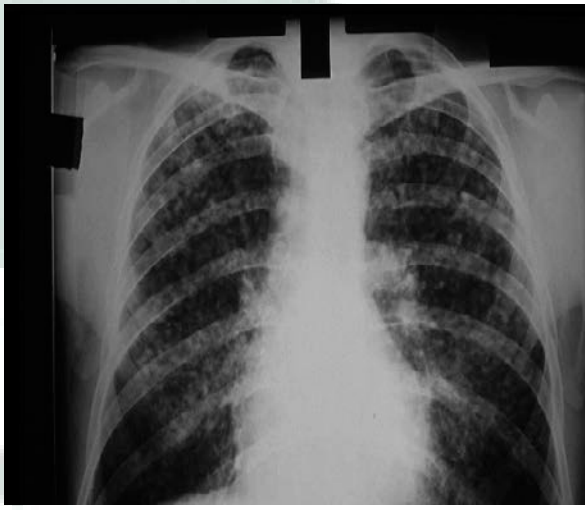
Tracking Work-Related Lung Diseases in Michigan

Additional Information Available at: www.oem.msu.edu

Summary Statistics*

Lung Disease 1988-2019	Number
Work-Related Asthma	3698
Silicosis	1200
Coalworkers' Pneumoconiosis	123
Hard Metal Lung Disease	20
Chronic Beryllium Disease	9
Lung Disease 2009-2019	**Number**
Asbestosis	2502
Chemical Irritation	942
Hypersensitivity Pneumonitis	172
Chemical Pneumonitis	155
Smoke Inhalation	67
COPD Exacerbation	66
Irritative Bronchitis	42
Allergies/Allergic Rhinitis	30
Infectious Agent	28
Pneumoconiosis Unspecified	10
Silo Related Respiratory Ill.	10
Metal Fume Fever	10
Siderosis	4
Acute Respiratory Distress Syndrome	2
Lung Cancer	2
Bronchiectasis	1
Bronchiolitis Obliterans	1
Respiratory Bronchiolitis	1

*Based on complete reporting from 39 of 134 hospitals reporting 2019 data through 3rd quarter of 2019 as of 1-9-2020.



Chest X-Ray showing silicotic changes associated with long-term exposure to silica.

Industry of Silica Exposure, MI

INDUSTRY	#	%
Manufacturing	1010	84
Construction	105	9
Mining	51	4
Transportation	7	1
Services, Health Care	6	1
Trade	5	<1
Government	4	<1
Farming	2	<1
Administrative Support	1	<1
Utilities	1	<1

Background

In 1988 the State of Michigan instituted a tracking program for silicosis, with financial assistance from the National Institute for Occupational Safety and Health. This is a joint project of the Michigan Occupational Safety and Health Administration (MIOSHA) and the Michigan State University (MSU) Department of Medicine. The incidence of silicosis cases in Michigan has been declining since the late 1990s. In an effort to continue to identify, understand and prevent other work-related lung disease, the tracking program was expanded in 2010 to include other dust diseases such as Asbestosis, Chronic Beryllium Disease, Hypersensitivity Pneumonitis (HP) and Hard Metal Lung Disease. Newly-identified cases are interviewed about their exposures and work history and MIOSHA enforcement workplace inspections may be conducted to determine if other employees are at risk of developing lung disease.

Work-Related Lung Disease Case Narratives

Chemical Irritation:

- A man in his 40s was exposed to solvents at a factory. He experienced chest tightness and shortness of breath and was treated with a bronchodilator. He went on sick leave and his breathing improved. He was a lifelong non-smoker.
- A security guard at a hotel was exposed to fumes from a fire extinguisher. He was a lifelong non-smoker. He was prescribed prednisone and a maintenance inhaler, which he used a few times until his cough, shortness of breath and chest tightness resolved about a month later.

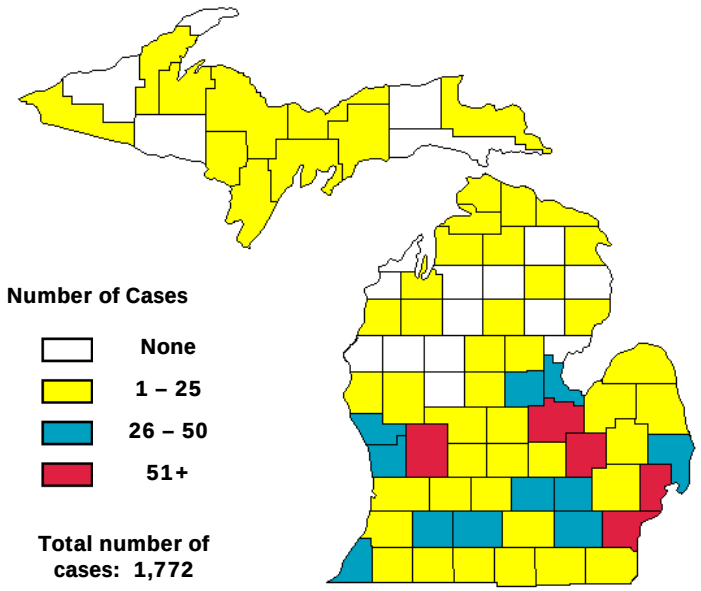
COPD: A male in his 50s developed COPD from his former work welding. He was a lifelong non-smoker.

Program Highlights: Silicosis

- 84% of MI silicosis patients worked in manufacturing, primarily foundries
- MIOSHA enforcement inspections at the workplaces of the silicosis patients reveal that over one-third of companies inspected had silica exposure measurements over the permissible limit
- Emerging industries identified with silica hazards include: **Engineered Stone Countertop Fabrication** -- http://blogs.cdc.gov/niosh-science-blog/2014/03/11/countertops/ and **Hydraulic Fracturing** -- https://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html

Example of respirable quartz-containing dust as a highway construction worker cuts cement.

Distribution of Michigan Residents Diagnosed with Mesothelioma: 2001-2015



The south-central region of Michigan has the highest number of cases of mesothelioma. The Saginaw-Bay county area cases can be attributed to exposure to asbestos in foundries and shipyard work. The counties with the highest annual incidence rates of mesothelioma are:

Marquette	**2.3 per 100,000**
Bay	**2.0 per 100,000**
Midland	**1.9 per 100,000**
St. Clair	**1.7 per 100,000**
Muskegon	**1.6 per 100,000**
Van Buren	**1.6 per 100,000**