

Impacts of Extreme Heat: Labor

Extreme heat is a major occupational hazard with far-reaching impacts on the national economy as well as worker health and safety. Extreme heat costs an estimated [\\$100 billion per year](#) in lost productivity, and causes an average of at least [3,389 heat-related injuries and 33 heat-related fatalities annually](#) – numbers that are likely [vast undercounts](#). To protect workers, Congress must **mandate a federal heat standard, retain federal workers with expertise in heat stress management strategies, and establish Centers of Excellence to support research, training, and sector-specific mitigation strategies**. Through [investments in infrastructure for heat safety](#), Congress can save lives, protect the economy, and enhance resilience nationwide.

Heat-Related Risks are Heightened in Many Work Environments

Extreme heat puts workers of all types at risk: OSHA has documented hospitalizations and heat-related deaths in [close to 275 industries](#). Some work environments present extreme heat risk, particularly those involving high exposures to the outdoors and limited access to cooling. With roughly [one in three U.S. employees regularly working outdoors](#), a large share of the workforce is at elevated risk during summer months. [Indoor workers also face high exposure](#), especially in kitchens, warehouses, manufacturing plants, and other poorly ventilated environments because heat and humidity easily build up in enclosed spaces without adequate air flow and climate-control.

Business and Economic Impacts of High Heat Exposure in the Workplace

On top of the \$100 billion in direct annual losses, high temperatures are also linked to [increased healthcare costs for employers](#) and [workers' compensation claims](#), with [claim frequencies rising by up to 10%](#) during temperature extremes. Some industries are more exposed than others; for example, agriculture, construction, and utility companies face [twice the risk](#) of incurring increased healthcare claims due to extreme weather and other environmental conditions. This growing number of [claims increases companies' experience modification rates](#), which insurers use as a key factor for calculating higher future premiums. Higher premiums translate to greater insurance and overall operating costs, which is especially burdensome for small and low-margin businesses. Despite all these risks, many employers continue to underestimate the financial burden of extreme heat and other weather-related health impacts.

Many Military Personnel and Federal Workers Face Above-Average Risks of Heat-Related Illness

Military personnel, federal law enforcement officers, border patrol officers, wildland firefighters, federal transportation workers like railroad inspectors, and postal employees are all in positions that require long, labor-intensive hours outdoors, raising the risk for heat-related illness. In 2024, heat-related illnesses were among the [top five most reported medical events among U.S. active duty service members](#). **Without consistent standards in place to protect these workers from extreme heat, military and other federal operations will continue to be vulnerable to disruption and reduced workforce capacity.**

Advancing Solutions: Establish a Strong Federal Heat Standard and Sector-Specific Centers of Excellence for Heat Workplace Safety

To begin to address heat-related injuries and illnesses in workplaces, OSHA in 2022 established the [National Emphasis Program \(NEP\) on Outdoor and Indoor Heat-Related Hazards](#), which remains in effect until [April 2026](#). As of 2025, OSHA reports that this NEP has conducted nearly 7,000 inspections connected to heat risks, which lead to 60 heat citations and nearly 1,400 "hazard alert" letters being sent to employers.

However, in the absence of a federal mandate for effective heat safety practices, most workplaces rely on voluntary guidance that is not tailored to specific job conditions, backed by consistent data, or subject to enforcement. This puts both workers and businesses at risk. OSHA's proposed [Heat Injury and Illness Prevention](#)

[rule](#) would be a critical step forward to establishing common-sense baseline protections. According to [the agency's projections](#), compliance with this standard could prevent thousands of heat-related illnesses and deaths. The **projected benefits from reduced fatalities, illness, and injury** amount to **\$9.18 billion per year**. Importantly, this action has broad public backing: [90% of American voters support](#) the implementation of federal protections from extreme heat in the workplace.



Congress should act swiftly to ensure OSHA finalizes and enforces a strong, evidence-based heat standard. To do this effectively, it is **essential that funding for experts at the National Institute for Occupational Safety and Health (NIOSH) is retained in the FY26 budget request**, as these critical workers [develop criteria for recommended standards on occupational heat stress](#). These experts have been impacted by [reductions in force](#) at NIOSH, and as of July 2025 have not been brought back by the agency.

Some employers have raised concerns about the technical and financial feasibility of the proposed rule. To address these concerns, Congress should pair regulation with practical support by **creating federally funded, sector-specific Centers of Excellence (CoEs) for Heat Workplace Safety**. These Centers would develop and implement evidence-based solutions tailored to different work environments. By leveraging advanced technology, predictive analytics, and continuously updated industry standards, CoEs can help [modernize OSHA regulations](#) and make them more aligned with current workplace realities that go beyond simple compliance or post-injury responses.

The CoE approach includes comprehensive data collection at worksites that form the basis of occupational safety and health protocols, policies, and best practices. CoEs collaborate with workers and employers to inform their effectiveness. Once strategies are developed, CoEs implement them, track their impact, and work with governments and cross-sector partners to ensure long-term success. **Federal agencies and other industries with sizable workforces that receive government contracts** are key places to develop best practices, technologies, and public-private partnerships for these interventions, **all while reducing fiscal risk to the federal government**.

The Federation of American Scientists: Who We Are

At the [Federation of American Scientists](#) (FAS), we envision a world where the federal government deploys cutting-edge science, technology, ideas, and talent to solve and address the impacts of extreme heat. We bring expertise in embedding science, data, and technology into government decision-making and a strong network of subject matter experts in extreme heat, both inside and outside of government. Through our [2025 Heat Policy Agenda](#) and broader policy library, FAS is positioned to help ensure that public policy meets the challenges of living with extreme heat.

CONSIDER FAS A RESOURCE FOR...

- » Understanding evidence-based policy solutions
- » Directing members and staff to relevant academic research
- » Connecting with issue experts to develop solutions that can immediately address the impacts of extreme heat

We are tackling this crisis with initiative, creativity, experimentation, and innovation, serving as a resource on environmental health policy issues. Feel free to always reach out to us:

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