



## Environmental and Occupational Disease Case Reporting and Investigation Protocol **CHEMICAL PNEUMONITIS**

### **I. IDENTIFICATION AND DEFINITION OF CASES**

A. **Clinical Description:** Chemical pneumonitis is inflammation of the lower respiratory tract caused by aspiration of a chemical agent that is inherently toxic to the lungs. Signs and symptoms include acute dyspnea, fever, tachypnea, hypoxemia, cyanosis, bronchospasm, and fever. Imaging findings include infiltrates on chest radiograph. Treatment is primarily supportive, and severe cases can result in pulmonary edema, respiratory failure, and death. Chemical exposures of sufficient intensity to result in chemical pneumonitis are typically occupational in nature. A wide variety of agents are known to produce chemical pneumonitis: a) metal fumes encountered in a variety of manufacturing processes, including beryllium compounds, mercury, cadmium oxide, nickel, copper, and manganese; b) caustic gases such as hydrogen fluoride, chlorine, and nitrogen dioxide; c) aspiration of liquid hydrocarbons such as gasoline and petroleum-derived solvents.

B. **Criteria for Diagnosis:**  
Clinically compatible illness or physician diagnosis

C. **Case Definition:**

- **Confirmed:** History of exposure to chemical agent and development of clinically compatible illness.
- **Probable—one of the following:**
  - Death certificate record listing pneumonitis linked to chemical exposure as an underlying or contributing cause of death
  - Hospital discharge record listing pneumonitis linked to chemical exposure as primary, secondary or other diagnosis
  - Worker's compensation claim with a diagnosis of pneumonitis linked to chemical exposure
  - Health care professional's report of an individual diagnosed with pneumonitis due to chemical exposure

### **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:** Clinically compatible disease.

### **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 exposure to chemical inhalants.
- Workers at risk for exposure to agents that can cause chemical pneumonitis should use appropriate personal protective equipment (PPE) and respiratory protection in accordance with NIOSH and OSHA guidelines.
- [Fact sheets](#) summarizing exposure regulations and PPE for many agents (usually with Spanish versions) are available from the New Jersey Right to Know Program. CDC-INFO (800-CDC-INFO/800-232-4636 or by [email](#)) is also available for consultation.

#### **V. CONTACTS FOR CONSULTATION**

- A. Medical Management: Wisconsin Poison Center, 800-222-1222
- B. Case Reporting: Bureau of Environmental and Occupational Health, 608-266-1120

#### **VI. RELATED REFERENCES**

- A. Akira M, Suganuma N. Acute and subacute chemical-induced lung injuries: HRCT findings. *Eur J Radiol.* 2014 Aug;83(8):1461-9
- B. Kelleher P, Pacheco K, Newman L. Inorganic Dust Pneumonias: The Metal-Related Parenchymal Disorders. *Environ Health Perspect.* 2000 Aug;108 Suppl 4:685-96.
- C. Marik P. Pulmonary aspiration syndromes. *Curr Opin Pulm Med.* 2011 May;17(3):148-54.
- D. McKee RH, Adenuga MD, Carrillo JC. Characterization of the toxicological hazards of hydrocarbon solvents. *Crit Rev Toxicol.* 2015 Apr;45(4):273-365.
- E. Nemery B. Metal toxicity and the respiratory tract. *Eur Respir J.* 1990 Feb;3(2):202-19.