

Un aperçu de la surveillance en santé au travail aux États-Unis: une organisation de systèmes en évolution

Overview of Occupational Health Surveillance Systems

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pulmonaires professionnelles

National Institute for Occupational Safety and Health
Respiratory Health Division



Objectives

- **To present background information about NIOSH national occupational respiratory disease surveillance**

NIOSH Surveillance

- **National/State population-based systems**
 - Limited information on work and exposures
 - Robust and ongoing
- **State-based case reporting**
 - Detailed information on work and exposures
 - Selective ascertainment
- **Worker populations**
 - Health Hazard Evaluations
 - Ongoing worker monitoring



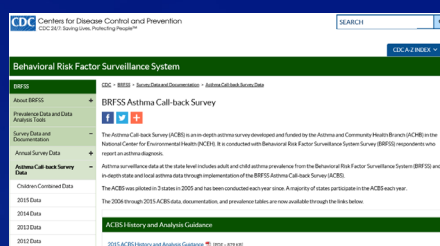
<https://www.cdc.gov/niosh/hhe/about.html>

Population-based Systems

- **National Health Interview Survey (NHIS)**
 - Occupation, industry, asthma, COPD
- **National Health and Nutrition Evaluation Survey (NHANES)**
 - Asthma, COPD, pulmonary function, exhaled NO
- **Behavioral Risk Factor Surveillance System (BRFSS)**
 - Asthma Call-back Survey (ACBS)
 - Work-related asthma, occupation, industry
- **National Vital Statistics System (NVSS) — mortality data**
 - ICD-10 codes; Industry and occupation for selected states and years

BRFSS ACBS: Work-Related Asthma (WRA)

Have you ever been told by a doctor or other health professional that your asthma was caused by, or your symptoms made worse by, any job you ever had?



<https://www.cdc.gov/brfss/acbs/index.htm>

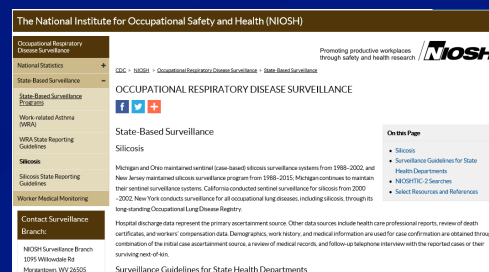
BRFSS ACBS: Possible WRA

No WRA and...

1. Are your asthma symptoms **made worse** by things like chemicals, smoke, dust, or mold in your **current job**?
2. Was your asthma first **caused by** things like chemicals, smoke, dust, or mold in your **current job**?
3. Were your asthma symptoms **made worse** by things like chemicals, smoke, dust, or mold in any **previous job** you ever had?
4. Was your asthma first **caused by** things like chemicals, smoke, dust, or mold in any **previous job** you ever had?

State-based Case Reporting (Silicosis, WRA)

- Physician case reports
- Hospital Discharge data
- Emergency room data
- Poison Control data
- Workers' Compensation Systems



<https://www.cdc.gov/niosh/topics/surveillance/ords/statesurveillance/silicosis.html>

- Demographic, work-history, and medical information collected for case confirmation, classification, and description through a combination of data sources, review of medical records, and when possible, a follow-up interview with reported cases.

Worker Populations

- Health Hazard Evaluations
- Coal Workers' Health Surveillance Program
 - <https://www.cdc.gov/niosh/topics/cwhsp/default.html>
- Employer sponsored monitoring programs
- Tools for respiratory health surveillance
 - ILO Classification of chest radiographs (B Reader Program)
 - Spirometry (Spirometry Course Certification Program, SPIROLA*)



<https://www.cdc.gov/niosh/hhe/about.html>



*Spirometry Longitudinal Data Analysis Software (SPIROLA):
<https://www.cdc.gov/niosh/topics/spirometry/spirola-software.html>

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A-Z Index: A B C D E F G H I J K L M N O P Q R S U V W X Y Z #

Morbidity and Mortality Weekly Report (MMWR)

[MMWR](#)

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Notes from the Field: Silicosis in a Countertop Fabricator – Texas, 2014

Weekly
February 13, 2015 / 64(05):129-130

Gary K. Friedman, MD¹, Robert Harrison, MD², Heidi Bojes, PhD³, Karen Worthington, MS⁴, Margaret Filios, MSc⁵ (Author affiliations at end of text)

In May 2014, the Texas Department of State Health Services was notified of a case of silicosis with progressive massive fibrosis in a Hispanic male aged 37 years who worked for an engineered stone countertop company as a polisher, laminator, and fabricator. He was exposed to dust for 10 years from working with conglomerate or quartz surfacing materials containing 70%–90% crystalline silica.* This is the first reported case of silicosis associated with exposure to quartz surfacing materials in North America.

In 2010, the patient presented to a primary care provider with a 2-year history of persistent cough and dyspnea on exertion. He had no history of tobacco use or pulmonary disease. On physical examination, he had diminished bilateral breath sounds and a right-sided inspiratory wheeze. Pulmonary function studies showed a combined obstructive and restrictive defect with no change post bronchodilator and reduced diffusion capacity. An electrocardiogram showed right ventricular hypertrophy, and cardiac catheterization confirmed the presence of pulmonary hypertension. A B Reader[†] classified the patient's chest radiograph as large opacity Category "C" with 3/2 profusion, q/r bilateral upper and middle lobe rounded opacities. Computed tomography scan of the chest showed bilateral upper and middle lobe small rounded and large opacities, with hilar and mediastinal adenopathy. The worker was reassigned to a different job to minimize silica dust exposure. He is oxygen-dependent, and his medical condition is being monitored for possible lung transplantation.

Clusters of silicosis cases, some requiring lung transplantation, have occurred among fabrication workers exposed to silica dust from quartz surfacing materials in Israel, Italy, and Spain (1–4). In the last year, imports of quartz surfacing materials to the United States have risen 49%,⁵ and these materials are among the most popular countertop materials. The increased use of this silica-containing material poses a new risk for silica exposure (<http://blogs.cdc.gov/niosh-science-blog/2014/02/11/countertops>). An investigation by CDC's National Institute for Occupational Safety and Health of the patient's work site is ongoing to identify work hazards and assess silica exposures and the health of the other employees.

Health care providers need to be aware of quartz surfacing materials as a source of silica exposure, advise reassignment of patients with silicosis to jobs without silica dust exposure, and report cases to their state public health agency; in 2010, silicosis was reportable in 25 states.⁶ Employers are responsible for maintaining a safe workplace by measuring silica exposure, limiting access to areas where silica exposures are high, using effective methods to reduce exposure (e.g., wet methods,^{7,8} local exhaust ventilation, and use of personal protective equipment), providing medical examinations to workers with high exposures, and training workers about silica hazards and how to limit exposures.¹¹

Acknowledgments

Morbidity and Mortality Weekly Report

Work-Related Asthma Cluster at a Syntactic Foam Manufacturing Facility — Massachusetts 2008–2013

Megan Casey, MPH^{1,2}, Marcia L. Stanton², Kristin J. Cummings, MD², Elise Pechter, MPH³, Kathleen Fitzsimmons, MPH³, Ryan F. LeBoef, PhD², Christine R. Schuler, PhD⁴, Kathleen Kreis, MD² (Author affiliations at the end of text)

Work-related asthma is asthma that is caused or exacerbated by exposure to specific substances in the workplace (1). Approximately 10%–16% of adult-onset asthma cases are attributable to occupational factors, and estimates of asthma exacerbated by work range from 13% to 58% (1–3). During 2008–2012, the Massachusetts Department of Public Health received nine reports of work-related asthma among workers at a facility that manufactured syntactic foam used for flotation in the offshore oil and gas industry. These reports and a request from facility employees led to a CDC health hazard evaluation during 2012–2013 in which CDC reviewed records, toured the facility, and administered a questionnaire to current employees. Investigators found that workers' risk for asthma increased substantially after hire, possibly because of known asthma triggers (i.e., asthmagens) used in production. The company has since initiated efforts to reduce employee exposures to these substances. This cluster of work-related asthma was identified through CDC-funded, state-based surveillance and demonstrates complementary state and federal investigations.

Case Report

His symptoms improved. During June–August 2009, he had no exacerbations requiring emergency department visits. In September 2009, he returned to work with restrictions in place to help prevent exposure to epoxy resins and curing agents. He wore a respirator and avoided the building that used epoxy resins and curing agents. After 3 days, he began experiencing dyspnea and chest tightness. He continued working, and over the next 15 months, he went to the emergency department four times for acute asthma exacerbations. In November 2010, he left his job because of his work-related symptoms. Since leaving, his respiratory symptoms have greatly improved. He still complains of dyspnea when breathing cold air; otherwise, his activities of daily living are not limited. He uses his asthma inhaler 2–3 times per year, representing a large reduction in his inhaler dependence.

Workplace Investigation

In 2012, a CDC health hazard evaluation was requested by employees of a facility that manufactured syntactic foam used for flotation in the offshore oil and gas industry. In addition, the Massachusetts Department of Public Health recognized a

Dissemination of Data

- Publications & presentations
- Web-based products
 - Work-Related Lung Disease Surveillance System (eWoRLD) - <http://wwwn.cdc.gov/eworld>
 - National Occupational Respiratory Mortality System (NORMS) - <http://webappa.cdc.gov/ords/norms.html>

The screenshot shows the NIOSH website for Occupational Respiratory Disease Surveillance. At the top, there is the CDC logo and the text "Centers for Disease Control and Prevention". A search bar is visible with the text "Search NIOSH" and "SEARCH". Below this, the NIOSH logo and tagline "Promoting productive workplaces through safety and health research" are displayed. The main heading is "The National Institute for Occupational Safety and Health (NIOSH)". A navigation menu on the left includes "Occupational Respiratory Disease Surveillance", "National Statistics", "State-Based Surveillance", "Worker Medical Monitoring", and "Contact Surveillance". The main content area is titled "OCCUPATIONAL RESPIRATORY DISEASE SURVEILLANCE" and features an "Overview" section with a magnifying glass icon over the word "data". The overview text states: "Occupational respiratory disease surveillance is the ongoing, systematic collection, analysis, and dissemination of health and hazard data to monitor the extent and severity of occupationally-related lung disease and related workplace exposures for use in public health education and in disease prevention. This NIOSH Topic page also includes information about occupational respiratory disease medical screening and monitoring – the systematic evaluation of exposed workers to detect potential health problems at an early stage and to facilitate action to prevent the development or progression of occupationally-related respiratory disease." Below the overview is an "Index" section with a link to "National Statistics". A sidebar on the left provides contact information for the NIOSH Surveillance Branch: "NIOSH Surveillance Branch, 1095 Willowdale Rd, Morgantown, WV 26505, world@cdc.gov, 1-888-480-4042".

<https://www.cdc.gov/niosh/topics/surveillance/ORDS/>

State-Based Surveillance

Information on state-based surveillance of occupational respiratory disease, including work-related asthma (WRA) and silicosis.

- [Work-Related Asthma \(WRA\)](#): Information on WRA surveillance programs from NIOSH funded states.
- [Silicosis](#): Information on silicosis surveillance programs from NIOSH funded states.

Worker Medical Monitoring

Information providing technical assistance and recommendations for worker medical monitoring for occupational respiratory diseases, including the [NIOSH B Reader Program](#) and the [NIOSH-Approved Spirometry Training Program](#).

- [Radiographic Monitoring](#): Radiographic monitoring for the pneumoconioses, especially coal workers' pneumoconiosis (CWP), is a widely accepted practice.
- [Spirometric Testing](#): Spirometric testing is frequently utilized in the United States to monitor workers at risk for chronic obstructive pulmonary disease and asthma.

Coal Workers' Health Surveillance Program (CWHSP)

Information on the [Coal Workers' Health Surveillance Program](#), a federally mandated medical monitoring program for coal miners.

- [Expanded Coal Workers' Health Surveillance Program \(Spirometry\)](#): Information on how to participate in the CWHSP for coal miner operators, contractors, radiographic facilities, spirometric facilities, and coal miners.
- [Coal Workers Health Surveillance Program \(CWHSP\) Data Query System](#): This query system generates tables by Disease Severity Level and Disease Severity Prevalence, by demographic and geographical criteria for the total number of underground miners who participated in the CWHSP program.
- [Enhanced Coal Workers' Health Surveillance Program \(ECWHSP\)](#): Information on the Enhanced Coal Workers' Health Surveillance Program (ECWHSP), a collaborative program with MSHA to institute field surveys of coal miners.

<https://www.cdc.gov/niosh/topics/surveillance/ORDS/>

Thank You!

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official views of NIOSH or CDC.

