The NIOSH Health Hazard Evaluation (HHE) Program: A Resource for State and Local Health Officials

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CDC Workplace Safety and Health™

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Today's Topics

- Understanding how the HHE program works
- Statistics about HHE requests
- HHE program working with states and localities
- Benefits of an HHE

Legislation

OSHAct (1970), MSHAct (1977) – NIOSH will:

- Conduct on-site toxicity determinations
- Respond to written request by employer or authorized representative of employees
- Determine whether any substance … has potentially toxic effects
- Submit determination to employers and employees
- Submit data to OSHA/MSHA

Regulation

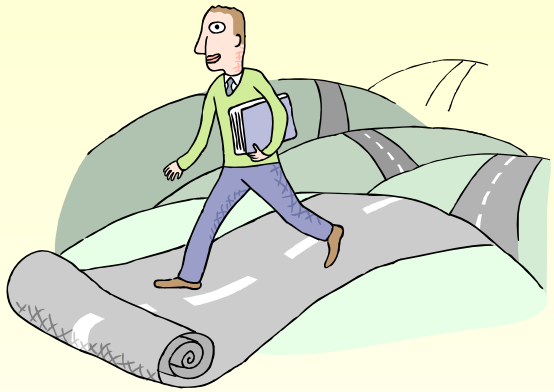
1972 – CFR, Title 42

Part 85 Requests for Health Hazard Evaluations

Part 85a Occupational Safety and Health Investigations of Places of Employment

- Who can request
- Responsibilities
- Procedures
- Representation
- Notification

Right of Entry

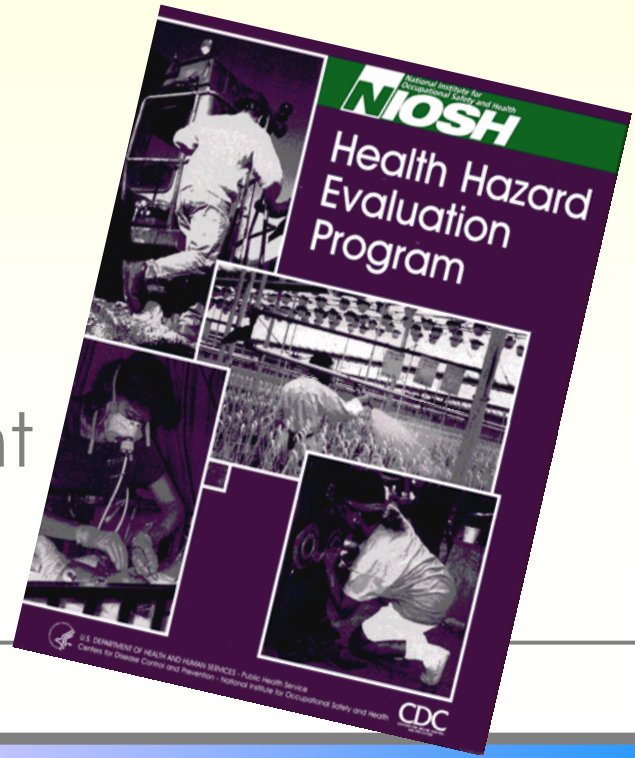


- Clear legal path when the HHE request is valid
- Possible legal challenges when it is not

Our approach: go as far as we can!

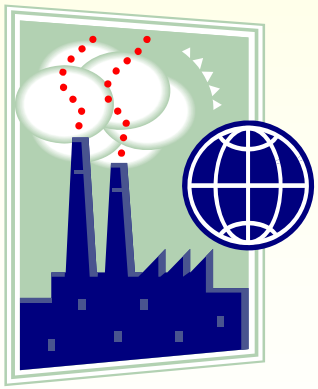
Valid or Not?

- Who submits it?
  - Management representative
  - Union representative – collective bargaining role
  - Individual employees
    - If >3 exposed: 3 names
    - If <= 3 exposed: 1 name
  - State or local government technical assistance



Valid or Not?

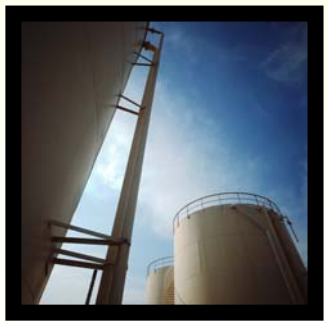
- Where do they work?
  - Private sector – yes, with a few exceptions



  - Federal government – mostly yes
  - State and local government - maybe

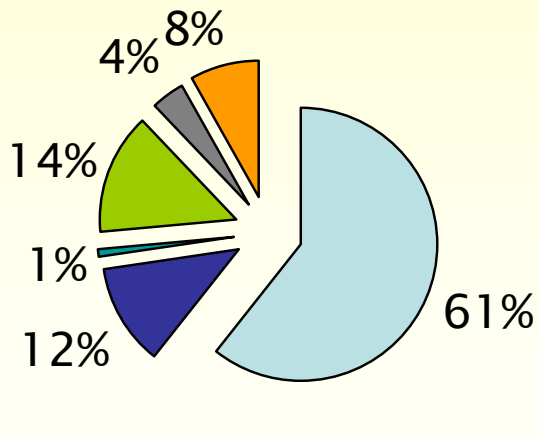
Valid or Not?

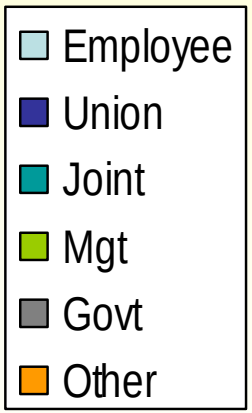
- What is the hazard?
  - Chemical or biological agent - yes
  - Physical hazard
    - OSHA – no
    - MSHA - yes



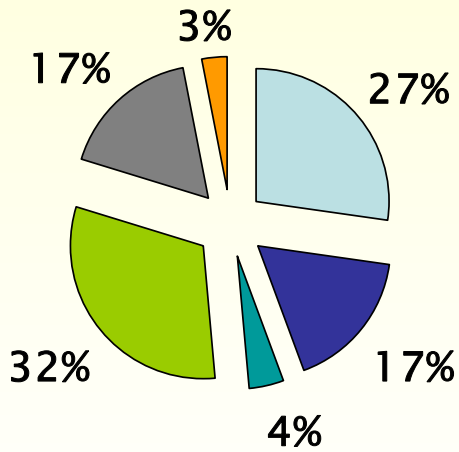
HHE Requests by Requestor

All Requests



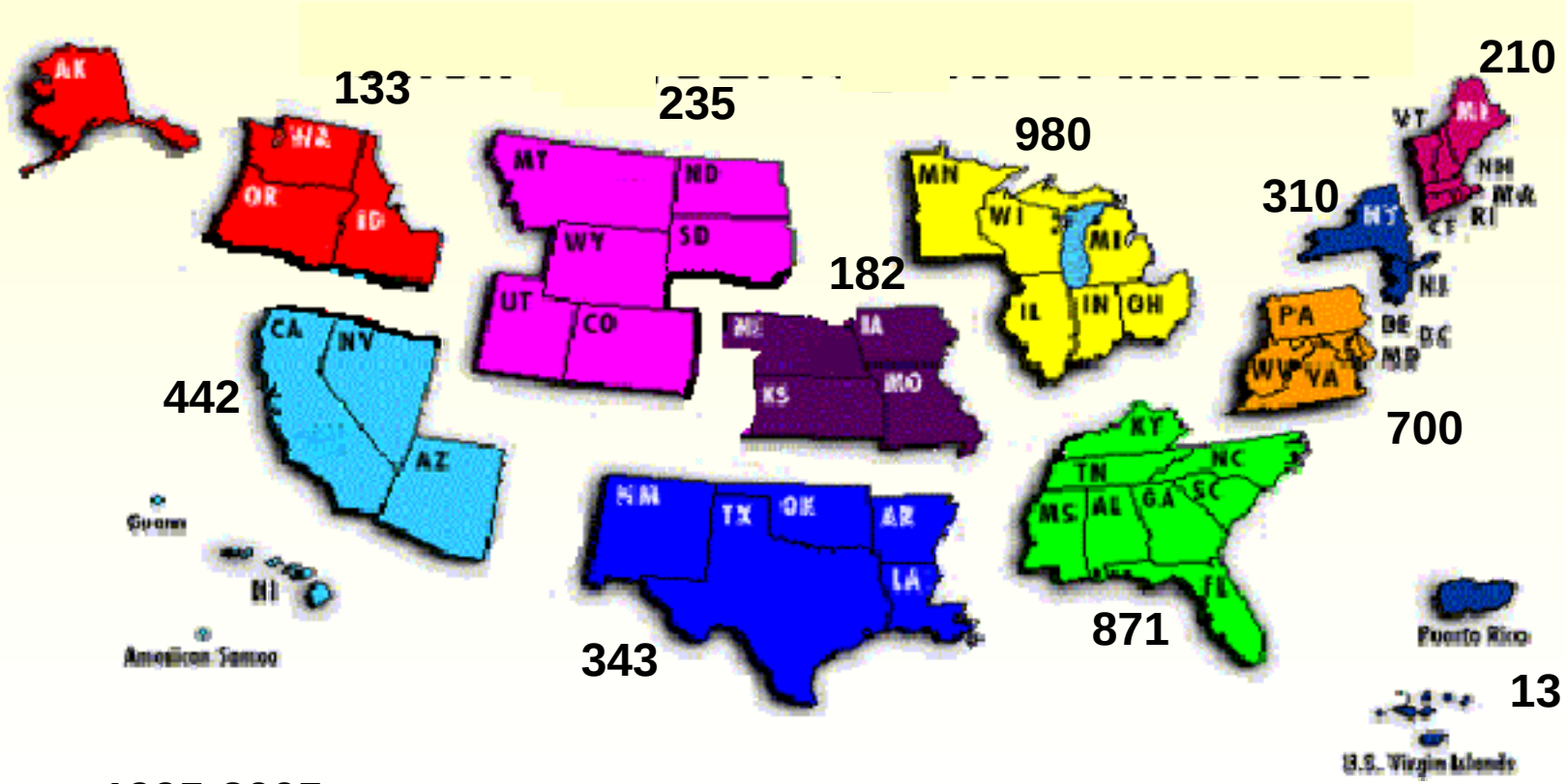


Requests w/Site Visits

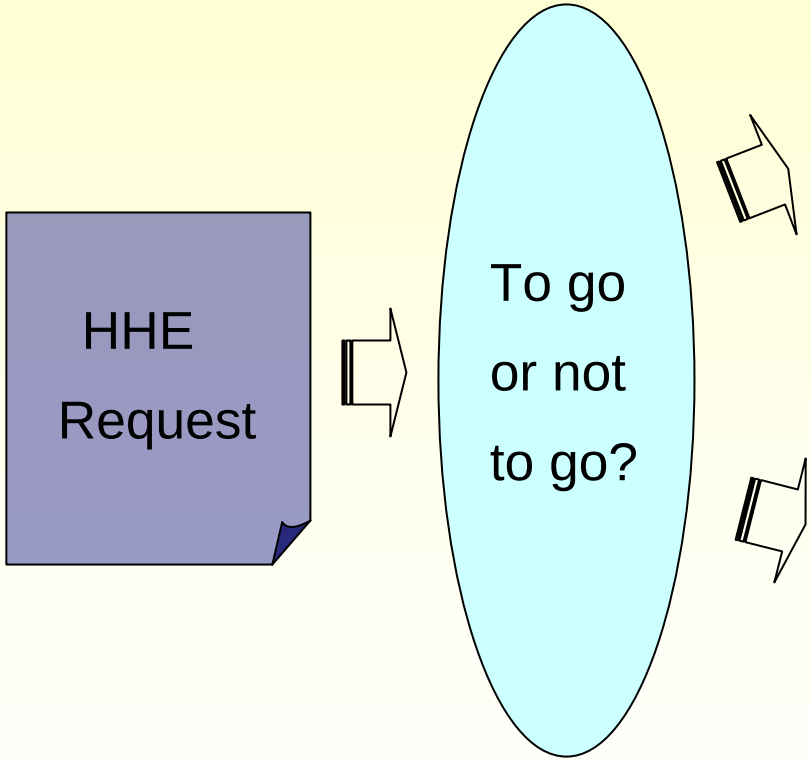


2002-2006

HHE Requests by Region



Triage of HHE Requests



Field evaluation

- Serious health issues
- New, unique, unfamiliar hazards
- Known problem & other resources not available

Consultation

- Referral letter – outside program scope
- Info Letter – routine IEQ/mold w/ no prior eval
- Call and letter – IEQ/mold w/serious health problems, prior eval; nonindustrial cancer cluster

On-site Response

An evaluation to:

- Provide current health hazard data to employers and employees
- Identify problems and offer workplace solutions

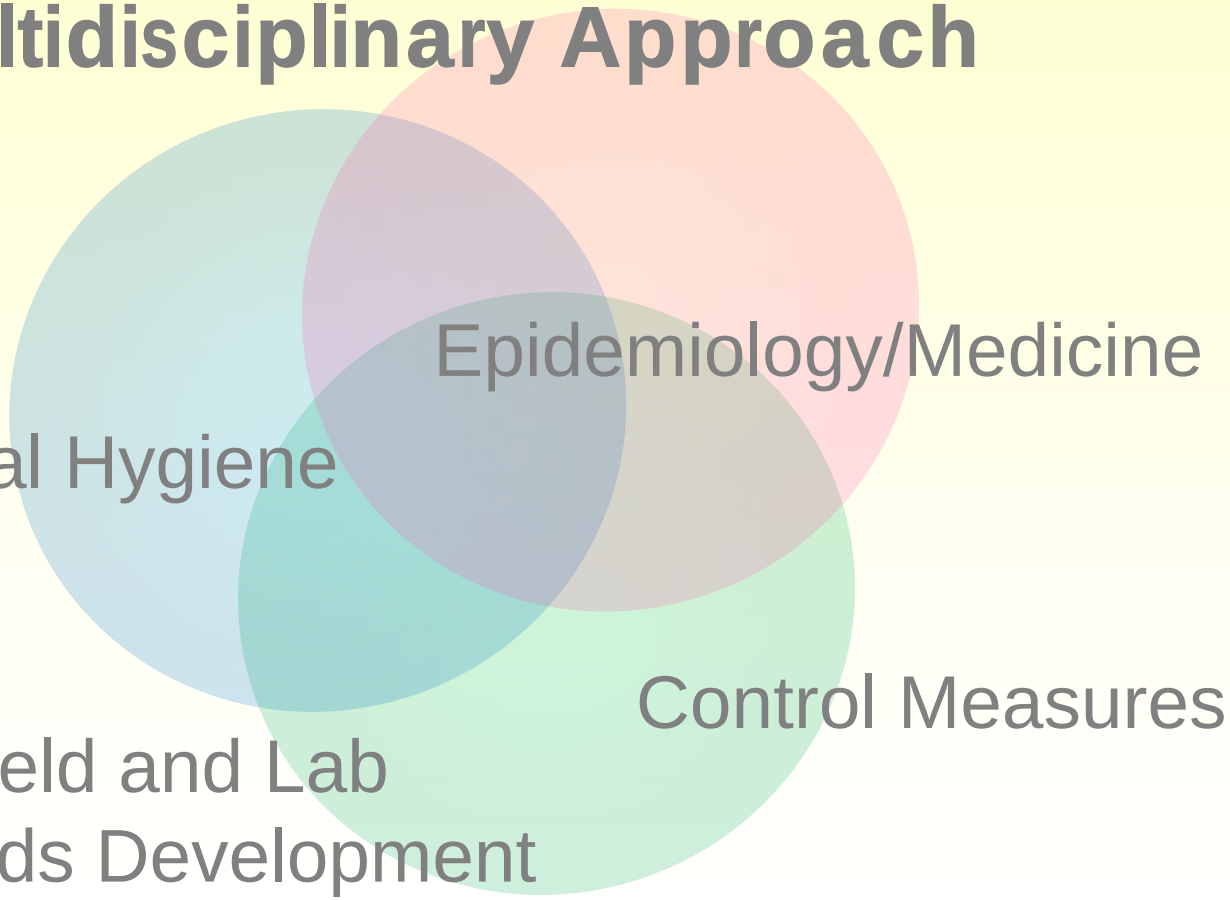
On-site Response

HHEs also:

- Generate exposure and human toxicity data
  - Guidelines, regulations
- Stimulate research

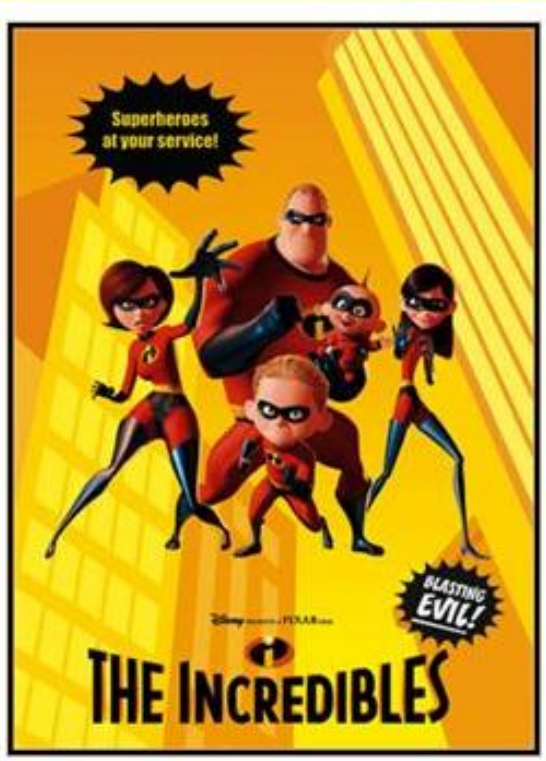
How HHEs Resolve Problems

Multidisciplinary Approach



HHE Program Personnel

- Physicians
- Nurses
- Epidemiologists
- Toxicologists
- Sociologists
- Statisticians



- Industrial hygienists
- Engineers
- Equipment technicians
- Logistics support

On-site Response

- Pre-arranged with employers and employee representatives
- Most problems are not acute – usually visit within weeks, not days
- Initial visit – usually 1-3 days
- Followup visits – as needed

On-site Response: Medical/Epidemiologic

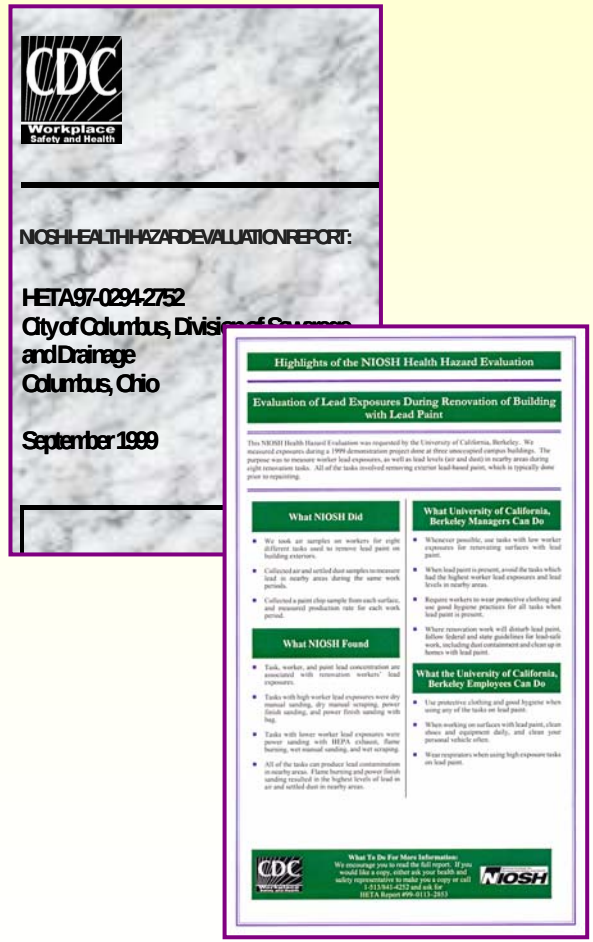
- Interview workers
- Survey workers (questionnaire)
- Collect blood/urine
- Conduct medical exams and tests
- Review illness records

On-site Response: Industrial Hygiene

- Observe processes, tasks, procedures, and work practices
- Talk to workers, supervisors, and managers
- Collect environmental samples
- Measure conditions
- Review exposure records
- Evaluate exposure controls

Reporting

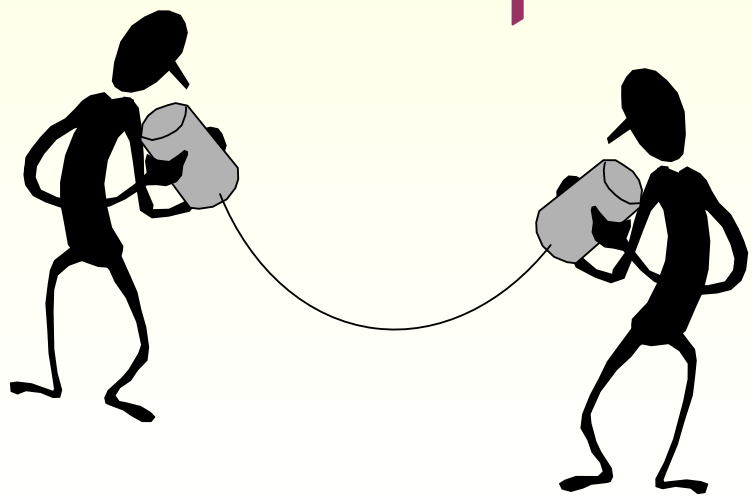
- What?
  - Letter or formal report
- Who?
  - Employer and employee representatives
  - OSHA
  - Epi-X posting
  - eNews announcement
  - NIOSH web site



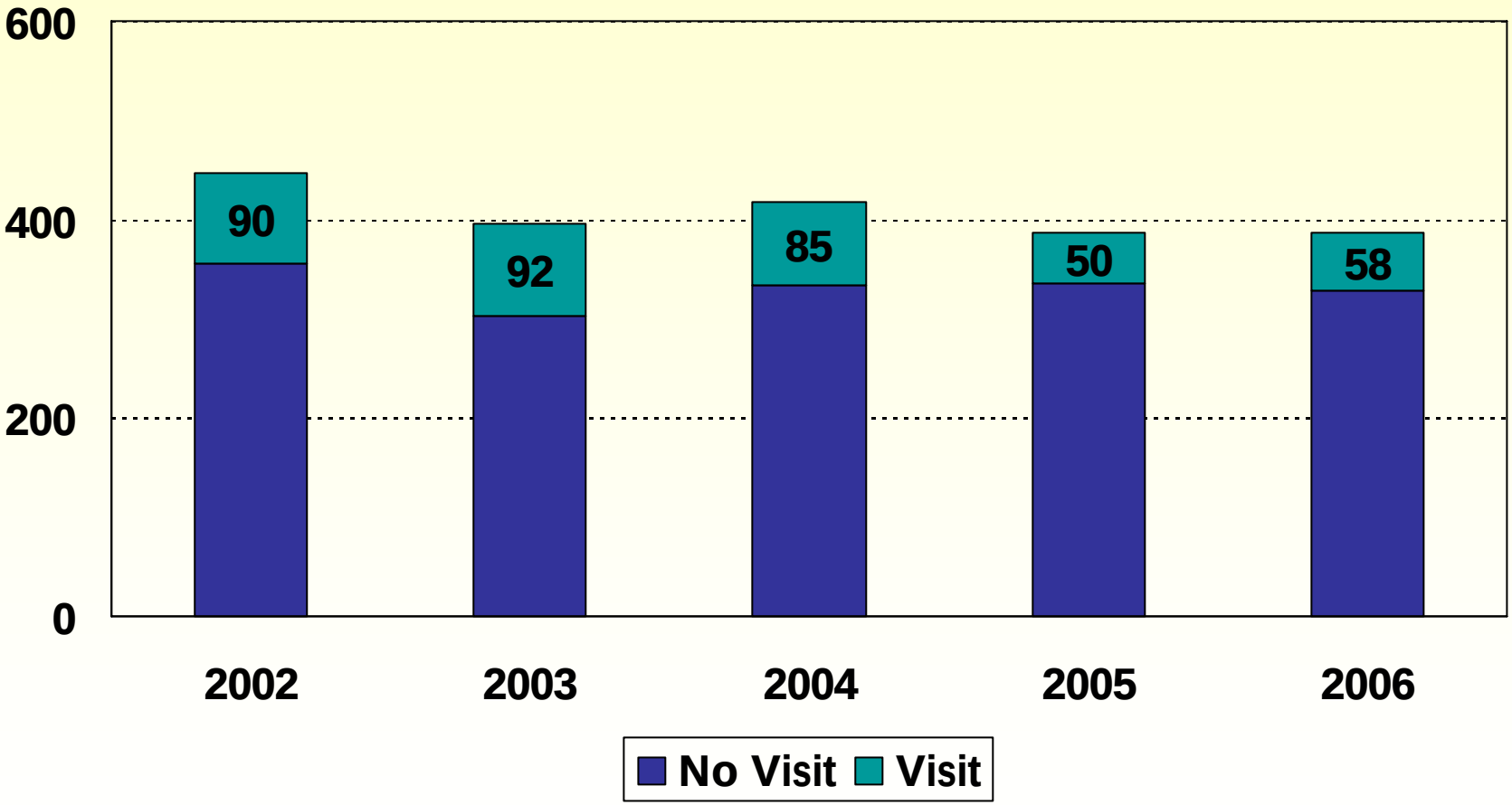
Informing Others

- Request
  - OSHA
  - State epidemiologist
  - Email to state surveillance partners
- On-site response
  - OSHA
  - Epi-X
- Report
  - OSHA
  - Epi-X

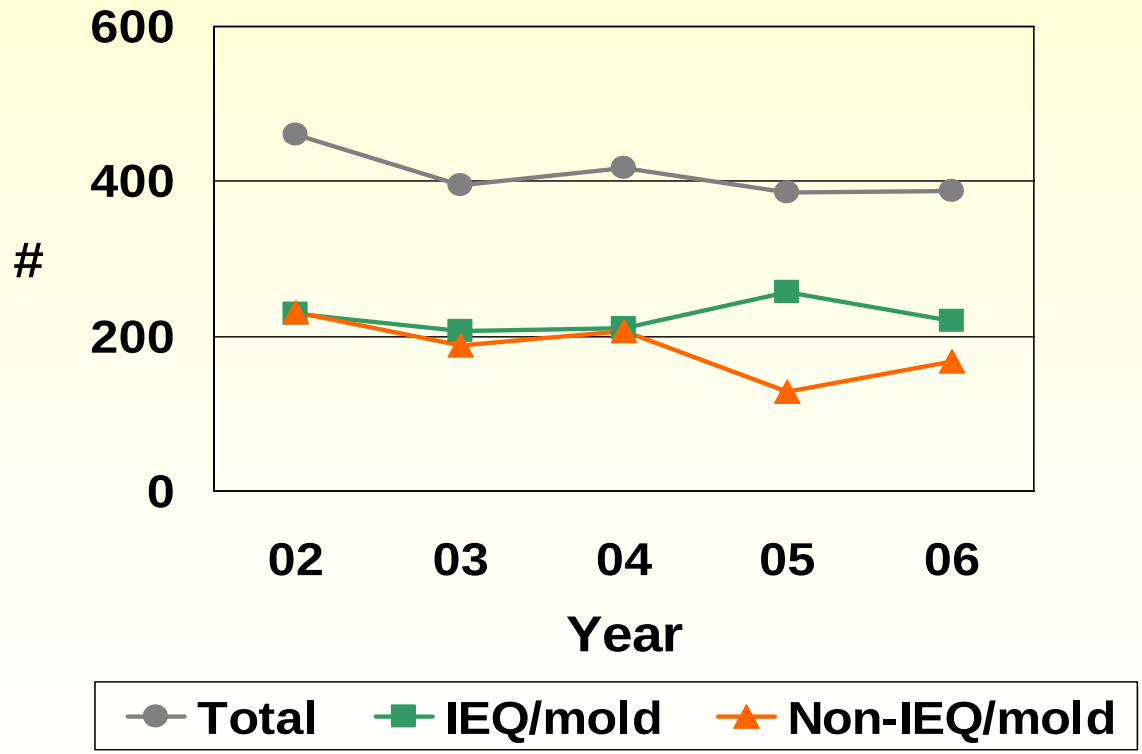
New!



HHE Requests by Response



HHE Requests by Type



HHE Followback Surveys

- Purpose
  - What impact have we had?
  - How can we do better?
- Mostly mailed questionnaires, some return site visits
  - Upcoming focus: hearing loss and respiratory protection programs

When an HHE Can Help

- New hazards, exposures, or processes
- Illnesses from an unknown cause
- Exposure to unregulated agents
- Adverse health effects at exposures below current standards

How the HHE Program Can Work with States

Depends on timing, resources, capabilities, etc.

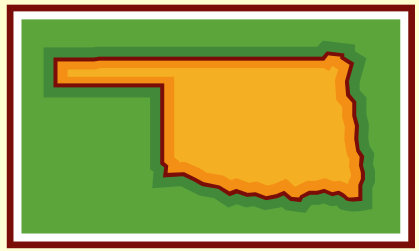
One size does not fit all!

- Provide consultation for a State-run investigation
- Conduct an investigation and report to the state
- Work collaboratively on an investigation

Caveats

For cancer clusters & indoor environmental quality (IEQ)

- For most requests on these issues, we provide an office-based response
- Cancer
  - Collect and review information about cases and potential exposures
- IEQ
  - Phone-based problem solving
  - Written guidance



Examples: Requests from States and Localities

New Hazard

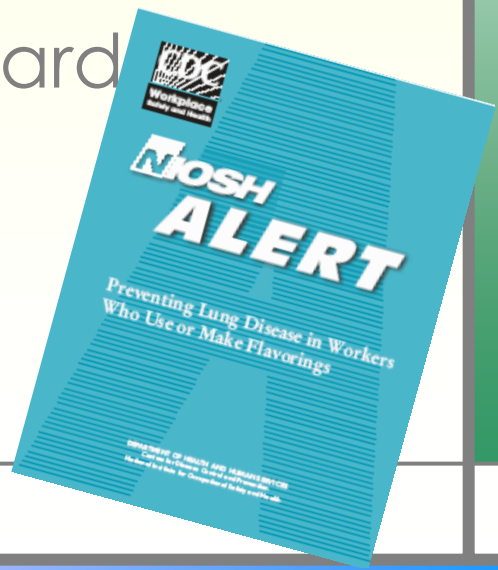
- Multiple patients with obstructive lung disease: physician ⇨ state health department
- Common factor: workplace, microwave popcorn
  - Butter flavoring mixing room
  - Packaging area

Findings

- Medical
  - Prevalence of lung obstruction > national rates (3.3X – all;10.8X – never-smokers)
  - Diagnosis ~ bronchiolitis obliterans
- Exposure
  - Predominant ketone = diacetyl (an artificial butter flavoring)
  - [Diacetyl]: ND to 98 ppm
- After engineering controls installed
  - [Diacetyl]: <1 ppm

Actions/Impact

- Evaluations at 3 other facilities followed "index" facility
- Dissemination
  - NIOSH Alert
  - Peer-reviewed publications
  - Presentations Toxicology studies
- Requests for emergency standard
- New request
  - medical evaluation, exposure assessment, engineering controls



Health Effects at Exposures Below Standards

- Physician ⇨ state health department – workplace exposures
- Battery separator mfg
- Workers with neurologic dysfunction and dementia

Findings

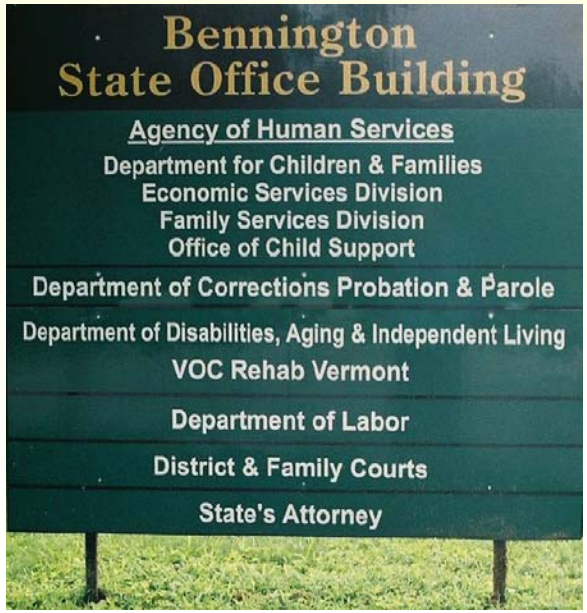
- Airborne TCE exposures @ 3.1 to 37 ppm (OSHA PEL = 100)
- Biological monitoring: 27% > exposure index
- Exposed>unexposed on 3/5 neuropsychological tests (subclinical)

Actions/Impact

- To reduce TCE exposures, NIOSH investigators recommended:
  - Engineering controls
  - Personal protective equipment
- Report in preparation
- Followup notification to OSHA

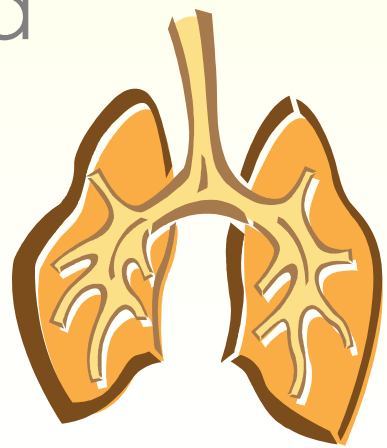
Illness of Unknown Cause

- State health department ⇨ NIOSH
- Workers in state office building with sarcoidosis
- NIOSH assistance
  - Questionnaire
  - Pulmonary function tests
  - Data analysis
  - Environmental evaluation



Findings

- Elevated rate of sarcoidosis
- Elevated rates of asthma and asthma-like illness
  - asthma onset post building occupancy
- PFT testing generally confirmed health survey findings



Actions/Impact

- Employees relocated to other offices
- University-based research study of sarcoidosis cases
- What happens next depends on results of building evaluation

Nonspecific Symptoms

- County health officer ⇨ NIOSH
- Workers in courthouse relocated
- Concerns:
  - Mold
  - Chemicals
  - Legionella, histoplasmosis

Findings

- Wide constellation of symptoms … not consistent with any particular known environmental exposures
- Symptoms not consistent with Legionella or Histoplasma infections
- Building problems
  - HVAC deficiencies
  - Excessive wall moisture
  - Bird droppings in attic
  - Unnecessary use of fragranced deodorizer

Actions/Impact

- HVAC renovations
- Mold remediation
- Employees moved back into building
  - Followup indicates resolution

Emergency Response

- 1990s: MO, NC, ND, and KY floods
- 2001: World Trade Center
- 2001: Anthrax, irradiated mail
- 2003: SARS
- 2005: Indonesian tsunami
- 2005: Hurricane Katrina
- 2005: Avian influenza
- 2006: Pandemic influenza preparedness

Hurricanes Katrina & Rita

- NIOSH assistance to state and local health departments
  - LA – medical & industrial hygienists in the state offices
  - New Orleans government & health officials – technical support
    - Surveys of police & fire personnel
    - On-site hazard assessments

Impact at the Worksite

- Identify hazards
  - Document exposures and health effects
- Recommend solutions
  - Reduce or eliminate hazards
  - Improve health

Impact on Science and Practice

- Research
  - Analytical methods development
  - Epi & tox studies
  - Effectiveness of controls
- Professional guidelines & practice
- Commercial products

Impact on Policy & Regulation

- Support standards and guidelines
  - OSHA PELs
  - NIOSH RELs
  - Professional organizations
  - Industry and trade organizations

HHEs and Surveillance

- HHE as a surveillance system
  - HHE request ~ sentinel event
- HHE request to followup findings from other surveillance systems

NIOSH HHE vs. OSHA Consultation

HHE	Consultation
Employee or employer request	Employer request
Focus on health	Focus on safety
Integrate industrial hygiene and medical epidemiology	Primarily industrial hygiene
Public reports	Reports only to employer

NIOSH HHE vs. Epi-Aid

HHE	Epi-Aid
Facility-based request	Health agency request
Usually not acute health problem	Often an acute health problem
Response timeframe - weeks	Response timeframe - days
Initial response duration - days	Initial respond duration - weeks
Communicate w/employees and employer	Communicate primarily w/employer

HHE Program Organization

- Home of the HHE program: DSHEFS, HETAB – Cincinnati
  - Allison Tepper, HETAB Branch Chief
    atepper@cdc.gov, 513.841.4382
  - Small offices in Denver (n=3) & Boston (n=1)
- In collaboration with DRDS, FSB – Morgantown
  - Kay Kreiss, FSB Branch Chief
    kkreiss@cdc.gov, 304.

How to Request Assistance

- Call us
- Write us a letter
- Fill out an on-line request form

  www.cdc.gov/niosh/hhe

Concluding Remarks

- We want to enhance our partnerships with states.
- Thank you for this opportunity!

The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

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