Wisconsin Department of Health Services
Division of Public Health
P-02190 (07/2018)

Environmental and Occupational Disease Case Reporting and Investigation Protocol

SILICOSIS

I. IDENTIFICATION AND DEFINITION OF CASES

A. **Clinical Description:** Silicosis is an occupational lung disease caused by the inhalation of crystalline silica dust. Persons working in mining, paint manufacturing, glass and concrete product manufacturing, foundries, brick making, abrasive blasting and sandblasting, construction, and manufacturing of plumbing fixtures can be at increased risk of silicosis. Silicosis is also associated with autoimmune diseases (for example, rheumatoid arthritis, scleroderma), chronic kidney disease, and an increased risk of tuberculosis and lung cancer. It is a progressive and incurable disease that can present differently depending on the duration and intensity of the exposure.

- **Chronic (classic) silicosis:** The most common form and occurs after at least 10 years of exposure to low concentrations of crystalline silica. It can be asymptomatic or result in progressive shortness of breath or cough that can worsen after exposure has ceased.
- **Accelerated Silicosis:** Generally occurs after 5–10 years after initial exposure to silica. It appears similar to chronic silicosis but progresses more rapidly.
- **Acute Silicosis:** A rare disease that occurs rapidly, within the period of a few weeks to five years, after extremely high levels of silica exposure. It presents with sudden severe shortness of breath that is progressive. It has a rapid clinical progression with death occurring within a few years of onset.

B. **Criteria for Diagnosis:**

- **Clinically compatible illness**
  - **Clinical:** A history of silicosis exposure prior to radiological or clinical evidence of disease. Dyspnea, cough.
  - **Radiologic**: Chest x-ray or high resolution CT imaging consistent with silicosis.
- **Physician reported diagnosis**
- **Administrative data**

C. **Wisconsin Surveillance Case Definition:**

- **Confirmed**: History of occupational exposure to respirable silica dust, **and**
  - Chest X-ray (or other radiographic imaging such as CT) showing findings compatible with silicosis; **or**
  - Lung histopathology consistent with silicosis.
- **Probable**:
  - Death certificate record listing silicosis or pneumoconiosis due to dust containing silica as an underlying or contributing cause of death; **or**
  - Hospital discharge record listing silicosis or pneumoconiosis due to dust containing silica as primary, secondary or other diagnosis; **or**
  - Worker's compensation claim with a diagnosis of silicosis or pneumoconiosis due to dust containing silica; **or**
  - Health care professional's report of an individual diagnosed with silicosis or pneumoconiosis due to dust containing silica.

II. REPORTING

A. **Wisconsin Disease Surveillance Category II—Methods for Reporting:** This disease shall be reported to the patient's local health officer or to the local health officer's designee within 72 hours of recognition of a case or suspected case, per Wis. Admin. Code § DHS 145.04 (3) (b). Report electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), or mail or fax a completed Acute and Communicable Disease Case Report (F-44151) to the address on the form.

B. **Responsibility for Reporting**: According to Wis. Admin. Code § DHS 145.04(1), persons licensed under Wis. Stat. ch. 441 or 448, laboratories, health care facilities, teachers, principals, or nurses serving a school or day

care center, and any person who knows or suspects that a person has a communicable disease identified in Appendix A.

C. **Criteria for Reporting**:
- Clinical diagnosis of silicosis
- Evidence of silicosis on chest radiograph or CT scan
- Pathologic findings of silicosis

III. CASE INVESTIGATION

A. **Responsibility for case investigation**: The Division of Public Health performs case investigations unless local health departments choose to conduct routine follow-up for all cases in their jurisdictions. A case investigation may include information collected by phone, in-person, in writing, or through review of medical records or disease report forms, as necessary and appropriate.

B. **Required Documentation:** WEDSS disease incident investigation report, including appropriate, disease-specific tabs.

IV. PUBLIC HEALTH INTERVENTIONS AND PREVENTION MEASURES

- Routine education to patients on prevention of silica exposure and surveillance following exposure.
- Workers working with silicosis should use appropriate personal protective equipment (PPE) and respiratory protection in accordance with National Institute of Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration guidelines. More information is available from the NIOSH website. A fact sheet summarizing exposure regulations and PPE is available from the New Jersey Right to Know Program (English; Spanish version also available).
- Screening exams including imaging and/or pulmonary function testing in accordance with NIOSH and OSHA guidelines for exposed workers.

V. CONTACTS FOR CONSULTATION

Bureau of Environmental and Occupational Health, 608-266-1120

VI. RELATED REFERENCES

A. Leung, C., Yu, I. and Chen, W. (2012). Silicosis. *The Lancet*, 379(9830), pp.2008-2018.

B. Grippi M, ed. (2015). Chapter 88: Coal Workers' Lung Disease and Silicosis In: *Fishman's Pulmonary Diseases and Disorders,* 5th Ed. McGraw Hill

C. Centers for Disease Control and Prevention website: https://wwwn.cdc.gov/nndss/conditions/silicosis/case-definition/2010/

D. Occupational Safety and Health Administration website: https://www.osha.gov/dsg/topics/silicacrystalline/gi_maritime.html

E. Mazurek JM, Wood JM, Schleiff PL, Weissman DN. Surveillance for Silicosis Deaths Among Persons Aged 15–44 Years — United States, 1999–2015. MMWR Morb Mortal Wkly Rep 2017;66:747–752. DOI: http://dx.doi.org/10.15585/mmwr.mm6628a2