

# 2015 Annual Report



Department of Health and Human Services  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health



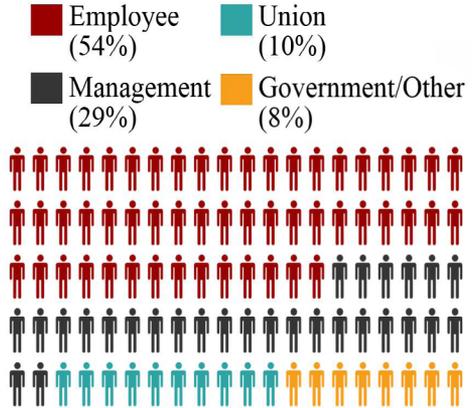
# HHE Requests in 2015

## 194 HHE Requests

### Top 3 Sectors



### Requested by:



## 43 Site Visits



37  
Workplaces



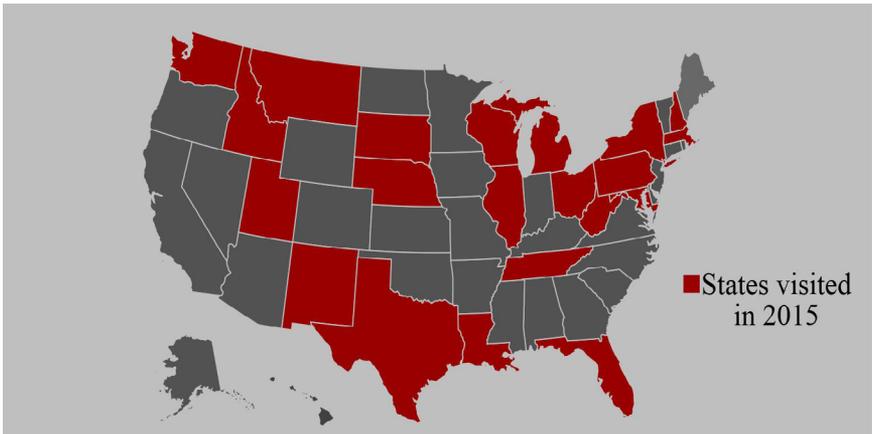
21  
States



33  
Cities



77,860  
Miles Traveled



## By the Numbers

# Outreach



HHE website viewed **53,584** times



**20** new HHE Reports



**566** downloads of lead and noise databases



**210** Facebook posts



Reached **440,487** people



**11,077** new page "likes"



**86** presentations



**16** publications

# Risk of Tuberculosis Exposure at an Elephant Refuge



## Request

- Who? A state health department
- Why? Potential elephant-to-human transmission of tuberculosis (TB)

## What We Did

- Interviewed 27 employees about their known TB exposure, respiratory protection, and work tasks
- Tested ventilation systems in barns using smoke and tracer gas and measured air pressure differences to see which direction the air flowed
- Reviewed TB screening and respiratory protection programs



Photo by NIOSH

## What We Found

- The TB screening and respiratory protection programs were incomplete
- Air flowed from elephant stalls to employee areas. Following recommended changes, this problem was fixed



Photo by NIOSH

## Recommendations

- Treat elephants with active TB as soon as possible
- Maintain ventilation systems and follow protocols so that air does not flow from elephant stalls to employee work areas
- Wear a respirator around elephants with confirmed/suspected TB
- Test employees for TB every year

See full report at: <http://go.usa.gov/cuyjR>

# Exposure to New Solvents in Drycleaning Shops

A local government program asked for our help in evaluating two new drycleaning solvents

## **SolvonK4**

- butylal, n-butanol, and formaldehyde

## **DF-2000**

- a mix of hydrocarbons



Photo by NIOSH

## **What We Did**

- Visited 1 shop using SolvonK4 and 2 using DF-2000
- Analyzed the chemical composition of both solvents
- Took air samples for DF-2000, butylal, butanol, and formaldehyde
- Tested for solvents on employees' hands under their gloves

## **What We Found**

- Chemical compositions matched the manufacturers' descriptions
- Highest air levels of SolvonK4 were near the drycleaning machine
- DF-2000 levels were below most protective exposure limit
- Both chemicals were on employees' hands under their gloves
- Employees did not have safety glasses or goggles for splash protection

## **Recommendations**

- Brush prespotting mixture onto fabric rather than spraying it on
- Wear eye protection and the right type of gloves when using spot cleaners and cleaning the machines
- Wash hands and exposed skin after contact with chemicals
- Wash hands before and after removing gloves

See full report at: <http://go.usa.gov/cujyF>



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## Positive Changes Reported at Workplaces We've Visited

“The independent and accurate assessment along with the employee interaction helped to allay concerns, identify problems, and discern a way forward.” – Employer

“[Management is] not pushing us to work in the extreme temperatures that could cause long term health effects on the workers.” – Employee

“Workers are better protected from infectious disease transmission.”  
– State epidemiologist

# Respiratory Health at a Syntactic Foam Manufacturer

## Request

- Employees were concerned about chemical exposures and respiratory, skin, and eye problems

## What We Did

- Observed work practices and interviewed managers and employees
- Took air samples for amines, volatile organic compounds (VOCs), and particles
- Surveyed employees about symptoms and medical diagnoses

## What We Found



Found VOCs & particles, but not amines, in the air



Asthma symptoms more likely among workers with 5+ year work at the plant

6 workers diagnosed with asthma after starting work at the plant



Skin rash, cough, nasal allergies, & asthma symptoms common

Risk of asthma 12x higher after hire compared to before hire



## Recommendations

- Use chemicals with fewer potential health effects
- Use engineering controls to reduce workers' exposure to chemicals
- Use quantitative fit testing in a respiratory protection program
- Encourage employees to report symptoms; refer them to occupational medicine physicians
- Use vacuum cleaners with HEPA filters rather than sweeping
- Move clean worker uniforms out of production areas; require workers to change into everyday clothes before leaving plant

See full report at: <http://go.usa.gov/cuyDT>



Photo by NIOSH

# Heat-Related Illness and Rhabdomyolysis during Structural Firefighter Training

## Rhabdomyolysis (or Rhabdo)

- Muscle tissue breakdown
- Releases electrolytes and proteins into the bloodstream
- Can cause heart and kidney damage, permanent disability, and death
- Often mistaken for heat-related illness (HRI), such as heat stroke
- Can be diagnosed only through blood test for creatine kinase (CK)

## What We Did

In a 4-day evaluation of cadet training, we measured:



Symptoms  
of rhabdo &  
HRI



CK levels  
in blood



Heart  
rate



Change  
in body  
weight



Core body  
temperature  
(CBT)

## What We Found

- 1 cadet had rhabdo; 16 others had elevated CK levels
- 1 cadet had CBT of 107.2°F during a live fire exercise
- Most cadets had excessive heat strain according to their CBT, heart rate, and body weight loss

## Recommendations

- Schedule training and physically demanding activities during cooler months and cooler parts of the day
- Educate firefighters about signs, symptoms, and dangers of rhabdo

See full report at: <http://go.usa.gov/cuyDm>

**Modern nail salons**



Photo by NIOSH

**Flame retardants  
in e-recycling**



Photo by NIOSH

**Vape shops**



Photo by NIOSH

2016  
— HHE —  
PROJECTS

**Coffee  
roasting**



Photo by ©Thinkstock

**Peroxyacetic  
acid disinfectant  
use in hospitals**



Photo by ©Thinkstock

**Copper slag  
and coal slag  
processing**



Photo by ©Thinkstock



# 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 more healthful 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



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