industries like construction, landscaping, and agriculture when the temperature exceeds 95 degrees.

Major requirements of the HIP standard for employers include provisions to allow employees to, at all times, get a cool down rest period, provide fresh, pure, and suitably cool water, to train employees about heat illness, and to closely monitor them. Farm employers have worked in good faith to implement these requirements, and in most cases, Cal/OSHA has engaged in enforcement aimed to help employers protect workers from heat illness.

Workers need to understand what heat illness is, what it looks like, and what it feels like and how to protect themselves and personal risk factors, like obesity and diabetes, and the use of certain prescription drugs that may influence their vulnerability to heat illness. California agriculture has been forthright and proactive in addressing heat illness by fully accepting our responsibility as producers and employers to take every action we can to ensure the health and safety of our agriculture workforce.

We believe the greatest need is for workers, supervisors, farm and labor contractors, and farm employers to understand the key steps to take to avoid incidents of heat illness, and deal effectively and promptly with incidents that occur. We have worked each year to identify any gaps or weaknesses in training, prevention, and emergency response.

The industry has also been proactive by working with the University of California system and other partners to create and distribute information through pocket heat illness educational cards, Spanish language radio advertisements and public service announcements, newspapers, and our own publications to our own members. We have worked closely with the agency to better define the agency's expectations for compliance.

The heat illness prevention standard is coming a long way toward achieving its goal. We in the agency have been successful in protecting more than 450,000 employees who work in California agriculture at any given time during our peak seasons. Compared to hundreds of fatalities that have historically accompanied heat waves in the overall population, the agency reports two occupational-related fatalities between 2014 and 2016, one in 2017, and two last year.

Make no mistake. Any work-related fatality is one too many, and it is hard to overstate what a tragedy a workplace fatality can be.

I want to acknowledge the United Farm Workers efforts in this area and applaud Mr. Rodriguez' testimony for highlighting the tragic and untimely deaths of farm workers who suffer from heat illness. Our hearts go out to all farm employees who suffered an illness. We extended our deepest condolences to their families of those who are affected.

I can assure the Committee the farmers want to protect all employees from illness because it is the right thing to do. Should the Department of Labor's Occupational Safety and Health Administration undertake a heat illness prevention program, we hope the agency will benefit from what we have learned California in the creation and refining of our heat illness prevention standard.

The law will be better if it is simple, collaborative, and flexible. California's efforts to protect employees from heat illness have been most successful when Cal/OSHA has adopted a collaborative approach, engaging in an open exchange with all stakeholders, including employer stakeholders. The result has been a relatively simple outdoor heat illness standard non-regulatory guidance developed with significant input from employers and cooperative educational programs to help the regulated community understand the enforcement agency's expectations.

Our HIP standard has succeeded in preventing heat illnesses and fatalities because it is relatively simple, limited in scope, and general in its requirements with special requirements for certain industries with specific risk factors. Federal OSHA should follow a model that prioritizes simplicity, training and collaboration.

Thank you for the opportunity to testify, and I look forward to answering any questions you may have.

[The statement of Mr. Little follows:]

Statement of the

California Farm Bureau Federation

TO THE

UNITED STATES HOUSE OF REPRESENTATIVES

COMMITTEE ON EDUCATION AND LABOR

SUBCOMMITTEE ON WORKFORCE PROTECTIONS

FOR A HEARING ON

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

July 11, 2019

Presented By:

BRYAN LITTLE

Director, Employment Policy

Chairwoman Adams, Ranking Member Byrne, and Members of the Subcommittee, thank you for the opportunity to testify today on heat illness. My name is Bryan Little, and I'm here representing the California Farm Bureau Federation (Farm Bureau) as the Director of Employment Policy. I also serve as the Chief Operating Officer of the Farm Employers Labor Service (FELS), which is a subscriber organization affiliated with the California Farm Bureau Federation. FELS has assisted agricultural employers in complying with employment laws and regulations since 1970.

Farm Bureau is a non-profit, voluntary membership organization whose purpose is to protect and promote agricultural interests throughout the state of California and to find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, representing nearly 36,000 members across 53 counties contributing to the largest agricultural economy of any state in the nation. Farm Bureau strives to protect and improve the ability of farmers and ranchers engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of California's resources.

Over a 14-day period in July 2006, California experienced a heat wave that caused 163 fatalities, an estimated 600 additional heat-related deaths, 1,200 hospitalizations, and 16,000 emergency-department visits among the state's overall population. Most of the deaths occurred in the hotter inland counties, while the highest number of illnesses occurred in the coastal counties, where residents are less-acclimated to heat waves. Recognition that outdoor workers are potentially vulnerable to extreme heat prompted our state's occupational safety and health agency,

Cal/OSHA, to adopt the first-in-the-nation Heat Illness Prevention (HIP) standard for employers of outdoor workers.

Some aspects of our standard are applicable at all times and seasons (particularly the requirements to provide water), and to all outdoor activity, with special requirements for certain industries like construction, landscaping and agriculture when the temperature exceeds 95° Fahrenheit.

The major requirements of the HIP standard for employers include the following provisions:

- Allow employees at all times to take a cool-down rest period to forestall heat illness. Employers are required to monitor for signs of heat illness, and employees shall not be returned to work for at least five minutes or until signs of heat illness have abated.
- Make shade for cool-down rest periods available at all times when the temperature is below 80° Fahrenheit.
- Shade must be provided (that is, shade structures, if used, must be erected) at all times when the temperature exceeds 80° Fahrenheit.
- Shade must be provided in amounts sufficient to allow any workers taking a heat illness recovery period to rest in shade and to sit in a natural posture without touching one another.
- Shade must be easy for employees to reach, and placement of shade should not deter access or use.
- Employees must not be required to encounter obstacles or hazards or unreasonably unpleasant conditions to reach or use shade.

- Shade must be provided to all employees on a rest or meal break, except those who choose to take a break elsewhere.
- Fresh, pure, and suitably cool water must be made available in enough quantities (replenishment is permissible) to allow each employee to drink one quart per hour;
- Water must be provided as close as practicable to location of work.
- Employees must be trained about heat illness and the HIP standard before they work in conditions where they might be exposed to heat.
- Supervisors must be additionally trained in HIP compliance procedures, emergency responses, and ensuring effective communication to facilitate emergency response.
- A written copy of the employer's HIP program in English and the language understood by the majority of the employees and be available to employees and Cal/OSHA inspectors on request.
- Close monitoring of employees for acclimatization to heat when changing seasonal weather conditions start to bring warmer days in the late Spring and Summer, and when employees are moved form cooler areas to hotter areas.
- When temperatures exceed 95° Fahrenheit, employers must implement "high heat" procedures, including:
    - A mandatory 10-minute break every two hours (meal and rest periods can serve as these breaks, but if employees work beyond eight hours or waive meal or rest periods, employers must still ensure the mandatory rest break occurs).
    - Continuous communication between workers in the field to a supervisor sufficient to allow communication in an emergency situation.

- Observing employees continuously for alertness and signs of heat illness.
- Authorizing an employee or employees to call emergency services when needed and making clear that any employee may do so.
- Pre-shift meetings to remind employees of high-heat precautions, to drink water frequently, and take a cool-down rest when needed.

Farm employers have worked in good faith to implement these requirements, and in most cases Cal/OSHA has engaged in enforcement aimed to help employers protect workers from heat illness. Farm employers and the organizations they are part of have responded to these requirements by undertaking training of employers, supervisors and workers before the beginning of the season. Of course, employers need to thoroughly understand the standards. Supervisors also need a thorough understanding of the regulation because, as the agents of employers, supervisors are responsible for aspects of implementation like close monitoring of employees for signs of heat illness; ensuring availability of adequate water and shade when and where it's needed; and monitoring the availability and effectiveness of emergency communications.

Workers need to understand what heat illness is, what it looks like and what it feels like, how to protect themselves, and what personal risk factors like obesity and diabetes may influence their vulnerability to heat illness.

California agriculture has been forthright and proactive in addressing heat illness, most especially in the following ways:

- We accept our responsibilities as producers and employers to take every action possible to ensure the health and safety of the agricultural workforce.
- We believe the greatest need is for workers, supervisors, farm labor contractors and employers/farm operators to understand the key steps to take to avoid incidents of heat illness and deal effectively and promptly with any incidents that occur. California agriculture has made great strides in this area and this is an ongoing process especially as each new heat season begins.
- We have worked each year to identify any gaps or weaknesses in training, prevention, and emergency response. Examples of this include our continuous efforts to push out to growers and supervisors information about heat illness and compliance with the Cal/OSHA standard, operating practices and systems to provide proper hydration, information and training on the importance of avoiding actions that can lead to dehydration, determining what constitutes adequate/useful shade, rest periods and established plans/procedures for contacting emergency medical assistance if incidents of heat illness occur, properly describing the work location, and established procedures for supervisors to follow.
- The industry has been proactive in many ways. For example, many growers already shift work schedules during hot weather periods – the work days typically start earlier, sometimes before daybreak, and so the open field work is then completed by early afternoon before temperatures reach their daily peak.
- The industry has also been proactive by creating and distributing information through pocket heat illness educational cards, Spanish-language radio advertisements and Public

Service Announcements, newspapers, our publications to our member/employers, etc. Each year there is need for new awareness of the warnings. The industry has been proactive in engaging Cal/OSHA on improvements to the regulation in 2010 and again in 2015. We have worked closely with the agency to better define the agency's expectations for compliance.

Some specific examples of what the industry has done:

- Major organizations representing the entire industry have worked cooperatively with the University of California Division of Agriculture and Natural Resources with support from the U.S. Department of Agriculture Western Extension Risk Management Education Center to produce and distribute thousands of pocket-sized heat illness educational cards in English and Spanish to remind workers about the dangers of heat illness and a listing of preventive measures they can take to avoid heat illness.
- Various organizations have provided training sessions for growers, supervisors, farm labor contractors and workers throughout the state. Fifteen organizations throughout California participated in organizing these trainings, including California Farm Bureau Federation, California Citrus Mutual, California Dairy Campaign, California Farm Labor Contractor Alliance, Fresno County Farm Bureau, Merced County Farm Bureau, Nisei Farmers League, Tulare County Farm Bureau, Western Pistachio Association, California Cotton Ginners & Growers Associations, California Grape and Tree Fruit League, Kern County Farm Bureau, Napa County Farm Bureau, Raisin Bargaining Association and the Ventura County Agricultural Association.

- FELS has provided heat training services to farm employers across the state since 2008. FELS field staff has provided this training for hundreds of farms across the state over the last ten years. In addition, FELS has worked with county Farm Bureau organizations to train growers and supervisors. Throughout this period, the monthly FELS Newsletter has provided its 850 subscribers with information on compliance and developments related to heat illness and compliance with the Cal/OSHA standard. FELS also publishes several resources available through our website on heat stress, including a heat stress training video aimed to train agricultural workers, titled "Heat Stress Prevention."
- Farm Bureau's Rural Health and Safety Department has been very active in educating both farm workers and farmers on heat stress. Rural Health and Safety has made statewide radio "buys" on Spanish-language radio stations for years throughout the rural areas of the state.
- FELS and CFBF worked closely with Fresno-based Nisei Farmers League and Igloo Products Corporation to develop and make available throughout California a "heat stress education" water cooler. Available in 5- and 10-gallon sizes, these coolers remind workers to drink water frequently, rest in the shade, dress properly for the conditions, watch for symptoms of heat stress, and to know emergency procedures in case of heat stress. Approximately 15,000 educational coolers have been acquired by farmers and ranchers for use at their farms and ranches since 2008. After all available coolers were distributed, FELS developed decals for existing coolers with the same information for workers.

The experience of the years since implementation of HIP shows the standard is coming a long way toward achieving its goal. We and the agency have been successful in protecting more than 450,000 employees who work in California agriculture every day during our peak seasons. Compared to hundreds of fatalities that have historically accompanied heat waves in the overall population, the agency reports two heat-related deaths in agriculture between 2014 and 2016, one in 2017, and two deaths last year. Make no mistake, any work-related fatality is one too many, and it's hard to overstate what a disaster a workplace-related death can be for an employer. This is particularly true for agricultural employers who often employ members of the same extended families for decades. Members of these families commonly attend each other's important family related events like weddings, baptisms, quinceañeras, and funerals. Their children grow up and grow old together. These ties are often so deep that farmers I know personally who have taken over their parents' farm operations agonize over how to find an appropriate job for a loyal octogenarian employee with failing eyesight or hearing who was hired decades ago by that farmer's parents.

Should the Department of Labor Occupational Safety and Health Administration undertake a heat illness prevention program, we hope the agency will benefit from what we have learned in California in the creation and refining of our HIP standard:

- **Keep it simple**: Outdoor environments present huge challenges to protect employees from heat illness. Indoor environments are so diverse, from offices to factories, that a one-size-fits-all approach will fit almost no one. The scope of any heat illness regulation

should be limited to very general, performance-based requirements, with more specific requirements for industries that can be identified as having higher risks, like outdoor or indoor employment. Any standard should require basic elements like the provision of drinking water, access to places to escape from heat temporarily, and training for everyone in the workplace to understand and cope with heat illness. Additional features serve only to complicate enforcement and compliance.

- **Adopt a collaborative, cooperative approach**: California's efforts to protect employees from heat illness have been most successful when Cal/OSHA has adopted a collaborative approach, engaging in an open exchange with all stakeholders, including employer stakeholders. The result has been a relatively simple outdoor heat illness standard, non-regulatory guidance developed with significant input from employers, and cooperative educational programs to help the regulated community understand the enforcement agency's expectations. More recently, the agency has been less collaborative in developing an indoor heat illness standard. The result has been an excessively complex regulation that will be difficult for the regulated community to understand. We are concerned about the lack of clarity on definitions distinguishing indoor from outdoor employments. This may seem straightforward, but it's simply not clear how the agency intends to treat vehicle drivers, for example. This is a problem for defining when and where the regulation applies, and in specifying how vehicle drivers moving in and out of an air-conditioned environment where the employer will have no control over the area outside the vehicle and no practical means to determine whether any protective measures are actually being followed as intended.

- **Allow for employer innovation and proactivity**: Regulators should enforce regulations that condemn bad actors, however, they should allow the freedom of good actors to innovate and be proactive. Subsequent versions of the HIP standard have become more complicated, and the state's pending indoor standard is so complex that it will hamper efforts by employers to be proactive and compliant. This can be remedied by talking to and listening to those who will be required to implement the regulation.

Our HIP standard has succeeded in preventing heat illnesses and fatalities because it is relatively simple, limited in scope, and general in its requirements except for certain industries with specific risk factors. Our standard has achieved its goal of protecting workers because our regulatory agency engaged the regulated community both in the process of creating the regulation and in enforcing it. Federal OSHA should not engage in a similar effort without following a model that prioritizes simplicity, education, and collaboration with affected employers.

Thank you for the opportunity to testify.

Chairwoman ADAMS. Thank you, Mr. Little. Mr. Rodriguez, you are recognized for 5 minutes, sir.

STATEMENT OF ARTURO S. RODRIGUEZ, PRESIDENT EMERITUS, UNITED FARM WORKERS

Mr. ARTURO RODRIGUEZ. Chairwoman Adams, Ranking Member Byrne, and distinguished Members of the Subcommittee, thank you for the opportunity to testify today. Today, I am representing the United Farm Workers, and the United Farm Workers Foundation.

Ultimately, though, I am here today for Maria Isabel, Miguel Angel, and many other workers who needlessly died due to heat exposure. Maria Isabel Vasquez Jimenez was 17, and an immigrant farm worker and pregnant. She collapsed after harvesting grapes in temperatures above 100 degrees Fahrenheit in a vineyard near Stockton. No paramedics were summoned. Instead, she was left in the field, and at the end of the workday, she was put in a non air-conditioned van that was hotter than it was in the vineyards.

On the trip home, her fiance convinced the driver to take her to a clinic. Her strong heart failed, her body temperature had reached 108 degrees Fahrenheit, and she died the next day.

Just last year, Miguel Angel Guzman Chavez, a 24-year-old farm worker that came to the United States under the H-2A guest worker program, died after picking tomatoes with a heat index that exceeded 100 degrees Fahrenheit. He had only been in the United States 5 days.

I have the privilege of sitting here with you here today in an air-conditioned hearing room while farm workers like Maria and Miguel are toiling under the scorching sun to harvest the food that reaches our tables. If any of us had to spend several hours toiling in the high temperatures, the basic protections that we would need would include water, shade, breaks, and training to prevent heat illness tragedies. Outdoor workers deserve nothing less.

Overall, there are approximately 2-1/2 million farm workers across the country, including hundreds of thousands of miners, who work in remote and rural areas. As a result of language barriers, status issues, and economic vulnerability, most farm workers won't speak out in the workplace, be adequately informed about heat illness prevention, or have access to timely medical attention when illness or injury strikes.

The issues I speak of are not hypotheticals. The farm worker communities that we serve are intimately and tragically familiar with the dangers of heat exposure. They experience a risk of heat-related death that is 20 times higher than the risk for workers overall.

This drove us to take action. After a string of heat deaths in 2005, the UFW worked with now Representative Judy Chu and Governor Arnold Schwarzenegger to issue the first comprehensive regulations in the Nation to protect farm workers and other outdoor workers from dying or becoming ill when temperatures soar.

Later in 2015, we worked with Governor Jerry Brown to ensure more effective, timely, and consistent enforcement of State heat rules. Furthermore, the State issued strengthened heat regulations for all employees that work outdoors. Their rules require that employees are provided with fresh and cool water, shade be present

at 80 degrees, and accommodate all employees on recovery or rest periods and those on-site taking meal breaks. High heat procedures are triggered at 95 degrees and ensure observation and monitoring of employees, and training to identify and prevent illnesses.

And over time, we have seen the progression of the standards implementation in fields across California. When driving along Highway 99 and Highway 5 initially, all you would see was tarps put out there for workers in an attempt by employers to provide workers with shade.

In those cases, workers would be left to sit in the dirt or have to bring their own blankets or portable chairs so they could be more comfortable during their breaks or while they were eating. Nowadays, oftentimes, we see many growers embracing the standard. Many of them, even now, have trailers in place that have roofs over tables and benches so workers can rest and sit down when eating and taking their breaks.

The road to implementation and enforcement of the California State standard has not been an easy one. When implementation and enforcement have occurred, the standard has secured meaningful improvements for farm workers and resulted in a notable reduction in the number of farm worker deaths related to heat hazards.

California is a prime example that implementing commonsense heat illness protections is good for workers, employers, and for our food system, but we did not stop and should not stop there. Maria Isabel, Miguel Angel, and the other heat victims had only one life. The only way we, the living, can affirm that the lives of farm workers are important and that they didn't die in vain is by bringing the protections we want in California throughout outdoor and indoor workers across the Nation.

Thank you very much.

[The statement of Mr. Arturo Rodriguez follows:]

Statement of Arturo S. Rodriguez

President Emeritus

United Farm Workers of America before

The House Education and Labor, Subcommittee on Workforce Protections

"From the Fields to the Factories:

Preventing Workplace Injury and Death from Excessive Heat"

July 11, 2019

Chairwoman Adams, Ranking Member Byrne, and distinguished members of the Subcommittee, thank you for the opportunity to testify today.

My name is Arturo S. Rodriguez and I had the honor of serving as the elected President of the United Farm Workers until last year. Today, I am representing the United Farm Workers and the United Farm Workers Foundation. Founded in 1962 by Cesar Chavez, Dolores Huerta, and other early organizers, the UFW is the nation's first enduring and largest farm worker union. The UFW Foundation is a sister organization of the UFW that provides critical services and resources to farmworker and immigrant communities. Additionally, it is part of a network of farm worker organizations in the 10 largest agricultural producing states.

How much is the life of a farm worker worth? Is it less than the life of any other human being? I am here today for Maria Isavel Vasquez Jimenez, Maria de Jesus Alvarez Bautista, Jaime Nuño-Sanchez, Ricardo Sotelo, Honesto Ibarra, Miguel Angel Guzman Chavez, and many workers before them who died due to heat exposure. Their deaths are hard to accept because they didn't need to happen.

- **Maria Isavel Vasquez Jimenez** was a 17-year-old farmworker who worked at a vineyard owned by West Coast Grape Farming located east of Stockton, California. She died of heat exhaustion on May 16, 2008. Two days prior to her death, she was tying grape vines when the temperature rose above 95 °F. She collapsed from heat exhaustion after working more than nine hours under oppressive heat conditions. She was left in a van while everyone completed their shift.
- **Miguel Angel Guzman Chavez** was a 24-year-old farmworker that came to the U.S. under the H-2A guestworker program. He died from heat on June 21, 2018, five days after he arrived in the U.S. from Mexico. He was picking tomatoes for Beiza Farm Labor

Contractor and Motley Farms in the state of Georgia. He was stricken at the height of the daily heat which exceeded 100 °F.

The UFW and the UFWF actively champion legislative and regulatory reforms that advance the health, safety and well-being of farmworker and immigrant families, rural communities, and beyond. For decades, we have been fighting to correct the historical inequities that penalized farm workers with weaker protections than workers in other industrial sectors and exclusions from federal labor laws. At the federal level and in the state of California, we have fought for laws and regulations that provide life-saving protections for farm workers and consumers. Among them:

- The national Agricultural Worker Protection Standard (WPS) which was strengthened on November 2, 2015 and protects approximately 2.5 million agricultural workers and their families from pesticide exposure and poisoning[1]
- The national Certification of Pesticide Applicators (CPA) rule which prevents injuries, illnesses, and deaths from the misuse of deadly pesticides in agricultural, residential and commercial settings and was revised on January 4, 2017[2]
- A California law --the first in the nation-- that was signed by Governor Brown on September 12, 2016 and guarantees farm workers overtime pay after eight hours of work[3]
- And critically relevant to today's hearing, the California Heat Illness Prevention standards – implemented in 2005 and strengthened in 2015-- designed to prevent deaths and illnesses from extreme heat for workers in agriculture and other outdoor industries[4]

My testimony does not address the unique risks that our brothers and sisters experience in a suffocating indoor environment, as it is not my area of expertise. Nonetheless, the challenges that they face are severe and life-threatening, and we firmly believe that any federal efforts to protect workers from heat must provide protections to these workers.

OVERVIEW OF THE FARMWORKER POPULATION

As you examine the role of Congress and the federal government in protecting outdoor and indoor workers from the risks of heat exposure, it's important that you understand the many challenges faced by farm workers -- whose skilled work is integral to our food system -- and the impediments they continue to face in securing the legal right to a safe workplace.

---

[1] 80 FR 67495 available at https://www.govinfo.gov/content/pkg/FR-2015-11-02/pdf/2015-25970.pdf
[2] 82 FR 952 available at https://www.govinfo.gov/content/pkg/FR-2017-01-04/pdf/2016-30332.pdf
[3] Text of Assembly bill 1066 available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1066
[4] California Code of Regulations, Title 8,section 3395 Heat Illness Prevention, available at https://www.dir.ca.gov/title8/3395.html

According to the 2015-2016 National Agricultural Workers Survey (NAWS), about half of the agricultural workforce is undocumented (49 percent)[5], a number that raises the urgency to provide a path to legalization for experienced agricultural workers to meet the needs of workers, agricultural employers, and our food system, as recent legislative proposals aim to do[6]. Only 29 percent of farm workers are U.S. citizens, and 21 percent are legal permanent residents. When it comes to language, 77 percent of farm workers are most comfortable speaking in Spanish, 21 percent in English, and 1 percent in indigenous languages.

Overall, there are approximately 2.5 million farm workers across the country, including hundreds of thousands of minors, ranging in number from 300,000[7] to 500,000[8]. In terms of family structure, the majority of farm workers surveyed (55 percent) reported having minors in their household. In fact, although nationally-based surveys of farm workers don't include children under the age of fourteen, in farmworker families, it is common for children to begin work alongside their parents at ages as young as twelve.[9]

Farm workers are predominantly of Latino and/or indigenous ancestry, hailing from Mexico (69%) and Central America (6%). Only 1 percent are natives of South America, the Caribbean, Asia, and the Pacific Islands. In terms of gender breakdown, nearly 70 percent identify as male (68%) and 32 percent, as female. Farmworkers are also relatively young, with two-thirds of the population (67%) under the age of 44:

- 14-19 years old (7%)
- 20-24 years old (11%)
- 25-34 years old (26%)
- 35-44 years old (23%)

Among the 2.5 million, there were nearly 250,000 guestworkers who entered the country under H-2A visas designed for temporary agricultural employment last year.[10] The number of H-2A workers has been increasing steadily over the past decade and is expected to be even higher next

---

[5] Findings from the National Agricultural Workers Survey (NAWS) 2015-2016: A Demographic and Employment Profile of United States Farmworkers. Research Report No. 13. January 2018. Available at https://www.doleta.gov/naws/pages/research/docs/NAWS_Research_Report_13.pdf

[6] See the Agricultural Worker Program Act of 2019 (H.R. 641/S.175) as proposed by Rep. Logren and Sen. Feinstein, available at https://www.congress.gov/bill/116th-congress/house-bill/641/text and https://www.congress.gov/bill/116th-congress/senate-bill/175/text?q=%7B%22search%22%3A%5B%22Agricultural+Worker+Program+Act+of+2019%22%5D%7D&r=2&s=2,

[7] Association of Farmworker Opportunity Programs, "Children in the Fields, An American Problem," 2007. Available at https://afop.org/wp-content/uploads/2010/07/Children-in-the-Fields-Report-2007.pdf

[8] Human Rights Watch. Fields of Peril. (2010). Available at: https://www.hrw.org/report/2010/05/05/fieldsperil/child-labor-us-agriculture

[9] Ibid

[10] U.S. Department of Labor, Employment and Training Administration, Office of Foreign Labor Certification, "H-2A Temporary Agricultural Labor Certification Program - Selected Statistics, FY 2018," data as of September 30, 2018. Available at: https://www.foreignlaborcert.doleta.gov/pdf/PerformanceData/2018/H-2A_Selected_Statistics_FY2018_Q4.pdf

year. The tremendous expansion of the H-2A program is occurring, even though there are serious concerns about worker abuses and discrimination. According to Polaris's report on human trafficking in temporary work visa programs, the H-2A program is the visa category with the most reported trafficking cases (327 out of a total of 797 reported cases, across temporary visa categories).[11] In terms of the nationality of H-2A visa holders in FY 2018, out of a total of 196,409, an overwhelming majority are from Mexico (180,420) and a significant number of workers are natives of Jamaica (5,251), South Africa (3,562), Guatemala (3,936), Peru (946).[12]

In addition to heat, farm workers are also on the frontlines of exposure to a range of pesticides that threaten their health and the development of their children. To protect themselves from the sun and reduce dermal exposure to agricultural chemicals, farm workers wear extra clothing and/or personal protective equipment (PPE). For workers that apply pesticides, they must do so wearing any PPE required by the Environmental Protection Agency (EPA). Although important for protecting workers against pesticide exposure, the use of such equipment when working in hot temperatures also increases the risk of heat-related illness. Additionally, the increasing temperatures caused by climate change also pose a significant risk of heat-related illness for all workers, including farm workers.

I share this because the nature of agricultural work, combined with the demographics of the domestic and guestworker population, puts workers in a particularly precarious situation and fundamentally limits their ability to:

- access information about the environmental and occupational hazards that they are exposed to
- protect their children and loved ones who work alongside them from heat illness
- be adequately informed about their rights or heat illness prevention
- seek out medical care when illness or injury strikes
- have access to timely medical attention
- speak out in the workplace without fear of retaliation or deportation

WITH RISING TEMPERATURES, HEAT ILLNESS PREVENTION IS A MATTER OF LIFE AND DEATH FOR OUTDOOR WORKERS

Today, I have the privilege and urgency of sitting before you, in an air conditioned hearing room, while farm workers across the nation are toiling under the scorching sun to cultivate and harvest

---

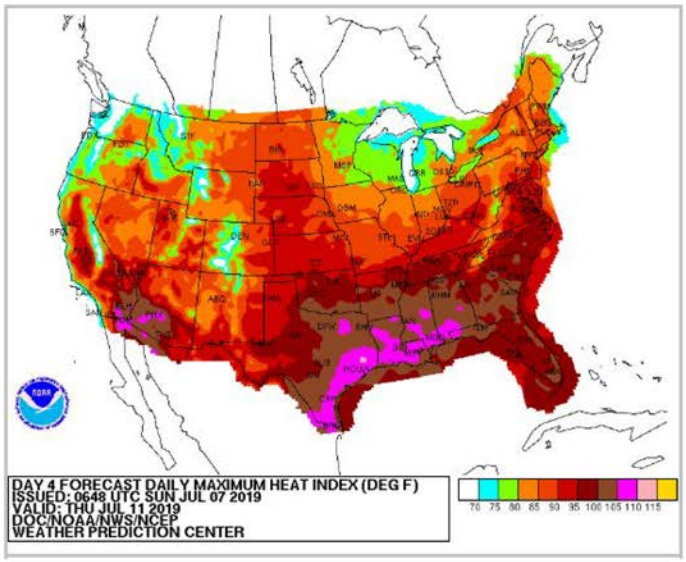
[11]Polaris, "Human Trafficking on Temporary Work Visas, A Data Analysis 2015-2017," available at "https://polarisproject.org/sites/default/files/Human%20Trafficking%20on%20Temporary%20Work%20Visas%20A%20Data%20Analysis%202015-2017.pdf

[12] U.S. Department of State, "Nonimmigrant Visa Issuances by Visa Class and by Nationality, FY 1997-2018 NIV Detail Table," available at https://travel.state.gov/content/travel/en/legal/visa-law0/visa-statistics/nonimmigrant-visa-statistics.html

the food that reaches our tables. Farmworkers feed our families and communities, without regard to region, race, ethnicity, gender, age, ability, or whether we are Democrats or Republicans.

If any of us had to spend several hours toiling under high temperatures, the basic protections that we'd need would include water, shade, breaks and training to prevent illness and tragedies. Outdoor workers deserve nothing less, and given the temperatures that they must labor under, protecting them from heat can be achieved through commonsense and feasible safeguards.

For July 11, 2019, according to the National Weather Service forecast, workers in many of the states that are represented in the Education and Labor Subcommittee on Workforce Protections are expected to experience a maximum heat index of 96 °F in Charlotte, North Carolina, 108°F in Mobile, Alabama, and 94 °F in Richmond, Virginia.[13]



In the state of Florida, the heat index will range from the mid to high 90s in Orlando (95 °F), Tampa (96°F) and Miami (99°F) to 102°F in Tallahassee. Throughout California, the cities of Sacramento, Fresno and Imperial will experience a maximum heat index of 93°F, 97°F and 106°F, respectively. In Texas, anyone outdoors will feel temperatures from the 90s to over

[13] See https://www.wpc.ncep.noaa.gov/heat_index_MAX/bchi_day4.html

100°F: Amarillo (93°F), Dallas (106 °F), San Antonio (103 °F), Houston (108°F), and Brownsville (107°F). In Georgia, both Atlanta and Savannah will feel a temperature of 98°F.

The daily maximum heat index even in Washington State, Minnesota, Michigan and Pennsylvania is high. For instance, it is expected to reach: 73 °F in Seattle,WA; 80°F in Minneapolis, MN and Grand Rapids, MI; 85°F in Detroit; and 90°F in Philadelphia.

THE LONG ROAD TO PROTECTING WORKERS HAS BEEN PAVED BY PREVENTABLE DEATHS

Whether they work in fields, farms, ranches or greenhouses, farm workers are intimately familiar with heat exposure and are experiencing some of the highest rates of heat-related illness in the country. The risk of heat-related death in crop workers is 20 times higher[14] than the risk for workers overall.

In 2005, following the deaths of five farm workers who died from the heat, the UFW worked with Representative Chu—at the time a member of the California State Assembly—to protect agricultural and other outdoor workers from heat-related death or illness. After Representative Chu held a hearing outdoors to highlight the impacts of extreme heat on workers, Gov. Schwarzenegger announced an emergency heat illness prevention standard. California became the first state in the nation to issue life-saving and comprehensive Heat Illness Prevention standards for outdoor workers.[15]

Since 2005, California has required:

- Training for all employees and supervisors about heat illness prevention.
- Potable water to employees that is free of charge and located close to the areas where employees are working
    - Water cannot be more than 400 ft away
    - Each employee should have access to 1 quart per hour, or four 8 ounce glasses of water per hour
- Access to shade and encourage employees to take a cool-down rest in the shade for at least 5 minutes. They should not wait until they feel sick to cool down.

---

[14]See Larry L. Jackson & Howard R. Rosenberg, Preventing Heat-Related Illness Among Agricultural Workers, 15 J. Agromedicine 200 (2010) ("The crop worker fatality rate averaged 4 heat-related deaths per one million workers per year—20 times higher than the 0.2 rate for US civilian workers overall.").

[15] California Code of Regulations, Title 8, Section 3395, Heat Illness Prevention, available at: https://www.dir.ca.gov/title8/3395.html

- Planning that includes written procedures for complying with the Cal/OSHA Heat Illness Prevention Standard.

The laws on the book are only meaningful if they are enforced and become a reality for the workers that need it the most. In the summer of 2008, five more farm workers died from heat illness in California. Their deaths inspired our organizing of the "March for Fallen Farm Workers" from Lodi to the state Capitol in Sacramento to raise awareness about agricultural establishments and farm labor contractors who were denying farm workers the life-saving protections inherent in the state's Heat Illness Prevention Regulation.

In light of these tragedies, the UFW helped aggrieved farm workers challenge the state of California in 2009 and 2012 over inadequate enforcement of heat regulations. In 2015, a settlement of these complaints led the state of California to increase their enforcement of the heat standard and included a memorandum of understanding under which farm worker advocacy groups, including the UFW and the UFW Foundation, can file reports of violations with Cal-OSHA, which is mandated to immediately investigate them.[16]

Furthermore, on Friday, May 1, 2015, the state issued strengthened heat regulations for all employees that work outdoors throughout California. The strengthened rules require that:

- Water provided to employees must be "fresh, pure, suitably cool" and located as close as practical to where employees are working.
- Shade must be present at 80 degrees, instead of the current 85, and accommodate all employees on recovery or rest periods, and those onsite taking meal periods.
- High-heat procedures (which will remain triggered at 95 degrees) shall ensure "effective" observation and monitoring of employees.
    - During high heat, employees must be provided with a minimum 10-minute cool-down period every two hours.

HEAT ILLNESS PREVENTION IS FEASIBLE AND MAKES A DIFFERENCE IN FARM WORKERS' LIVES

California is a prime example that implementing common sense heat illness protections is good for workers, employers and for our food system. California leads the nation in agricultural production and exports, and is home to the largest concentration of farm workers in the country. According to the California Department of Food and Agriculture (CDFA), over one-third of the country's vegetables and two-thirds of the country's fruits and nuts are grown in the state. Although the agriculture industry was initially skeptical of the heat standard, it survived and

[16] See UFW, "Better enforcement of farm-worker heat rules as UFW and Brown administration settle lawsuit," available at https://ufw.org/Better-enforcement-of-farm-worker-heat-rules-as-UFW-and-Brown-administration-settle-lawsuit/

thrived: A recent report by CDFA points out that in 2017, farms and ranches in California received over $50 billion[17] in cash receipts for their output. In fact, the most recent statistics on farm income and wealth indicate that in 2017, California experienced a 31 percent increase in cash receipts for all agricultural commodities, when compared to 2010.[18]

On behalf of farm workers, the UFW played a crucial role in the development, implementation and enforcement of the California Heat Illness Prevention standard. Since the standard went into effect, the UFW and the UFWF have worked to ensure that the protections on the books make a difference in the conditions of farm workers in fields across California.

Some heat deaths still persist, even in California, although our state heat rules have saved thousands of farm and outdoor workers from being stricken. Farm workers benefiting most from the state heat standards work on non-union farms and we use our UFW contracts to enforce government protections at unionized farms.

Over time, we have seen the progression of the standard's implementation in fields across California. When driving along Highway 99 and Highway 5, initially, all you would see was tarps put out for the workers, in an attempt by employers to provide workers with shade. In those cases, workers would be left to sit in the dirt or have to bring in their own blankets or portable chairs so they could be more comfortable. Nowadays, we can see how some growers are embracing the standard and making an effort to improve the conditions under which workers receive shade, take breaks, and meal periods. In addition to shade, some employers put out tables with seating while others have trailers in place that have covered tables and benches so workers can rest and sit down, rather than have to sit in the ground after performing backbreaking work. These are examples of what can be done if employers are willing to treat workers with dignity.

While the road to implementation and enforcement of the California standard has not been an easy one, when implementation and enforcement have occurred, the standard has secured meaningful improvements for farm workers and resulted in a notable reduction in the number of farmworker deaths related to heat hazards.

The key issue here is CalOSHA's ability to have a realistic presence in the fields and construction sites statewide to stop negligent employers from taking these risks in the first place: enough inspectors, strict enforcement of reporting rules and effective procedures for responding to complaints from workers and their allies.

---

[17] California Department of Food and Agriculture, "California Agricultural Statistics Review 2017-2018," available at https://www.cdfa.ca.gov/statistics/PDFs/2017-18AgReport.pdf

[18] USDA/ERS Farm Income and Wealth Statistics, Cash receipts by commodity 2010-2019F, available at https://data.ers.usda.gov/reports.aspx?ID=17845#P3e0e42f706df4f508a1f9e8b1cf24bce_6_17iT0R0x5

And when CalOSHA and other state enforcement agencies cannot be there, workers and their allies must have the legal tools and rights to take preventive, protective action themselves.

IN THEIR OWN WORDS, FARM WORKERS SHARE THE IMPACT THAT HEAT STANDARDS HAVE ON THEIR WORKING CONDITIONS

In light of this hearing, we asked farm workers to share their experiences with heat exposure and the standards in California or Washington State. Some workers have been in the fields under five years while others have spent over two decades working with various crops that reach our tables. Although they can't be here today, below are their testimonies:

Felicitas from Alpaugh, California has worked in the fields for over 20 years with strawberries, pistachios, blueberries, and grapes. She shares that she has spent most of her life working in the fields, adding that, "We would often hear about people who were dying in the fields during the summer because there were no laws to protect farm workers. No one would ask the foreman if the bathrooms were ok or if we had water. Now, there are laws that protect us and organizations that also help us report when the law is not followed. During training, they tell us about our rights, symptoms, and what to do when we feel bad in hot weather. Knowing the symptoms, we know when we have to leave the furrow and take a break and also know the symptoms in case a co-worker starts to feel bad because of the heat, so we can help."

Vicente Reyes Enriquez from Bakersfield, California has worked with various crops in the 8 years he has spent as a farmworker but the main one has been grapes. Vicente shares that, "[working in the fields under intense heat] is very humid, suffocating. You just want to take off all your clothes because it is really hot. There's a sense of desperation. The heat regulations are good, and they benefit the workers."

Amadeo Sumano from Oxnard, California has worked in the fields for 11 years. He currently picks strawberries. Amadeo says that, "It is very difficult to work under the sun. Workers have to resist because the body has to withstand the high temperatures. We suffer from dehydration, headaches and our mouths are often dry. It is necessary that these protections are provided to the rest of the country because here in California farm workers have died for not having the basics: fresh water, shade. We all know that temperatures of up to 80 and 90 are very high, so when you are looking for fresh air, there isn't any, just hot air. It is important that all workers have protections from heat. In California, the lives of workers have improved because growers and private contractors are required to have basic protections against heat." Before concluding his statement, Amadeo extended an invitation to lawmakers, "to accompany us to the fields so that they understand the need for these protections at the national level."

Jesus Ochoa from Bakersfield, CA has worked with grapes, oranges and tomatoes for four years and he recently moved to Arizona. Jesus says, "Sometimes you feel like you will melt down to nothing. Like you are just doing it for a paycheck. I would sometimes just lay on the ground about to pass out. Covered in dirt with bugs crawling on you. Until I hear 'Get up' and force myself back to work. I would see older farm workers struggling but we all had to do it because we need the paycheck. They remind us that we are easily replaceable if we are not producing." While he has worked for many agricultural establishments, he shared that not everyone provides the basic protections required by the CA heat standard. Jesus says, "On paper it's nice to have these protections but in practice we are often not provided these protections. Immigrant farm workers are not informed so their rights are often violated and they have no clue that they can report these violations or don't know how to defend themselves." When asked about his thoughts on a federal heat standard so that outdoor and indoor workers in other states can benefit from protections, Jesus said, "I can't believe that there aren't federal heat protections...If they could be preventing deaths why would they not do something about this? Right now I moved from California to Arizona and it is horrible to see farm workers out in this heat."

Martha Montiel from Delano, California has worked in the fields for 9 years, mainly with grapes. Martha shared the following: "It's too hard to work in the heat because we have to be well covered. We need a lot of water. Sometimes there are people who do not feel well because we get dizzy with the smell of chemicals that get stronger with the heat." She adds, "California regulations have helped because farm worker deaths shouldn't happen for lacking something as basic as water and breaks. Now our employers are more aware that we are human and not robots. The rest of the country would benefit from these regulations that put workers first by giving them the power to protect themselves from the heat."

HONORING THE DEAD, FIGHTING FOR THE LIVING WITH A FEDERAL HEAT STANDARD

Beyond the statistics, at the heart of the call for a federal heat standard are tragedies that have robbed families of their loved ones. Tragedies that could have been preventable. These safeguards are for:

- **Miguel Angel Guzman Chavez** was a 24 year old farmworker that came to the U.S. under the H-2A guestworker program. He died from heat on June 21, 2018, five days after he arrived in the U.S. from Mexico. He was picking tomatoes for Beiza Farm Labor Contractor and Motley Farms in the state of Georgia. He wasn't used to the high heat and humidity, and was stricken at the height of the daily heat at about 4 p.m. while picking tomatoes. That day, the high temperature was 95, with a heat index (how hot it really

feels when relative humidity is factored in along with the actual air temperature) of 103 or 104 degrees. Miguel had told his crew boss he was feeling ill. The foreman told him to sit it out in the shade. Meanwhile, Miguel yelled and moaned of pain and demanded medical attention. After one hour of suffering, the foreman finally took Miguel to the labor contractor's office, where human resources staff was present. However, it was another employee, a mechanic, who drove him to the hospital. He died in route.[19] Like many heat stroke deaths of farm workers, Miguel's death was preventable.

- **Honesto Ibarra** was a 28-year-old worker that entered the U.S. on an H-2A visa. On August 6th, 2017, he was working on a blueberry farm in Sumas,Washington. His coworkers say that it was a hot day when Honesto started experiencing headaches and told his supervisor on two different occasions that he was not feeling well. Honesto was ignored by his supervisor both times and was told to go back to work. Honesto eventually collapsed and was transported to a medical center where he died.[20]
- **Ricardo Sotelo** passed away due to heat illness. This past June 30th marked 4 years since his death. While Ricardo was harvesting blueberries at Olsen Bros, Wyckoff Farms in Washington State, the temperature was 107 degrees. Because of the high temperatures, many of his co-workers were feeling ill and began to vomit. Ricardo had been feeling sick all day and had asked to take a break, but unfortunately he was denied rest by his supervisor and had to continue picking blueberries. Later that day, when Ricardo arrived home from work, he passed out. His family took him to the hospital, where he died on the same day. Medical records indicated that his death was due to heat stroke.
- **Jaime Nuño-Sanchez** who was a 48 year-old farm worker with 30 years of experience harvesting fruits and vegetables throughout the Coachella Valley in Southern California. On the morning of September 21st, 2015, he started his shift picking lemons for Wonderful Citrus, one of the largest citrus distributors in the United States. Around 10:30 a.m. on Sept. 21, a work crew that included Nuño-Sanchez and his wife began picking from a row of trees at the back of the grove, not far from where a supervisor had set up shade and water to comply with California's heat illness prevention standards. Temperatures hovered around 90 degrees, but the humidity made it feel like 105. Forty-five minutes into the shift, Nuño-Sanchez, 48, sat down in a shaded area, saying he didn't feel well. Minutes later he collapsed. One picker, who could speak English, called 911. A supervisor jumped into a pickup and sped to Highway 86 to wait for a fire truck and paramedics. When they arrived, he led them to the last lemon tree in the grove. Paramedics tried to revive Nuno- Sanchez, but it was too late. The father of three died in the field at 12:35 PM.[21]

---

[19]https://www.moultrieobserver.com/news/farmworker-dies-after-collapsing-in-field/article_6149dde8-78db-11e8-829a-ff2ed25eca1f.html
[20]https://www.bellinghamherald.com/news/local/article166401757.html
[21]https://www.desertsun.com/story/news/2015/11/19/death-fields/74058984/

- **Maria de Jesus Alvarez Bautista** was 63 years old and worked at Anthony Vineyards, employed through farm labor contractor Manuel Torres. On July 15, 2008, on a 110 degree day, she was picking grapes in the vineyard. The foreman pressured the crew to work harder, telling them they were not working fast enough. According to her family, Maria felt pressured to keep pace with her coworkers, although she needed a break. As a result, she worked for the rest of the day. The crew of 150 people were not provided shade, nor were they trained in heat stroke prevention and precautions as mandated by state law. Without the proper training, her coworkers were not able to identify the signs of heat illness. Later that evening when she was home, she had a headache, a high fever and started vomiting. Her son found his mother wrapped up in a blanket on the sofa, saying she was cold, despite it being a hot day. With her condition deteriorating rapidly over the course of two weeks, she was taken to the hospital on July 29. Doctors determined that she was severely dehydrated and had suffered a heat stroke. After being treated at two different hospitals, Maria de Jesus Alvarez Bautista died on August 2, 2008, making her one of six farm workers whose death was due to fatal exposure to heat in 2008.[22]
- **Maria Isavel Vasquez Jimenez** was a 17 year old undocumented farmworker who worked at a vineyard owned by West Coast Grape Farming located east of Stockton, California. She died of heat exhaustion on May 16, 2008. Two days prior to her death, she was tying grape vines when the temperature rose above 95 degrees. She was unable to reach a water cooler that was about 10 minutes away and the foreman didn't give workers a long enough break to get a drink of water. She collapsed from heat exhaustion after working more than nine hours under oppressive heat conditions. She didn't have access to shade or water and she was never trained on heat illness protection. Two days after collapsing from heat exhaustion she passed away. As Bautista, her fiancé, cradled her, the supervisor just stared at her and did nothing. The farm labor contractor failed to bring Maria Isavel to a hospital right way. Instead, the supervisor told Bautista to lay her down in a bed of a hot van and place a wet cloth on her forehead. When she was finally taken to a hospital near Lodi, approximately two hours after collapsing, Maria Isavel was in a coma and her body temperature was about 108 degrees. Then the doctors discovered she was two months pregnant. Bautista said that Maria and him had not been given safety training and that the supervisors had told him to lie about the event.[23]

Maria Isavel Vasquez Jimenez, Maria de Jesus Alvarez Bautista, Jaime Nuño-Sanchez, Ricardo Sotelo, Honesto Ibarra and Miguel Angel Guzman Chavez, were not agricultural implements; they were important human beings. Their lives were worth a lot—and they deserved better treatment than they received.

---

[22] https://www.desertsun.com/story/news/2015/11/19/death-fields/74067666/
[23] https://www.npr.org/templates/story/story.php?storyId=91240378

Like them, farm workers sweat and sacrifice to feed millions of people across America and the world and they shouldn't risk death or illness just by going to work when temperatures soar.

Fourteen years ago we got a Republican governor to take action. Four years ago we worked with a Democratic governor to strengthen the heat standards and we stand ready to work with Republicans and Democrats in this committee, and beyond, to stop these unnecessary deaths and advance national standards, such as those we won in California.

Chairwoman ADAMS. Thank you very much, and thank you all to all the witnesses.

Under Committee Rule 8(a), we will now question the witnesses under the 5-minute rule. I now recognize myself for 5 minutes.

Dr. Bernard, the testimony of Mr. Cannon from the AGC calls the legislation before us a one-size-fits-all bill, because different parts of the country have different temperatures, and because people are different because of age, preexisting conditions, drug use, and lifestyle choices. But it seems to me that this bill allows an employer to choose from a number of options to protect its workers, depending on the heat conditions and their workplace and the type of work that they do. It seems to me that as long as they seriously consider how to make their workers safe from excessive heat, it is more like a Burger King slogan, "have it your way." A little heat water and shade if it is cool, or a lot if it is hot, air conditioning when it is appropriate or cooling suits when it is not. Dr. Bernard, would you agree?

Mr. BERNARD. I do agree.

Chairwoman ADAMS. Thank you.

Dr. McCarthy, do city employees such as those studied do dangerous work that places them at risk of occupational injuries or illnesses?

Dr. MCCARTHY. Yes. They work in dangerous atmospheres. They use heavy equipment. They work in confined spaces and high places. Yes.

Chairwoman ADAMS. In my state of North Carolina, State and local government employees are covered under a State OSHA plan, but I realize that 24 of the states do not have these legal protections in place.

In your view, would it be a good idea to provide OSHA coverage for State and local government employees in states, such as Texas, which currently have no OSHA protections?

Dr. MCCARTHY. Of course. All workers should have a place of employment where they do not have to risk serious physical harm or their life to provide for themselves and their family.

Chairwoman ADAMS. Why did you decide to implement a heat stress prevention program for the city given that Federal OSHA has no jurisdiction over State and local governments in States such as Texas?

Dr. MCCARTHY. For that very reason. These employees had serious heat illnesses, and it is just -- it is the right thing to do to protect them.

Chairwoman ADAMS. All right.

Mr. Little, your testimony concludes that the California outdoor heat standard has been a great success in terms of saving lives. I am happy to hear that. Would you be supportive if OSHA decided to issue a similar standard?

Mr. LITTLE. I think if the agency takes the kind of flexible and collaborative approach that Cal/OSHA took in originally developing and revising our standard in 2010 and 2015, it could be a worthwhile exercise to try to do something.

But it is going to be very important, I think, to avoid creating a standard that is going to be a one-size-fits-all standard, because our conditions in California are different than they are in most

places. Employers in different places in California face different conditions and different challenges in providing protection for employees.

So I would simply urge a collaborative approach to learn from what we learned when we went through this process in California.

Chairwoman ADAMS. Okay.

Mr. Cannon, you state that this bill presents a one-size-fits-all approach because climate varies from region to region. I think we can all agree that climate varies from region to region.

So can you tell me what burden an OSHA heat standard would put on an employer in a mid-region of the country where workers are not exposed to excessive heat?

Mr. CANNON. Thank you for the question, Chairwoman. Sorry, Chairwoman. Now, your question is regarding the central part of America, correct?

Chairwoman ADAMS. Yes.

Mr. CANNON. I am not certain, you know -- without understanding what the final rule looks like, I cannot tell you what burdens that these employers would face. I will say that, you know, I think everyone on the panel has pretty much repeated the same approach to prevent these types of illnesses, which is water, rest, shade, and education.

So, so long as, you know, these requirements are, you know, following those basic guidelines -- I really can't tell you what the impacts would be without seeing what the final rule would be.

Chairwoman ADAMS. So give me a "yes" or "no." I just have a few seconds. Mr. Cannon, you stated, referring to OSHA's general duty clause, the fact that current law already protects workers from extreme heat.

You are familiar with the Sturgill decision by the Occupational Safety and Health Review Commission. So -- and there was a citation against an employer after a roofer died on the job from heat stroke after internal body temperature reached over 105 degrees.

Yes or no?

Mr. CANNON. I am, yes.

Chairwoman ADAMS. Okay. Are you aware that OSHA has not appealed this decision so it sets a precedent for enforcing the heat standard? Yes or no, are you aware?

Mr. CANNON. That OSHA appealed the decision?

Chairwoman ADAMS. Right -- has not appealed.

Mr. CANNON. Oh, has not?

Chairwoman ADAMS. Yeah.

Mr. CANNON. I am aware.

Chairwoman ADAMS. Okay. And do you think, as a result, that workers are now more protected or less protected from heat hazards? Yes or no -- more or less?

Mr. CANNON. I am sorry?

Chairwoman ADAMS. Are they more protected or less?

Mr. CANNON. I would say neither at this point. I think the general duty clause is still in place to enforce hazards related to heat.

Chairwoman ADAMS. So you don't know, you don't have an opinion about whether it is more or less.

Mr. CANNON. As I stated, I think --

Chairwoman ADAMS. Okay.

Mr. CANNON. -- the general duty clause --

Chairwoman ADAMS. Okay. All right. Thank you.

My time has expired. Okay. I want to recognize the Ranking Member of the committee.

Ms. Foxx, you are recognized now for 5 minutes.

Ms. FOXX. Thank you, Madam Chairwoman.

And I want to thank our witnesses for being here today.

Mr. Little, as you mentioned in your testimony, California experienced a heat wave in 2006 which prompted the State to implement a heat illness prevention standard. But the climate differs dramatically throughout the country. When it gets to be 75 where I live, it is a heat wave.

How should we take that into consideration when considering whether to impose legislatively a one-size-fits-all Federal regulation?

Mr. LITTLE. We have 26 state plan states, and the rest are under Federal coverage for most private employers. And I think that you can give those state plan states a lot of flexibility to be able to figure out how to go about best protecting workers on the basis of conditions that are unique to their States.

That is why we have state plan states in the first place and why California opted to have its own plan, because we have unique conditions in California that don't exist anywhere else. Perhaps one of the most important unique conditions that exists in California is that, since we grow more food than any other State in the country, we employ about two out of every three farm workers that work in the United States.

We also have kind of a unique climate where, unlike today where you can wear the air it is so humid here in Washington, in Sacramento it is going to be 96 degrees but the humidity is only going to be 20 percent. So it is going to be much more comfortable to work outside.

And what kind of remedy you pursue on any given day is going to be different depending on what activity you are doing, what the weather conditions are, and just what the local conditions are. So I think that you can give a lot of different parties a lot of flexibility to be able to decide what is going to work best for them.

Ms. FOXX. Thank you.

Mr. Cannon, as you mentioned, employers are already required under the law to provide employees a workplace free of known safety hazards.

Can you expand upon actions that OSHA is currently undertaking to ensure that employees are protected from heat illnesses? And, in your view, has the agency been effective in its outreach to industry and in raising awareness on heat illness prevention?

Mr. CANNON. Thank you for that question.

As I mentioned in my written as well as oral testimony, the heat illness prevention campaign has been a huge success. I can cite a handful or several AGC chapters who have taken that campaign and spread the word throughout their local memberships. And even according to OSHA's website, the campaign has reached millions of workers and employers.

So I think, you know, if data were collected -- I am not for sure if you are familiar with their annual Fall Stand-Down, but I think,

you know, the numbers of participants in this campaign itself would rival that.

So I think they are doing a good job with spreading the word about what needs to be done to protect workers from, you know, extreme temperatures, especially heat.

Ms. FOXX. Thank you.

Mr. Little, in your testimony, you said that California is in the process of promulgating an indoor heat standard, and there is confusion about what is considered an indoor versus an outdoor environment. Can you expand upon the uncertainty in this area?

Also, what lessons should we take from California's recent rulemaking on an indoor standard when considering whether Federal legislative action should be taken?

Mr. LITTLE. We have recommended to the agency that the indoor standard that they are considering should be considerably simplified from what they have produced so far, should be more similar to the outdoor standard than what they have created up to this point, that it should focus on specific industries and activities where there is significant risk related to heat illness.

The warehouse work that was cited by another one of the witnesses today is a pretty good example of an indoor environment that needs to have something done about heat illness because of the conditions you face.

Trying to impose a one-size-fits-all indoor regulation on the huge variety of indoor employers, where you have everything from an air-conditioned dentist's office to an un-air-conditioned warehouse facility, trying to create a one-size-fits-all program that will fit all those will fit none of them.

So we would, again, strongly suggest that, should Fed OSHA decide to go down this road, that they learn from what we've learned in California while putting our standard together and doing what was necessary to make it work.

Ms. FOXX. Thank you.

Mr. Cannon, when considering new laws or regulations that affect the American workplace, we need to understand the full impact these policies would have on industries that employ tens of thousands of people.

Can you walk us through how employers typically participate in OSHA's traditional rulemaking process? Why is it so important that the agency follow that process and allow the public sufficient opportunity for input?

Mr. CANNON. Thank you for that question.

Oftentimes, you know, the primary way that employers are engaged in the rulemaking process is the review-and-comment period. OSHA issues a proposal, whether it is an advance notice of proposed rulemaking, a notice of proposal, or request for information, and it gives the regulated community the opportunity to review what is being put out there for consideration and respond accordingly.

One of the things that, you know, I have observed is that oftentimes some of these proposals can be complex and require extensive review and analysis. And I think that is where it takes some time and, I think, we have historically asked for extensions.

And so, you know, it does take some time for employers to review the proposals, analyze what is being proposed, and respond with complete and comprehensive remarks so that the agency can take them into consideration.

You know, I think the second piece that is equally important is giving the agency enough time to review --

Chairwoman ADAMS. We have run out of time, so if you could --

Ms. FOXX. Thank you, Madam Chairwoman. Thank you for your indulgence.

Chairwoman ADAMS. All right. Thank you very much. Thank you.

I want to recognize now the gentlelady from Pennsylvania, Representative Wild.

Ms. WILD. Thank you, Madam Chairwoman.

I would like to address my first questions to Mr. Javier Rodriguez.

Sir, I read your testimony with interest, and it deeply concerned me. And I would like to ask you if you could tell us a little bit about the situation that actually occurred with your wife when she was working so that we get that on the record.

Mr. JAVIER RODRIGUEZ. Yes. The last year in Ontario, California, we had high temperatures, 110, 120. My wife work in the warehouse. She packaged clothes for some of the very important stores, like Charlotte Russe. And she starts, like, typical day, she starts, like, at 2:00 p.m.

And 2 hours after she started, she started feeling bad. And she went with the supervisor, and then she is telling him, like, she feels sick, like, it is too hot, like, we need drinking water and take some break. And the supervisors respond like, oh, well, you can rest and back to work, or you feel bad, go home and come in tomorrow when you feel better.

And she went back to the house. And she called me. Hey, Javier, I feel bad. And I said, hey, you know, like, this is a serious problem. Like, we need to go to the doctor. And we went to the doctor. The doctor diagnosed it like, oh, you have a stomach flu.

So this is hard for, like, for example, my wife or another workers in California make some complaint or do something against the heat, because the doctors never give a real diagnosis.

Ms. WILD. Let me ask you another question.

Mr. JAVIER RODRIGUEZ. Yes.

Ms. WILD. So that is your wife's experience, and you commented in your testimony about some other coworkers or people that you knew in the workforce who had heat-related problems. Was your wife's experience in getting the doctor to diagnose it as being work-related typical?

Mr. JAVIER RODRIGUEZ. Yeah.

Ms. WILD. Okay.

Mr. JAVIER RODRIGUEZ. It is typical for the workers, yeah.

Ms. WILD. And do you know workers who have filed workers' compensation claims related to heat-related illnesses?

Mr. JAVIER RODRIGUEZ. Not -- no. I never hear of some of the workers, like, file a workers' comp complaint around the heat, the heat illness.

Ms. WILD. All right.

Mr. JAVIER RODRIGUEZ. It is not easy because what I mentioned before. Like, the doctor diagnosis never say, like, oh, this is something for the heat. It is all the time, like, different kind of diagnosis, like, high pressure, diabetes, flu, so much, like in my wife's case.

Ms. WILD. Okay.

So let's talk for a moment about the warehouse work that you have done. My district in Pennsylvania is home to many warehouses and factories. My understanding is that you worked in a warehouse moving freight in and out of metal shipping containers. Is that --

Mr. JAVIER RODRIGUEZ. Correct.

Ms. WILD. -- right? Can you give us some idea of how hot it gets in those metal shipping containers and inside the warehouse compared to outdoor temperatures?

Mr. JAVIER RODRIGUEZ. Yes. The warehouse doesn't have any air circulation. And these containers, this is small -- we have the small space. We load and load merchandise. And when the temperatures outside is, like, 100, inside the containers, these metal containers, it is 115, 120.

Ms. WILD. So did they have any fans inside the --

Mr. JAVIER RODRIGUEZ. No, we don't have any fans.

Ms. WILD. And are the containers in any way air-conditioned from the truck that is going to be pulling the container?

Mr. JAVIER RODRIGUEZ. No. This kind of container doesn't have any air conditioner, because it is a metal -- these containers come from China and other regions.

Ms. WILD. So what would you do if you became overheated while working inside one of these metal containers?

Mr. JAVIER RODRIGUEZ. What we do is, like, go outside and try to drink water, rest. But like I mentioned before, the supervisor don't like that. Like, we need to continue work, we need to produce. So this is a real situation, a real problem, when the worker is trying to do something to feel better, like -- yeah.

Ms. WILD. I would like to switch over to Dr. McCarthy.

Dr. McCarthy, can you comment, please, on the clinical symptoms and prognosis of heat stroke?

Dr. MCCARTHY. Yes. The clinical symptoms of heat stroke, usually you start with heat exhaustion, which can have dizziness, headache, profuse sweating, nausea. The change occurs when you start having neurologic symptoms, when the thermoregulatory system breaks down and cannot keep the core temperature maintained at the 98.6 degrees, give or take a degree --

Ms. WILD. Can heat stroke have long-term implications for a person other than death?

Dr. MCCARTHY. Yes. You begin to have multi-organ failure, and this affects the brain, liver, kidneys. And if not treated within 2 hours, it is a true medical emergency. You can have long-term chronic health symptoms related to those organs that are affected and/or death.

Ms. WILD. Thank you very much.

My time is up.

Chairwoman ADAMS. Thank you very much.

I want to recognize the Representative from Michigan, Representative Stevens.

Ms. STEVENS. Thank you, Madam Chair.

And thank you to our panel of expert witnesses.

I also happen to serve on the House Science Committee, and we are having a hearing today on glacier ice melt and rising sea levels. And this is a conversation about climate change. This is a conversation about what climate change is posing to our economy, to our people, to our workforce.

And heat has obviously always existed in, you know, the United States and in the fields of work that we have heard from today and that are in the testimony, but the expectation that it is going to get worse is spot-on. And how we as a body take these matters seriously and for what they mean for people and for workers is of paramount importance.

There is also something significant in this room, which is that I am reconnecting with a friend, Arturo Rodriguez, who may or may not remember me from the time that I picked him up from the airport, O'Hare Airport, in March of 2016.

And we find ourselves yet again, my friend, in this important hearing. And so I would like you to be my first question, which is: Could you just talk to us a little bit more about your personal experiences, particularly in the warehouse lines of work, people who you have had the privilege of representing? We would love to get some more of that narrative, sir.

Mr. ARTURO RODRIGUEZ. Well, I will leave the warehouses to Javier.

Ms. STEVENS. Yeah. That is Javier, yeah, but --

Mr. ARTURO RODRIGUEZ. I will definitely talk about, you know, the fields. And Mr. Little made some good comments in regards to the situation with agriculture. The reality is, folks, that, I mean, the temperatures are soaring. The Coachella Valley, if not already, very soon it will be 115 to 125 degrees. Workers working out there harvesting vegetables primarily, at this point in time, and some citrus.

But we have to have standards. And we have seen the standards that have been implemented now with water, shade, and rest breaks. And ensuring that supervisors and foremen are well-trained but also that the workers really understand what the symptoms are has helped out tremendously to reduce the number of deaths and to ensure that we lower the worker compensation costs for the employers and ensure that there is better production because workers are feeling like they can produce in an environment where they do have the water, the rest, and the breaks and so forth.

And so we are very fortunate to be able to have passed those regulations thanks to the hard work of Representative Judy Chu and others to really make that possible. And so we are really looking forward to this being expanded throughout the Nation.

Ms. STEVENS. And you might not know this, but you are a pride and joy of southeastern Michigan. And I am a Representative from southeastern Michigan, and we are so thrilled to have your connection to the labor movement. It is tied to Michigan and your time in Michigan. We know you lived in Michigan, in my great State.

What is the role here of the medical professionals? And I kind of open this up to the panel with the remaining time I have left. Why have doctors not been recognizing some of these conditions as tied to workplace protections, particularly as it pertains to the excessive heat?

Dr. MCCARTHY. Okay. I think it has just been under-recognized as an illness related to the workplace because it does have a multi-organ effect. I think it has been under-reported by workers. It is under-recognized as an illness by clinicians. And it is great that it is becoming more recognized.

When it affects a certain system, such as the cardiovascular system or the kidneys or the liver, it gets that diagnosis on the chart versus the heat-related illness. Or you get dehydration. And I think that is why we don't get the recording of a heat stroke or heat exhaustion, because the doctor is attending to the specific system that is being treated.

I hope that helps.

Ms. STEVENS. Thank you.

Madam Chair, I yield back.

Chairwoman ADAMS. Thank you very much.

I yield to the gentleman from California, Mr. DeSaulnier.

Mr. DESAULNIER. Thank you, Madam Chair, for your leadership.

And to the panel, Mr. Little, Mr. Rodriguez, particularly Mr. Little, it is nice to see you.

I was Chair of the California State Senate Labor Committee when we were having hearings on our law and we were working with the farm workers. It was not always easy, I think is the proper way -- from my memory, Mr. Little.

But maybe you could expand a little bit on what you and the employers have discovered as you have gone through this process and hopefully worked with the State Department of Labor but also with the researchers in the field and your employees on the benefits of it and the challenges, to be quite honest.

Mr. LITTLE. The challenges, I think, are mostly logistical.

We have long had to comply with field sanitation requirements that require you to provide some sort of toilet facility, often a chemical toilet, like you find any outdoor chemical toilet at any outdoor event, and figure out how to manage the logistics of getting that to the field, getting it to where the workers are, getting it at the appropriate location so they don't have to walk too far in order to get to it.

And then with heat illness it is a slightly different situation, because you need to have the water within -- I mean, the agency picked the word "practicable" to put in our regulation. And I am not sure I know how to define "practicable." Maybe it is like "truth" and "beauty"; it is in the eye of the beholder. But the general idea is you keep the water and the shade as close as you can with practical means.

And that gives us an opportunity to try a lot of different things to try to provide that shade. We invented -- I didn't do it, but we invented a piece of farm equipment that didn't exist prior to the heat illness standard, and that is the shade trailer. I don't know if you have ever seen one of these things.

I think you might have.

But it is basically a two-wheel trailer that you haul around behind a pickup truck that has two wings that unfold, that has a picnic table in the middle so the workers can sit on the benches, facing what amounts to a picnic table, eat their meal, their midday meal, there. You can stow personal articles in the trailer -- tools, water. Usually they have a rack on it for a 5-gallon Igloo cooler.

But if you are already hauling the portable toilet out to the field, then you have to find another truck to haul the shade trailer or, more often than not, several shade trailers out to the field.

So that flexibility in logistics, making sure you always have enough water on hand is something I -- when I talk to people about, I put a lot of emphasis on making sure you have worked out how you are going to make sure you have the requisite amount of water and give some thought to how you are going to do that. Don't do something like --

Mr. DESAULNIER. This isn't a hearing about water in California --

Mr. LITTLE. Sorry.

Mr. DESAULNIER. -- Mr. Little. You don't want to go down that road.

Mr. LITTLE. All right.

Mr. DESAULNIER. Go ahead.

Mr. LITTLE. Oh, I am sorry, I just was going to make one last point related to that, and that is, don't make the mistake that I have seen farm employers make from time to time, where, in their zeal to try to make sure they have water out there for everybody, they go out and they pick up all the Igloos and they take them in town to Taco Bell to fill them up with ice and water, but you are leaving the workers that are there with no water while you are doing that.

Mr. DESAULNIER. Right.

Mr. LITTLE. So just thinking ahead a little bit and having a plan for how you are going to do this can make it a lot easier to deal with it and make sure you provide water and shade for people, as you are required to do under our standard.

Mr. DESAULNIER. Mr. Rodriguez, passing effective policy is one thing, but having the cultures change to see the value, both from the employer and the employee, how do you see that, as the regulation continues to be enforced, particularly in California?

And, by the way, we are happy to have you in California from Michigan.

Mr. ARTURO RODRIGUEZ. Thank you.

I think it has created a situation whereby employees feel much more respected, feel like they are being treated as human beings and not as agricultural implements.

I mean, they know what they have gone through year after year after year. And, unfortunately, we weren't able to get these regulations, to even begin consideration, until 2005. But I think a lot has changed over the course of the last two decades, and we have seen significant improvements in terms of what has transpired.

And we are hopeful that there are new innovations that are going to come up. Like, the shade trailer was one, and I am sure there are going to many, many more as we look to how we can pro-

tect employees and how we can create a better work environment for them.

Mr. DESAULNIER. And how has that improved the agricultural industry in California, from your perspective?

Mr. ARTURO RODRIGUEZ. Well, one, I mean, in terms of -- as already mentioned by Mr. Little and as I mentioned in my testimony, we have seen the shade trailer come out, which, for the first time -- I mean, it is hard for us to imagine. Can you imagine sitting in the dirt eating your lunch every single day? And that has just changed now within the last 5 years, where you see shade trailers.

So I think more and more of those types of things are going to come and take place and become a reality, as well as thinking about how do you provide cool water to folks and get it close enough to them when they are working in fields with long rows and many, many acres and so forth so that we can provide the immediate attention folks need.

Mr. DESAULNIER. Thank you. Thank you, both.

I thank the panel, and I thank the Chair.

Chairwoman ADAMS. Thank you very much.

I will now yield to the gentlelady from Minnesota, Ms. Omar.

Ms. OMAR. Thank you, Chairwoman.

Over 30 million people in the United States have jobs that require them to work outside, according to the Bureau of Labor Statistics, which makes the issue of deadly heat exposure a very serious workplace safety concern.

Frankly, I find it disturbing that a country like ours has to adopt safety standards surrounding this problem. I sit on another committee just across the hall, Foreign Affairs Committee. And there I often talk about the importance of upholding the same values and standards here at home that we are promoting around the world, and this is a perfect example of that.

Just a couple of years ago, I remember the world calling out Qatar to establish some kind of heat exposure rules to protect the migrant workers dying doing construction in preparation of the World Cup. And so how could it be that here in the United States we are still lacking those standards ourselves?

And this concern is only made more serious when you consider the climate crisis we are currently facing. Climate change is making extreme heat days more frequent, and it is bringing about record-breaking summers. And that is a trend that is only going to continue unless we take serious action and we take it soon.

It is true that only three States here in the United States have established these standards. Those are California, my home state of Minnesota, and Washington. And so we have to make sure that we are doing something to standardize it for the whole Nation.

So I wanted to chat a little bit about the kind of vulnerable communities that are in some of these workplaces.

And to Mr. Rodriguez, you mentioned in your testimony that nearly 70 percent of our agricultural workforce comes from the immigrant communities. I believe that it is an important factor we need to take into consideration here, because it is no secret that immigrant workers, even though they are often facing high risk, they are high risk of injury or illness, are more likely to suffer in silence because of the fear of retaliation. The threat of violence and

harassment and fear of having their status held against them is something that many immigrant workers know a little too well, regardless of what industry they might be in.

And so could you, Mr. Rodriguez, share with us a little bit more on how the lack of strong Federal workforce regulation is hurting these workers particularly and how it makes an already vulnerable community more vulnerable?

Mr. ARTURO RODRIGUEZ. Thank you very much for the question.

It definitely has an impact because of the fact that, one, probably the percentage of immigrant workers in this country working in agriculture today is probably even much higher than 70 percent; and, secondly, many of them do not speak the language or English, and so they are not aware of what regulations are, they are not aware of what the rules are, and so forth.

Thirdly, there is an extremely high percentage, as many on the committee know, that these workers that come here to work in agriculture do not have legal status in our country today. So they are extremely fearful about the fact that many will hold that over their head and, "If you don't work, then I am going to report you to the authorities."

And none of these workers that are here come here to work because, one, they want to improve their families, but, most importantly, they want to be able to provide for their families, and they know and they are experienced and they are professionals in agriculture. So, as a result, the fact that they don't have legal status and that oftentimes is utilized against them has a really severe impact.

We are confident that, much like in California, where we have instituted these regulations, that if we do this on a national basis -- and you have done in your State already, in Minnesota, and Washington State -- that we will be successful at workers, one, being protected and, secondly, being much more open about the fact that these issues have to be addressed.

Ms. OMAR. And what are other proposals that you have, beyond just addressing the workplace, that we can address to make sure that these vulnerable communities don't continue to be vulnerable?

Mr. ARTURO RODRIGUEZ. Well, I think in terms of, as mentioned already by others testifying this morning, that we need to figure out how to do an educational program in the languages that workers speak, in the language oftentimes that supervisors and foremen speak, so that people are much more aware of what is needed and so, as a result, they can take immediate action when they feel symptoms of heat stress and so forth.

Ms. OMAR. Yeah. Considering the safety of our workers allows us to consider their dignity and make sure that their humanity is intact. So I look forward to us addressing this.

And I yield back.

Chairwoman ADAMS. Thank you very much.

Ms. Jayapal, you are recognized for 5 minutes.

Ms. JAYAPAL. Thank you so much, Madam Chair.

And thank you all very much for being here.

We have heard today that workers are dying from heat exposure both outdoors and indoors in places like warehouses that routinely exceed 100 degrees. And we have also heard that many heat-ex-

posed workers have contracted chronic illnesses, like kidney disease, and that medical professionals are concerned that there is a link between those diseases and heat exposure.

In some unionized warehouses, workers already have heat standards. I am proud of my State for having some standards. For example, ILWU's Local 26 has a collective bargaining agreement with heat standards that protects workers in the Rite Aid distribution centers in the Mojave Desert.

Before workers unionized, though, let's be clear that the temperatures in the warehouses were so high that a worker died. And across the country, despite your tremendous work, Mr. Rodriguez, not all workplaces are unionized, and many workers are suffering terribly.

So let me start, Mr. Javier Rodriguez, with you. You worked in a warehouse where you faced horrific conditions, and you then started organizing other warehouse workers to take action. Thank you very much for your courage.

When a worker doesn't feel well on a job, do the labor contractors or the warehouse companies do any follow-up to see if the worker is actually okay?

Mr. JAVIER RODRIGUEZ. Not any follow-up. Basically, the company don't care. Like, especially with the warehouse workers in our area, the majority work for the staffing agencies, and these staffing agencies don't have any, like, prevention plan, health insurance. What we say with the staffing agencies, you are hired in the morning, you are fired in the afternoon. So, basically, no, any follow-up.

Ms. JAYAPAL. And so, if there is some sort of a medical emergency, there is really no support whatsoever to deal with that on the job.

Mr. JAVIER RODRIGUEZ. No. No. Because -- I don't know. Like, I think -- I have a lot ideas in my mind. But when you feel bad, what the company do is, like, "Oh, sit down, like, couple minutes. When you feel better, back to work. If you don't feel good, like, go home. Take the day." So this is how the companies probably, like, wash their hands --

Ms. JAYAPAL. Yeah.

Mr. JAVIER RODRIGUEZ. -- to take responsibility with the workers.

Ms. JAYAPAL. Thank you.

Mr. Cannon, let me turn to you. In your testimony on behalf of AGC, you state that Asuncion Valdivia Heat Illness and Fatality Prevention Act would be too burdensome for employers, if I understood your testimony.

Do you agree that, as we have heard today, that workers are dying from heat-related causes?

Mr. CANNON. We do recognize that heat is a problem in our industry. What we are saying is that there is no one-size-fits-all approach to regulating the heat, especially in the construction industry. When you have the various trades, you have some --

Ms. JAYAPAL. But do -- I am sorry. Let me just stop you for a second. You agree that death because of heat-related illnesses on the job is a problem in the industry?

Mr. CANNON. Yes.

Ms. JAYAPAL. Okay. And do you think it is wrong when workers die on the job?

Mr. CANNON. Yes, it is wrong.

Ms. JAYAPAL. Okay. And do you agree that, while some employers voluntarily adopt standards because they may be higher-road employers, do you agree that legislation should be focused not on the top of the barrel but on the bottom of the barrel, the employers that refuse to adopt standards, refuse to actually take action when workers are dying on the job?

Mr. CANNON. What I think would help is better outreach. Ninety percent of the construction industry are employers with 20 or fewer employees. So these are the ones that I think are not as informed, I will say, and --

Ms. JAYAPAL. Do you think that we should wait to inform employers and allow workers to die while we wait for that? I mean, how long -- do you think one death is --

Mr. CANNON. One death is too many.

Ms. JAYAPAL. One death is too many.

Mr. CANNON. Yes.

Ms. JAYAPAL. So then why wouldn't you -- because I think you are an employer who has taken some precautions around this.

Mr. CANNON. Yes.

Ms. JAYAPAL. You have admitted that there are workers who are dying on the job. Why wouldn't you want legislation to make sure that every employer takes precautions as you do?

Mr. CANNON. Regardless of whether it is the legislation or a regulation or standard, you still need to reach the small employer.

Ms. JAYAPAL. Sure. But you don't you think that legislation gives an added push for an employer who isn't paying attention, is allowing for workers to die?

Because you agreed with us that workers are dying on the job and that there is a problem in the construction industry. So why wouldn't you want to -- well, I mean, I have heard your answer, but why would an OSHA heat standard be too burdensome?

Because, according to your testimony, you already encourage contractors to engage in safe heat-related practices. But the reality is they are not listening to you, Mr. Cannon. Maybe they would listen to the Federal Government if we actually had some standards around this.

Let me just -- I guess my time has expired. I am sorry, Mr. Rodriguez. I was going to ask you a question. I just want to thank you for your decades of service on behalf of farm workers and people across the country who are providing such tremendous service every day to all of us as we eat the food on the table.

Thank you.

Chairwoman ADAMS. And thank you very much.

Mr. Cline, you are recognized for 5 minutes, sir.

Mr. CLINE. Thank you, Madam Chair.

Before I get to my first question that I had written down here, Mr. Rodriguez, you said in your answer to Ms. Jayapal that you were told, if it is too hot, to take a break, to sit down, to have some water, to take a rest, or to take the day, potentially, if you need to take time off?

Mr. JAVIER RODRIGUEZ. When it is too hot --

Mr. CLINE. Didn't you just say that? Isn't that how you responded to the question that was just asked of you?

Mr. JAVIER RODRIGUEZ. Yes, I would take the breaks.

Mr. CLINE. Okay.

Mr. JAVIER RODRIGUEZ. We forced the company to give us breaks.

Mr. CLINE. But the company gave you breaks. And, in fact, if you said you --

Mr. JAVIER RODRIGUEZ. The company don't give you no breaks. We force it.

Mr. CLINE. Okay.

Mr. Cannon, your testimony is that a one-size-fits-all policy does not apply. But you did acknowledge that deaths due to heat-related illness is a problem in some States, correct?

Mr. CANNON. I was just speaking in general. Any death, you know, whether it be heat-related, fall-related, is a problem in our industry.

Mr. CLINE. In some states, deaths related to heat are reduced or may not even occur because the heat is not excessive, correct?

Mr. CANNON. Correct.

Mr. CLINE. Okay. So to require each state, which has different levels of heat, different rates of heat-related illness, to go through all of the plan content that is in this legislation, which was just given to us, I believe, yesterday -- a plan to include hazard prevention, including engineering controls, administrative controls, personal protective equipment, local exhaust ventilation, shielding from a radiant heat source, insulation of hot surfaces, the provision of air conditioning, cooling fans, cooling mist fans, evaporative coolers, natural ventilation, administrative controls, rotating employees, scheduling work earlier or later in the day using work-rest schedules, personal protective equipment which may include water-cooled garments, air-cooled garments, reflective clothing, and cooling vests.

Would you say that constitutes a one-size-fits-all regime that may be overly burdensome in some parts of the country?

Mr. CANNON. I am sorry. Can you repeat that?

Mr. CLINE. All of the things I just said are part of a plan that has to be developed under this legislation. Would you say that the imposition of a one-size-fits-all solution on employers, large and small, no matter what region of the country they are coming from, would be excessively burdensome on some employers, whether it is in parts of the country or some smaller employers?

Mr. CANNON. I think if you are requiring an employer to -- or prescribing an employer to implement measures that are not applicable to what they do, then it could become burdensome.

Mr. CLINE. Okay.

Dr. MCCARTHY. May I interject?

Mr. CLINE. No.

Ms. Chairwoman, I agree that occasional exposure to heat and the illnesses that result is a very serious issue, and we are looking to reduce and eliminate the consequences of this. But it is important to be mindful of the individual considerations and norms that States have. More mandates don't always equate to better practices. That is what we should be focused on in this hearing.

One-size-fits-all becomes far more complicated for certain industries, such as truck drivers, who are changing environments from one place to another. And when a request was made in 2012 to

push OSHA to issue a one-size-fits-all standard, the last administration denied the petition due to the complications and ineffectiveness that one overreaching standard would have.

I look forward to discussing further potential ways that employers and States can work together to prevent the effects of occupational heat exposure, but I would warn against the imposition of a one-size-fits-all mandate on employers that would harm the economy and harm workers at the end of the day.

I yield back.

Chairwoman ADAMS. The gentleman yields back.

All right. I want to officially welcome Mr. Keller of Pennsylvania to the Committee on Education and Labor.

And, Mr. Keller, I now recognize you for 5 minutes.

Mr. KELLER. Thank you, Madam Chair.

It is an important issue when we are talking about safety of the people that work in the United States. I was in private industry, and I was also in State government. And I guess I would have a question for Mr. Little.

When we are looking at Congress trying to implement a one-size-fits-all approach, being the diversity of our Nation and the working conditions from California to New York and from Maine to Alabama, do you feel it would be best to let this decision up to the States, have OSHA work with the States and let it up to the States to determine what might work best to protect the workers in those areas?

Mr. LITTLE. Twenty-six states have state plans, and they have the legal capacity to be able to promulgate standards, just like California did. Some may choose to do so, as some have already have, and some may choose not to. Some may choose to rely on what may be in their law already.

In the Federal law, we have the General Duty Clause. In California, we have an injury and illness prevention plan requirement. They are kind of analogous, because if your injury and illness prevention plan doesn't cover the hazards that you actually have in your workplace, then you need to modify it and take those hazards into account. Heat is obviously one for outdoor workers.

So there is usually more than one way to fix a problem, depending on what the problem is. And I think, to the extent that you give people flexibility and space to be able to figure out their problems, whether or not -- whether it is Federal OSHA perhaps doing a standard at some point or the way we went about doing our standard in California, where we talked to all the stakeholders, including employers who have to actually implement whatever it is the regulation comes up with, is going to be very important to create something that you can actually make work on the ground in the real world.

Mr. KELLER. Okay.

As far as the California standard, has there been any enforcement or audits of the California standard with any of the employers?

Mr. LITTLE. There has been quite a bit of enforcement around our heat and illness prevention standard, yes.

Mr. KELLER. Okay. And has that been working out well for the people that work in California?

Mr. LITTLE. Sometimes -- I think we accomplish more when we undertake the education than we do when we undertake enforcement, some types of enforcement, where you are penalizing an employer for failing to have a written copy of the program at each individual work site.

For agricultural employers, probably for construction employers too, you could have dozens of active work sites on any given day. If someone forgets a piece of the notebook they carry with them that happens to be their heat and illness prevention plan, the person who is in charge of safety for the company knows how to implement it, knows how to direct others to implement it, but if you don't have that copy of that plan at each individual work site, that is a violation of our standard.

I understand you want to educate people, and maybe part of education is making that available. But what harm occurs if you don't have that, and why are you penalizing that employer? I think the penalty is $7,500 for failing to do that. So there is a right way and wrong way to do a lot of different things. I am not sure that penalizing people for paperwork violations is constructive.

Mr. KELLER. Well, I guess I would have a question, then, because I come into mind, in Pennsylvania, we have PennDOT, which is the Department of Transportation, and a lot of times they have flaggers out when there is construction work. And it is hot and so forth. I imagine California's Department of Transportation does the same thing for road construction. Would they fall under the same enforcement rules as the farmers, the agriculture community, landscapers?

Mr. LITTLE. To the best of my understanding, yes, they do.

Mr. KELLER. They do. Okay.

Do they have the plans -- or how do they do it? I guess that might be a way to look, how the government -- are you aware of how the government makes sure that there is a plan in place for that worker that is standing on a highway as the flagger? How do we take care of them and make sure they do their paperwork?

Mr. LITTLE. I don't know. I have never worked with them, so I don't know what they do.

Mr. KELLER. I think it would be incumbent upon Congress to make sure we understand that we are protecting all the workers and we are not putting some regulations on private industry. And we need to make sure everybody is safe. And I think going about this from Congress rather than letting the states do it, I think we are probably creating some unintended consequences for the workers and for the States in order to enforce a good policy.

I yield back my time. Thank you, Madam Chair.

Chairwoman ADAMS. Thank you.

I now recognize the gentleman from Arizona, Mr. Grijalva.

Mr. GRIJALVA. Thank you, Madam Chair. And thank you very much for the hearing. Much appreciated.

Dr. McCarthy -- and Dr. Bernard, if you want to also chime in -- it is not only here, but every time that there is a discussion about promulgating a regulation or a rule around worker protections, we get the one-size-fits-all counterargument and also what I heard from one of the witnesses: We will be forced to do individualized plans for each worker.

Respond to that. Because we are talking about standards here as the guardrails to protect workers. Talk about the argument that we can't do this because one-size-fits-all does not work.

Dr. MCCARTHY. There are many OSHA Federal standards for hazardous exposures, such as asbestos, lead, and the list goes on, and they are not a one-size-fits-all for all employers. They have action levels, permissible exposure levels, ceiling limits. NIOSH has recommended action levels and exposure levels. And so, just like the weather, the NOAA has a chart where you calculate heat index, what temperature, OSHA also has a standard.

So it is not -- if the employer does not fit in that heat and temperature, we also have, for indoor workers, wet bulb globe temperatures. And this takes into account four different measures for heat, so you can apply it equally among outdoor and indoor workers. Because, as Mr. Rodriguez said, the indoor can be much higher than even the outdoor worker.

Mr. GRIJALVA. Thank you very much.

Any addition to that?

Mr. BERNARD. Yes. Thank you for asking.

I feel, far from it being a one-size-fits-all, I really think it is a menu of options. There are things that we do that are kind of transcendent through any jobs. And we talked a bit about that in terms of the education and the drinking and surveillance. So those are common elements. How you execute them are individual.

Then we talked about a long list of others that really are very much, does it apply to the particular workplace?

With regard to people with individual susceptibilities, most of the guidance for occupational exposures are acclimatized, healthy people. It is the reason why you want to have a good emergency plan to take those other people who may be individually at risk --

Mr. GRIJALVA. Gotcha.

Mr. BERNARD. -- that fall out.

Mr. GRIJALVA. Appreciate that.

Mr. Arturo Rodriguez, good to see you again, my friend. We talked a lot about Cal/OSHA. Would employers be providing water, rest, shade, and innovations that we see now in California had Cal/OSHA not been implemented or passed?

Mr. ARTURO RODRIGUEZ. No, I don't believe so. I mean, as mentioned earlier today by Mr. Little, 26 States, I believe, do have the opportunity to employ some type of standards as we have been discussing here today and only 3 have done so.

So I think it is incumbent upon OSHA to really take action on a Federal basis to ensure that we do have standards set across the country.

Mr. GRIJALVA. Yeah.

Farm workers, many times, are paid on the piecework, and many farm laborers are on a piecework basis. They could lose pay for taking shade and rest breaks. How are they compensated within Cal/OSHA?

Mr. ARTURO RODRIGUEZ. So my understanding is and the way that we have chosen to do it in the State of California has been -- and piecework is very common there -- that they will take the average of the hours worked during the week and look at the wage that they have earned and average it out, and that becomes the

hourly rate for the worker to be paid, whatever break time that they took.

Mr. GRIJALVA. Cal/OSHA -- again, another question. Would the agency have taken the initiative to adopt the heat illness prevention standards if the legislature had not passed a bill that mandated that?

Mr. ARTURO RODRIGUEZ. In our opinion, no, they wouldn't have.

Mr. GRIJALVA. You know, one of my colleagues mentioned the point about climate change. And, yes, that is part of the discussion. Everything is warming. The globe is warming. We can have that debate some other time. And I know it will be an intense debate about what we do about climate change in this Congress.

But, nevertheless, this is not part of that debate. This is about worker protection, regardless of the source of the heat, regardless of the exposure. And we should deal with that on that level, because, yes, climate change is part of it, but this is the easy part that Congress faces in dealing with this issue.

I yield back and thank you again, Madam Chair.

Chairwoman ADAMS. Thank you.

I want to now recognize the Ranking Member of the Subcommittee, Mr. Byrne from Alabama.

You have 5 minutes, sir.

Mr. BYRNE. Thank you, Madam Chairwoman.

Mr. Cannon, I know a lot of contractors in Alabama. I think most of them are your members. And they tell me, to a person, that they are having a hard time finding workers. So they are doing everything they can to attract workers, and once they get them, they are doing everything they can to keep them.

I wouldn't think it would be positive to attract workers and certainly to keep them if you are exposing them to an unhealthy environment. So I would think most of your members are doing what they know to do to try to make sure that they maintain a healthy environment, including one involving heat. Is that correct?

Mr. CANNON. That is correct. You know, our members are encouraging their workers to report any and all hazards, including heat-related hazards. They ask them to report any and all injuries and illnesses regardless of what the source of the injury and illness was. I think, as you pointed out, you know, trying to keep workers and keep the positive image of the industry is very important to us in attracting new talent to the industry.

So, you know, they are committed to the safety of their workers. They give them the authority to stop work if they encounter a situation that they deem to be unsafe and discuss it and come up with a plan to complete their task in a safe manner.

Mr. BYRNE. Well, you also said something earlier that I think is very important. Most of your members -- and, in my State, most employers, period -- are not big companies. They are smaller operations. So what can we do, what can government do, to help them accomplish what they want to accomplish, which is a safe workplace, particularly with regard to this heat issue?

Mr. CANNON. Very good question, but I think that definitely presents a challenge. I think we struggle with trying to reach that demographic of our membership. I know, you know, OSHA as well as

NIOSH, they have continued discussions as to how they can better reach the small employer.

So, I mean, I don't have a solution or a recommendation, at this point, as to how we can get to that group of employers. But I definitely think, if we are able to reach them on, you know, heat or whatever else, you know, safety-related matter there is, I think we will definitely make improvements and good strides in that area.

Mr. BYRNE. Mr. Little, some advocates for a national occupational heat illness standard push for very specific requirements such as maintaining water at a specific temperature.

Does it make sense for the Federal government to prescribe such specific rules? And is it even possible to meet some of these requirements in an outdoor environment?

Mr. LITTLE. I don't think that trying to be that specific with standards that you are required to meet for a heat illness prevention standard really makes a lot of sense.

We had debate around that in -- I think it was 2012, about whether or not the agency should specify a temperature for drinking water. What we settled on was that the water should be palatable, that the whole point of the exercise was to place shade in a place where workers will use it, to provide water that is of a quality and temperature that workers will want to drink it.

The regulation leaves employers some leeway to figure that out, and I think that is a very practical solution to that problem.

Mr. BYRNE. Well, one of the things that concerns me is that, when we start to put down these big national standards, it is very difficult to do it without it being one-size-fits-all. You start down the path, and it is like you can't help but go where you are going.

Is it possible to create a regulation that would allow for the flexibility that we would need in order to make an effective applicable regulation to the entire country? Can we achieve that level of flexibility in a national regulation?

Mr. LITTLE. That is a difficult question to answer. I don't know. I don't think you can if you don't listen to the regulated community and talk to them about what they can actually do in the real world. That is what Cal/OSHA did, and I think that is probably the right approach if you are going to go down that road.

Mr. BYRNE. Well, I think that is another good point that you have made, and that is that this has to be a collaborative effort between employers, OSHA, but also employees. Because if you get a regulation that is too onerous to comply with, then you won't get the employees to do what they need to do, because employees have to play their role.

So we have to have everybody involved in this, and it takes time to do that, doesn't it?

Mr. LITTLE. Oh, yes, it does. We have been working on it for 15 years.

Mr. BYRNE. Fifteen years. I think Ms. Chu's bill would require us to get this done in 2 years on a national basis, when you all did it on a State basis.

So I guess I have some concerns about the bill just in the fact that it puts these sort of arbitrary, false time limitations on our ability to get all the stakeholders to the table so we can listen to all of them.

And, with that, Madam Chairwoman, I yield back.

Chairwoman ADAMS. Thank you, Mr. Byrne.

I am pleased to recognize the gentleman from Virginia, the Chair of the Education and Labor Committee, Mr. Scott.

You are recognized now for 5 minutes, sir.

Mr. SCOTT. Thank you, Madam Chair.

Dr. Bernard, NIOSH and OSHA already have recommended standards. Is that right?

Mr. BERNARD. They are both active in providing information about managing heat stress. So I stayed away from the word "standard" a little bit.

Mr. SCOTT. They have recommendations.

Mr. BERNARD. They have recommendations, yes.

Mr. SCOTT. And they can't be enforced because they are just recommendations, not formal rules. Is that right?

Mr. BERNARD. That is correct.

Mr. SCOTT. How difficult would it be to change the recommendations to rules? How complicated would it be to implement?

Mr. BERNARD. No, I believe the groundwork has already been laid between the criteria document of NIOSH and their online activities.

Mr. SCOTT. And for businesses, how complicated would it be to implement what would then be regulations?

Mr. BERNARD. My experience is that it is not that complicated to work with a company to implement a heat stress management program.

Mr. SCOTT. Is it expensive to implement, including the lost productivity?

Mr. BERNARD. I don't believe that it is expensive. It is, you know, on the order of implementing any other health and safety program. It is not extraordinary in that regard.

I think you have picked up that there are costs of accepting those risks of heat-related disorders that need to also be included.

Mr. SCOTT. The military has implemented programs for a long time. Has there been any research to show how effective that program has been?

Mr. BERNARD. There has been some research over the years that has convinced the military to continue doing it. And that is up to the most recent paper I saw recently, where, during Ranger training, they actually provide cooling stations, where they immerse their arms in ice water to reduce their body temperature as they move on to their next activity.

Mr. SCOTT. Thank you.

Dr. McCarthy, from a medical perspective, is this a situation where you can know that you are getting into problems and stop working or get into shade? Or is it a situation where, by the time you get symptoms, it is already too late?

Dr. MCCARTHY. Heat strain has symptoms that can identified. Workers can be trained to recognize those symptoms. If they are not trained, sometimes they just feel like they are just having a bad day or, you know, just nondescript, headache, dizziness, nausea. And if they are trained that if it is hot and they are having those symptoms, they need to drink water, go into shade or a cooled area, and rest, and that can help avert more serious illness.

But if they go on to more severe symptoms, such as heat stroke, it can have neurologic symptoms, where they can lose the inability to think for themselves. And that is why communication procedures or buddy systems are so important, because they may not be able to take themselves out of that situation.

Mr. SCOTT. Now, you showed the number of incidents from the twenties down to zero in the city. Can you translate that into cost savings of workers' compensation?

Dr. MCCARTHY. Yes. We showed that -- well, the last 2 years, we had no heat-related illnesses, so, therefore, no cost. But per heat-related illness, we had a reduction to 50 percent prior to implementation of the program.

And we believe that was due to workers understanding what their signs and symptoms were and, therefore, seeking medical attention earlier and, therefore, getting treatment earlier, so having a less severe illness to treat for those workers.

Mr. SCOTT. And did the cost savings exceed the cost of implementing the program?

Dr. MCCARTHY. I do not have that data.

Mr. SCOTT. And I think you wanted to make a comment on a previous question. Did you want to make that comment now?

Dr. MCCARTHY. Oh, I was able to answer it at a previous -- but, basically, I do not feel it is a one-size-fits-all. I feel like the recommendations, if implemented today, can be administered to employers on a graduated basis, depending on the circumstances of the employee, depending on the temperature levels, what the employee's work environment is and their job description. And it has been used in the military successfully, this program, successfully.

Mr. SCOTT. Thank you, Madam Chair.

Chairwoman ADAMS. Thank you.

Thank you for your responses.

I want to remind my colleagues that, pursuant to committee practice, materials for submission for the hearing record must be submitted to the Committee Clerk, preferably in Microsoft Word format. The materials must address the subject matter of the hearing. Only a member of the committee or an invited witness may submit materials for inclusion in the hearing record.

Documents are limited to 50 pages. Documents longer than 50 pages will be incorporated into the record via an internet link that you must provide to the Committee Clerk within the required timeframe. But please recognize that years from now that link may no longer work.

Again, I want to thank the witnesses for their participation today. What we have heard from each of you is very valuable.

Members of the Committee may have some additional questions for you, and we ask the witnesses to please respond to those questions in writing. The hearing record will be held open in order to receive those responses.

I remind my colleagues that, pursuant to committee practice, witness questions for the hearing record must be submitted to the majority committee staff or Committee Clerk within 7 days. The questions submitted must address the subject matter of the hearing.

I now want to recognize the Ranking Member for his closing statement.

Mr. BYRNE. Thank you, Madam Chairwoman.

Thank you all for being here. That was very interesting. I learned a lot. You all have a lot to offer us as we consider what we are going to do here.

Mr. Rodriguez was talking about workers sitting on the ground eating their lunch. I remember doing that in the summertime, and it is hot. And it is hard to get the rest you need from your working environment when you are not in the shade. And probably sitting on the ground is probably not good for you either. I didn't have a pickup truck, so I couldn't sit on the back of a tailgate, so most of us sat on the ground.

I do worry about workers. And when I drive by them in Alabama in the summertime and I see them working on a roof or out there doing a road job out there in the sun, asphalt, it is hot. But I know these employers, and they don't want those workers to get sick. It is not good for them for their workers to be sick. But they need our help to understand what they can do, and we need to figure out a better way to give them the information that they need.

OSHA has the general duty standard, and they enforce under the general duty standard. In fact, they enforce on heat-related illnesses under the general duty standard.

Perhaps that is why, in 2012, the Obama administration, which was not known for being pro-employer, denied the petition to establish a heat standard. In fact, at that time, OSHA's head said their increased focus on enforcement and robust education on outreach campaigns adequately addressed the hazard.

Now, I would like to hear from OSHA. That is what they said in 2012. If we are going to consider a piece of legislation that is going to force them into a sort of arbitrary timeframe, et cetera, I would kind of like to hear what OSHA says about this. Because, after all, they are going to have to be the ones to implement it if we pass it.

I also think that we need to hear from people who have more experiences like we heard here today from the folks from California. That would be helpful for us to understand how has this worked in other places.

I think that we need to be very careful in Congress, when we start legislating an area like this, that we pass the law that we perhaps pass most frequently around here, and that is the law of unintended consequences. Because you can enact a very prescriptive statute, and you get exactly that: unintended consequences that make it difficult, if not impossible, for employers to comply with it. And worse than that, it makes it very difficult for the employees to get the help that they need.

I remember working on the job. When you have all that safety stuff, the burden still falls on the employee to comply with the rules. And if we put too much rules on the employees, they won't do it even though they are required to do it by their employers.

So I want us to be very, very careful here. I am skeptical about a two-year timeline in Ms. Chu's bill. I think that is way too short, particularly given the California example. And I think we need to think long and hard before we prescribe a bunch of things in a stat-

ute directed at an agency about how they are going to carry out their job, because I am not sure we know enough to do that.

So I really do appreciate everybody's testimony today. This is an important issue, there is no question about it. I just hope that this committee will go about its job in a very thoughtful and deliberative way and that we consult with the agency before we do anything.

With that, Madam Chairwoman, I yield back.

Chairwoman ADAMS. Thank you, Mr. Byrne.

I now recognize myself for the purpose of my closing statement.

Let me again thank the witnesses for providing us with valuable expertise. I think that I speak for all of the Members of the Subcommittee when I say that we learned an enormous amount of valuable information from each of you today.

We have heard compelling evidence about the serious and often deadly hazards that millions of workers face in this country from uncontrolled exposure to excessive heat. But the good news is that we know these deaths and illnesses can be prevented. The science and practice have proved the effectiveness of these measures. Now, workers await only action from OSHA to make sure that these protective measures are implemented. Passage of H.R. 3668 will go far toward establishing and accomplishing that goal.

But even with the progress we hopefully are making, we are reminded again of the larger structural problem within the Occupational Safety and Health Act. Even if this bill becomes law and OSHA issues a heat standard, public employees in 24 States will receive no protection because they are not covered by Federal OSHA. As the committee continues its critical oversight of the Occupational Safety and Health Act, we look forward to addressing some of these serious weaknesses.

And before I conclude, I ask unanimous consent to insert into the record testimony from Public Citizen, "Public Law and Climate Disasters from Occupational Health and Safety Law" by Sidney Shapiro and Kathleen Tracy.

Without objection, so ordered.

[The information follows:]

Written Testimony of

Public Citizen

Before the

U.S. House of Representatives Committee on Education and Labor

Workforce Protections Subcommittee

On

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

July 11, 2019

Chairman Adams, Ranking Member Byrne, and Members of the Subcommittee:

Thank you for holding this hearing on the dangers of extreme heat in the workplace. Public Citizen is a national consumer advocacy and public interest organization with more than 500,000 members and supporters. Since 1971, Public Citizen has advocated for stronger health, safety and consumer protection measures, as well as curbs on corporate wrongdoing. Public Citizen is a part of a nationwide network of more than 130 organizations that have banded together to raise awareness around the growing impacts of climate change on workers, by advocating for occupational heat protections.

Heat is the leading weather-related killer in the U.S., and climate change is resulting in more days of extreme heat. Alarmingly, 18 of the last 19 hottest years on record have occurred since 2001.[1] With record-breaking summers becoming the norm, outdoor and indoor workers across a wide variety of workplaces are at greater risk for heat related illnesses. Despite this intensifying threat, the Occupational Safety and Health Administration (OSHA) has not developed a federal heat stress standard for workers. Inexcusably, approximately 130 million workers in the U.S. lack the protections of a heat stress standard.[2] Rather, OSHA polices heat-related injuries and deaths only by enforcing its general duty clause, a "catch all" provision that requires employers to provide safe workplaces. Enforcement is scarce and, by definition, reactive rather than preventive. Further, a recent court case may make it more difficult for OSHA to hold employers accountable for heat-violations under the general duty clause.[3]

In the absence of a federal standard, states and some municipalities are taking measures to protect workers from heat. Further, the U.S. military has implemented heat stress guidance for servicemembers. Existing programs have demonstrated that the solutions to heat stress are not only sensible, but cost-effective.

In July 2018, Public Citizen and a coalition of more than 130 labor, environmental, and public health organizations, as well as former OSHA officials, petitioned OSHA for a federal heat stress standard (see Appendix 1).[4] The petition builds on repeated recommendations by the National Institute for Occupational Safety and Health calling for OSHA to issue such a standard. Nearly a year after the submission of our petition, OSHA has yet to provide a formal response. In light of the agency's failure to act, Congress has a responsibility to require OSHA to protect workers from preventable heat-related injuries, illnesses and deaths.

The Asuncion Valdivia Heat Illness and Fatality Prevention Act, led by Representatives Judy Chu (D-CA) and Raul Grijalva (D-CA) in partnership with House Committee on Education and Labor Chairman Bobby Scott (D-VA) and members of the Committee, is commonsense legislation that fills this critical health and safety gap. The bill directs OSHA to develop a heat stress standard for indoor and outdoor workers. Specifically, the standard requires employers to develop a heat-illness prevention plan that includes the following components:

- develop and implement the standard with meaningful participation of covered employees, and their representatives when applicable, and tailor it to the specific hazards of the workplace;
- ensure it is written in a language understood by the majority of the employees;
- require that workers who are exposed to high heat have paid breaks in cool environments, access to water for hydration, and include limitations on how long workers can be in extreme heat areas;
- create emergency response procedures for employees suffering from heat illness;
- provide training for employers and employees on heat stress illness and prevention;
- include acclimatization plans to ensure workers can adjust to their working conditions;
- ensure engineering and administrative controls are used to limit heat exposure, i.e. ventilation and/or protective clothing;
- require employers to maintain records on heat-related illnesses and deaths, and other heat data; and
- prohibit retaliation against a covered employee for reporting violations of this standard or exercising any other rights under this bill.

I. Deadly Heat for Workers

The Occupational Safety and Health Act of 1970 declared a national policy to "assure . . . safe and healthful working conditions" for "every working man and woman."[5] The OSHA website cautions, "Every year, thousands of workers become sick from occupational heat exposure, and some are fatally injured. These illnesses and fatalities are preventable."[6] Given the gross inadequacies of the general duty clause in protecting workers from extreme heat, the agency has an obligation to prevent future heat-related injuries, illnesses, and fatalities by issuing a heat stress standard for outdoor and indoor workers.

Excessive heat can cause heat stroke and death if not treated properly. It also exacerbates existing health problems like asthma, heart disease and kidney failure. From 1992 through 2017, exposure to excessive environmental heat killed 815 U.S. workers and seriously injured over 70,000, according to the U.S. Bureau of Labor Statistics.[7] However, available data on heat-related injuries and deaths vastly understate the problem, especially in the sectors employing vulnerable and often undocumented workers.[8]

Many factors contribute to this problem. Undocumented workers face possible termination or deportation if they report a workplace injury. In addition, records of injuries and fatalities are based on incomplete employer self-reporting to OSHA, as employers attempt to hide the full extent of workplace hazards. Further, the data do not include significant worker populations that are impacted by extreme heat, including small farms with 10 or fewer employees. Lastly, heat is not always recognized as a cause of heat-related injuries or deaths. Many of the symptoms, such as headache, rash, and fatigue or sweating, overlap with other more common diagnoses.[9]

Heat-related illness and death can be expected to increase in the U.S. and globally as temperatures rise.[10] According to Fourth National Climate Assessment, released by the U.S. Global Change Research Program in 2018, the increase in deaths due to hotter temperatures is expected to be larger than the reduction in cold-related deaths in most U.S. regions by the end of the century. The available data suggest that the rate of heat-related fatalities has been on the rise since 1992 — the first year for which numbers are available — and has a positive correlation with the increase in average annual temperature.[11] Analyses of emergency room visits, emergency medical service calls, and hospital admissions further demonstrate an association between hot days and heat-related illnesses in the U.S.[12] Further, research based on data from Michigan hospitals between 2010 and 2016 found that large temperature spikes are associated with significantly more heart attacks.[13] As temperatures continue to rise, more workers will be exposed to dangerously hot working conditions for longer periods of time.

As climate change intensifies, excessive heat is becoming a problem over more months a year and in more parts of the country. A report by Public Citizen found that during the July 4, 2018 week, an average of more than 2.2 million construction and farm workers labored in extreme heat each day (see Appendix 2).[14] Another report by Public Citizen, Farmworker Association of Florida, and a researcher from Emory University showed that Florida outdoor workers labor in dangerous heat conditions a high proportion of the time and their health is suffering as a result (see Appendix 3).[15]

Laboring in these conditions harms workers' health and employers' bottom lines even when it falls short of directly causing illness. In excessive heat, people work less effectively due to "diminished ability for physical exertion and for completing mental tasks," which increases the risk of accidents, workers compensation costs, and hospital-related expenses.[16] Reduced productivity alone causes significant economic harm.[17] Rising temperatures have contributed to the loss of 1.1 billion labor hours in the U.S. between 2000 and 2017.[18] The costs of lower labor productivity under rising temperatures is estimated to reach up to $160 billion in lost wages per year in the U.S. by 2090 according to the 2018 National Climate Assessment.[19] Some regions will be disproportionally impacted. For instance, jobs with greater exposure to heat are projected to experience a three percent decline in labor productivity in Southeast and Southern Great Plains region states. By the end of the century, some Texas and Florida counties are projected to have more than six percent losses in annual labor hours due to rising temperatures.[20]

Given the health and economic impacts of extreme heat, states, cities, and some industries have taken concrete measures to protect their workers from rising temperatures. It's time for Congress to make sure that OSHA takes action to protect all workers from heat stress.

II. Existing Heat Prevention Programs and Benefits

In the absence of a federal rule, three states have implemented standards protecting workers from heat stress. California and Washington have standards that cover outdoor

workers, and Minnesota has a standard that covers indoor workers.[21] In addition, California is in the process of finalizing a rule for indoor workers.[22] These standards demonstrate that heat stress rules are not just feasible, but effective. From 2013 through 2017, California used its heat standard to conduct 50 times more inspections that resulted in heat-related citations than OSHA did nationwide under its general duty clause.[23]

Cities also have implemented successful heat prevention measures. For instance, in 2011, a central Texas municipality implemented a heat illness prevention program for outdoor municipal workers that not only resulted in a significant decrease in heat-related illnesses, but a decrease in worker's compensation costs by 50% per heat-related illness.[24]

In addition, different branches of the U.S. military have adopted heat policies. In 1973, the U.S. Navy developed heat exposure limits based on combined metabolic and environmental heat loads.[25] In addition, the Navy curtails training as wet bulb globe temperatures (WBGTs) rise. WBGT is a measure of heat stress in direct sunlight, accounting for temperature, humidity, wind speed, sun angle, and cloud cover.[26] In 2003, the U.S. Army and U.S. Air Force issued a technical bulletin on effective measures to prevent heat-related injury in soldiers in both outdoor and indoor workplaces.[27] The bulletin provides detailed instructions on acclimatization, with gradually increasing environmental heat exposure and workloads over a two-week period. A rigorous WBGT threshold is calculated for differing work intensities and environmental temperatures, with a recommended cycles of work and rest based on these values.[28] The U.S. Marines has issued heat guidance in the past, and since 2015 it has been following the Navy's guidance on an interim basis.[29]

Although laudable, these policies are not perfect. Weaknesses of the military guidelines include the absence of recordkeeping requirements to verify compliance, the lack of shade requirements, and the lack of exposure limits in any branch other than the Navy. Also, it is unclear on reading the military materials whether they are merely advisory and, if so, the extent of compliance. Nevertheless, the Navy's exposure limits and the Army and Air Force's work-rest cycle and acclimatization protocols represent rigorous and feasible model provisions on which to base a federal standard.[30]

Without a federal standard, some sectors have begun taking matters into their own hands. The Communication Workers of America negotiated with AT&T, Verizon, Century-Link, and Frontier Communications to institute comprehensive heat programs for its members in 2011. Since that time, the union has observed no heat-related fatalities, and heat-related health problems have significantly decreased. The United Steelworkers also has a collaborative heat program in place with positive results.

III. General Duty Clause Weaknesses

In the absence of a dedicated standard to address heat hazards, OSHA relies on its general duty clause to police hazardous heat exposure. This broad mandate requires employers to provide their employees with a workplace that is "free from recognized hazards that are causing or are likely to cause death or serious physical harm."[31] It is a poor substitute for

a standard. It fails to give employers guidance on precisely how to prevent heat illness; it requires a much higher burden of evidence than a specific standard; and it typically is used only in response to tragedies rather than preventatively.[32] OSHA recommends that employers voluntarily implement heat stress prevention programs, but most employers will not implement the recommended practices unless they are required to do so.[33]

Further, it is likely to become even more difficult to protect workers from heat stress under the general duty clause due to a recent decision by the Occupational Safety and Health Review Commission's decision in *Secretary of Labor v. A.H. Sturgill Roofing, Inc.* During a worker's first day as a temporary employee of A.H. Sturgill, he was admitted to the hospital with a core body temperature of 105 degrees after working in direct sunlight for five hours. He ultimately died from heat stroke. OSHA cited the company for failing to protect its workers from heat under the general duty clause. In a 2-1 decision, the Commission reversed the citation, finding that OSHA did not establish the existence of a hazard or feasible means of abatement and the Secretary of Labor "failed to meet his burden of proving a violation."[34] However, the majority also noted, "The Secretary's failure to establish the existence of an excessive heat hazard here illustrates the difficulty in addressing this issue in the absence of an OSHA standard."[35]

OSHA has a single acceptable course of action in response to this decision: Promulgate a heat standard to provide clear instructions on what employers must do to protect workers, and enforce the standard. Given OSHA's inaction, it's up to Congress to ensure workers are protected from extreme heat.

III. Conclusion

During this year's Workers Memorial Week, more than 100 organizations spanning the labor, environmental, and public health community followed up on the 2018 petition for rulemaking by writing a letter urging OSHA to issue a heat stress standard to protect workers from rising workplace temperatures (see Appendix 4). Still, OSHA has not moved. Today's hearing and introduction of The Asuncion Valdivia Heat Illness and Fatality Prevention Act are essential steps toward sensible workplace protections from rising heat.

For questions or for more information, please contact Shanna Devine, Worker Health and Safety Advocate of Public Citizen's Congress Watch Division, at sdevine@citizen.org, 202.454.5168, or David Arkush, Managing Director of Public Citizen's Climate Program, at darkush@citizen.org, 202.454.5132.

---

[1] *Excessive Heat Conditions*, NATIONAL WEATHER SERVICE (viewed on July 8, 2019), https://bit.ly/2Fngca8; MICHAEL TANGLIS, SHANNA DEVINE, PUBLIC CITIZEN, EXTREME HEAT AND UNPROTECTED WORKERS: PUBLIC CITIZEN PETITIONS OSHA TO PROTECT THE MILLIONS OF WORKERS WHO LABOR IN DANGEROUS TEMPERATURES (July 17, 2018), https://bit.ly/2NoqhFo [hereinafter PUBLIC CITIZEN, EXTREME HEAT AND UNPROTECTED WORKERS].

[2] Petition by Public Citizen et al. to Loren Sweatt, Acting Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, for heat stress standard 1 (July 17, 2018), https://bit.ly/2wjJSzy [hereinafter 2018 Petition by Public Citizen et al. to Loren Sweatt].
[3] *Secretary of Labor v. A.H. Sturgill Roofing, Inc.* 21 No. 13-0224 (OSHRC Feb. 28, 2019), https://bit.ly/2IIteSe.
[4] 2018 Petition by Public Citizen et al. to Loren Sweatt.
[5] The Occupational Safety and Health Act, 29 U.S.C. § 651(2)(b) (1970) https://bit.ly/2B1tB5t.
[6] *Occupational Heat Exposure*, U.S. DEPARTMENT OF LABOR (viewed on July 8, 2019) https://bit.ly/1wVAwUN.
[7] *Occupational Injuries/Illnesses and Fatal Injuries Profiles*, BUREAU OF LABOR STATISTICS, https://bit.ly/2VVCGW6 (viewed on July 8, 2019). Serious injuries are defined as those resulting in at least one day away from work.
[8] PUBLIC CITIZEN, EXTREME HEAT AND UNPROTECTED WORKERS, 27-28.
[9] Sheila Arbury, Matthew Lindsley and Michael Hodgson, *A Critical Review of OSHA Heat Enforcement Cases: Lessons Learned*, JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE 58, 361 (April 2016) http://bit.ly/2NooKA6.
[10] PUBLIC CITIZEN, EXTREME HEAT AND UNPROTECTED WORKERS; Arthur Neslen, *Workers Face 'Epidemic of Heat-Related Injuries' Due to Climate Change*, THE GUARDIAN (April 28, 2016), https://bit.ly/2WUAwFJ.
[11] 2018 Petition by Public Citizen et al. to Loren Sweatt at 13 – 14.
[12] ARPANA BOLE, ALLISON CRIMMINS ET AL., U.S. GLOBAL CHANGE RESEARCH PROGRAM, FOURTH NATIONAL CLIMATE ASSESSMENT: CHAPTER 14: HUMAN HEALTH (2018), https://bit.ly/2Rq1WCm [hereinafter FOURTH NATIONAL CLIMATE ASSESSMENT: CHAPTER 14]; RENEE N. SALAS, PAIGE KNAPPENBERGER, JEREMY HESS, AMERICAN PUBLIC HEALTH ASSOCIATION, 2018 LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE BRIEF FOR THE UNITED STATES OF AMERICA 5 (November 28, 2018), https://bit.ly/2P7MIik [hereinafter U.S. LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE].
[13] Press Release, American Association of the Advancement of Science, *Heart Attacks Often Follow Dramatic Changes in Outdoor Temperature* (March 1, 2018) https://bit.ly/2Fpjk5l.
[14] PUBLIC CITIZEN, EXTREME HEAT AND UNPROTECTED WORKERS at 6.
[15] DAVID ARKUSH, VALERIE MAC ET AL., PUBLIC CITIZEN, FARMWORKER ASSOCIATION OF FLORIDA, UNWORKABLE: DANGEROUS HEAT PUTS FLORIDA WORKERS AT RISK (2018) https://bit.ly/2WY97Yu.
[16] *Climate Change and Labor: Impacts on Health in the Workplace*, UNITED NATIONS DEVELOPMENT PROGRAMME (viewed on July 8, 2019), https://bit.ly/2dGd79p.; SIDNEY SHAPIRO & KATHERINE TRACY, PUBLIC LAW AND CLIMATE DISASTERS OCCUPATIONAL HEALTH AND SAFETY LAW (Rosemary Lyster *et al.* eds., 1st ed., Edward Elgar Pub, 2018), https://amzn.to/2QTBWxJ; FOURTH NATIONAL CLIMATE ASSESSMENT: CHAPTER 14; U.S. LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE at 5.
[17] SIDNEY SHAPIRO & KATHERINE TRACY, PUBLIC LAW AND CLIMATE DISASTERS OCCUPATIONAL HEALTH AND SAFETY LAW (Rosemary Lyster *et al.* eds., 1st ed., Edward Elgar Pub, 2018), https://amzn.to/2QTBWxJ; FOURTH NATIONAL CLIMATE ASSESSMENT: CHAPTER 14.
[18] U.S. LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE at 1.
[19] FOURTH NATIONAL CLIMATE ASSESSMENT: CHAPTER 14.
[20] *Id.*

[22] California Legislative Information. Senate Bill No. 1167. Employment safety: indoor workers: heat regulations. Chapter 839. (viewed on July 8, 2019), https://bit.ly/2WW8nOo.
[23] 2018 Petition by Public Citizen et al. to Loren Sweatt at 17.
[24] Ronda B. McCarthy et. al., *1536 Occupational Heat Illness in Outdoor Workers Before and After Implementation of a Heat Stress Awareness Program*, 75 BMJ JOURNALS OCCUPATIONAL AND ENVIRONMENTAL MEDICINES (2018) https://bit.ly/32j3XFA.
[25] MANUAL OF NAVAL PREVENTIVE MEDICINE, DEPARTMENT OF THE NAVY. NAVMED P-5010-3 (Rev. 2-2009) 3-15–3-19, https://bit.ly/2ForD1g.
[26] *WetBulb Globe Temperature*, NATIONAL WEATHER SERVICE (viewed on July 8, 2019), http://bit.ly/2KXC3tq.
[27] Technical Bulletin: Heat Stress Control and Heat Casualty Management. Headquarters, Departments of the Army and Air Force. TB MED 507 / AFPAM 48-152 (I) (March 7, 2003),
[28] TECHNICAL BULLETIN: HEAT STRESS CONTROL AND HEAT CASUALTY MANAGEMENT. HEADQUARTERS, DEPARTMENTS OF THE ARMY AND AIR FORCE. TB MED 507 / AFPAM 48-152 (I). March 7, 2003. p. 16–18, Table 3-3, https://bit.ly/2Phxdpq.
[29] Marine Corps Heat and Cold Stress Injury Prevention Program. MARADMIN 111/15 (March 9, 2015), https://bit.ly/2WZ1fWq.
[30] 2018 Petition by Public Citizen et al. to Loren Sweatt at 23.
[31] *OSH Act of 1970*, U.S. DEPARTMENT OF LABOR (viewed on July 9, 2019) https://bit.ly/2o06h0W.
[32] *Id.*
[33] *Occupational Heat Exposure*, U.S. DEPARTMENT OF LABOR (viewed on July 8, 2019) https://bit.ly/1wVAwUN.
[34] *Secretary of Labor v. A.H. Sturgill Roofing, Inc.* 21 No. 13-0224 (OSHRC Feb. 28, 2019), https://bit.ly/2IIteSe.
[35] *Id.* at 8.

Source: Research Handbook on Climate Disaster Law: Barriers and Opportunities 148-66 (Rosemary Lyster & Robert R.M. Verchick, eds., 2018)

_. PUBLIC LAW AND CLIMATE DISASTERS OCCUPATIONAL HEALTH AND SAFETY LAW

Sidney Shapiro & Katherine Tracy

INTRODUCTION

Climate change is a significant threat, not only to the environment, but also to human health and safety. Countries are suffering a range of effects, including extreme temperatures, degraded air quality, increased flooding, climbing tick and mosquito populations, and the spread of food-borne and water-borne pathogens.[1] Like every aspect of human life, climate change will have adverse effects on working conditions and employment opportunities. Unmitigated effects of climate change on the natural and built environment poses severe risks to workers' health and safety, and economic risks to workers, employers, communities, and governments. While aggressive action to curb greenhouse gases, such as by transitioning to a green economy, can help to reduce the adverse effects of climate change on the labor sector, this too imposes major risks. Yet governments have so far paid less attention to this aspect of climate risk.[2]

This chapter examines the health and safety risks that climate change poses to workers, and the economic risks associated with the way in which governments choose to respond. Total failure by any country to reduce and manage these climate risks could be disastrous for its people and economy, and potentially have consequences that reach far beyond state borders. For purposes of studying this issue, however, this chapter focuses primarily on the United States, and how public law can be used to reduce and manage these risks within U.S. borders. The chapter begins with an overview of the risks to workers associated with climate change and which workers are most at risk. We then focus in on the U.S. legal system and examine current efforts to protect workers from occupational hazards associated with climate change. This leads us to conclude that existing U.S. regulation and policy falls far short of what will be needed. Finally, we consider the reforms needed to protect the workforce from health and safety risks associated with climate change and from the economic dislocations for workers that are likely to result.

OCCUPATIONAL HAZARDS RELATED TO CLIMATE CHANGE

The adverse effects of climate change on our natural and built environment will put workers at greater risk of harm from occupational hazards. Evidence suggests that workers will experience more frequent and more intense exposure to known hazards such as excessive heat, disease-carrying microbes, toxic chemicals, wildfires, other weather events, and workplace violence, among other hazards.[3] As well, what hurts workers will harm employers and the economy itself since productivity will also decline.

---

[1] U.S. GLOBAL CHANGE RESEARCH PROGRAM CLIMATE CHANGE AND HEALTH ASSESSMENT, THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES: A SCIENTIFIC ASSESSMENT, EXECUTIVE SUMMARY (2016), *available at* https://health2016.globalchange.gov.

[2] Katie M. Applebaum, et. al., *An Overview of Occupational Risks from Climate Change*, 3 CURR. ENVIR. HEALTH RPT. 13, 13 (2016).

[3] *Id.* at 18.

The rise in temperatures because of climate change could affect workers' health in different ways, as the partial list in Table 1 indicates:[4]

TABLE I. Climate Change Related Health Impacts

Related To	Elevated Health Risk
Warmer temperatures	Heat stress / stroke
	Decreased chemical tolerance
	Fatigue
	Impact on immune system
Increased air pollution	Increased pollutants
	Asthma and other respiratory disease
	Allergens – mold
Increased UV radiation from Ozone depletion	Eye effects and skin cancer
	Disturbed immune system
More extreme weather	Injuries / diseases from flood cleanup
	Mental stress
	Lightening fatalities & injuries
Additional insect-borne illness	Pathogens
	Insects—ticks, mosquitoes

The most obvious risk to workers' health is an increased risk of heat-related illnesses such as heat exhaustion or heat stroke related to rising ambient temperatures, humidity, radiant heat, and metabolic heat from strenuous physical work.[5]

Heat exhaustion occurs when the body is depleted of water and salt, and is usually accompanied by symptoms of excessive sweating and dehydration.[6] Heat stroke is a potentially fatal or disabling medical emergency that occurs when the body loses its ability to regulate body temperature. Heat stroke is often accompanied by a rapid increase in temperature and lack of perspiration, and may also cause cognitive impairment or loss of consciousness.[7]

Working in high temperatures is also associated with an increased risk of additional work-related injuries.[8] The U.S. Mine Safety and Health Administration, for example, has found that the lowest incident rates for miners occurs at temperatures below 70°F, and the highest rate of injuries occurs when temperatures exceed 80°F.[9] When temperatures are elevated, the incident rate

---

[4] *See* Paul A. Schulte & HeeKyoung Chun, *Climate Change and Occupational Safety and Health: Establishing A Preliminary Framework*, 6 J. OF OCCUPATIONAL AND ENVTL HYGIENE, 542, 545 (2009) (presenting information about additional health risks).

[5] Dianne M. Bubernot, G. Brooke Anderson, & Katherine L. Hunting, *The Epidemiology of Occupational Heat Exposure in the United States: A Review of the Literature and Assessment of Research Needs in a Changing Climate*, 58 INT'L J. OF BIOMETEOROLOGY 1779 (2014).

[6] *See, e.g.*, NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH, CENTERS FOR DISEASE CONTROL AND PREVENTION HEAT STRESS-HEAT RELATED ILLNESS, https://www.cdc.gov/niosh/topics/heatstress/heatrelillness.html (last visited July 31, 2017).

[7] *Id.*

[8] Applebaum et al., *supra* note 2, at 14.

[9] MINE SAFETY & HEALTH ADMIN., HEAT STRESS IN MINING INDUSTRY, https://arlweb.msha.gov/s&hinfo/heatstress/heatstresshp.htm (last visited Aug. 7, 2017)

increases because of lapses in concentration, higher levels of fatigue, and stressed hormone levels that affect cognitive performance and the quality of decision-making.[10]

Workers are already at risk from high temperatures. In the United States, an estimated five to ten million laborers are currently exposed to outdoor heat indexes that exceed safe levels.[11] The U.S. Department of Labor reported 291 worker deaths from exposure to environmental heat from 1992 to 2002, 272 deaths from 2003 to 2010, and 181 deaths from 2011 to 2015. That averages 31 worker deaths per year over 24 years.[12] The numbers likely reflect undercount. The Maricopa County Department of Public Health in Arizona, for example, recorded 463 cases of heat-associated death during 2002-2009 in that county.[13] For outdoor workers, such as those employed in farm work, construction, oil and gas operations, landscaping, and emergency response operations are most at risk. The most dangerous indoor employment includes mines, smelters, foundries, and commercial kitchens.[14] Climate related temperature increases are understood to increase morbidity and mortality risks in these work sectors in a V or U-shaped curve, indicating that the risks to workers will likely be greater in the future as temperatures rise.[15]

Because higher temperatures are associated with degraded air quality, there will be an increased risk to outdoor workers related to air pollution as well. Researchers thus expect an increase in illnesses related to cardiovascular and respiratory disease, which are caused or aggravated by dirty air.[16] Similarly, outdoor workers will be exposed to more ultraviolet radiation, increasing their risk of developing skin cancer.[17]

Since climate change is associated with more frequent and extreme weather events, workers involved in the resulting rescue and cleanup missions will face the traditional risks that accompany them, including death, injury, illness, mental health disorders, and other maladies.[18] First responders during Hurricane Katrina in New Orleans, for example, reported both physical and mental health symptoms. Cleanup workers were exposed to unsafe levels of carbon monoxide emitted by clean up equipment, work-related *Vibrio* illnesses that likely resulted from floodwaters, infecting cuts and bruises, serious reactions to mold, and other health problems.[19]

---

[10] Kerstin K. Zander, Wouter J.W. Botzen, Elspeth Oppermann, & Tord Kjellstrom, *Heat Stress Causes Substantial Labour Productivity Loss in Australia*, 5 NATURE CLIMATE CHANGE 647 (2015).

[11] *See generally* PREVENTING OCCUPATIONAL DISEASE AND INJURY (James L. Weeks, Barry S. Levy & Gregory R. Wagner eds., 2nd ed. 2005).

[12] *See* U.S BUREAU OF LAB. STAT., OCCUPATIONAL INJURIES/ILLNESSES AND FATAL INJURIES PROFILES, https://data.bls.gov/gqt/InitialPage (For table type, select "Fatal Injuries Numbers;" Choose year; For Area, select "All U.S.;" Choose beginning year; For Characteristic Type, select "Event or Exposure;" For Order, select "Name or Description;" For Subcharacteristic, select "Exposure to Environmental Heat;" For Ownership, select "All Ownerships;" Choose Output Type). Note that for 2001 data, the total number of fatalities reported does not include fatalities associated with the terrorist attacks on Sept. 11, 2001. Also, note that the Bureau of Labor Statistics extensively revised its Occupational Injury and Illness Classification System, and data from 2011 forward represents a break in series with data for prior years. U.S BUREAU OF LAB. STAT., OCCUPATIONAL SAFETY AND HEALTH CHANGES TO OIICS, NAICS AND SOC, INJURIES, ILLNESSES, AND FATALITIES, https://www.bls.gov/iif/osh_notice11.htm (last visited July 31, 2017).

[13] David B. Petitti, Sharon L. Harlan, Gerardo Chowell-Puente, & Darren Ruddell, *Occupational and Environmental Heat-Associated Deaths in Maricopa County, Arizona: A Case-Control Study*, 8 PLOS ONE e62596 (2013).

[14] U.S. DEPT. OF LAB., OCCUPATIONAL HEAT EXPOSURE, https://www.osha.gov/SLTC/heatstress/ (last visited July 31, 2017).

[15] Applebaum et al., *supra* note 2, at 14.

[16] Schulte & Chun, *supra* note 4, at 544.

[17] *Id.* at 546-47.

[18] *Id.* at 547.

[19] *Id.*

The literature also associates the effects of climate change, including higher temperatures and humidity and rising sea levels, with vector-borne illnesses, resulting in an elevated risk of diseases associated with insects, such as ticks and mosquitoes. Outdoor workers will be most at risk, including those working in agriculture, fishing, construction, mining, and transportation.[20]

While there is a considerable literature studying heat stress and stroke, the other risks to workers associated with climate change is uncertain both in terms of the extent of the potential harm and the number of workers at risk. Further study is required to establish the necessary evidence for regulatory protection as we discuss in the last section of the paper. Because many of these problems will also affect the population in general, workers are likely to serve as "'canaries in the coal mine' of climate change impacts."[21]

The problems associated with rising temperatures and extreme weather events will extend beyond the workforce, affecting employers and the economy as a whole. Economic projections show that lost labor productivity will be a substantial cost associated with climate change.[22] As temperatures rise, workers will need to take breaks more frequently or reduce work intensity to prevent heat-related health disorders and on-the-job injuries due to impaired cognition. Thus, workers either will achieve less output over the same number of working hours or will need to extend work hours to achieve the same output as under current conditions. Reduced productivity and missed workdays may also result from water- and food-related illness, vector-borne diseases, increased absorption of chemicals into the body, and dangerous working conditions attributable to extreme weather events.[23] A study of workers in Germany estimated the current loss of productivity due to heat impacts at between $771 and 3.4 billion per year.[24] Estimates put future productivity loss at 11-27 percent in hot areas such as Asia and the Caribbean by 1980.[25] Other studies estimate reduced labor capacity of up to 80-90% in the hottest months across the world.[26]

Reduced productivity can translate into lost income for employers and workers. For workers, if climate conditions lead to workers producing less over the course of a shift, those paid in proportion to their output will earn less.[27] If climate conditions lead an employer to extend work hours to meet production demands (because of lost productivity, safety concerns, or mechanical

---

[20] *Id.* at 548.

[21] Cora Roelofs & David Wegman, *Workers: the Climate Canaries*, 104 AM. J. OF PUB. HEALTH 1799, 1799-1801 (Oct. 2014), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4167120/pdf/AJPH.2014.302145.pdf.

[22] U.N. DEV. PROGRAMME, et al., *Climate Change and Labour: Impacts of Heat in the Workplace* 22 (2016), *available at* http://www.undp.org/content/undp/en/home/librarypage/climate-and-disaster-resilience-/tackling-challenges-of-climate-change-and-workplace-heat-for-dev.html; *see also* ROBERT KOPP, ET AL., RHODIUM GROUP, AMERICAN CLIMATE PROSPECTUS: ECONOMIC RISKS IN THE UNITED STATES 54 (2014), http://climateprospectus.org/assets/publications/AmericanClimateProspectus_v1.2.pdf.

[23] Zander, et. al., *supra* note 10, at 647; *see also* Charmian M. Bennett & Anthony J. McMichael, *Non-heat Related Impacts of Climate Change on Working Populations*, 3 GLOBAL HEALTH ACTION 1, 2 (2010), http://www.tandfonline.com/doi/pdf/10.3402/gha.v3i0.5640?needAccess=true (explaining how vector-borne diseases diminishes the health and capability of the workforce, resulting in more lost work days, reduced productivity, and longer-term effects on individuals' ability to work).

[24] M. Hübler, G. Klepper, & S. Peterson, *Costs of Climate Change – The Effects of Rising Temperatures on Health and Productivity in Germany*, 68 ECOLOGICAL ECON. 381, 390 (2008).

[25] Tord Kjellstrom, R. Sari Kovats, Simon J. Lloyd, Tom Holt, & Richard S. J. Tol, *The Direct Impact of Climate Change on Regional Labor Productivity*, 64 ARCHIVES ENVTL. OCCUPATIONAL HEALTH 221 (2009), http://ensembles-eu.metoffice.com/docs/kjellstrom_2009_prod_paper.pdf.

[26] John P. Dunne, Ronald J. Stouffer, & Jasmin G. John, *Reductions in Labour Capacity From Health Stress Under Climate Change*, 3 NATURE CLIMATE CHANGE 563, 563 (2013).

[27] U.N. DEV. PROGRAMME, et al., *supra* note 22, at 21.

challenges) than those paid by the job will work more for the same pay unless the employer hires additional help or raises pay. This would also result in workers having less personal time outside of work, thereby upsetting their work-life balance.[28] When a worker receives less income or must work more for the same income, the economy of the household is also affected. Thus, one could expect higher health risks for children, women, and the elderly.[29] This means the cost of healthcare and social safety programs will rise. Loss of income is associated with mental stress, which can lead to unhealthy behaviors like substance abuse or violence, as well as can impair cognitive ability, which can result in a higher risk of on-the-job injuries.[30] As workplace injuries and illnesses increase, so too will the cost of workers' compensation insurance.[31]

Substantial economic dislocation is also likely. As the economy begins the transition to greener industries, some employers or even whole industries may disappear, while new industries emerge. This change will raise unique concerns for workers in old and new industries, both in terms of health and safety and in terms of broader socioeconomic concerns.[32]

Climate change will also affect economies by causing the displacement of workers and workplaces, either within a nation or across nations.[33] An employer may choose not to locate a new facility in a region that is at high-risk for climate disasters. When super-charged storms occur, it could cripple transportation systems and other infrastructure, imposing substantial costs on employers and taxpayers. Similarly, in the aftermath of extreme weather events, workers may face challenges with commuting to work, and when workplaces close due to extreme weather or damaged infrastructure, workers may not have alternative work options.[34] For example, in the aftermath of Hurricane Katrina in New Orleans, Louisiana, 40,000 jobs were lost due to the damage.[35]

Workers in areas that are prone to weather disasters may also see available work become less consistent, forcing them to relocate to regions that afford more job stability. In the agricultural sector, for instance, changes in weather conditions may make it difficult to produce crop yields of sufficient quantity, thereby negatively affecting income from farming. If agriculture is not economical, workers may move to new areas in search of available work, which can negatively affect the surrounding community.

Migrant farmworkers, and in particular those paid by the quantity of production, will also face increased risks in regions where crop yields become inconsistent, not only in terms of declining income, but in terms of finding available work if farmers reduce the number of migrant workers hired.[36] In fact, climate change is already causing displaced workers to migrate, even across borders. For example, when California experienced a prolonged drought, there were major economic consequences for the state, particularly in the agricultural sector. An economic analysis prepared by the University of California—Davis for the 2015 drought estimated a loss of 21,000

---

[28] *Id.*
[29] *Id.*
[30] Bennett & McMichael, *supra* note 23, at 6.
[31] *Id.*
[32] Schulte & Chun, *supra* note 4, at 549-50.
[33] Anabella Rosemberg, *Building A Just Transition: The Linkages Between Climate Change and Employment*, 2 INT'L J. LABOUR RES. 125, 130-31 (2010).
[34] *Id.* at 130.
[35] *Id.*
[36] *Id.* at 7.

jobs statewide, with 10,100 of those being seasonal jobs in agriculture.[37] Loss of jobs and income has made it impossible for many agricultural workers to support themselves and their families financially, forcing some to rely on social programs and charitable giving.[38] Climate change is also believed to be a major impetus for a migration northward from Chiapas to other states of Mexico and the United States.[39]

LEGAL STRUCTURE

Despite the risks borne by workers, employers, and national economies, regulatory agencies have done little to prepare for the impacts of climate change on the nation's workforce. The state of the problem is perhaps best described in an editorial in the *American Journal of Public Health*:

> Employers may not be sufficiently prepared, empowered, educated, concerned, or compelled to protect their employees from the health impacts of climate change. There has not been any national regulatory action, and only limited state action, to compel employers to recognize climate-related impacts such as sustained durations of high temperatures as occupational hazards from which they must protect their employees.[40]

Focusing on the United States, this section offers a snapshot of how public law has addressed the protection of workers from climate change related illnesses and other risks, and how these efforts fall far short of what is necessary in the face of this looming danger to workers. Since the Occupational Safety and Health Administration (OSHA) has not adopted a heat exposure regulation, the agency is hampered in protecting workers because its only regulatory authority is from regulations that were written for other purposes or that are difficult to enforce. Three American states, by comparison, have mandatory regulations covering some industries. While these states offer a model for other states and for OSHA, the regulatory protection extends only to the workers in those states and only to some industries in those states. The practical effect is that the only protection for most workers is voluntary employer compliance with heat exposure recommendations from OSHA or from a number of public health organizations.

As this picture suggests, there is a substantial gap in public law regarding climate change related occupational health effects. Yet, it will not be easy to fill this gap, as the last part of this section explains.

I. REGULATORY STANDARDS

Section §3(8) of the Occupational Safety and Health Act (OSH Act) authorizes OSHA to promulgate a health standard when it is "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."[41] Using a health standard, OSHA can establish a heat stress threshold and require for workers exposed to heat above that threshold that employers provide medical surveillance and monitoring, engineering controls and safe work practices, training, emergency response, and heat illness prevention planning. Although the agency has a

---

[37] Richard Howitt, et al., Economic Analysis of the 2015 Drought for California Agriculture 7 (2015), https://watershed.ucdavis.edu/files/biblio/Final_Drought%20Report_08182015_Full_Report_WithAppendices.pdf.

[38] *See, e.g.*, Lesley McClurg, *Farmworkers See Jobs, Earnings Shrivel in California Drought*, NPR Morning Edition (Aug. 27, 2015, 5:07 AM), http://www.npr.org/sections/thesalt/2015/08/27/434763709/farmworkers-see-jobs-earnings-shrivel-in-california-drought.

[39] Rosemberg, *supra* note 33, at 131 (citing Workshop on Climate Change, Its Impacts on Employment and Labour Markets, Country-Based Studies, Brussels, Mar. 2010, Country-Based Studies, *Trade Unions and Climate Change, Conference News*, http://www.ituc-csi-org/IMG/pdf?Conference_News_1.pdf).

[40] Roelofs & Wegman, *supra* note 21, at 1800.

[41] OSH Act §3(8) (1970).

long history related to the need to prevent heat-related injuries and illnesses in the workplace, it has not yet issued a national occupational standard on heat exposure.

The National Institute for Occupational Safety and Health (NIOSH), the research arm of OSHA, first recommended that OSHA adopt an occupational heat standard in 1972 after conducting a study on the effects of heat stress on workers.[42] NIOSH renewed its recommendation in 1986 and again in 2016.[43] In 1973, OSHA established the Standards Advisory Committee on Heat Stress to review the NIOSH recommendations and advise the agency on developing a heat standard, but OSHA never followed through with promulgating a standard.

Although there is no federal occupational heat exposure standard, several OSHA standards partially address the hazard. Among other limitations, however, these regulatory options lack key components of a protective heat exposure standard, which would include the protections mentioned earlier, including medical surveillance and monitoring, and engineering and safe work practices.

II. SANITATION STANDARDS

Under OSHA's sanitation standards for general industry, agriculture, shipyards, maritime, and construction, employers must provide employees with potable drinking water, but each regulation varies in terms of whether it specifies the quantity of water to be provided and the frequency with which it must be made accessible.[44] Of these, the field sanitation standard for the agricultural sector is the most comprehensive. The standard requires employers to provide field workers with potable drinking water in "readily accessible" areas. The water must also be "suitably cool, and in sufficient amounts, taking into account the air temperature, humidity and the nature of the work performed, to meet the needs of all employees." Employers subject to the standard must inform each employee of the location of the drinking water and must provide employees reasonable opportunities to access the water throughout the workday. Employers must also notify employees of the importance of minimizing exposure to hazards, such as drinking water frequently, especially on hot days, to avoid heat hazards in the field.

Although OSHA has issued an interpretative letter to clarify that it intends for the standard to address heat stress and exhaustion,[45] it remains unclear what employers must do to satisfy the requirement that drinking water be "accessible" or how much water they must provide. Furthermore, requirements for drinking water should be combined with engineering controls and other safe work practice requirements, such as phased-in acclimatization, periodic rest breaks, and access to shade.

---

[42] NAT'L INSTIT. FOR OCCUPATIONAL SAFETY & HEALTH, PUB. NO. 72-10269, CRITERIA FOR A RECOMMENDED STANDARD: OCCUPATIONAL EXPOSURE TO HEAT AND HOT ENVIRONMENTS (1972), *available at* https://www.cdc.gov/niosh/docs/72-10269/ (download .pdf files from Table of Contents).

[43] NAT'L INSTIT. FOR OCCUPATIONAL SAFETY & HEALTH, PUBLICATION NO. 1986-113, CRITERIA FOR A RECOMMENDED STANDARD: OCCUPATIONAL EXPOSURE TO HEAT AND HOT ENVIRONMENTS (Revised Criteria 1986), http://www.cdc.gov/niosh/docs/86-113/86-113.pdf; NAT'L INSTIT. FOR OCCUPATIONAL SAFETY & HEALTH, PUB. NO. 2016-106, CRITERIA FOR A RECOMMENDED STANDARD: OCCUPATIONAL EXPOSURE TO HEAT AND HOT ENVIRONMENTS (Revised Criteria 2016), http://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf.

[44] 29 C.F.R. § 1910.141(b); 29 C.F.R. § 1926.51(a); 29 C.F.R. § 1915.88(b); 29 C.F.R.§ 1917.127(b); 29 C.F.R. § 1928.110.

[45] Letter of Interpretation from Gerald F. Scannell, Asst. Sec'y of Labor, U.S. Dep't of Labor, to Sen. Steve Symms (Jan. 24, 1990), https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=19913.

III. PERSONAL PROTECTIVE EQUIPMENT

OSHA has promulgated standards on personal protective equipment (PPE) applicable to general industry and the shipyard, maritime, and construction industries. Although the specific language used in these standards varies, they typically require employers to assess the workplace for hazards that are or are likely to be present and for which workers will need to use PPE.[46] For hazards identified, the employer must provide and maintain the PPE, and must conduct training and ensure affected employees use the required PPE.

While PPE standards may operate to ensure employers identify workplace hazards—including hazards like heat exposure and other climate-induced hazards—that may necessitate the use of PPE by employees, PPE alone cannot suffice to protect workers. This standard, like the sanitation standard, does not require employers to implement engineering controls and safe work practices to reduce the risks of heat-related injuries and illnesses, in addition to providing workers with necessary PPE.[47]

IV. SAFETY TRAINING AND EDUCATION

In the construction industry, OSHA requires employers to train employees on hazard identification, avoidance, and prevention.[48] The vague wording of the statute does not give any indication as to what employers need to do to train employees properly to identify, avoid, and prevent injuries and illnesses related to heat exposure. Not only does OSHA need to promulgate training and education standards for all industries, the agency should expand this standard substantially insofar as it applies to the construction industry.

V. MEDICAL TREATMENT AND FIRST AID

OSHA has promulgated medical treatment and first aid standards for employers in general industry, and in the shipyard, maritime, and construction industries.[49] Under these standards, whenever employees are working at a site that is not in close proximity to a medical facility, the employer must ensure persons are on site that are adequately trained to render first aid. While this standard may provide some protection to workers concerning heat stress and stroke in the previous industries, the lack of a similar standard in the agricultural sector is alarming given field workers are among the most susceptible workers to heat-related illness and injury. In addition, to protect all workers adequately, all employers with workers subject to heat stress should be required to develop written emergency response plans that include immediate action to stop an employee from working if he or she shows symptoms of heat stress and that provides on-site first aid.

VI. RECORD-KEEPING AND REPORTING

OSHA's record-keeping standard requires employers to record injuries and illnesses if the employee required medical treatment (as opposed to first aid).[50] However, OSHA does not require

---

[46] 29 C.F.R. § 1910.132(d) (year); 29 C.F.R. § 1915.152 (year); 29 C.F.R. § 1917.95 (year); 29 C.F.R. § 1926.28.

[47] NAT'L INSTIT. FOR OCCUPATIONAL SAFETY & HEALTH, PUB. NO. 2016-106, CRITERIA FOR A RECOMMENDED STANDARD: OCCUPATIONAL EXPOSURE TO HEAT AND HOT ENVIRONMENTS (Revised Criteria 2016), at 7, http://www.cdc.gov/niosh/docs/2016-106/pdfs/2016-106.pdf.

[48] 29 C.F.R. § 1926.21.

[49] 29 C.F.R. § 1910.151; 29 C.F.R. § 1915.87; 29 C.F.R. § 1917.26; 29 C.F.R. § 1926.50.

[50] 29 C.F.R. § 1904.7.

employers to identify heat-related illnesses, and instead, employers must only account for these illnesses under the category for "all other illnesses."[51]

VII. GENERAL DUTY CLAUSE

When a worker is exposed to a hazard that is not addressed by any other federal standard, OSHA may look to §5(a)(1) of the OSH Act, which imposes a general duty on employers to protect workers from a recognized hazard that places them at risk of death or serious physical harm – e.g., excessive heat exposure.[52] However, the agency rarely invokes its general duty clause authority. According to the Labor Department, although 31 workers died and 4,120 suffered due to heat-related injuries and illnesses in 2012, the agency only cited employers in 17 cases.[53] One reason is that the general duty clause imposes a higher burden of proof on the agency than is required for citing violations of hazard-specific health standards.[54]

VIII. REGIONAL EMPHASIS PROGRAMS

Finally, OSHA approved a regional emphasis program (REP) for worksites in Arkansas, Louisiana, Oklahoma, and Texas, and certain worksites in New Mexico that fall under federal OSHA jurisdiction.[55] The program expired on Sept. 30, 2016, however, and as of the time of this writing, no decision has been made to renew the program.[56] Under the REP, on days where the National Weather Service had issued a heat advisory in the area, inspectors were instructed to conduct limited inspections of outdoor job activities (subject to some exceptions) to ensure workers had been trained on heat hazards, drinking water and first aid supplies were available, and the employer had made provisions for workers to receive prompt medical attention in case of illness.

In addition, some regional OSHA programs have established "local emphasis programs" that are not specially targeted to heat or cold stress, but include those hazards as the subject of intensified inspection efforts. A program in Omaha, Nebraska authorizes targeted inspections of

---

[51] OCCUPATIONAL SAFETY AND HEALTH ADMIN., OSHA INJURY AND ILLNESS RECORDKEEPING AND REPORTING REQUIREMENTS, https://www.osha.gov/recordkeeping/index.html (last visited July 31, 2017).

[52] Occupational Safety and Health Act § 5(a)(1), 29 U.S.C. § 651 (2000).

[53] U.S. DEPT. OF LABOR, PRESS RELEASE, ANNUAL SUMMER CAMPAIGN TO PREVENT HEAT-RELATED ILLNESSES (May 22, 2014), https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=26052; OCCUPATIONAL SAFETY AND HEALTH ADMIN., HEAT FATALITIES, https://www.osha.gov/SLTC/heatillness/map_text.html (last visited July 31, 2017); *see also* Roelofs & Wegman, *supra* note 21, at 1800.

[54] *See* OCCUPATIONAL SAFETY AND HEALTH LAW 98 (Gregory N. Dale & P. Matthew Shudtz, eds., 3d ed., 2013) (explaining that the court in *National Realty & Construction Co. v. OSHRC*, 489 F.2d 1257, 1 OSH Cases 1422 (D.C. Cir. 1983), laid out three elements that OSHA must prove with substantial evidence to establish a violation of the general duty clause and the Review Commission adopted a forth element based on the court's reasoning).

[55] OCCUPATIONAL SAFETY AND HEALTH ADMIN., OSHA REGIONAL NOTICE (2010), http://greaterhoustonsteps.com/yahoo_site_admin/assets/docs/REP_Heat_Stress_20100324065320.8371426.pdf; OCCUPATIONAL SAFETY AND HEALTH ADMIN., OSHA REGIONAL NOTICE, (2015), https://www.osha.gov/dep/leps/RegionVI/reg6_fy2016_heat_CPL2_02-00-027.pdf (see also for references to OSHA Technical Manual on inspecting heat exposures and memo to Regional Administrators; guidance on issuing GDC violations for heat hazards).

[56] As of Nov. 7, 2016, OSHA's website did not indicate that the Region VI emphasis program on heat illness had been renewed. On calling the Region VI office to find out more, it was explained that OSHA may be waiting on data from the previous year before moving forward, OSHA may be waiting until the warmer months to renew the program, or OSHA may not have posted the renewal on its website yet.

general industry, construction, and agricultural establishments for which the Nebraska Workers' Compensation Court's records show certain injuries or illnesses have been reported, including those resulting from heat or cold stress.[57] Under the program, an inspection will generally result if the workers' compensation records indicate an employee suffered an injury or illness resulting in hospitalization or days away from work due to severe environmental temperature exposure.

When an inspection does not occur, the Omaha Area Office Director will send a hazard alert letter on heat or cold stress to the establishment and request a response from the employer. Another program targets landscaping and horticultural worksites in Kansas.[58] Under the LEP, inspectors are tasked with conducting inspections of any covered worksite where the inspector observes conditions that would suggest employees may be exposed to certain high-risk hazards, among which includes excessive outdoor temperatures.

The impact of these regional and local emphasis programs is limited, however. Even when an inspector finds hazardous conditions related to heat exposure, OSHA can only pursue general duty clause citations. As mentioned earlier, OSHA only issued 17 general duty standard citations in 2012 concerning excess heat exposure. Moreover, these programs have limited lifespans and will expire unless the agency acts affirmatively to renew them.

IX. STATE STANDARDS

When federal OSHA has not adopted a national standard for a particular hazard, any state may adopt its own standard. At present, California, Washington, and Minnesota are the only states that have adopted occupational heat standards.

California's regulation covers workers employed in agriculture, construction, landscaping, oil and gas extraction, and the transportation or delivery of agricultural products, construction materials or other heavy materials.[59] It applies year-round and requires employers to ensure employee access to at least one quart of potable water per hour, access to shade (including preventative cool-down rest) when temperatures exceed 80°F (or at any temperature if a worker requests shade), and to employ additional protective actions when temperatures exceed 95° F to identify employees who may be suffering from heat illness.[60] It also requires employers to provide training to all new employees, establish written procedures for complying with the standard, and develop an emergency response plan in the event of a heat-related emergency. In 2016, California enacted new legislation that requires its state agency (Cal/OSHA) to adopt an indoor heat exposure regulation.[61]

Washington's regulations on heat exposure cover outdoor workers between May 1 and September 30 of each year when temperatures exceed certain thresholds, or 89°F for most workers.[62] The standards require employers to ensure that workers have access to drinking water and an opportunity at least once each hour to drink at least one quart of water per hour in a hot environment. In addition, employers that are subject to the standards must address their outdoor heat exposure safety program in their written accident prevention program and encourage their

---

[57] OCCUPATIONAL SAFETY AND HEALTH ADMIN., OSHA REGIONAL NOTICE, (2016), https://www.osha.gov/dep/leps/RegionVII/reg7_fy2017_CPL-02-11-06G_workcomp.pdf.

[58] Occupational Safety and Health Admin., OSHA Regional Notice, (2014), https://www.osha.gov/dep/leps/RegionVII/reg7_fy2015_landscape_horticulture_CPL_02-13-010B.pdf.

[59] CAL. CODE REGS., tit. 8, § 3395, *available at:* https://www.dir.ca.gov/title8/3395.html.

[60] *Id.*

[61] S.B. 1167, 2016 Leg., Reg. Sess. (Cal. 2016).

[62] WASH. ADMIN. CODE § 296-307-09710.

(2008), *available at:* http://apps.leg.wa.gov/WAC/default.aspx?cite=296-307-09710.

employees to consume water or other acceptable beverages frequently. The standards also include training requirements for all new employees. Employees, however, are responsible for monitoring themselves for heat-related illness and for consuming water or other acceptable beverages to ensure hydration.

Minnesota's regulation addresses indoor workroom ventilation and temperature year-round.[63] The regulation prohibits employers from exposing workers to indoor environmental heat conditions in excess of 77°F for heavy work, 80°F for moderate work, and 86°F for light work, as measured using a two-hour time-weighted average and the wet bulb globe temperature (WGBT) index, a measurement that accounts for both temperature and humidity. When temperatures exceed those limits, employers must provide employees with heat-protective clothing and equipment. The standard also imposes training requirements for all new employees and for all employees at least annually.[64]

A state survey of efforts to address heat stress would be a valuable contribution to the field, as none presently exists. For instance, other states may have emphasis programs, guidance documents, or have addressed climate impacts on labor via other means, and understanding those efforts could assist with finding models that other states could adopt.

X. VOLUNTARY INITIATIVES

Although OSHA does not have an occupational heat standard, it launched a national campaign on heat stress in 2011, which seeks to educate employers and employees about occupational heat exposure.[65] As part of the campaign, OSHA developed a smartphone app that notifies users of the heat index for their location and provides an overview on preventing, identifying, and responding to heat-related illnesses and injuries.[66]

A number of public health organizations have also published voluntary occupational heat standards, including the American Conference of Governmental Industrial Hygienists (ACGIH)[67] and the International Organization for Standards.[68] The U.S. military, American College of Sports Medicine (ACSM), and several foreign governments have also issued heat standards to protect workers and those participating in sports.

BARRIERS TO FILLING THE GAPS IN THE LAW

Climate-induced hazards that pose risks to workers' health and safety—such as excessive heat exposure or extreme weather events—clearly fall within the scope of OSHA's standard-setting authority. Yet in attempting to address such risks, OSHA will need to establish that it has sufficient evidence to prove that the risk is significant. Moreover, as discussed in more detail

---

[63] MINN. R., § 5205.0110, *available at:* https://www.revisor.mn.gov/rules/?id=5205.0110.

[64] *Id.* (incorporating by reference training requirements in § 5206.0700 subpart 1 and 3).

[65] Occupational Safety & Health Admin., U.S. Dep't of Labor, *Heat Illness Prevention Campaign*, OSHA, https://www.osha.gov/heat/index.html (last visited July 31, 2017).

[66] OCCUPATIONAL SAFETY AND HEALTH ADMIN., HEAT INDEX, https://www.osha.gov/SLTC/heatillness/heat_index/about.html (last visited July 31, 2017).

[67] AMER. CONF. OF GOVERNMENTAL INDUSTRIAL HYGENIESTS, HEAT STRESS AND STRAIN (7th ed. 2009), https://www.acgih.org/forms/store/ProductFormPublic/heat-stress-and-strain-tlv-r-physical-agents-7th-edition-documentation.

[68] HOT ENVIRONMENTS — ESTIMATES OF THE HEAT STRESS ON WORKING MAN, BASED ON THE WBGT-INDEX (WET BULB TEMPERATURE) (INTERNATIONAL ORGANIZATION FOR STANDARDIATION 1989), *available at:* https://www.iso.org/standard/13895.html.

below, even if OSHA promulgates a standard that is able to withstand judicial review, the agency faces even more barriers to enforcing standards, as well as political barriers related to climate change policies.

To promulgate an occupational health standard, the U.S. Supreme Court has required that a standard must "materially reduce a significant risk to worker health and safety."[69] The Court suggested that a risk of one-in-one-thousand was significant, and OSHA has adopted this suggestion as the minimum level of risk it is authorized to regulate.[70] As a result, OSHA will regulate a health hazard only if it adversely affects one-in-one-thousand workers. In 2011, OSHA denied a petition for an emergency temporary standard on heat stress filed by Public Citizen in 2011 because it lacked enough information about the risk of harm to workers,[71] explaining that risk of death to crop workers (0.39 per 100,000 crop workers) "does not exceed those of other hazards OSHA has deemed to be 'significant' . . . ."[72]

In defining significant risk, however, the U.S. Supreme Court explained that OSHA must look to "a body of reputable scientific thought" and that reviewing courts must "give OSHA some leeway where its findings must be made on the frontiers of scientific knowledge." Given the number of studies available on heat stress and stroke, and additional climate studies indicating that the risk to workers will continue to increase as temperatures and humidity rise and extreme heat events become more frequent and intense, OSHA may have been too timid in deciding that it lacked sufficient scientific evidence to act.

Even if OSHA promulgates a health standard to limit heat exposure or any standard to address climate-related hazards, the agency must overcome a number of hurdles to enforce the regulation effectively. The agency has limited enforcement resources for conducting inspections, which means OSHA increasingly relies on workers to serve as its "eyes and ears" inside the workplace. Yet, workers are unable to serve this role well because of legitimate fear of retaliation if they report hazards or refuse to perform dangerous work. When OSHA does issue citations against violators, the small size of the fines the OSH Act authorizes the agency to impose have little deterrent effect. In addition, because of limited resources, the agency often settles cases for far less than the original penalty it imposed, further decreasing any deterrent effect. As a result, time and again, companies simply ignore the rules. When disaster ensues, the company pays only a small fine for their bad behavior and returns just as quickly to business as usual. This is why, in addition to strong safeguards, the victims of harmful business practices must be able to access our court system. Yet, the OSH Act lacks any mechanism for workers to enforce the law, even though citizen enforcement is common in many statutes enacted or updated over the last several decades.

---

[69] Industrial Union Dep't, AFL-CIO v. American Petroleum Instit. (*Benzene*), 448 U.S. 607 (1980).

[70] OCCUPATIONAL SAFETY AND HEALTH LAW 549 (Gregory N. Dale & P. Matthew Shudtz, eds., 3d ed., 2013) ("OSHA has incorporated the Supreme Court's suggested level of significant risk — a risk of 1/1,000 — as a policy norm") (citing UAW v. Pendergrass, 878 F.2d 389, 14 OSH Cases 1025 (D.C. Cir. 1989)).

[71] Letter from Public Citizen, Consumer and Health Advocacy Group, to the Honorable David Michaels, Asst. Secretary of Lab. for Occupational Safety (September 1, 2001), https://www.citizen.org/sites/default/files/1917.pdf. OSHA must meet an even more rigorous standard of "grave" risk to support emergency temporary standards, but its explanation of its actions indicate that the agency found that it did not have sufficient risk evidence to meet even the significant risk standard.

[72] *See* Mike Elk, OSHA Declines to Issue Rule Protecting Workers From Heat (July 11, 2012) (quoting letter from David Michaels, Assistant Secretary of Labor for OSHA rejecting Public Citizen petition), available at http://inthesetimes.com/working/entry/13516/as_record_temperatures_hit_us_osha_declines_to_issue_rule_protecting_worker/.

When a worker is injured on the job, the U.S. workers' compensation system is supposed to compensate the worker for his or her injury. As of 2015, OSHA concluded however that workers compensation systems fail to provide injured workers the full benefits promised.[73] In many cases, payments to injured workers cover a mere 21 percent of lost wages and medical costs.[74] Again, as with limited standards enforcement, without adequate remedial systems in place to protect workers' interests, companies easily push the costs onto workers and consumers.[75]

Adding to these challenges, the agency may also face new, unique climate-related policy challenges. As discussed earlier, exposure to higher temperatures is not the only hazard that workers will face because of climate change. Yet, OSHA's authority to address these other hazards is limited either because they are the responsibility of other agencies or because the evidence concerning the risks posed by these hazards is not yet sufficiently developed to meet OSHA's self-imposed bar to regulating. A valuable contribution to the legal research would be to continue exploring OSHA's ability to address climate hazards beyond heat exposure, as well as other federal agencies capacity to address these hazards.

FILLING THE GAPS

Moving forward effective labor policies must both protect workers and assist them in adjusting to the economic dislocations that are likely to arise because of climate change and efforts to mitigate it. At the same time, it will be necessary to develop better information about the hazards and associated risk of harm that climate change creates for workers.

I. RISK ASSESSMENT

A pressing problem is to develop more detailed knowledge about the adverse health and safety outcomes that workers are likely to confront. Regulators need more information about the potential harms that climate change poses for workers and on effective options they can adopt as a response. A team of researchers from NIOSH has identified a research agenda, which indicates the substantial gaps in knowledge that need to be overcome.[76] The researchers identify the need for additional research concerning potential hazards, subpopulations susceptible to those hazards, how those hazards interact with other factors, and the effectiveness of methods to reduce the hazards.[77] There is also a need for additional surveillance that identifies risks according to occupation, location, and changes over time, enhances early warning systems, and utilizes surveillance data to in developing prevention programs.[78] For risk assessment, research is necessary to appraise the usefulness of existing approaches, address uncertainties in the evidence, find new sensitivity analysis methodologies, and develop integrated models that include all the hazards related to climate change.[79]

---

[73] OCCUPATIONAL SAFETY & HEALTH ADMIN., U.S. DEP'T OF LABOR, ADDING INEQUALITY TO INJURY: THE COSTS OF FAILING TO PROTECT WORKERS ON THE JOB 6 (2015), https://www.dol.gov/osha/report/20150304-inequality.pdf.
[74] *Id.* at 6.
[75] The costs not covered by workers compensation are shouldered by workers, their families, and private health insurance (63 percent), and by taxpayers (16 percent). *Id.*
[76] Paul A. Schulte, et. al., *Advancing the Framework for Considering the Effects of Climate Change on Worker Safety and Health*, 13 J. OCCUPATIONAL & ENVTL. HYGIENE 847, 855 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5017900/.
[77] *Id.*
[78] *Id.*
[79] *Id.*

II. RISK MANAGEMENT

The best means to protect workers, employers, communities, and the economy from the threat of climate change is by reducing greenhouse gas emissions and by developing strong adaptation measures to prepare for the climate effects that cannot be mitigated. The latter effort would, at minimum, include a heat exposure standard with the following elements:

1. **Heat Stress Threshold:** Permissible heat exposure thresholds for acclimatized and un-acclimatized workers for indoors and outdoors work year-round, consistent with the latest evidence on the human health effects of environmental and metabolic heat.
2. **Medical Surveillance:** A requirement that employers provide medical surveillance for all workers exposed to heat stress above heat exposure thresholds.
3. **Engineering Controls and Safe Work Practices:** A requirement that employers use engineering controls and safe work practices that prevent workers' core temperature from exceeding exposure thresholds, such as phased-in acclimatization, access to sufficient quantities of drinking water, periodic rest breaks, and access to shade.
4. **Training:** A requirement that employers train new employees and supervisors when hired and at least annually about the hazards of heat stress, hazard identification, prevention, and mitigation, and employee rights using languages that each worker can understand.
5. **Emergency Response:** A requirement that employers develop written emergency response plans that include immediate action to stop an employee from working if he or she presents with symptoms of heat stress and that provide on-site first aid.
6. **Heat Illness Prevention Plan:** A requirement for employers to develop a written plan that explains steps taken to achieve compliance with each of the previous requirements.
7. **Recordkeeping and Reporting:** A requirement that employers report fatalities and hospitalization to OSHA or the state-plan counterpart, maintain adequate records of heat related illnesses, and provide those records to OSHA upon request.

Two types of tradeoffs complicate the implementation of these risk management tools. First, OSHA and other regulators must account for trade-offs between adaptation and mitigation strategies when developing occupational health standards to address climate hazards. Increasing the availability of air conditioning to reduce health risks to indoor workers, for example, may contribute to greenhouse gas emissions, and thus, conflict with mitigation efforts.[80]

Second, OSHA and other regulators should consider the economic risks to workers in choosing the type of controls to use. Workers, for example, may offset the protection of frequent rest breaks by over-exerting themselves when they are paid by quantity of production or fear they will be fired for failing to meet current production quotas.[81] Similarly, a standard that requires new employees to undergo medical evaluations may protect workers who are most at risk of injury or illness, but it may also result in reduced employment opportunities for those workers.[82]

---

[80] *See e.g.*, Alice Kaswan, *Domestic Climate Change Adaptation and Equity* (University of San Francisco Law, Research Paper No. 2013-05, 2012), https://ssrn.com/abstract=2184551.

[81] Rebekah A I Lucas, et. al, *Excessive Occupational Heat Exposure: A Significant Ergonomic Challenge and Health Risk for Current and Future Workers*, EXTREME PHYSIOLOGY & MEDICINE 1, 3 (2014), http://www.extremephysiolmed.com/content/3/1/14.

[82] *Id.* at 4.

A "JUST TRANSITION" TO A GREEN ECONOMY

Efforts to reduce greenhouse gases that help mitigate the rise in temperatures will help reduce health risks to workers and the public, but as we transition away from carbon- and energy-intensive industries, many workers currently employed in these industries will likely lose their jobs. As a result, labor unions have been reluctant to support strong climate policies because of concerns about the potential loss of existing jobs.[83] Fortunately, economic projections on the cost of fighting climate change as compared to the costs of inaction indicate that climate change mitigation and green investments are the rational path forward for the economy and have potential for substantial job creation.[84]

Even if emerging industries offer an abundance of new jobs (as economic projections suggest), governments should adopt programs and policies that assist workers in making a smooth transition into these new jobs. "A strategy designed to provide full employment and rising living standards by putting millions of people to work on the transition to a climate-safe economy could transform the politics of climate by shattering the 'jobs versus the environment' frame. And it could provide a common platform around which climate protection advocates at every level of the labor movement could rally."[85]

Moreover, accounting for the adverse effects of climate change on workers is an integral piece of climate mitigation and adaptation planning because ensuring our workforce is large enough and possesses the skills and protections needed to implement our climate plans effectively will not occur automatically.[86] Rather, governments must understand the costs and benefits of an industrial transition for workers, employers, communities, and other impacted stakeholders, and put in place safeguards that serve to distribute those costs and benefits "in a just and equitable manner."[87]

This concept of a "just transition" has been organized into a framework for managing the transition to a green economy, while simultaneously "highlighting public policy needs and aiming to maximize benefits and minimize hardships for workers and their communities in this transformation."[88] More specifically, it "addresses the different aspects related to the vulnerability of workers and their communities: uncertainties regarding job impacts, risks of job losses, risks of undemocratic decision-making processes, risks of regional or local economic downturn, among others."[89]

According to the available literature on "just transition," a comprehensive strategy for the U.S. must include at least six key components:[90]

---

[83] Jeremy Brecher, et al., *If Not Now, When? A Labor Movement Plan to Address Climate Change*, New Labor Forum, 1-2 (2014). *But see generally* David Foster, *BlueGreen Allliance: Building A Coalition For A Green Future in the United States*, 2 INT'L J. LABOUR RES. 233 (2006) (discussing the formation of the Blue Green Alliance).

[84] Rosemberg, *supra* note 33, at 129 (citing NICHOLAS STERN, THE STERN REVIEW: ECONOMICS OF CLIMATE CHANGE (2007)).

[85] Brecher, *supra* note 80, at 2.

[86] Rosemberg, *supra* note 33, at 140.

[87] David Doorey, *A Law of Just Transitions?: Putting Labor Law to Work on Climate Change*, (12 Osgoode Hall Law School Legal Studies, Research Paper Series No. 35, at 5, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2680241.

[88] Rosemberg, *supra* note 33, at 141.

[89] *Id.* at 142.

[90] *See, e.g., id.* at 141-42; Lene Olsen, Int'l Labour Office, *Supporting A Just Transition: The Role of International Labour Standards*, 2 INT'L J. LABOUR RES. 293, 295-96 (year).

1. **Investment:** The substantial public and private sector investment necessary for the transition to a greener economy should include initiatives to retrain workers in transitioning or declining industries and provide training to young workers just entering the workforce,[91] including carbon-pricing regimes, incorporating green investments into recovery plans, and incorporating principles of sustainable development in public procurement policies.[92]
2. **Research and Early Assessment:** While some studies on the impact of climate action and inaction on employment and labor markets has already begun, more comprehensive studies that look at individual countries, regions, and industries must be conducted.[93]
3. **Social Dialogue:** Stakeholders, including unions, workers, communities, employers, and nongovernmental organizations, should be engaged in a meaningful dialogue with decision-makers at all levels of government, beginning at the earliest stage of developing mitigation and adaptation strategies and continuing after policies are implemented,[94] ensuring all stakeholders have an opportunity to comment and allowing decision-makers to give meaningful consideration to their comments.[95]
4. **Education and Training:** Education and training initiatives should include skills training for workers on: (i) adapting to changes in natural and built environments; (ii) complying with climate-related policy and regulations relating to the use of certain materials, tax incentives, etc.; (iii) developing green technologies and other innovative solutions; and (iv) and competing in the marketplace and responding to market fluctuations and consumer preferences.[96]
5. **Social Protections and Security:** Climate policies should include social programs and protections to assist workers with the transition to a green economy[97], such as social security, healthcare, unemployment benefits, public employment guarantee schemes, public works programs for the unemployed and underemployed, educational leave laws for workers to receive skills training, rights to unionize and collective bargaining protections, and access to the courts.
6. **Economic Diversification:** Transition plans should fit the needs of local communities because "while local governments play a relatively marginal role in designing and implementing climate change regulation, they will play a considerable role in managing the transition to a low-carbon economy and enabling green growth."[98]

The Workers Climate Plan developed by Canadian oil sands workers is an example of what is necessary to achieve a just transition.[99] Notably, the plan recognizes the importance of retraining skilled workers from oil and gas sectors to renewable energy jobs. Specifically, the plan states,

---

[91] Rosemberg, *supra* note 33, at 142; Olsen, *supra* note 87, at 295.
[92] Rosemberg, *supra* note 33, at 146; Olsen, *supra* note 87, at 296; Foster, *supra* note 80, at 242.
[93] Rosemberg, *supra* note 33, at 143.
[94] *Id.*; Olsen, *supra* note 87, at 301.
[95] *Id.* at 301-02.
[96] *Id.* at 304-05.
[97] Rosemberg, *supra* note 33, at 128; Olsen, *supra* note 90, at 308; Foster, *supra* note 83, at 242.
[98] CRISTINA MARTINEZ-FERNANDEZ, ET AL., OECD, GREENING JOBS AND SKILLS: LABOUR MARKET IMPLICATIONS OF ADDRESSING CLIMATE CHANGE 33 (2010), http://www.oecd.org/cfe/leed/45484420.pdf.
[99] *See generally* IRON & EARTH, WORKERS' CLIMATE PLAN REPORT: A BLUEPRINT FOR SUSTAINABLE JOBS AND ENERGY (2016), http://d3n8a8pro7vhmx.cloudfront.net/themes/5640eaf72213934458000001/attachments/original/1480293178/Iron_and_Earth-WCP_Nov_2016_vers_2.pdf?1480293178.

"Positioning existing energy sector workers would not only benefit our environment, it would also benefit the economy. In the short term, it would employ an out-of-work labour force, boost the local economy, and save on Employment Insurance and other benefits. In the longer term, energy sector workers industrial trade skills could position Canada in becoming a global leader in renewable energy."[100]

In the U.S., the New York State Climate and Community Protection Act is another example.[101] The bill seeks to shape the transition of the state's energy sector by creating good jobs and providing workers in declining industries with the programs, training, and support needed to transition into new "green" jobs. Among the equitable principles incorporated into the bill is the need "to ensure increased access to good jobs for marginalized communities while making the same neighborhoods more resilient."[102]

CONCLUSION

The health, safety, and economic risks to workers associated with climate change have not received the attention that they deserve. Rising temperatures are associated with heat stress and a number of other health and safety hazards, which are growing more intense as the expected impacts of climate change become a reality. Despite numerous climate studies evincing a need for near-term action, regulatory agencies in the United States, such as OSHA, have yet to respond with efforts to protect and prepare workers and employers for increased health, safety, and economic risks associated with climate change. For OSHA to address the health and safety hazards, the agency must overcome significant legal and political barriers that have generally made it more difficult to protect workers despite substantial evidence of a significant risk. Looking ahead, governments at all levels will need to continue studying the risks to workers and the best ways of addressing those risks. A comprehensive strategy is also necessary to help workers adjust to the economic changes that result from efforts to mitigate greenhouse gases and to protect workers from the harmful effects of climate change that cannot be mitigated.

---

[100] *Id.* at 23.
[101] A.B. A10342, 238th Leg. (NY 2015).
[102] *Id.* at §1(10).

[Additional submissions by Mr. Byrne follow:]

AMERICAN FARM BUREAU FEDERATION®
600 Maryland Ave. SW | Suite 1000W | Washington, DC 20024

ph. 202.406.3600
f. 202.406.3602
www.fb.org

August 2, 2019

The Honorable Bobby Scott, Chairman
House Committee on Education and Labor
2176 Rayburn House Office Building
Washington, DC 20510

The Honorable Virginia Foxx, Ranking Member
House Committee on Education and Labor
2176 Rayburn House Office Building
Washington, DC 20510

Dear Chairman Scott and Ranking Member Foxx,

The American Farm Bureau Federation appreciates the opportunity to provide feedback on the Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019 (H.R. 3668), introduced by Rep. Chu. Farm Bureau members understand the importance of farm worker safety and health, especially concerning peak heat temperatures, and we would be pleased to work with policymakers and others on such issues. In our view, we are concerned that a mandatory heat illness standard, however laudable its purpose, would not actually result in a reduction of temperature-related sickness on farms.

H.R. 3668 asserts that the government should dictate when employees should take breaks, seek shade, and drink water. This government-imposed approach does not account for varying temperatures, worker needs, and different job tasks throughout the country and across industries. For example, humidity, cloud cover and wind are factors that would alter how temperature will affect a worker. Regarding individual health needs, older workers or those less acclimated to a farm's weather environment may need more breaks than younger workers. Additionally, farm work is not equally strenuous across all tasks. Due to these variances, a standard like the one found in H.R. 3668 may well fail in achieving the purposes of the legislation.

It is in the inherent interest of all employers to ensure their employees are taking appropriate safeguards while working and take proper precautions to avoid hazardous work conditions. Many farmers take steps to ensure workers avoid heat stress such as shifting their work schedules to avoid the hottest hours of the day. Additionally, Section 5 of the Occupational Safety and Health Act, known as the General Duty Clause, gives OSHA the authority it needs to protect employees from heat, making the standard imposed in H.R. 3668 duplicative. Combined with the worker protections afforded by the General Duty Clause, employers are expected to plan for potential medical emergencies, such as heat stress, under the Medical and First Aid Standard (29 CFR 1910.151 and 1926.50). Under the OSHA Sanitation Standard (29 CFR 1910.141 and 1926.51), employers are required to provide fresh drinking water to employees. Considering these provisions already exist, legislation to impose a one-size fits all standard is unnecessary. It is also critical to maintain the current prohibition on the use of appropriated funds for OSHA enforcement on small farms with fewer than ten employees. The application of regulations and

standards intended for large scale businesses should not be imposed on small agriculture entities. A better approach to heat illness prevention is to focus on education to mitigate potential health hazards due to working in hot temperatures and collaboration with the agriculture industry to better understand what steps farmers have already taken to prioritize workers' health needs.

As Congress looks to find ways to prevent potential heat related illnesses, it is important that the agriculture industry be involved in the decision-making process for any new standard. Legislators must understand the practices already in place to ensure worker health and safety. Farm Bureau appreciates the opportunity to provide feedback on the Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019 (H.R. 3668) and looks forward to working with the Committee and its Members to best address the needs and concerns of workers and the American agriculture industry.

Sincerely,

Zippy Duvall
President

CONSTRUCTION INDUSTRY SAFETY COALITION

August 8, 2019

The Honorable Alma S. Adams
Chairwoman
Subcommittee on Workforce Protections
Committee on Education and Labor
U.S. House of Representatives
2176 Rayburn House Office Building
Washington, DC 20515

The Honorable Bradley Byrne
Ranking Member
Subcommittee on Workforce Protections
Committee on Education and Labor
U.S. House of Representatives
2176 Rayburn House Office Building
Washington, DC 20515

Dear Chairwoman Adams and Ranking Member Byrne:

The undersigned member associations of the Construction Industry Safety Coalition (hereinafter referred to as the "CISC") appreciate the opportunity to submit our comments for the record for the July 11, 2019 Subcommittee hearing "From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."

The CISC was formed several years ago to provide comments on Occupational Safety and Health Administration ("OSHA") regulatory initiatives from the wide-range of construction trades affected by OSHA standards. The CISC speaks for small, medium, and large contractors; general contractors; subcontractors; union contractors; etc. The CISC has submitted comments on a variety of OSHA rulemaking initiatives.

The CISC recognizes the potential hazards of heat exposure and strongly believes that employers should take steps to ensure that employees are protected. Many CISC member associations have published guidance material to employers to inform them of the hazards of excess heat exposure and measures that can be implemented to protect employees. Many of these measures include common sense solutions. For example, construction employers frequently schedule work shifts to begin earlier in the morning so that the shift ends in the early afternoon, before the hottest part of the day.

Notwithstanding this, the CISC has significant concerns with H.R. 3668, the "Asuncion Valdivia Heat Illness and Fatality Prevention Act of 2019":

- *First*, issues of heat exposure and the means to address it on the variety of construction worksites across the country are extremely complex. H.R. 3668, which essentially

C/O LITTLER MENDELSON, P.C.
1650 TYSONS BOULEVARD, SUITE 700, TYSONS CORNER, VA 22310

dictates how and what should be included in an OSHA standard for heat exposure, does not account for the complexities of the issue.

- *Second*, how "excessive heat" is defined in the legislation depends upon personal characteristics that would make compliance with any OSHA standard difficult and potentially infringe upon the privacy interests of employees. Defining "excessive heat" as heat at "levels that exceed capacities of the body" is not a standard that can be objectively applied. It has the potential to create significant compliance difficulties as employers must make a judgement as to what constitutes "excessive heat" based upon an individualized assessment of the health condition of their workers.

- *Third*, requiring OSHA to publish a standard that provides "no less protection than the most protective heat prevention standard adopted by a State plan" is also problematic. A few states have implemented heat exposure standards and those states address the problem very differently. It would be almost impossible for OSHA to determine which state approach to heat exposure was more or less protective than another state's approach.

- *Fourth*, the CISC is concerned that the time frames set forth in the legislation for OSHA to issue proposed and final rules would not provide sufficient time for the Agency to complete important rulemaking steps. This includes convening a small business review panel under the Small Business Regulatory Enforcement and Fairness Act ("SBREFA") and engaging in meaningful consultation with the Advisory Committee on Construction Safety and Health ("ACCSH"), the standing advisory committee created to advise the Agency on all construction proposed rules.

Background on H.R. 3668

H.R. 3668 seeks to direct OSHA to issue an occupational safety and health standard to protect workers from heat-related injuries and illnesses. The bill requires OSHA to introduce a proposed standard on the prevention of occupational exposure to excessive heat within 2 years from the date of enactment of the legislation. OSHA would then be required to issue a final standard within 42 months after the date of enactment. According to the bill, the final standard must provide no less protection than the most protective heat prevention standard adopted by an OSHA State-plan State.

The final standard must also take into consideration the "NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments" published in 2016. Covered employers would be expected to develop, implement, and maintain heat illness prevention plans for covered employees, which must be tailored and specific to hazards in the workplace, and published in English (and the language understood by a majority of the employees at the workplace, if such language is not English).

The plans would need to include procedures for initial and regular monitoring of employee exposure; provision of water, paid rest breaks, and access to shade or cool-down areas; emergency response; acclimatization; and hazard prevention. Employers would be required to provide annual training and education to covered employees who may be exposed to high heat levels and training

and education to covered employees who are supervisors. Each covered employer is also expected to adopt a policy prohibiting any person from discriminating or retaliating against any employee for exercising any rights under the standard, which would be enforced in the same manner as other safety and health standards issued under Section 6(b) of the Occupational Safety and Health Act of 1970 ("OSH Act," "Act," or the "Statute"), rather than through the anti-discrimination provisions of the Act set forth in Section 11(c) of the Statute.

Many of the requirements of the final standard would be triggered where there is "excessive heat." "Excessive heat" is defined as including "outdoor or indoor exposure to heat at levels that exceed the capacities of the body to maintain normal body functions and may cause heat-related injury, illness, or fatality (including heat stroke, heat exhaustion, heat syncope, heat cramps, or heat rashes)." Finally, should OSHA fail to promulgate a proposed standard in 2 years from the date of enactment, the legislation requires that an interim final standard be adopted that also requires employers to develop a heat prevention plan containing the same basic requirements as described above.

The CISC shares the goals of H.R. 3668 – to protect employees from exposure to excess heat and to prevent heat illness from occurring in construction employees. However, the CISC has significant concerns with the approach taken in the legislation to accomplish these goals.

1. H.R. 3668 Does not Account for the Complexity of Issues Associated with Heat Exposure.

Determining when heat exposure becomes a hazard is exceedingly difficult. There are numerous factors to consider when determining at what point or under what conditions the potential for "heat" becomes a hazard. This is particularly acute in the construction work environment, which is frequently outdoors, highly variable, and changes throughout the course of a day or shift.

There are a number of tools and resources available to assess whether there is a heat hazard, but many do not consider the full range of environmental and work conditions that could impact the determination. For example, OSHA established a Regional Emphasis Program for Heat Illness in 2015 for OSHA Region VI covering Arkansas, Louisiana, Texas, Oklahoma, and parts of New Mexico. *OSHA Regional Emphasis Program for Heat Illness*, CPL 2 02-00-027, October 1, 2015. The emphasis program focuses on heat advisories issued by various National Weather Services offices in the specific region. However, this program is not implemented in other regions across the country and heat advisories themselves are often very general and do not account for site-specific environmental conditions.

The complexity of the issue is further exemplified by the NIOSH criteria document cited in the legislation. It is a 160-page document comprehensively analyzing from NIOSH's perspective when heat exposures can become dangerous, and steps to take based on heat level to protect employees. The NIOSH document involves more than simply considering local National Weather Advisories, or even Heat Index Tables. It is a useful guide regarding heat, but it also demonstrates how determining when heat becomes dangerous and how to address that danger is very difficult.

The CISC believes that H.R. 3668 does not fully consider the range of issues presented with identifying heat as a hazard and then what is the appropriate response to the hazard. The legislation uses words such as "high heat" and "excessive heat," but these are either undefined (in the case of "high heat") or raise very complicated compliance issues (in the case of "excessive heat" as described below). A requirement for employers to implement a "plan" to address heat exposure is non-controversial in the abstract, but the legislation avoids difficult issues such as when certain controls must be implemented and how and to what extent they must be implemented.

On a daily basis, construction contractors throughout the country work outdoors, subject to a wide range of environmental conditions. The environmental conditions can involve temperature, wind, sun, and humidity. Determining when those factors become hazardous and specifying in a regulation how to address the factors is very complicated. H.R. 3668, while well-meaning, does not fully consider this complexity.

2. Determining what Constitutes "Excessive Heat" Depends upon Individual Risk Factors.

Further complicating the issue, H.R. 3668 seemingly defines "excessive heat" based upon individual characteristics of employees. The legislation does not define "excessive heat" by an objective standard, such as a specific temperature or even by reference to a heat index. Instead, it defines "excessive heat" as "exposure to heat at levels that exceed the capacities of the body to maintain normal body functions and may cause heat-related injury, illness, or fatality." This approach seems to define the hazard based upon personal characteristics of employees, as every person will react differently to heat based upon a number of personal risk factors (weight, body fat, other health conditions, etc.)

Analyzing personal health conditions to determine whether there is excessive heat would place an incredibly difficult burden on employers. It would also potentially infringe upon employee privacy rights under the Americans with Disabilities Act. The CISC is very concerned that H.R. 3668 pushes employers in this very direction. The CISC also notes that two states that have implemented specific outdoor heat standards or heat illness prevention standards do *not* require employers to assess personal conditions. *See* California, Cal. Code Regs., tit. 8 § 3395(h)(1)(A) (addressing personal risk factors for heat illness only in the context of training employees so that they are aware of the potential personal factors that may impact their risk and making clear in rulemaking that the standard does not require employers to get personal information from employees, and employers are neither expected nor encouraged to do this); Washington, WAC 296-62-09560(1)(b) (equally addressing personal factors as part of training to provide general awareness of these factors to employees and specifically stating that such information is for the employee's personal use).

H.R. 3668 seems to envision an OSHA requirement – and thus a requirement placed upon employers – to delve into personal characteristics of employees and use that information to judge whether heat is "excessive" in a particular case. The CISC disagrees with this approach.

3. Requiring OSHA to Establish a Standard that is No Less Protective than the Most Protective State Standard is Virtually Impossible to Implement.

H.R. 3668 correctly notes that several states have implemented heat illness prevention standards, including California, Washington, and Minnesota. The bill, however, goes further and requires that any final standard put forward by OSHA shall "provide no less protection than the most protective heat prevention standard" adopted by an OSHA State-plan State. Unfortunately, it would be virtually impossible for OSHA to determine which approach to the issue of heat at the state level is "the most protective."

To date, the state approaches to heat illness have differed significantly. For example, California, recognizing the need for simplicity, relies solely on outdoor temperature to trigger various requirements under its existing rules. The standard defines temperature as "the dry bulb temperature in degrees Fahrenheit obtainable by using a thermometer to measure the outdoor temperature in an area where there is no shade." Cal. Code Regs., tit. 8, § 3395. Washington State, on the other hand, has three "outdoor temperature action levels" based on the type of clothing worn by employees. WAC 296-62-09510. Both of these approaches may make sense for the states involved, but it is virtually impossible to determine which is more protective than the other, as H.R. 3668 would require OSHA to do.

This approach also turns the entire structure of the OSH Act on its head. Under the OSH Act, federal OSHA is authorized to issue safety and health standards and OSHA State-plan States must then adopt those standards or develop their own standards that are at least as effective as the federal ones. 29 U.S.C. § 667. Here, H.R. 3668 limits OSHA's rulemaking authority by requiring it to follow the lead of current or future state standards in promulgating a standard that is no less protective than the most protective State-plan State rule. Rather than federal OSHA setting a floor for the states, H.R. 3668 has states setting a floor for the rest of the country. This is contrary to the OSH Act and could allow one state with certain climate and weather characteristics essentially to impose requirements on another state with entirely different climate and weather characteristics.

4. The Time Prescribed for OSHA to Issue a Final Standard is Insufficient to Ascertain Meaningful Input in this Complex Area.

Finally, H.R. 3668 contemplates that a final standard will be promulgated within 42 months of the bill being enacted into law. The CISC respectfully believes that this time period is too short for the Agency to fully consider stakeholder input and conduct required analyses for any rule. Developing a heat exposure standard would significantly affect employers across a wide range of industries and OSHA should be allowed to meticulously develop such a standard without added pressure from Congress to speed up the process.

The CISC believes that any federal heat exposure standard will undoubtedly have a significant impact on a substantial number of small entities, thus triggering the review procedures required by the SBREFA. Most CISC member associations are dominated by small businesses and it is vitally important that small entities be given the opportunity to comment on any approach proposed by the Agency and that the Agency have time to meaningfully address those comments and make changes to any proposed approach, as appropriate.

Even if any standard does not exceed the triggering threshold, the CISC encourages OSHA to convene a "SBREFA-like" panel to gather small entity views on the costs and impacts of a heat exposure proposal. As OSHA can attest, small entity input at the earliest stages of a rulemaking can provide valuable insight and data to OSHA regarding how a rule should be structured, and the costs and economic impacts of such a rule. When OSHA opens channels for input from small entities that may be affected by proposed standards, OSHA is more likely to issue a final rule that will have maximum beneficial impact with minimized burden across affected industries. The CISC is very concerned that the timeframes established in the legislation will not provide for meaningful small business input.

In addition, the CISC feels strongly that any OSHA standard on heat exposure be fully vetted by OSHA's Advisory Committee on Construction Safety and Health ("ACCSH").[1] Given the significant impact that any standard would have on the construction industry, the CISC believes that OSHA should work in close consultation with ACCSH during the standard's development. This should involve more than the Agency simply presenting to ACCSH what it proposes to include, but instead should involve a true back-and-forth and consultation with the Committee. Again, as with the small business feedback, the CISC is very concerned that the timeframes for completion of a standard do not allow for this important interaction.

* * * * *

The CISC appreciates the Subcommittee's efforts in trying to develop legislation to protect employees from heat exposure and shares the Subcommittee's goal of ensuring employees are fully protected from the hazards of heat. However, for the reasons set forth above, the CISC has significant concerns with H.R. 3668 as currently drafted.

CISC member associations will continue to provide guidance and compliance assistance material to construction contractors regarding heat exposure and heat illness prevention. Getting the "word out" by trade associations, OSHA, NIOSH, and other stakeholders is critically important to prevention in this area. Furthermore, should an employer not appropriately address heat hazards

[1] ACCSH is a standing advisory committee initially created by Congress pursuant to Section 107 of the Construction Safety Act (or the Contract Work Hours and Safety Standards Act). 40 U.S.C. § 3701 *et seq*. ACCSH advises the Agency on the promulgation of standards applicable to the construction industry. This consultation is mandatory. *See* 29 C.F.R. § 1911.10(a) ("The Assistant Secretary shall provide the committee with any proposal of his own … together with all pertinent factual information available to him, including the results of research, demonstrations, and experiments.")

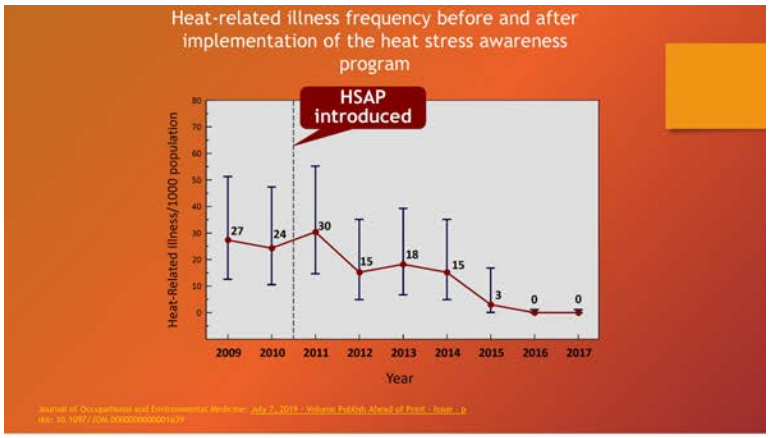
in the workplace, OSHA can bring an enforcement action against the employer under Section 5(a)(1) of the OSH Act, which the Agency has done on numerous occasions.

The CISC would be happy to meet with the Subcommittee to discuss this letter, our views on heat exposure hazards, and to answer any questions the Subcommittee may have.

Sincerely,

American Road & Transportation Builders Association
American Society of Concrete Contractors
American Subcontractors Association
Associated Builders and Contractors
Associated General Contractors
Concrete Sawing & Drilling Association
Construction & Demolition Recycling Association
Distribution Contractors Association
Interlocking Concrete Pavement Institute
International Council of Employers of Bricklayers & Allied Craftworkers
Leading Builders of America
Mason Contractors Association of America
Mechanical Contractors Association of America
National Association of Home Builders of the United States
National Association of the Remodeling Industry
National Demolition Association
National Electrical Contractors Association
National Roofing Contractors Association
National Utility Contractors Association
Natural Stone Council
Natural Stone Institute
The Association of Union Constructors
Tile Roofing Industry Alliance

[Additional submission by Dr. McCarthy follows:]89



[Additional submissions by Mr. Javier Rodriguez follows:]

Assignment Goals Per Hour Safely

Loading Conveyable Goal	300	cases per hour
Loading Non- Conveyable Goal	150	cases per hour
Unloading Goal	450	cases per hour
Prime Order Filling Goal	125	cases per hour
Residual Goal	85	cases per hour
Slotters Goal	30	Pallet/Rack move per hour
Putaway Goal	30	Pallet/Rack move per hour
Haulers Goal	26	Pallet/Rack move per hour
Full Pallet Goal	15	Pallet/Rack move per hour
Replenishment Goal	10	Pallet/Rack move per hour

WWU leaders David Garcia and Manolo Fernandez document 100+ temp in NFI warehouse

[Additional questions for the record and their responses follow:]

MAJORITY MEMBERS:

ROBERT C. "BOBBY" SCOTT, VIRGINIA,
Chairman

SUSAN A. DAVIS, CALIFORNIA
RAÚL M. GRIJALVA, ARIZONA
JOE COURTNEY, CONNECTICUT
MARCIA L. FUDGE, OHIO
GREGORIO KILILI CAMACHO SABLAN, NORTHERN MARIANA ISLANDS
FREDERICA S. WILSON, FLORIDA
SUZANNE BONAMICI, OREGON
MARK TAKANO, CALIFORNIA
ALMA S. ADAMS, NORTH CAROLINA
MARK DESAULNIER, CALIFORNIA
DONALD NORCROSS, NEW JERSEY
PRAMILA JAYAPAL, WASHINGTON
JOSEPH D. MORELLE, NEW YORK
SUSAN WILD, PENNSYLVANIA
JOSH HARDER, CALIFORNIA
LUCY MCBATH, GEORGIA
KIM SCHRIER, WASHINGTON
LAUREN UNDERWOOD, ILLINOIS
JAHANA HAYES, CONNECTICUT
DONNA E. SHALALA, FLORIDA
ANDY LEVIN, MICHIGAN
ILHAN OMAR, MINNESOTA
DAVID J. TRONE, MARYLAND
HALEY M. STEVENS, MICHIGAN
SUSIE LEE, NEVADA
LORI TRAHAN, MASSACHUSETTS
JOAQUIN CASTRO, TEXAS

COMMITTEE ON EDUCATION
AND LABOR
U.S. HOUSE OF REPRESENTATIVES
2176 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6100

MINORITY MEMBERS:

VIRGINIA FOXX, NORTH CAROLINA,
Ranking Member

DAVID P. ROE, TENNESSEE
GLENN THOMPSON, PENNSYLVANIA
TIM WALBERG, MICHIGAN
BRETT GUTHRIE, KENTUCKY
BRADLEY BYRNE, ALABAMA
GLENN GROTHMAN, WISCONSIN
ELISE M. STEFANIK, NEW YORK
RICK W. ALLEN, GEORGIA
FRANCIS ROONEY, FLORIDA
LLOYD SMUCKER, PENNSYLVANIA
JIM BANKS, INDIANA
MARK WALKER, NORTH CAROLINA
JAMES COMER, KENTUCKY
BEN CLINE, VIRGINIA
RUSS FULCHER, IDAHO
VAN TAYLOR, TEXAS
STEVEN WATKINS, KANSAS
RON WRIGHT, TEXAS
DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

August 13, 2019

Mr. Thomas E. Bernard, Ph.D.
University of South Florida
College of Public Health
13201 Bruce B. Downs Blvd.
Tampa FL 33612

Dear Dr. Bernard:

I would like to thank you for testifying at the July 11, 2019, Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."*

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Tuesday, August 20, 2019, for inclusion in the official hearing record. Your responses should be sent to Jordan Barab of the Committee staff. He can be contacted at 202-225-3725 should you have any questions.

I appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Committee on Education and Labor
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019
10:15 a.m.

Representative Alma Adams (D-NC)

- Mr. Cannon of the Associated General Contractors testified that an OSHA standard would be an unworkable one-size-fits-all because of workers' differing ages, pre-existing conditions, or drug use and life-style choices.
    - How would a heat illness prevention program as set forth in H.R. 3668 address these variations? What are the steps an employer can implement that takes these differences into account?
    - Can you describe the importance of medical surveillance?
- Would the requirements of H.R. 3668 impose any burden on employers who have facilities in areas, or operate in industries that don't have risks from excessive heat exposure to employees?
- How feasible is it for employers operating warehouses or cross-docks to implement measures that would prevent heat-related illness? What measures could they implement?
- How feasible is it for employers in the construction industry to implement measures that would prevent heat-related illness? What measures could they implement?

MAJORITY MEMBERS:

ROBERT C. "BOBBY" SCOTT, VIRGINIA,
Chairman

SUSAN A. DAVIS, CALIFORNIA
RAÚL M. GRIJALVA, ARIZONA
JOE COURTNEY, CONNECTICUT
MARCIA L. FUDGE, OHIO
GREGORIO KILILI CAMACHO SABLAN, NORTHERN MARIANA ISLANDS
FREDERICA S. WILSON, FLORIDA
SUZANNE BONAMICI, OREGON
MARK TAKANO, CALIFORNIA
ALMA S. ADAMS, NORTH CAROLINA
MARK DESAULNIER, CALIFORNIA
DONALD NORCROSS, NEW JERSEY
PRAMILA JAYAPAL, WASHINGTON
JOSEPH D. MORELLE, NEW YORK
SUSAN WILD, PENNSYLVANIA
JOSH HARDER, CALIFORNIA
LUCY MCBATH, GEORGIA
KIM SCHRIER, WASHINGTON
LAUREN UNDERWOOD, ILLINOIS
JAHANA HAYES, CONNECTICUT
DONNA E. SHALALA, FLORIDA
ANDY LEVIN, MICHIGAN
ILHAN OMAR, MINNESOTA
DAVID J. TRONE, MARYLAND
HALEY M. STEVENS, MICHIGAN
SUSIE LEE, NEVADA
LORI TRAHAN, MASSACHUSETTS
JOAQUIN CASTRO, TEXAS

COMMITTEE ON EDUCATION
AND LABOR
U.S. HOUSE OF REPRESENTATIVES
2176 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6100

MINORITY MEMBERS:

VIRGINIA FOXX, NORTH CAROLINA,
Ranking Member

DAVID P. ROE, TENNESSEE
GLENN THOMPSON, PENNYSLVANIA
TIM WALBERG, MICHIGAN
BRETT GUTHRIE, KENTUCKY
BRADLEY BYRNE, ALABAMA
GLENN GROTHMAN, WISCONSIN
ELISE M. STEFANIK, NEW YORK
RICK W. ALLEN, GEORGIA
FRANCIS ROONEY, FLORIDA
LLOYD SMUCKER, PENNSYLVANIA
JIM BANKS, INDIANA
MARK WALKER, NORTH CAROLINA
JAMES COMER, KENTUCKY
BEN CLINE, VIRGINIA
RUSS FULCHER, IDAHO
VAN TAYLOR, TEXAS
STEVEN WATKINS, KANSAS
RON WRIGHT, TEXAS
DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

August 13, 2019

Ms. Ronda McCarthy, MD, MPH
2400 Lindsey Hollow Road
Waco, TX 76708

Dear Dr. McCarthy:

I would like to thank you for testifying at the July 11, 2019, Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."*

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later Tuesday, August 20, 2019, for inclusion in the official hearing record. Your responses should be sent to Jordan Barab of the Committee staff. He can be contacted at 202-225-3725 should you have any questions.

I appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Committee on Education and Labor
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019
10:15 a.m.

Representative Alma Adams (D-NC)

- Javier Rodriguez of Warehouse Worker Resource Center testified that when cross-dock and warehouse workers reported symptoms of heat illness to their supervisors, they were sent home for the day. Was this the right thing to do? Why or why not?

- Can you explain why acclimatization is so important?

- How did you decide at what temperature to implement the city's heat illness prevention program?

- Mr. Cannon of the Associated General Contractors testified that an OSHA standard would be an unworkable one-size-fits-all because people are different because of age, pre-existing conditions, drug use and life-style choices.

    - How would a heat illness prevention program address these variations? What are the steps an employer can implement that takes these differences into account?
    - Can you describe the importance of medical surveillance?

MAJORITY MEMBERS:

ROBERT C. "BOBBY" SCOTT, VIRGINIA,
Chairman

SUSAN A. DAVIS, CALIFORNIA
RAÚL M. GRIJALVA, ARIZONA
JOE COURTNEY, CONNECTICUT
MARCIA L. FUDGE, OHIO
GREGORIO KILILI CAMACHO SABLAN, NORTHERN MARIANA ISLANDS
FREDERICA S. WILSON, FLORIDA
SUZANNE BONAMICI, OREGON
MARK TAKANO, CALIFORNIA
ALMA S. ADAMS, NORTH CAROLINA
MARK DESAULNIER, CALIFORNIA
DONALD NORCROSS, NEW JERSEY
PRAMILA JAYAPAL, WASHINGTON
JOSEPH D. MORELLE, NEW YORK
SUSAN WILD, PENNSYLVANIA
JOSH HARDER, CALIFORNIA
LUCY MCBATH, GEORGIA
KIM SCHRIER, WASHINGTON
LAUREN UNDERWOOD, ILLINOIS
JAHANA HAYES, CONNECTICUT
DONNA E. SHALALA, FLORIDA
ANDY LEVIN, MICHIGAN
ILHAN OMAR, MINNESOTA
DAVID J. TRONE, MARYLAND
HALEY M. STEVENS, MICHIGAN
SUSIE LEE, NEVADA
LORI TRAHAN, MASSACHUSETTS
JOAQUIN CASTRO, TEXAS

COMMITTEE ON EDUCATION
AND LABOR
U.S. HOUSE OF REPRESENTATIVES
2176 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6100

MINORITY MEMBERS:

VIRGINIA FOXX, NORTH CAROLINA,
Ranking Member

DAVID P. ROE, TENNESSEE
GLENN THOMPSON, PENNYSLVANIA
TIM WALBERG, MICHIGAN
BRETT GUTHRIE, KENTUCKY
BRADLEY BYRNE, ALABAMA
GLENN GROTHMAN, WISCONSIN
ELISE M. STEFANIK, NEW YORK
RICK W. ALLEN, GEORGIA
FRANCIS ROONEY, FLORIDA
LLOYD SMUCKER, PENNSYLVANIA
JIM BANKS, INDIANA
MARK WALKER, NORTH CAROLINA
JAMES COMER, KENTUCKY
BEN CLINE, VIRGINIA
RUSS FULCHER, IDAHO
VAN TAYLOR, TEXAS
STEVEN WATKINS, KANSAS
RON WRIGHT, TEXAS
DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

August 13, 2019

Mr. Arturo Rodriguez
UFW President Emeritus
411 Mt. Vernon Ct.
San Antonio, TX 78223

Dear Mr. Rodriguez:

I would like to thank you for testifying at the July 11, 2019, Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."*

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Tuesday, August 20, 2019, for inclusion in the official hearing record. Your responses should be sent to Jordan Barab of the Committee staff. He can be contacted at 202-225-3725 should you have any questions.

I appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Committee on Education and Labor
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019
10:15 a.m.

Representative Alma Adams (D-NC)

- Some workers are lucky enough to belong to unions or worker organizations that allow them to act together by engaging in concerted activity and are ostensibly protected by the National Labor Relations Act or the California Agricultural Labor Relations Act.
    - What happens to workers when they protest excessive heat and they don't have the protection of a union or worker rights organization?
    - Do workers face greater challenges when they complain about workplace conditions if they work for a temp agency?
- When California was first considering adoption of a heat standard, what were the objections raised by the employers and agricultural interests?
    - Were the predictions and concerns raised by the employers and agricultural industry ultimately validated after the rule went into effect? If not, why not?
- Minnesota, Washington, and California all have heat illness prevention standards. Yet Federal OSHA has not even begun work on one. If Congress were to mandate legislation, what improvements or changes would you recommend based on the experience in California?
- How many months did it take for California to develop its 2005 outdoor heat standard from the time the Governor ordered work to begin to the point when the initial rule was finalized and published?
- Based on your experience working with CalOSHA on its outdoor heat standard, is it infeasible for OSHA to issue a proposed heat standard in 24 months and a final standard in 42 months?

MAJORITY MEMBERS:

ROBERT C. "BOBBY" SCOTT, VIRGINIA,
Chairman

SUSAN A. DAVIS, CALIFORNIA
RAÚL M. GRIJALVA, ARIZONA
JOE COURTNEY, CONNECTICUT
MARCIA L. FUDGE, OHIO
GREGORIO KILILI CAMACHO SABLAN, NORTHERN MARIANA ISLANDS
FREDERICA S. WILSON, FLORIDA
SUZANNE BONAMICI, OREGON
MARK TAKANO, CALIFORNIA
ALMA S. ADAMS, NORTH CAROLINA
MARK DESAULNIER, CALIFORNIA
DONALD NORCROSS, NEW JERSEY
PRAMILA JAYAPAL, WASHINGTON
JOSEPH D. MORELLE, NEW YORK
SUSAN WILD, PENNSYLVANIA
JOSH HARDER, CALIFORNIA
LUCY MCBATH, GEORGIA
KIM SCHRIER, WASHINGTON
LAUREN UNDERWOOD, ILLINOIS
JAHANA HAYES, CONNECTICUT
DONNA E. SHALALA, FLORIDA
ANDY LEVIN, MICHIGAN
ILHAN OMAR, MINNESOTA
DAVID J. TRONE, MARYLAND
HALEY M. STEVENS, MICHIGAN
SUSIE LEE, NEVADA
LORI TRAHAN, MASSACHUSETTS
JOAQUIN CASTRO, TEXAS

COMMITTEE ON EDUCATION
AND LABOR
U.S. HOUSE OF REPRESENTATIVES
2176 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6100

MINORITY MEMBERS:

VIRGINIA FOXX, NORTH CAROLINA,
Ranking Member

DAVID P. ROE, TENNESSEE
GLENN THOMPSON, PENNSYLVANIA
TIM WALBERG, MICHIGAN
BRETT GUTHRIE, KENTUCKY
BRADLEY BYRNE, ALABAMA
GLENN GROTHMAN, WISCONSIN
ELISE M. STEFANIK, NEW YORK
RICK W. ALLEN, GEORGIA
FRANCIS ROONEY, FLORIDA
LLOYD SMUCKER, PENNSYLVANIA
JIM BANKS, INDIANA
MARK WALKER, NORTH CAROLINA
JAMES COMER, KENTUCKY
BEN CLINE, VIRGINIA
RUSS FULCHER, IDAHO
VAN TAYLOR, TEXAS
STEVEN WATKINS, KANSAS
RON WRIGHT, TEXAS
DANIEL MEUSER, PENNSYLVANIA
WILLIAM R. TIMMONS, IV, SOUTH CAROLINA
DUSTY JOHNSON, SOUTH DAKOTA

August 13, 2019

Mr. Javier Rodriguez
Worker Resource Center
521 N. Euclid Avenue
Ontario, CA 91762

Dear Mr. Rodriguez,

I would like to thank you for testifying at the July 11, 2019, Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."*

Please find enclosed additional questions submitted by Committee members following the hearing. Please provide a written response no later than Tuesday, August 20, 2019, for inclusion in the official hearing record. Your responses should be sent to Jordan Barab of the Committee staff. He can be contacted at 202-225-3725 should you have any questions.

I appreciate your time and continued contribution to the work of the Committee.

Sincerely,

ROBERT C. "BOBBY" SCOTT
Chairman

Enclosure

Committee on Education and Labor
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019
10:15 a.m.

Representative Alma Adams (D-NC)

- How feasible is it for employers operating warehouses or cross-docks to control excessive heat exposure? What measures could they take?

- Given that it's difficult to use air conditioning to cool the cargo containers in which employees must work, what measures should a CalOSHA standard mandate that would protect workers from heat-related illnesses.

- When someone is sent home after complaining about not feeling well due to the heat, is there any follow-up to see if they're OK? Do you ever find out what happened to them? Is their heat illness consistently recorded on an OSHA Injury Log?

- Most warehouse workers are directly employed by temporary labor firms, but their work is directed by the warehouse companies who set hours and working conditions. Who is liable for compliance with the heat illness prevention standard—the warehouse owner or the temporary labor supplier? Or both?

- You testified that when workers report symptoms of heat-related illness, they were told to rest or sent home. Do warehouse or cross-dock companies consistently provide breaks for overheated workers?

Committee on Education and Labor
"From the Fields to the Factory: Preventing Workplace Injury and Death from Excessive Heat"
Thursday, July 11, 2019

Response to Questions by Thomas E. Bernard

Responses to Questions from Representative Adams

1. Mr. Cannon of the Associated General Contractors testified that an OSHA standard would be an unworkable one-size-fits-all because of workers' differing ages, pre-existing conditions, or drug use and life-style choices.

One-size-fits-all is a mischaracterization of the intent of OSHA health standards as a whole and of the proposed heat stress standard in particular. Health standards provide a reference exposure that protects most workers with the knowledge that some workers with known or unknown personal risk factors may be less tolerant of the exposure than most.

OSHA health standards in general do not specify specific interventions. The proposed legislation could offer a non-exhaustive menu of interventions that an employer might select based on the context of the exposure and their capacity to implement the intervention.

The *NIOSH Criteria for a Recommended Standard for Occupational Exposure to Heat and Hot Environments* is an excellent resource and it guides my responses. My professional recommendation is that training, support for heat stress hygiene practices, and surveillance be essential parts of a heat stress management program when a health and safety professional deems that heat stress may be a workplace hazard.

- How would a heat illness prevention program as set forth in H.R. 3668 address these variations (e.g., workers' differing ages, pre-existing conditions, or drug use and life-style choices)?

To deal with the personal risk factors, which include workers' differing ages, pre-existing conditions, or drug use and life-style choices, is to recognize that some workers will have low heat tolerance and thus they are more susceptible to a heat-related disorder. The first way to address risks to those with low tolerance is to have an emergency response plan with early recognition of heat-related disorders.

Second, training programs should include information on personal risk factors as well as job risk factors for heat-related disorders. I would specifically include a generic letter to personal health care providers that describe the heat stress exposure and the essential issues related to heat stress exposure history and attention to diseases and drugs that may interfere with the ability of the person to tolerate heat stress. The provider can advise the person about their individual risks and the warning signs.

- What are the steps an employer can implement that takes these differences into account?

The previous responses are appropriate and repeated here:

To deal with the personal risk factors, which include workers' differing ages, pre-existing conditions, or drug use and life-style choices, is to recognize that some workers will have low heat tolerance and thus they are more susceptible to a heat-related disorder. The first way to address risks to those with low tolerance is to have an emergency response plan with early recognition of heat-related disorders.

Second, training programs should include information on personal risk factors as well as job risk factors for heat-related disorders. I would specifically include a generic letter to personal health care providers that describe the heat stress exposure and the essential issues related to heat stress exposure history and attention to diseases and drugs that may interfere with the ability of the person to tolerate heat stress. The provider can advise the person about their individual risks and the warning signs.

- Can you describe the importance of medical surveillance?

Medical surveillance presents two opportunities to protect employee well-being. The first is encouraging employees with known or suspected personal risk factors to consult with their health care provider as described above. The second is to review the first aid, workers compensation, and OSHA 300 logs for patterns of heat-related disorders. The review can look for serious or repeated episodes for individual employees, which would be indicative of a lower tolerance. The review can also look for repeated or serious episodes within a job title or activity. The review of jobs can indicate where there should be emphasis on heat stress management.

2. Would the requirements of H.R. 3668 impose any burden on employers who have facilities in areas, or operate in industries that don't have risks from excessive heat exposure to employees?

There should be no additional burden on employers who are not likely to have employee heat stress exposures. Generally, employers will know from their experience and the experience of others in the same business whether heat stress may be a risk. If they are suspicious of a potential exposure, a qualitative exposure assessment can usually meet the requirement to demonstrate the absence of the risk. A health and safety professional can help them make that decision.

3. How feasible is it for employers operating warehouses or cross-docks to implement measures that would prevent heat-related illness? What measures could they implement?

Warehouses and cross-docks have a variety of configurations and work practices that require specific considerations. As with all interventions specific to a particular job, the context and capacity of the employer need to be considered. With that said, I can offer some ideas, but it should not be viewed as an exhaustive list. Two engineering controls come to mind. If an employee spends a significant part of a work cycle in one location, spot ventilation with or without cooling can reduce the level of heat stress while working in that area. Two specific operations that I have seen are a sorter/handler who works in one location outside of a truck and employees who are manually loading or unloading a truck. The push ventilation for the fixed location can be fixed while the ventilation for the truck loading/unloading needs to move with the working face of the merchandise being moved. The second engineering control is automated or

powered materials handling rather than manual materials handling. There are situations in which fans and misting fans can provide lower levels of heat stress.

For administrative controls, work and recovery cycles, and perhaps job rotation if there are low heat stress jobs to rotate to. While work and recovery cycles can be effective in a range of heat stress conditions, they are generally less productive and more useful for incidental versus daily use.

Personal cooling systems can also be effective in a warehouse or cross-dock operation. I have seen and recommended for other workplaces, supplied-air cooling systems and ice vests.

4. How feasible is it for employers in the construction industry to implement measures that would prevent heat-related illness? What measures could they implement?

Construction sites broadly speaking are well-known for variations in workplace configurations and work practices, and thus require specific considerations. As with all interventions specific to a particular job, the context and capacity of the employer need to be considered. My personal experience is with construction contractors performing outage maintenance, and I have some understanding building construction. If an employee spends a significant part of a work cycle in one location, spot ventilation with or without cooling can reduce the level of heat stress while working in that area. I have also seen airconditioned recovery tents that are easily constructed and moved to provide a rest area that greatly reduces the recovery time from a heat stress exposure. Work and recovery cycles, especially where the recovery can occur in a shaded area with good air movement, can be used to facilitate recovery from a heat stress exposure. Job sites that I have seen also have sources of compressed air that can be used for supplied-air personal cooling.

AMERICAN COLLEGE OF
OCCUPATIONAL AND
ENVIRONMENTAL MEDICINE

September 13, 2019

Robert C "Bobby" Scott
Committee on Education and Labor
U.S. House of Representatives
2176 Rayburn House Office Building
Washington, DC 20515-6100

Dear Chairman Scott.

Thank you for accepting my testimony at the July 11, 2019, Subcommittee on Workforce Protections hearing entitled *"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."* Please find enclosed responses, confirmed by ACOEM and Concentra, to the additional questions submitted by Committee member, Alma Adams (D-NC).

I appreciate your work to provide all U.S. workers the right to a place of employment without fear of severe physical harm or death.

Sincerely,

Ronda McCarthy, MD, MPH

Ronda McCarthy, MD, MPH, FACOEM
National Medical Director, Medical Surveillance Services
Regulatory Testing and Exam Medical Expert Panel Chair
Concentra Occupational Health

Enclosure

25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007-1030
Phone: (847) 818-1800 – Fax: (847) 818-9266 – Web: www.acoem.org

Committee on Education and Labor

"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat." Thursday, July 11, 2019 10:15 a.m.

Representative Alma Adams (D-NC)

1. **Question:** Javier Rodriguez of Warehouse Worker Resource Center testified that when cross-dock and warehouse workers reported symptoms of heat illness to their supervisors, they were sent home for the day. Was this the right thing to do? Why or why not?

Response:

Javier Rodriguez of Warehouse Worker Resource Center testified that when cross deck workers and warehouse workers reported symptoms of heat illness to their supervisors, they were sent home for the day. This is ***not*** the recommended response for supervisors to relay to workers as it can increase the risk of serious physical harm and death. A worker with heat-related illness symptoms should never be left alone as heat exhaustion can quickly progress to heat stroke. An individual with heat stroke symptoms is neurologically impaired and will likely not have the ability to seek medical help. Heat stroke is a medical emergency. A worker sent home by a supervisor without medical treatment may suffer from serious harm or death as a result. A health care provider should have the responsibility of deciding whether a worker home who is experiencing symptoms of heat exhaustion should be sent home (NIOSH, 2016).

25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007-1030
Phone: (847) 818-1800 – Fax: (847) 818-9266 – Web: www.acoem.org

2. **Question:** Can you explain why acclimatization is so important?

Response:

Acclimatization is so important because unacclimated persons working in hot environments are at increased risk of heat-related illness. Almost half of heat-related deaths occur on a worker's very first day on the job (Arbury et al., 2014). Over 70 percent of heat-related deaths occur during a worker's first week (Tustin et a., 2018).

Unacclimated workers show signs of heat stress more quickly and have difficultly replacing water lost in sweat. An individual's physiologic responses to heat acclimatization are: sweating begins at lower temperatures and increases in amount (cooling), cardiovascular stability improves (less stress on the heart) and work is performed at a lower core temperature and heart rate. Workers who are physically active in the heat have an increased hormonal response to conserve salt and water loss from the kidneys (decrease risk of dehydration and cramping) and salt loss from sweating (decreased risk of cramping). The physiologic adaptions that occur with acclimatization help to prevent heat -related illness.

Workers should acclimatize to work in heat by performing the required job tasks in the hot environment starting at 20% exposure per shift, increasing time in hot environment by 10-20% per day depending on the physical ability and health of the worker. Physically fit workers may acclimate as quickly as five days, where less physically fit workers may take up to two weeks if expected total heat stress demands are high.

3. Question: How did you decide at what temperature to implement the city's heat illness prevention program?

Response:

OSHA and NIOSH recommend that administrative and engineering controls for outdoor heat exposure should be implemented when the heat index reaches 90^0 F. In this Central Texas city that typically happens in May. Supervisor and worker training and medical surveillance began in March so that the program could be implemented in time for expected heat index reaching 90^0 F mid May. When temperatures are below recommended action levels- prevention measures do not need to be implemented. The level of heat stress controls to be implemented depends on the relative heat/workload experienced in any given workplace.

4. **Question:** Mr. Cannon of the Associated General Contractors testified that an OSHA standard would be an unworkable one-size-fits-all because people are different because of age, pre-existing conditions, drug use and life-style choices.

Response:

The one-size -fits -all characterization does not apply. During the medical screening process individual variations are taken into account.

However, an OSHA Heat Standard will work like all other OSHA standards and federal laws governing our country applicable to workers of various ages, races, and genders, and those with health conditions covered by the American with Disabilities Act under the Equal Employment Opportunity Commission.

The proposed OSHA Heat standard follows basic concepts to protect individuals from occupational hazards. There is a hierarchy of hazard controls that is recommended by NIOSH to employ for ***any*** hazard. Following this hierarchy leads to the safer workplaces where the risk of illness or injury can be substantially reduced. Since eliminating heat exposure is becoming more unlikely with global warming and substitution is also not an option- a heat standard must rely on the remaining hierarchy of controls.

Hierarchy of hazard controls:

Elimination > Substitution > Engineering Controls > Administrative Controls > Personal Protective Equipment

4.a How would a heat illness prevention program address these variations?

From the *Protecting Workers Against Excessive Heat Bill*: Section 2.5 Requirements for a Heat Prevention Plan, the only listed item that may required individual variation is (A) iv. *Acclimatization methods and procedures*. The variation range is from 5 to 14 days acclimatization period depending on workers' physical fitness level and the employers' job description of work heat stress load. This is best managed by a physician or other licensed health care provider (PLHCP) in a pre-placement or a return to work exam.

4. b What are the steps an employer can implement that takes these differences into account?

Employers should establish a preplacement and periodic medical monitoring program for workers with occupational exposure to hot environments. During the medical screening process the individual variations can be taken into account.

The purpose of the preplacement and periodic medical evaluations of workers in hot environments is to determine if the worker can meet the demands and physical stresses of the specific job in the hot environment with reasonable assurance that the safety and health of the individual, co- workers and/or general public will not be placed at risk.

Medical surveillance evaluations also help determine whether workers have already suffered from an adverse health effect from heat stress exposure and allow the physician or other licensed health care provider (PLHCP) to work with management to modify the job as necessary.

5. Question: Can you describe the importance of medical surveillance?

Response:

As stated previously over 70% of worker deaths occurred in the first week of work and un- acclimatized workers are at increased risk for heat-related illness. The purpose of the preplacement and periodic medical surveillance evaluation of workers with physical exposure to heat and hot environments is to determine whether the worker can meet the demands and physical stresses of the specific job with reasonable assurance that the safety and health of the individual, co- workers and/or general public will not be placed at risk. The physician or other licensed health care provider (PLHCP) can make recommendations for an acclimatization schedule based on the pre-placement evaluation and return to work examinations. The medical evaluation considers the worker's past medical and occupational history including prior exposure to heat, current medical illnesses, current medications and substance use. The evaluating PLHCP can advise workers of their individual risk factors for heat illness, if any, and instruct on self -monitoring for heat-related signs and symptoms. Counseling regarding needed life-style changes may also be offered at this evaluation.

My research indicated those persons with two or more risk factors were statistically more likely to have a heat illness. Despite this finding, the Heat Stress Awareness Program (which included medical surveillance) showed a significant decrease in the number and severity of heat-related illnesses over the course of the study for all workers, even those most at risk.

Periodic medical evaluations also monitor whether workers have suffered from an adverse health effect from heat exposure and allow the PLHCP to work with management to modify the job as necessary.

Resources:

- NIOSH. 2016. Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments.
- Arbury et al. Heat Illness and Death Among Workers—United States, 2012-2013. MMWR Morbidity and Mortality Weekly Report 2014;63(31):661-665.
- Tustin AW, Cannon DL, Arbury SB, Thomas RJ, Hodgson MJ. Risk Factors for Heat-Related Illness in U.S. Workers: An OSHA Case Series. J Occup Environ Med. 2018 Aug;60(8):e383-e389.

25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007-1030
Phone: (847) 818-1800 – Fax: (847) 818-9266 – Web: www.acoem.org

Committee on Education and Labor
"From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019
10:15 a.m.
Representative Alma Adams (D-NC)

Some workers are lucky enough to belong to unions or worker organizations that allow them to act together by engaging in concerted activity and are ostensibly protected by the National Labor Relations Act or the California Agricultural Labor Relations Act.

What happens to workers when they protest excessive heat and they don't have the protection of a union or worker rights organization?

For farmworkers, and workers in other industry sectors that may not count with union representation or the support of worker rights organizations, the inclination to speak out in workplace about unjust or illegal working conditions is affected by a combination of factors, including but not limited to: language, immigration status, fear of retaliation, job loss, or deportation. Workers that are represented by a union are more likely to know about their rights, as well as the responsibilities that employers have to ensure a healthy and safe workplace.

For instance, because of the inherent power imbalance between workers and employers, having access to a representative of the United Farm Workers (UFW) and/or the United Farm Workers Foundation (UFWF) ensures that farmworker communities are trained and empowered with information about the life-saving requirements of the California Heat Illness Prevention Standard (cool water, shade, rest, training and emergency procedures). Trainings and educational resources are delivered in a language and manner that workers can understand and we ensure that they know who they can contact if they notice that the agricultural establishment where they are working is not complying with the Standard. Furthermore, the UFW and the UFWF work directly with farmworker communities to ensure that employers as well as Cal/OSHA are held accountable for the implementation and enforcement of the CA Heat Illness Prevention Standard.

Union representation plays an important role in ensuring that the laws on the books are the laws in the fields. In some of the companies where the UFW has contracts, we have worker-led health and safety committees to ensure that worker protections are implemented.

In addition to facing exposure to the elements and high temperatures that threaten their health and safety on the job, it's crucial to note that the workers who would significantly benefit from union representation (as well as a federal heat illness and fatality prevention standard) are those that work in some of the most dangerous industries in the country. The most current data indicates that in

2017, the highest number of fatal work injuries occurred in the construction sector (971), followed by transportation and warehousing (882) and agriculture, forestry, fishing and hunting (581). [1]

Unfortunately, U.S. farmworkers who seek improvements in wages or working conditions can be fired by their employers if they choose to join, organize or support a labor union. That is not the case for workers in other industry sectors that count with federal protections provided by the National Labor Relations Act of 1935 (NLRA), which among many things, prohibits employers from firing workers for the aforementioned activities. The disparity in protections is due to a legacy of racism that specifically excludes farmworkers (and domestic workers) from the NLRA. And the exclusions don't end there. In fact, farmworkers and domestic workers are also excluded from the right to overtime pay in the Federal Labor Standards Act of 1938 (FLSA).

It's important to note that needless and preventable tragedies due to heat exposure occurred at non-unionized companies. In such companies, the power imbalance between workers and their employers is significant and farmworkers fear doing anything that could compromise their job and those of their family members. In the case of 17-year-old Maria Isavel Vasquez Jimenez, although she was not represented by a union, she was not alone in the fields. Maria Isavel was working in a vineyard where her fiancé also worked. She collapsed after laboring more than nine hours without access to shade or water. Despite the presence of her loved one and his pleas for help, management never called 911.

Do workers face greater challenges when they complain about workplace conditions if they work for a temp agency?

Indeed, workers that secure employment through a temporary agency are just as vulnerable as any non-union worker, and even more so if they are temporary guest workers in the U.S.. In either scenario, a worker can be blacklisted for complaining about inadequate conditions or treatment, or for engaging in union-related activities.

Among the farmworker population, the power imbalance is worse for workers that enter the country under the H-2A temporary agricultural worker program. H-2A workers depend on the employer that petitioned them for their job, ability to stay in the country, housing and transportation. Without family or community ties in the United States, the workers' main contacts are the growers or the labor contractors. Because H-2A workers are only allowed to work for a single employer who can send them home at will, most H-2A workers will work to the limits of human endurance to keep their employers happy. This coercive factor leads workers to stay in a job even when conditions fall short, and it deters workers from trying to resolve problems that may arise on the farm.

[1] See AFL-CIO, "Death on the Job: The Toll of Neglect, 2019," available at https://aflcio.org/sites/default/files/2019-05/DOTJ2019Fnb_1.pdf

Miguel Angel Guzman Chavez was a 24 year old H-2A farmworker that was picking tomatoes for Beiza Farm Labor Contractor and Motley Farms in the state of Georgia. He died from heat on June 21, 2018, a few days after his arrival to the U.S.

Honesto Ibarra was only 28-years-old. He came to the U.S. with an H-2A visa to work on a blueberry farm in Sumas, Washington. He died from heat on August 6th, 2017. Both of these workers asked for help and were denied timely intervention. This is what happens when employers treat farm workers as if they were agricultural implements instead of human beings.

As H-2A workers, Miguel Angel Guzman Chavez and Honesto Ibarra were part of a visa program with the highest number of reported human trafficking cases.[2] The H-2A program is uncapped, and in FY 2018 alone, 242,762 positions were certified.[3] The growth in the H-2A program is expected to continue, with the first three quarters of FY 2019 showing an 11.5% increase in the number of applications received compared to FY 2018.[4] The growth of the H-2A program combined with the recent July 26, 2019 U.S. DOL proposal to weaken protections for U.S. and H-2A workers raises serious concerns for the health and safety of guest-workers.

When California was first considering adoption of a heat standard, what were the objections raised by the employers and agricultural interests?

In their pushback against the implementation of the CA Heat Illness Prevention Standard, employers raised arguments that reflected their lack of concern for the humanity of workers. Some claimed that requirements to provide shade and rest for workers would mean that they would not be able to keep people working. The construction industry wanted to be exempt from the standard all together.

Some employers claimed that it was not "practical or reasonable" to provide shade to workers at all times or at a temperature of 70 Fahrenheit, arguing that shade should be triggered by a specific and higher temperature. On the trigger temperature for shade, they advocated for 85° Fahrenheit. Farmworker advocates and health and safety experts had recommended for the trigger temperature for shade to be set at 70° Fahrenheit or 75° Fahrenheit, in order to adequately protect outdoor workers. In the end, the current California Heat Illness Prevention Standard requires employers to erect shade structures when temperatures exceed 80° Fahrenheit and high-heat procedures when the temperature equals or exceeds 95° Fahrenheit.[5]

---

[2] See Polaris, "Human Trafficking on Temporary Work Visas, A Data Analysis 2015-2017," available at "https://polarisproject.org/sites/default/files/Human%20Trafficking%20on%20Temporary%20Work%20Visas%20A%20Data%20Analysis%202015-2017.pdf

[3] See U.S. Department of Labor, Employment and Training Administration, Office of Foreign Labor Certification, "H-2A Temporary Agricultural Labor Certification Program - Selected Statistics, FY 2019 YTD," available at https://www.foreignlaborcert.doleta.gov/pdf/PerformanceData/2018/H-2A_Selected_Statistics_FY2018_Q4.pdf

[4] See U.S. Department of Labor, Employment and Training Administration, Office of Foreign Labor Certification, "H-2A Temporary Agricultural Labor Certification Program - Selected Statistics, https://www.foreignlaborcert.doleta.gov/pdf/PerformanceData/2019/H-2A_Selected_Statistics_FY2019_Q3.pdf

[5] See, minutes from July 16, 2009, at a Public Meeting of the Occupational Safety and Health Standards Board, available at https://www.dir.ca.gov/oshsb/minutesJuly09.doc

Were the predictions and concerns raised by the employers and agricultural industry ultimately validated after the rule went into effect? If not, why not?

It's important to note that in testimony provided by Mr. Bryan Little, Director of Employment for the California Farm Bureau Federation, among many things, he shared that: the California Heat Illness Prevention Standard is simple; that any heat standard should require provision of water, shade, and training for everyone, and that "the greatest need is for workers, supervisors, farm labor contractors and employers/farm operators to understand the key steps to take to avoid incidents of heat illness and deal effectively and promptly with any incidents that occur." As both workers and the CA Farm Bureau Federation can attest, some employers have been proactive and simply shifted work schedules to start earlier so workers can perform and complete field work when it's cooler and before the temperatures reach their peak.[6]

Since the rule went into effect, California's farming industry continues to prosper. In fact, according to the most recent farm income and wealth statistics by the CA Department of Food and Agriculture, from 2008-2018, the state experienced a nearly 34 percent increase in cash receipts for all agricultural commodities, compared to 2008.[7]

California is the leading agricultural state in the country, producing over 400 commodities, two-thirds of the nation's fruit and nuts, and more than one-third of the nation's vegetables. It is also home to the largest number of farmworkers in the U.S..[8] California's size (the third largest state by land area and most populated state in the country)[9], diverse temperature zones, and the various industries that are subject to the California Heat Illness Prevention Standard (agriculture, construction, landscaping, oil and gas extraction, and transportation or delivery of agricultural products, construction materials or other heavy materials)[10] can serve as a model for the nation, and a testament to the feasibility of a national heat illness standard to protect workers.

Although industry pushed back while the rule was in development, nowadays, some employers have taken the initiative to treat workers with dignity and go beyond what the regulations require. In addition to providing shade, some agricultural establishments erect shade structures that are mobile and also provide tables and benches for workers to be able to eat and/or cool down without having to sit in the dirt.

---

[6] From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat: Hearing before the Subcommittee on Workforce Protections of the House Committee on Education and Labor. 116th Cong. (2010) (testimony of Bryan Little), available at https://edlabor.house.gov/imo/media/doc/LittleTestimony0711191.pdf

[7] USDA/ERS Farm Income and Wealth Statistics, Cash receipts by commodity 2008-2019F, available at https://data.ers.usda.gov/reports.aspx?ID=17845#P5f4072bb859f4ffc99c413a4eee73e71_4_17iT0R0x5

[8] USDA, National Agricultural Statistics Service, 2017 Census of Agriculture, State Data, Table 7. Hired Farm Labor - Workers and Payroll: 2017, available at https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_2_US_State_Level/st99_2_0007_0007.pdf

[9] See U.S. Census Bureau, Quick Facts: California; United States, available at https://www.census.gov/quickfacts/fact/table/CA,US/PST045218#

[10] 8 CCR § 3395, 8 CA ADC § 3395, Heat Illness Prevention in Outdoor Places of Employment, available at https://www.dir.ca.gov/title8/3395.html

Minnesota, Washington, and California all have heat illness prevention standards. Yet Federal OSHA has not even begun work on one. If Congress were to mandate legislation, what improvements or changes would you recommend based on the experience in California?

In industries such as agriculture, construction, transportation, and others, workers can be compensated on a piece-rate basis. Piece-rate pay refers to an amount of money offered by an employer, for the production of a unit, regardless of the hours worked by an employee. In situations where workers can increase their pay by producing more, there is an incentive to continue to work rather than take rest and recovery periods that they were entitled to under the law, if doing so affects their paycheck. While we recognize a worker's desire to earn more, failure to rest and cool-down can increase their risk of heat related illness.

Recognizing that to earn more money and keep their employers satisfied, workers will work to the limits of their endurance, we'd recommend the importance of heat legislation that ensures that piece-rate workers will be compensated for heat-related rest periods.

How many months did it take for California to develop its 2005 outdoor heat standard from the time the Governor ordered work to begin to the point when the initial rule was finalized and published?

The California outdoor Heat Illness Prevention Standard was first issued as an emergency on August 22, 2005. A Certificate of Compliance, including amendments were transmitted to the Office of Administrative Law ("OAL") on June 16, 2006 and filed on July 27, 2006. That amounts to an eleven month period from the moment it was issued as an emergency to the moment it was filed with OAL, an office whose job is to ensure that regulations are "clear, necessary, legally valid, and available to the public."[11]

Based on your experience working with CalOSHA on its outdoor heat standard, is it infeasible for OSHA to issue a proposed heat standard in 24 months and a final standard in 42 months?

No. As our experience with CalOsha demonstrates, it is feasible for OSHA to issue a proposed heat standard in 24 months and a final standard in 42 months. To protect outdoor and indoor workers, we urge Congress to give OSHA a mandate to propose and finalize a federal heat illness and fatality prevention standard.

---

[11] 8 CCR § 3395, 8 CA ADC § 3395, Heat Illness Prevention in Outdoor Places of Employment, available at https://www.dir.ca.gov/title8/3395.html

Responses of Javier Rodriguez to Committee on Education and Labor, "From the Fields to the Factories: Preventing Workplace Injury and Death from Excessive Heat."
Thursday, July 11, 2019 10:15 a.m.

Representative Alma Adams (D-NC)

How feasible is it for employers operating warehouses or cross-docks to control excessive heat exposure? What measures could they take?

Every employer has the capacity to control excessive heat exposure. Depending on how the workplace is laid out, climate control might be more or less possible. But other measures, including providing regular breaks, water and cool-down periods have been shown to be effective. Education to workers about the effects of heat on the body and encouragement of workers to look out for each other remain key parts of the equation.

• *Given that it's difficult to use air conditioning to cool the cargo containers in which employees must work, what measures should a CalOSHA standard mandate that would protect workers from heat-related illnesses.*

Where it is feasible, employers should still use climate controls to reduce the temperature, such as fans or other means of safe air circulation. Beyond climate control, employers should use other important measures such as ensuring regular breaks, providing water and cool rest areas, having a plan to acclimatize workers to new conditions, and providing training on heat illness symptoms and prevention. We are encouraged that Cal/OSHA's current proposed standard includes many of these measures, but to be effective it should be strengthened, especially by mandating regular preventative breaks in high temperatures.

• *When someone is sent home after complaining about not feeling well due to the heat, is there any follow-up to see if they're OK? Do you ever find out what happened to them? Is their heat illness consistently recorded on an OSHA Injury Log?*

When a worker goes home after complaining about feeling ill, they are usually told to 'come back when you feel better.' Often these workers are employed seasonally or through a staffing agency- we don't even know who they are. We ask management what happened and they tell us to mind our own business. We rarely see heat illness show up on an OSHA log, but we have not done a comprehensive review.

• *Most warehouse workers are directly employed by temporary labor firms, but their work is directed by the warehouse companies who set hours and working conditions. Who is liable for compliance with the heat illness prevention standard—the warehouse owner or the temporary labor supplier? Or both?*

In California we have made a consistent case that the staffing agency and warehouse operator both have a role in complying with health and safety regulations. The staffing agency is often responsible for training and education. The warehouse operator is often the supervisor of the workers and has responsibility to respond to dangerous conditions. We are concerned that, as in the case of Domingo Blancas, the two employers claim that they are not responsible for the

workers' conditions, delaying treatment or possibly resulting in the worker not receiving any support.

• *You testified that when workers report symptoms of heat-related illness, they were told to rest or sent home. Do warehouse or cross-dock companies consistently provide breaks for overheated workers?*

Warehouses as a rule do not provide breaks for overheated workers beyond what is required by law by the state of California. Those workplaces that do provide breaks have been forced through either a collective bargaining agreement or a group of workers who join together and demand breaks, often after learning about their rights with the help of an organization like the Warehouse Worker Resource Center. In all these cases, without consistent reminding and demanding, the employer will cut these breaks.

Chairwoman ADAMS. If there is no further business, without objection, the Committee stands adjourned.

[Whereupon, at 12:26 p.m., the Subcommittee was adjourned.]