



It Costs \$30 and Saves Lives. Why Don't Many Hotels Install Carbon Monoxide Alarms?

Three deaths at a resort in the Bahamas called attention to the dangers of the odorless gas. In the U.S., where it often takes multiple poisonings for hotels to install alarms, a debate about detector policies has been intensifying.

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Pawel Markowski with a portable carbon monoxide detector at his home in York, Pa. He almost lost his life because of a carbon monoxide leak at an Oklahoma hotel that did not have a detector. Andrew Morgan for The New York Times

By Heather Murphy
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He was not the first guest to fall ill in Room 205. Just when Pawel Markowski thought that nothing could shake him more than nearly losing his life to a carbon monoxide leak at a hotel in Catoosa, Okla., his lawyer sent him the Fire Department's report.

"We have previously responded to this exact room number two other times in the last two weeks," Dennis Benton, Catoosa's fire chief, wrote.

"I don't know what these people were waiting for — someone to die?" said Mr. Markowski, 44, whom a colleague discovered "unresponsive" on the floor of his hotel room on March 16, according to medical reports.





Incidents like Mr. Markowski's rarely break through beyond the [local news](#). But when, in May, [a carbon monoxide leak killed three Americans](#) at the luxurious Sandals Emerald Bay resort in the Bahamas, it generated hundreds of news stories and sparked conversations about the invisible, odorless gas.

After the tragedy, Sandals announced that it would install carbon monoxide detectors in all its hotel rooms in the Caribbean. In doing so, the company inadvertently called attention to the fact that most resorts and hotels, the world over, do not place detectors in guest rooms.

The company's action also fed into a simmering debate about how to prevent carbon monoxide poisonings in hotels in the United States. Though smoke alarms are normally required in American hotel rooms, no state and few hotel brands require in-room carbon monoxide detectors, which can be purchased for as little as \$30. Some firefighters, doctors, activists and [lawmakers](#) have been pushing hotels to install them in every room. The lodging industry says that is unnecessary and too expensive.

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Those who want stricter detector requirements say the frequency of incidents necessitates change. In the past year, in addition to Mr. Markowski's almost-fatal stay at a Hampton Inn & Suites outside Tulsa, carbon monoxide leaks at six other U.S. hotels killed two and injured at least 35 other guests and employees, including 10 children. In most of these cases, there was no working detector on site, according to interviews with fire officials, front desk staff and local news reports.

In the past 20 years, at least 1,090 people have been injured by carbon monoxide leaks in U.S. hotels, with 32 people — including 7 children — dying, according to the Jenkins Foundation, a nonprofit that tracks carbon monoxide incidents at hotels. A study published in the journal Preventive Medicine Reports last year suggested that these figures could be [many times higher](#) given that so few incidents are publicly reported.

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The International Fire Code, which guides state and corporate policies but does not carry the force of law, was updated in 2012 to say that hotels should either place carbon monoxide monitors in common areas or in guest rooms. But when the code was updated in 2015, the lodging industry successfully lobbied to remove that requirement, according to interviews with key stakeholders.

Many states and brands do require carbon monoxide detectors in rooms with fireplaces and near fuel-burning appliances, such as hot water heaters, in compliance with the current International Fire Code and other building codes. But in more than a dozen states, this only applies to newer hotels. At least six states do not require detectors in hotels at all.

Both Airbnb and VRBO, which have dealt with at least 10 carbon monoxide deaths in [Brazil and Mexico over the past four years](#), were forced to install detectors near every sleeping area, but do not

regulators to mandate detectors in those cases. Inexpensive models that do not require them. Airbnb offers hosts free detectors, but in a 2018 study, public health researchers found that only 58 percent of hosts said they had installed them.



The Sandals Emerald Bay resort recently had a carbon monoxide leak that killed three people and injured a fourth. [Dimitrios Kambouris/Getty Images for Sandals](#)

"How many people need to die and be permanently brain injured for it to matter to them as an industry?" asked Kris Hauschildt, whose parents died from carbon monoxide poisoning in a hotel room in Boone, N.C., in 2013. It was only seven weeks later, after an 11-year-old boy [died in the same room](#), that investigators identified a leak from a pool heater.

Ms. Hauschildt created the Jenkins Foundation, in part, to track the poisonings at hotels, something no entity was previously doing. In 2021, her findings helped compel the National Fire Protection Association, a nonprofit group that establishes safety codes that set some state policies, to require detectors in both new hotels and old hotels.

The lodging industry generally takes the position that poisonings are too rare to rationalize costly changes, like requiring detectors in every one of the country's 5 million or so guest rooms. Proper maintenance and installing detectors near devices capable of emitting carbon monoxide should prevent virtually all poisonings, lobbyists representing major hotel chains have argued.



"Few hotel guest rooms have fireplaces or fuel-fired appliances capable of producing carbon monoxide, so warning devices such as CO alarms are a secondary defense," a spokeswoman for the American Hotel & Lodging Association, which represents Hilton, Hyatt, Marriott and many other hotel companies, said in an email. "The proper maintenance of fuel-fired appliances precludes the likelihood of an inadvertent carbon monoxide exposure."





Kris Hruschid at her home in Kalama, Wash. She holds a photograph of her parents, who died of carbon monoxide poisoning while staying in a hotel in North Carolina. *Ritzya Baker for The New York Times*

Room 205 and the “great mimicker”

Mr. Markowski, who lives in York, Pa., has been traveling to Catoosa almost every week since early 2019, when he became the general manager of a factory there. He chose the Hampton Inn & Suites, which is owned by Hilton, because it is about six miles from the factory.

His first inkling that something was wrong came soon after he checked into Room 205 on the evening of March 14, when he struggled to fall asleep. But he dismissed it as just another bad night, just as he dismissed the feeling of being unusually tired the next day. It was only the next night, back in Room 205, that he could no longer deny there was something wrong.

“I felt kind of drunk or something,” he said.

He vaguely recalls descending to the lobby to ask if there might be something wrong with the room. It is not clear whether the front desk clerk knew that two other guests had recently called 911 from Room 205. One guest was throwing up and the other had chest pain, according to Mr. Benton, Catoosa’s fire chief.

“They went to the hospital,” Mr. Benton said, referring to the two earlier guests. “The hospital turned them loose.”

It’s common for hotel staff and doctors to miss the signs of carbon monoxide poisoning, experts say. This is partly because the symptoms — headache, dizziness, weakness, shortness of breath, nausea, vomiting, chest pain, confusion, blurred vision, tingling of the lips — could be caused by so many things.

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“That’s why they call it ‘the great mimicker,’” said Charon McNabb, a co-founder of the National Carbon Monoxide Awareness Association, a nonprofit based in Bloomfield Hills, Mich.

Diagnostic confusion also seemed to have played a role in the Sandals case. The night before they were supposed to check out, two of the people who died, Robbie Phillips, 65, a travel adviser who was actually one of the top sellers for Sandals, and her husband, Michael, 68, visited a medical facility complaining of

nausea and vomiting, according to local authorities. Dennis Chiarella, 65, who was staying on the other side of the wall, also visited a clinic, her son [told ABC News](#). All returned to their adjoining beachfront villas, where the Philippses and Ms. Chiarella's husband, Vincent, 64, were found unresponsive the next morning according to local authorities. Later that day, all three were pronounced dead. Ms. Chiarella, who had to be hospitalized, was the lone survivor.

Further complicating diagnosis is the fact that there often aren't any major hints before the invisible, odorless gas renders someone too disoriented to take action, said Patrick Morrison, the chief of field services for the International Association of Fire Fighters, the largest union of firefighters and paramedics in the United States. He said his union supports requiring detectors in all hotel sleeping quarters for this reason.

"If you cannot get out to fresh air, you'll be overcome by it," Mr. Morrison said. "That's why people die in their sleep."

Mr. Markowski returned to his room, where at some point he recalls lying on the floor screaming.

Fuel and a bird's nest

Carbon monoxide is released when a device burns a fuel such as gas, oil, propane, kerosene, wood or charcoal. The most common causes of carbon monoxide poisoning in hotels are boilers and heaters used to warm swimming pools and water for an entire wing, said Dr. Lindell K. Weaver, who specializes in carbon monoxide poisoning at Intermountain Healthcare in Salt Lake City. Gas dryers, fire places, portable gas-powered pool cleaning devices and portable generators are other sources of carbon monoxide leaks.

If these devices are working properly — or, in the case of generators, if they are used in a safe location outside — they shouldn't pose a danger. Carbon monoxide, in tiny amounts, will exit through the exhaust vent. Problems typically occur when the device malfunctions or the vent is blocked or broken. In Mr. Markowski's case, fire reports identified a bird's nest plugging the vents in the room with the hot water tanks.

The gas can follow air currents through vents, tiny holes and even dry wall, sometimes ending up far away from the original source of the leak. In this case, the gas likely entered Room 205 through holes and crevices in the floor, according to fire authorities.



Filling a room with carbon monoxide causes an effect similar to removing oxygen from the air. That's because when people breathe in carbon monoxide, it binds with hemoglobin in the blood, causing less oxygen to get transported to vital organs such as the brain and heart.

A missed 7:30 meeting

Early on the morning of March 16, Jason Morgan, the plant manager at the factory, learned that his boss, Mr. Markowski, had failed to show up to a 7:30 a.m. meeting. Calling and texting did not elicit a response.

Upon arriving at the hotel, Mr. Morgan spotted the Kia Soul Mr. Markowski always rented outside. After convincing the woman at the front desk to let him into the room, he found his boss curled up in a fetal position on the floor.

"He couldn't talk. He didn't know where he was at," he said.

Fire fighters responding to Mr. Morgan's call realized that this was

their third call to room 203 in recent weeks and pulled out a carbon monoxide detector. Most in-room alarms are calibrated to go off at levels at which people could be injured if they stay in the room — somewhere around 70 parts per million for more than an hour or 400 p.p.m. for more than four minutes, said Dr. Weaver. Mr. Markowski's room was at 764 p.p.m., according to Fire Department reports. The water heater room registered at 1,500 p.p.m.

At the hospital, doctors screened Mr. Markowski's blood for the percentage of red blood cells bound with carbon monoxide — the level is affected by the severity of the leak to which a person has been exposed and the length of their exposure. A normal reading is around 2.5 percent; 50 percent is almost always fatal; people with heart disease or lung disease often die at around 35 percent, said Dr. Weaver. Mr. Markowski's blood registered at 37.2 percent, according to medical reports. He said that doctors told him he was lucky to be alive.

"I'm 44 years old and I'm in pretty good shape, so maybe that helped me," he said.

Among those who are poisoned, about 30 to 50 percent experience lasting effects including cognitive issues and heart damage, said Dr. Weaver, who travels with a portable carbon monoxide detector.

Isolated incidents or a systemic problem?

In Mr. Markowski's case, in addition to the bird's nest, two exhaust flues were found detached from the hot water tanks according to fire reports. In contradiction of safety codes in Oklahoma, there was no carbon monoxide alarm near the tanks according to a lawsuit that Mr. Markowski filed against both the hotel owner and Hilton Worldwide Holdings, the company that licenses its name and sets standards for around 2,200 franchise hotels.



When contacted for comment, Hilton said that the Catoosa hotel was independently owned and operated and that questions should go to the hotel's owner. Kalpesh Desai, the owner, said he could not comment because he was involved in active litigation. Josie Hill, a spokeswoman for Hilton, referred questions about carbon monoxide policies to the American Hotel & Lodging Association.

The lodging association said that it encourages members to adhere to the International Fire Code, which urges installing detectors near fuel-burning devices.

Thomas G. Daly, a consultant and former Hilton employee who has helped the lodging association lobby against stricter carbon monoxide rules, said detectors aren't the issue. "If equipment isn't maintained and there is leak, that's human error," he said.

Requiring detectors in every room is "outrageously expensive," he said, because it involves not only installing a detector every six years or so but also testing and upkeep. It's also "the wrong place" to put monitors, Mr. Daly said, given that it's smarter to catch leaks at the source.

But others say that Mr. Markowski's case is representative of a broken system where it often takes multiple poisoning incidents before leaks are identified and many people only survive because someone happens to come looking for them. It should be on lawmakers and hotel brands to ensure safety, they say.

Mr. Desai's hotel was built in 2010, before Oklahoma required detectors in hotels. The state later required them near fuel-burning devices, but there was no compliance mechanism. Mr. Benton said he didn't think hotels were aware of the new rule — he didn't even know of the requirement. Fewer than one-third of states have statutes that outline who is responsible for verifying that hotels have detectors.



Regardless, the emphasis on fuel-burning devices “is a real red herring,” said Gordon Johnson, a lawyer specializing in carbon monoxide cases. The issue, he said, “is not where the carbon monoxide is created, it’s where it escapes,” and that can be multiple floors or rooms away from the source.



An array of portable carbon monoxide monitors, which range in cost from \$20 to \$200 and have different levels of sensitivity. — Kristina Barker for The New York Times

Leslie Lienemann, a lawyer from Minnesota who, with her son, was poisoned by a carbon monoxide leak in a Warren, Mich., hotel in 2019, said the lodging industry’s cost argument is offensive. She and her son wound up in the emergency room because a plumber had incorrectly installed a water heater without an exhaust pipe at a Hawthorn Suites by Wyndham. There was no working detector anywhere at the hotel, according to court documents. They later learned that three years earlier a cleaning woman had stumbled on two guests in another room who’d passed out from a leak.

“My son’s life is worth more than the \$35 that you’d spend on a carbon monoxide detector,” said Ms. Lienemann, who is suing the company that owns the hotel and the plumbing company that installed the water heater.

In a statement, Wyndham Hotels & Resorts said that the hotel is individually owned and operated and required to abide by local laws. Michigan requires carbon monoxide detectors in hotels built after 2009. The owner and the plumber did not respond to calls or emails.

Soon after the incident, the hotel replaced the fire alarms in every guest room with combination fire alarm-carbon monoxide detectors that cost \$31.99 each.

During a deposition, a hotel manager who was not accused of any wrongdoing shared that not long after they were installed, one of the alarms revealed that a new pool heater vent, angled up too high, was releasing carbon monoxide into a guest’s open window.

“It was detected, thank God,” said Bassam Mikhael, the manager.

Rity Bennett and Sheelagh McNeill contributed research.



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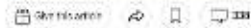
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Correction: July 31, 2022

An earlier version of this article misquoted Gordon Johnson on cases of carbon monoxide poisoning. He said that the issue with these cases was where carbon monoxide escapes, not where carbon dioxide escapes.

Heather Murphy is a reporter on the Travel desk. She welcomes tips, questions and complaints about traveling during the pandemic. [@heathermtal](#)

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