

Ice rink fumes have sent kids to the hospital: Few states require tests

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Credit: Tima Miroshnichenko from Pexels

Last December, dozens of young hockey players were rushed to hospitals in the Buffalo, New York, area—some vomiting, lethargic and suffering from headaches.

The skaters had been exposed to high levels of carbon monoxide at an indoor ice rink, a problem that is far from uncommon. Most rinks use ice resurfacing machines—often known by the brand name of Zamboni—and edgers that often run on propane or other fuels. Some use gas-powered heaters above seating areas. Without proper ventilation, the fumes from that equipment can build up high levels of poisonous gases such as carbon monoxide and nitrogen dioxide.

"It's almost akin to running the car in the garage with the door closed," said New York Democratic Assemblymember Monica Wallace, whose district includes the ice rink where the poisoning incident occurred.

"And it's in rinks that are used frequently by children, where people are breathing heavily when they're playing."

While the young skaters in New York all recovered, Wallace learned that they were far from the first to suffer from a mass poisoning event at an ice arena. Within the past decade, similar incidents have sent handfuls to scores of ice rink visitors to the hospital in Delaware, Illinois, Ohio and Wisconsin.

Some state health officials say many more incidents don't make the news. And as families around the country begin hockey training camps and wrap up registration for fall leagues, health experts note that many ice rink visitors may be unknowingly suffering from lower-level exposures that can cause long-term damage.

As Wallace researched previous incidents across the country, the former hockey mom was even more surprised to find only three states require their rinks to test air quality and meet certain safety thresholds.

"It seems pretty surprising that this is such an issue," she said. "Until it happened in my district, I had no idea."

Earlier this year, Wallace drafted a bill that would require New York ice rink owners to monitor their air quality. At certain thresholds, they would be required to increase ventilation, notify state officials, or evacuate the rink. In many rinks, especially in older structures, ventilation occurs near the top of the building, so as not to pull warmer outside air near the ice surface. But that can allow gases to settle into the skating area unless they are cleared out by exhaust fans.

The bill is modeled on existing standards in Massachusetts, Minnesota and Rhode Island. Leaders in those states say regulations have helped to reduce emergencies and lower the long-term exposures that can cause respiratory problems such as asthma.

While some rink owners initially expressed skepticism about the rules, industry officials in those states say they've learned how to comply. Now, they say the standards are a key framework for helping them provide a safe environment for skaters and staff.

"It doesn't benefit anyone to have something on the nightly news of 15 kids getting loaded onto ambulances at an ice rink," said Ed Peduto, a board member with the North East Ice Skating Managers Association and the general manager of an ice arena in Reading, Massachusetts. "People don't want to be regulated, but this has made rinks in Massachusetts exponentially more safe."

Promoting safety

National ice rink industry groups already recommend air quality testing and safety thresholds. They haven't openly opposed bills such as Wallace's to make that testing mandatory. But the New York bill did not advance before the legislature adjourned this session; Wallace intends to bring the proposal back next year. Still, it seems there's been little traction at the state or federal level to adopt such rules for the nation's

roughly 2,000 indoor ice rinks.

"I do see the reports of incidents in various states, which does suggest that in the absence of regulations there's an increased risk of severe acute poisoning," said Dan Tranter, supervisor of the Indoor Air Unit at the Minnesota Department of Health. "It's a pretty reasonable way to protect public health."

Minnesota became the first state to enact air quality rules for ice rinks in 1973. Over time, testing results have shown a decline in carbon monoxide and nitrogen dioxide levels as rink owners have fixed ventilation issues or switched to electric machines. The state has not seen a severe hospitalization incident in more than 20 years, Tranter said.

Massachusetts passed its standards in 1997. Suzanne Condon, former associate commissioner of the state Department of Public Health, helped draft the regulations. In addition to the mass poisoning events, state leaders were concerned about high rates of childhood asthma and other respiratory conditions. They cited emerging evidence that long-term lower-level exposures could worsen such problems.

"I remember watching the team bench during school hockey games and almost every other kid was using an inhaler," she said. "You really want to prevent exposures in order to prevent disease and ultimately make life better for kids."

Current agency officials did not grant a Stateline interview request.

Peduto, the Massachusetts ice arena manager, said the agency backed up its rules with a stringent inspection regime that initially angered rink owners. Over time, though, as they were forced to comply, the owners came to see their improved air quality as a selling point, Peduto said.

"Skating rink operators in Massachusetts are really proud of the air quality of their rinks," added Condon. "It's been so many years since there's been any incident related to carbon monoxide or nitrogen dioxide. It's testament to the fact that it worked."

Industry response

Rhode Island also has enacted standards, while Connecticut, New Hampshire and Wisconsin have issued nonbinding guidelines. The U.S. Environmental Protection Agency has issued detailed guidance for rink operators, but it is voluntary.

The U.S. Ice Rink Association recommends that its members voluntarily test their air and take corrective actions at certain thresholds. The trade group did not respond to a request for comment.

Given the number of high-profile poisoning incidents, and the lack of visible industry pushback, some officials are surprised that more states haven't established their own regulations. Some speculate that it stems from a lack of awareness, or the fact that the issue is limited to a single industry.

At least one local government has taken matters into its own hands. Roughly a decade ago, firefighters in Evendale, Ohio, grew alarmed at how often they were called over several years to a local ice arena to help sickened skaters.

"We started to measure [carbon monoxide](#) whenever we were in that facility, and we kept getting alarms," said Michael Hauck, chief of the village's fire department. "That tipped us off that we had a potential issue with the equipment being used in the ice arena."

As local leaders looked into the issue, they heard from Ohio health

officials that no statewide regulations would be forthcoming. In 2017, the village council passed a set of air quality testing requirements and standards, modeled on Minnesota's regulations. Soon after it passed, the rink that had caused the fire department's concerns discovered that it had problems with its ventilation units. Once fixed, its [air quality](#) improved dramatically.

Eventually, both rinks in town switched to electric ice resurfacers. Officials at the state and local level say they have seen many rink owners switch to electric equipment after the passage of testing regulations. By switching to models that don't emit fumes, they can exempt themselves from testing requirements and save money on fuel in the long run.

"The regulation does incentivize going all electric," said Tranter, with the Minnesota agency. "Now it's rare to see a corrective action level reached, and that has a lot to do with the switch to electric."

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