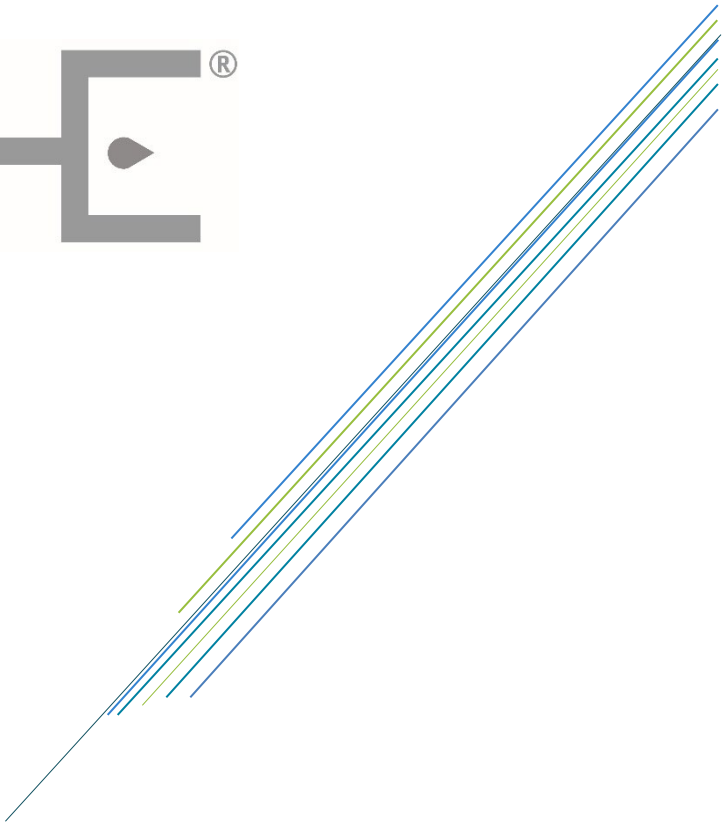
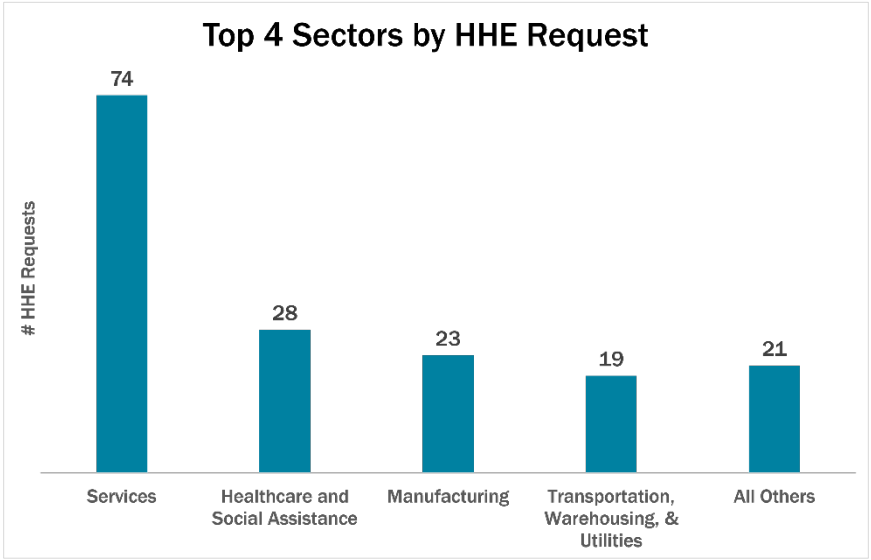
# NIOSH Health Hazard Evaluation (HHE) Program

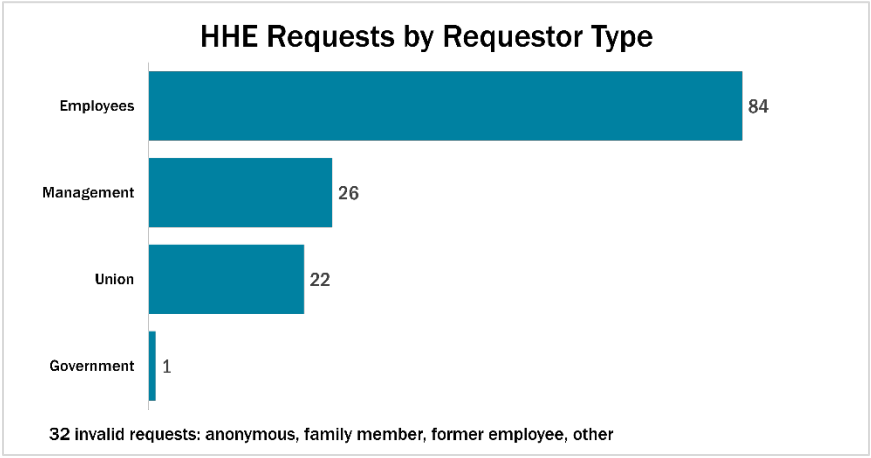
## 2024 Annual Report



# NIOSH HHE Requests in 2024

## 165 Requests



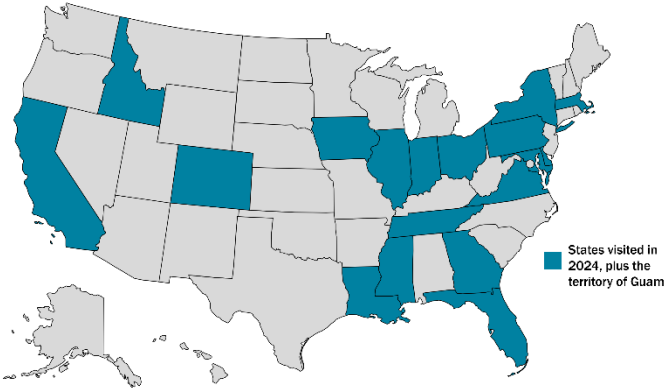
## 29 Site Visits and Emergency Response Deployments

**27** Workplaces

**18** States plus Guam

**25** Cities

Approx. **63,314** Miles Traveled




## Outreach

HHE website viewed **43,863** times

**2,391** different HHE reports downloaded **16,738** times

**15** new HHE final reports published

**50** informational letters provided to employer, employee, and/or union representatives.

Most downloaded report of 2024 (**357** downloads)
*Evaluation of Exposures to Metals, Metalworking Fluids, Alcohols, and Volatile Organic Compounds at an Acrobatic Equipment Manufacturer*

**37** Presentations

**34** Peer-reviewed publications

# HHE Final Report Examples from 2024

## Evaluation of Silica and Noise Exposures at a Concrete Corrosion Testing Facility

An employee at a concrete infrastructure corrosion testing facility was concerned about exposures to respirable crystalline silica and noise during the processing of concrete samples.

### What NIOSH Did

- Collected personal air samples for respirable crystalline silica and respirable dust.
- Collected bulk samples of pulverized concrete to determine its silica content.
- Measured sound levels and workers' noise exposures when processing concrete samples.

Photo by ©Getty Images

### Key Findings

- Employees' exposures to respirable crystalline silica were above the Occupational Safety and Health Administration's action level.
- Employees were overexposed to noise.

### Recommendations

Install a local exhaust ventilation system for the pulverizer.

Avoid dry brushing the wheel inside of the pulverizer during cleaning and dry sweeping the floor after sawing.

Start a respiratory protection program.

Include all employees who use the masonry saw in a hearing conservation program.

Read the full report online.

# Evaluation of Waste Anesthetic Gas Exposures at a Veterinary Hospital

Employees at a veterinary hospital were concerned about waste anesthetic gas (WAG) exposure and possible health effects.

## What NIOSH Did

- Assessed work practices and the operation and maintenance of WAG scavenger systems.
- Collected personal and area air samples for sevoflurane.
- Interviewed employees about their health concerns related to WAG.

Photo by ©Getty Images

## Key Findings

- Personal air-sampling indicated exposures to sevoflurane concentrations below occupational exposure limits for WAGs.
- Certain anesthesia procedure tasks can result in high peak exposures to WAG.
- High sevoflurane concentrations were exhaled by a patient during recovery from anesthesia.
- Employees reported different timing of endotracheal cuff inflation and when to turn on the sevoflurane vaporizer.

## Recommendations

Continue to properly maintain and inspect anesthesia machines and WAG scavenger systems.

Discontinue use of anesthesia chamber box made from a modified plastic container.

Ensure the surgery suite and treatment room are properly ventilated.

Ensure employees understand the hazards associated with sevoflurane and how to protect themselves from exposure.

Read the full report online.

# Evaluation of Mercury and Noise Exposure at a Lightbulb Recycler

Management at an electronics waste and lamp recycling facility was concerned about employees' exposure to mercury, lead, and noise.

## What NIOSH Did

- Measured employees':
  (1) full-shift mercury air exposure
  (2) amount of mercury in urine
  (3) exposure to noise
- Interviewed employees about their work, personal protective equipment use, training, and health and safety concerns.

Photo by NIOSH

## Key Findings

- Mercury exposures exceeded occupational exposure limits.
- Some employees had elevated urine mercury levels and reported symptoms consistent with mercury exposure.
- Some employees' noise exposures exceeded occupational noise exposure limits.

## Recommendations

Install local exhaust ventilation and improve airflow in production and nonproduction areas.

Separate clean and dirty functions in the workplace to prevent the spread of mercury-containing dusts into nonproduction areas.

Use engineering controls and equipment maintenance to reduce noise.

Tell employees to report any new, persistent, or worsening health symptoms, especially those with a work-related pattern, to their healthcare providers.

Read the full report online.
Also read a CDC Morbidity and Mortality Weekly Report.

## Ergonomic and Musculoskeletal Evaluation of Warehousing Tasks at a Logistics Agency

Safety management at a logistics agency was concerned about ergonomics and potential musculoskeletal injuries among employees who performed general warehousing and forklift operations.

### What NIOSH Did

- Observed work processes, practices, and workplace conditions.
- Measured workstation heights and took pictures of workstations.
- Interviewed employees about their work and their health.

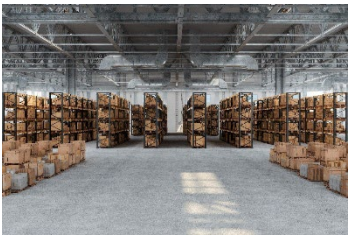


Photo by ©Getty Images

### Key Findings

- Most workstations and areas were not ergonomically designed to reduce work-related musculoskeletal disorders.
- The most common potentially work-related pain reported was in the back and shoulders.

### Recommendations

Ensure appropriate hand working heights on conveyors.

Provide antifatigue mats for employees who usually stand as part of their job.

Provide workstations that adjust for sitting and standing based on employees' job demands.

Encourage employees to report health concerns they think are work-related to their supervisors.

Read the full report online.

A similar report from 2024 is also available online.

# Evaluation of Exposures and Health Concerns in a Dental Clinic

Employees at a dental clinic were concerned about workplace exposures and possible health effects including lung disease.

## What NIOSH Did

Photo by ©Getty Images

- Observed work processes and practices and assessed the ventilation systems.
- Measured concentrations of respirable dust, respirable crystalline silica (RCS), respirable metals, and volatile organic compounds (VOCs) in the workplace air.
- Interviewed employees about their work, personal protective equipment use, and health concerns.

## Key Findings

- Employees reported no work-related symptoms.
- Employee exposures to respirable dust and RCS were below applicable occupational exposure limits. Area air samples for respirable dust, RCS, and respirable metals were low. Some VOCs were higher in some locations or during specific tasks.
- Some operatories did not receive adequate outdoor air. Laboratory local exhaust ventilation (LEV) was not consistently used.

## Recommendations

Ensure the clinic is properly ventilated and appropriate temperatures are maintained.

Ensure the laboratory areas are maintained under negative pressure relative to adjacent areas.

Use the LEV controls in the laboratory when grinding, trimming, or soldering tasks are performed.

Ensure employees understand the hazards associated with working in a dental clinic and how to protect themselves.

Read the full report online.

# Maui Wildfires

The HHE Program assisted in a NIOSH emergency response to the Maui Wildfires by visiting Maui County and the Hawai'i National Guard to evaluate potential exposures in firefighters and others who responded to the wildfires.

## Activities

- Measured responders' biological exposure markers to inorganic elements, flame retardant chemicals, and per- and polyfluoroalkyl substances (PFAS).
- Administered two questionnaires to collect responders' demographic, work, and potential exposure characteristics while responding to the wildfires.
- Analyzed the exposure marker results by self-reported demographic, occupational, and exposure characteristics collected on the questionnaires.

## Key Findings

- Some employees had levels of inorganic elements above relevant reference values.
- As expected, almost all Maui County and Hawai'i National Guard participants had detectable levels of PFAS, polybrominated diphenyl ethers, and organophosphate esters.
- We found some associations between occupation and the levels of inorganic elements and exposure markers measured in Maui County employees.
- We did not observe clear patterns between self-reported exposure characteristics and the exposure markers we measured in blood and urine.

Read the full report online.

Also read a CDC Morbidity and Mortality Weekly Report.

# Select Specialty Publications

## Examples of New Scientific Journal Articles

- Wiegand DM, Chiu SK, Broadwater K, Li JF [2024]. A cross-sectional evaluation of city firefighters' exposure to potentially traumatic events during opioid overdose responses and mental health. J Workplace Behav Health 1–18, https://pubmed.ncbi.nlm.nih.gov/40927385/. Advance online publication.
- Rossner A, Wick DP, LeBouf RF, Lutes C, Carroll M [2024]. Evaluation of flow controllers used with evacuated canisters to assess VOC exposures in occupational and non-occupational environments. J Occup Environ Hyg *21*(7):504–514, https://pubmed.ncbi.nlm.nih.gov/38924715/.
- Shi DS, Rinsky JL, Grimes GR, Chiu SK [2024]. Health Hazard Evaluations of occupational cancer cluster concerns: the USA, January 2001-December 2020. Occup Environ Med *81*(2):109–112, https://pubmed.ncbi.nlm.nih.gov/37932036/.
- Foreman AM, Omari A, Marks KJ, Troeschel AN, Haas EJ, Moore SM, Fechter-Leggett E, Park JH, Cox-Ganser JM, Damon SA, Soileau S, Jacob C, Bakshi A, Reilly A, Aubin K, Puszykowski K, Chew GL [2024]. Knowledge, attitudes, and practices related to mold remediation following Hurricane Ida in southeast Louisiana. Int J Environ Res Public Health *21*(11):1412, https://pubmed.ncbi.nlm.nih.gov/39595679/.

## New NIOSH Science Blogs

- How Tribal Communities Can Use the Health Hazard Evaluation (HHE) Program
- Worried About Lead in Your Workplace?

## NIOSH Website Updates

- Workplace Mold and Your Health
- About Flavoring-related Lung Disease

## What They are Saying

During and after an HHE, the HHE Program asks for feedback on how well we did, our communication, our recommendations, and other questions to help us improve. These quotes are from HHE participants who in 2024 commented on our evaluation at their workplace.

> The staff were very friendly, professional, and had a warm concern for learning about the workplace. I appreciate their visit!
> ~ cultivation company health and safety staff

The team was extremely professional and a pleasure to work with. They were not intimidating to the workforce which is extremely important. The crews worked well with the investigators and were very receptive of feedback.
~ city government supervisory employee

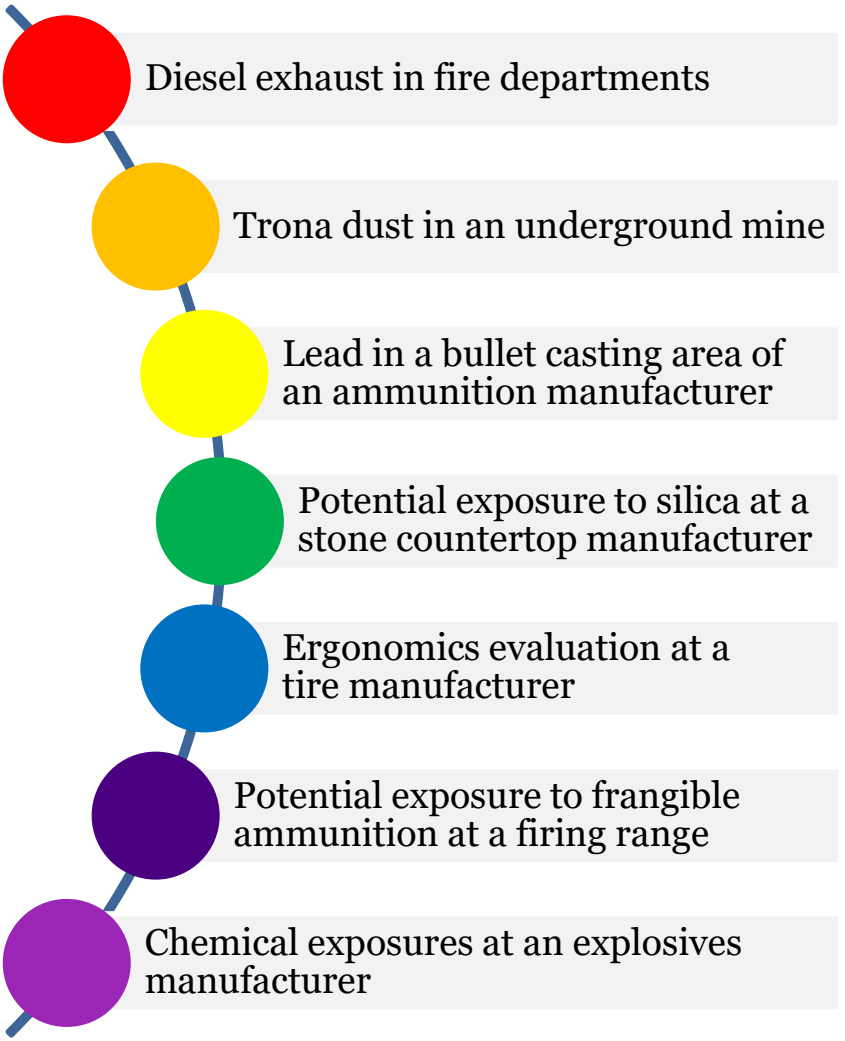
An excellent process. The review team was thorough and professional. We truly appreciated the care in which the evaluation was conducted.
~ employee requestor at a university

The report was both educative and thorough regarding environmental standards in the workplace. While the information reported on the facility conditions it also educates the reader on what the standards are.
~ management representative from a school district

The HHE TA was clear, timely, well referenced, and thorough. I have shared it with numerous partners who have all found it very helpful. One of our colleagues said “This sorta stuff is exactly what the street level folks need to make informed decisions – based on facts and science, double.”
~ government health and safety requestor

## Moving Forward

The NIOSH HHE Program continues to receive requests for assistance from employers, employees, and union officials. The following are examples of requests the HHE program recently received and are currently evaluating.



# HHE Health Hazard® Evaluation Program

**The mission of the NIOSH Health Hazard Evaluation Program is to respond to requests from employees, employers, and union representatives to evaluate potential health hazards in their workplace.**

These evaluations are done at no cost to the requestor. Once the evaluation is complete, recommendations are made on ways to reduce or eliminate identified hazards. Health Hazard Evaluations can help reduce hazards and create healthier workplaces.


If you have questions, please contact the HHE Program
Monday–Friday, 9 a.m. – 4:30 p.m. EST
Phone: 1-513-841-4382

@ HHERequestHelp@cdc.gov

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