ROANOKE CITY and ALLEGHANY HEALTH DISTRICTS
Your Partner in Community Wellness

Roanoke City and Alleghany Health Districts

Alleghany Highlands Situation Update

2.20.25 Action Update: While the original investigation at Covington Middle School was closed on 2.1.25, the wider investigation of elevated carboxyhemoglobin levels in the area is an ongoing, evolving situation.

- **A source for carbon monoxide exposure at Covington Middle School was identified during the original investigation, thus closing that specific investigation.**
  - Fewer than 10 reports occurred within the window for possible exposures (1.31.25 - 2.2.25) related to the Covington Middle School event.
    - There were no hospitalizations related to this event or to reports received since then.
  - It is very difficult to associate the significance of the reported clinical symptoms with the levels of carboxyhemoglobin in the lab results.

- **As of 2.19.25, approximately 60 reports relating to elevated carboxyhemoglobin levels in the Covington/ Alleghany area have been received so far by the Roanoke City and Alleghany Health Districts (RCAHD) since the initial Covington Middle School event on 1.31.25.**
  - To enable a thorough investigation, RCAHD continues to request that healthcare providers submit all recent carboxyhemoglobin reports as quickly as possible.

- **Reports of elevated carboxyhemoglobin levels among Covington/ Alleghany residents continue to be investigated by RCAHD.**

  The Department of Health is working with local healthcare providers, including laboratory managers, Blue Ridge Poison Control (BRPC), the state toxicologist, the Department of Environmental Quality (DEQ), and others to systematically investigate possible factors related to the recent cluster of reports.

  - The ongoing, evolving investigation is likely to take several weeks. Activities include:
    - An ongoing preliminary investigation pertaining to lab quality assurance.
    - Individual case investigations are currently underway to determine other potential sources for carbon monoxide in the community. Patient privacy will continue to be protected.
    - Regular discussions with BRPC, DEQ and others to better understand this evolving situation.

- As the investigation continues, residents are encouraged to survey their personal living space to eliminate any sources of carbon monoxide *(see below)* and install carbon monoxide detectors in their residences.

-end update-

Common Sources of Carbon Monoxide and How to Reduce Exposures:

What are possible common sources of carbon monoxide?

The most common sources of carbon monoxide are from breathing smoke from fires and tobacco products, poorly functioning heating systems, fuel (wood, kerosene, natural gas, propane burning devices, heaters, grills) and engine exhaust.

Do not use outdoor heaters indoors, since they produce carbon monoxide.

How can I reduce exposure to carbon monoxide in my residence and car?

- Install battery-powered carbon monoxide alarms and smoke detectors. If your carbon monoxide alarm goes off, immediately get to fresh air.
- Never use portable generators inside the home. Portable generators should be run only when at least 20 feet from the house.
- Schedule annual maintenance of heating systems and fuel-burning appliances to ensure proper ventilation.
- Install and use an exhaust fan over gas stoves. The fan must exhaust to the outside of the building.
- Never use your oven to heat your home.
- Never burn fuels indoors except in stoves or furnaces that are designed for indoor use and properly installed.
- Do not let your car idle in the garage.
- Do not set up a grill inside your garage, even if the garage door is up.
- Check the exhaust system of your car each year.
- Consult an expert if you smell an odor from your gas refrigerator.

Additional FAQs :

What is carbon monoxide?

Carbon monoxide (CO) is a poisonous, odorless, colorless, and tasteless gas. Carbon monoxide is produced when fuel is burned, such as natural gas, propane, gasoline, oil, kerosene, wood, charcoal, or tobacco products. This gas is produced from both human-made and natural sources. Possible sources of carbon monoxide include heating systems, stoves, portable generators, fireplaces, furnaces, automobile exhaust, gasoline engines, boats and tobacco products.

What is carboxyhemoglobin?

Hemoglobin is a protein in red blood cells that carries oxygen. Carboxyhemoglobin results when someone is exposed to carbon monoxide , and the carbon monoxide binds to the hemoglobin. Carboxyhemoglobin levels can be used to diagnose carbon monoxide exposure.

How is a diagnosis of carbon monoxide poisoning made?

Diagnosis of carbon monoxide poisoning can be a challenging task. Carboxyhemoglobin levels of patients may not correlate with symptoms or outcome, but they are used as a marker of exposure to carbon monoxide.

What are the symptoms of carbon monoxide poisoning?

Depending on the levels of carbon monoxide a person is exposed to, different symptoms may occur. Symptoms of carbon monoxide poisoning can include, but are not limited to, headache, nausea, dizziness, and drowsiness. Diagnosing carbon monoxide poisoning from symptoms alone can be difficult because many of the symptoms are similar to other illnesses such as viral infections.

What levels of carboxyhemoglobin are considered dangerous?

- Carboxyhemoglobin levels are normally less than 1.5% in people's blood, although levels can be higher in people who smoke.
- The Centers for Disease Control and Prevention defines a laboratory confirmed case of carbon monoxide poisoning to be "a person who does not smoke, or a child (under age 14) whose smoking status is unknown, **and** has a carboxyhemoglobin (COHb) level of greater than 5.0% as measured in a blood sample."
- Carboxyhemoglobin levels begin to decrease as soon as the exposure is eliminated. This decrease typically takes several hours, so people who are exposed should return to levels within normal limits within one day.

What is the treatment for high levels of carboxyhemoglobin?

Only people who have symptoms of severe carbon monoxide poisoning, such as loss of consciousness or altered mental status, require treatment. In those situations, the standard treatment is 100 % oxygen. People who do not have symptoms or who have minor symptoms will improve when the source is removed, and the space is ventilated with fresh air.

What are the remaining concerns from the situation at Covington Middle School?

The investigation of the Covington Middle School event on 1.31.2025 has been completed. The findings of elevated carboxyhemoglobin levels that have been reported to the Roanoke City and Alleghany Health Districts on and after Monday 2.3.2025 cannot be attributed to the January 31 event. RCAHD is conducting an ongoing investigation of the more recent findings provided by local healthcare providers.

What is the effect of carbon monoxide exposure during pregnancy?

- This 2023 National Institutes of Health fact sheet may contain helpful information.
- Individuals should continue to discuss their concerns with their healthcare providers. Healthcare providers are in the best position to give guidance tailored to each unique health situation. Healthcare care providers are welcome to contact RCAHD if they have any questions about the current situation.

Is carbon monoxide related to sewer issues?

Carbon monoxide is produced when materials burn. It is a byproduct of burning fuels like gasoline, natural gas, wood, and coal, with the most significant source being vehicle exhaust from cars, trucks, and other motor vehicles. Other common sources include gas stoves, furnaces, fireplaces, generators, smoke from tobacco products, and poorly ventilated appliances when not properly maintained or installed. It is not typical for carbon monoxide exposures to be related to sewers.