

Merlin disease code: 98600 Carbon Monoxide Poisoning

[Paper case report form](#)  
Merlin extended data required

## Background

There is no consistent constellation of signs and symptoms resulting from acute carbon monoxide (CO) poisoning, nor are there any pathognomonic clinical signs or symptoms which would unequivocally indicate a case of acute CO poisoning. The clinical presentation of acute CO poisoning varies depending on the duration and magnitude of exposure and between individuals with the same degree of exposure or the same venous carboxyhemoglobin (COHb) level.

The most common signs and symptoms include headache, nausea, fatigue (lethargy), weakness, abdominal discomfort/pain, confusion, and dizziness. Other signs and symptoms may include visual disturbances including blurred vision, numbness and tingling, ataxia, irritability, agitation, chest pain, shortness of breath (dyspnea), palpitations, seizures, and loss of consciousness.

## Clinical criteria for case classification

### Presumptive:

Either of the following:

- Loss of consciousness
- **Or** death.

### Supportive:

A person with signs or symptoms consistent with carbon monoxide poisoning, which may include one or more of the following: elevated pulse CO-oximetry measurement, headache, nausea, vomiting, abdominal pain, fatigue, weakness, confusion, dizziness, irritability, shortness of breath, or chest pain.

## Laboratory criteria for case classification

### ***For a person who does not smoke or a child <14 years old whose smoking status is unknown***

#### Confirmatory:

COHb level  $\geq 5.0\%$ .

#### Supportive:

COHb level  $\geq 2.5\%$  and  $< 5.0\%$

### ***For a person who smokes or a person $\geq 14$ years old whose smoking status is unknown***

#### Confirmatory:

COHb level  $> 12.0\%$ .

#### Presumptive:

COHb level  $\geq 9.0\%$  and  $\leq 12.0\%$ .

#### Supportive:

COHb level  $\geq 7.0\%$  and  $< 9.0\%$ .

# Carbon Monoxide Poisoning (Continued)

## Note:

Laboratory criteria are not met if elevated COHb levels are due to chronic obstructive lung disease, hemolysis or smoking in the absence of another external source of CO exposure.

## Exposure criteria for case classification

Exposure evidence that is provided by the patient is sufficient for meeting exposure evidence criteria.

### Confirmatory:

A person who had an exposure to an elevated level of CO based on a dedicated or multi-gas meter/instrument (e.g., fire department notation) for a known duration that is consistent with CO poisoning.

### Presumptive:

Either of the following:

- A person who was in a location where a CO detector's alarm sounded
- **Or** a person who had onset of CO-related symptoms associated physically and temporally with a CO-emitting source (e.g., gasoline-powered generator, power washer, malfunctioning furnace, fire).

## Epidemiological criteria for case classification

A person who is epidemiologically linked to a confirmed CO poisoning case (i.e., was present and exposed in the same CO exposure event).

## Case classification

Intentional exposure related to suicide and attempted suicide are not reportable.

### Confirmed:

Either of the following:

- A person with confirmatory laboratory criteria
- **Or** a person with presumptive or supportive clinical evidence and confirmatory exposure evidence.

### Probable:

One or more of the following:

- A person with presumptive laboratory criteria,
- **Or** a person with presumptive clinical evidence and presumptive exposure evidence,
- **Or** a person with presumptive or supportive clinical evidence and epidemiologic criteria.

### Suspect:

Either of the following:

- A person with supportive laboratory criteria
- **Or** a person with supportive clinical evidence and presumptive exposure evidence.

# Carbon Monoxide Poisoning (Continued)

## Criteria to distinguish a new case from previous reports

A new Merlin case should be created when there is either:

- New exposure to CO from different exposure source
- **Or** repeated exposure as defined by having the same exposure source as previous occurrence where the criteria used to designate a case has been resolved prior to repeat exposure.

A new Merlin case should not be created when there are multiple reports for the same person for the same episode, such as when there are multiple COHb lab test results or when a patient receives multiple hyperbaric treatments following a single poisoning event.

## Comments

The acceptance of CO environmental monitoring data is at the discretion of the public health investigator/official. The quality of environmental monitoring data is dependent on the capabilities and limitations of the monitoring equipment and the equipment users. False positive environmental monitoring data is possible (e.g., some CO sensor technologies are known to be cross-sensitive when exposed to other chemicals such as hydrogen sulfide). Please contact the Florida Department of Health Radon and Indoor Air Program Office at (850) 245-4288 or (800) 543-8279 for assistance with the interpretation of CO environmental monitoring data.