

SPRING 2025

# THE ANTIDOTE

News and Notes from the Blue Ridge Poison Center

## What is the PPPA, and how has it helped thousands of children?

This year marks the 55th anniversary of this life-saving law



*Child-proof* medicine bottles; *child-proof* cabinet locks; *child-proof* gates...there is a long list of child-proof items you can buy that promise to protect your child from harm. We use that term ‘child proof’ a lot. However, many parents of toddlers have learned the hard way that, given enough time, some children can figure out how to open “child proof” items—especially if they watch an adult open them first.

The correct term for safety packaging is ‘*child resistant*.’ This year marks the 55<sup>th</sup> anniversary of the **Poisoning Prevention Packaging Act (PPPA)**, which made it the law to sell medicines and other hazardous household products in child resistant packages to help keep children safe. Passing the PPPA was a milestone in childhood poisoning prevention. In fact, since the PPPA took effect, the *number of children dying from poisoning each year has dropped by 92 percent*.

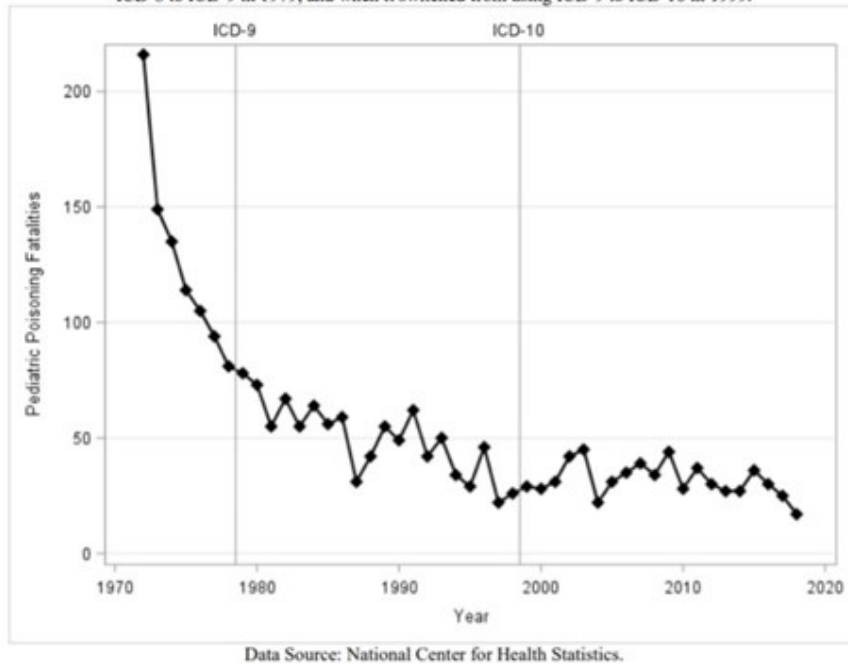
The very first child resistant safety cap was designed by Peter Hedgewick, a Canadian tool manufacturer. He called it the “Palm N Turn” cap, and it worked because it required two actions at the same time: pushing down on the cap while turning it. This was difficult for children to do. His design was the winning entry in a contest sponsored by the Ontario [Canada] Association to Control Poisonings. The cap was soon tested in the U.S., and it was so successful at keeping children out of medicine bottles that the PPPA was quickly signed into law by President Nixon on December 30, 1970. Almost immediately, childhood poisoning began to plummet (see the chart on the page 2).

Today there are many different types of child resistant packages for all sorts of products. Some require the user to squeeze while turning; some require lining up arrows on the bottle and cap; some have false lids or other tricky devices that children cannot easily operate. But they all have one thing in common: they have passed a very strict test

Continued next page

**Figure 1: Pediatric Poisoning Fatalities Among Children Under 5: 1972–2018**

Note: The vertical lines indicate when the World Health Organization switched from using ICD-8 to ICD-9 in 1979, and when it switched from using ICD-9 to ICD-10 in 1999.



This chart shows the number of poisoning deaths to children under age 5 from the year after the PPPA was signed into law until 2018. The data was collected from U.S. hospitals.

reclose. If that has you scratching your head, Kristin Wenger, Education Coordinator of the Blue Ridge Poison Center, explains: “Studies show that when an adult has too much trouble opening a medicine bottle, they don’t use it. They might just leave the cap off, or store the medicine in something else like a baggie or a regular bottle. This puts children at risk.” Likewise, if an adult cannot successfully reclose the locking device, the cap is worthless.

Child resistant containers are very effective at protecting children. But parents and caregivers still need to **take additional steps to keep children safe**. Store potential dangers up high, in a place where children can’t see them and can’t reach them, including:

- All medicines (prescription, over-the-counter, herbals, and supplements)
- Cleaning products
- Pesticides
- Automotive products
- Personal care products (such as mouthwash, sunscreen, etc.)
- Tobacco and nicotine products
- Alcohol
- Cannabis products, including CBD, edibles, concentrates, etc.

to earn the label “child resistant.” Testing is overseen by the **U.S. Consumer Product Safety Commission**:

- At least 50 children between the ages of 42-51 months old must be used to test the container.
- Each child is given an empty container and asked to open it.
- If the bottle remains unopened after 5 minutes, the tester gives the child a visual demonstration. The tester can also say to the child “You can use your teeth if you want to.”
- The child gets 5 more minutes to try to open the container.

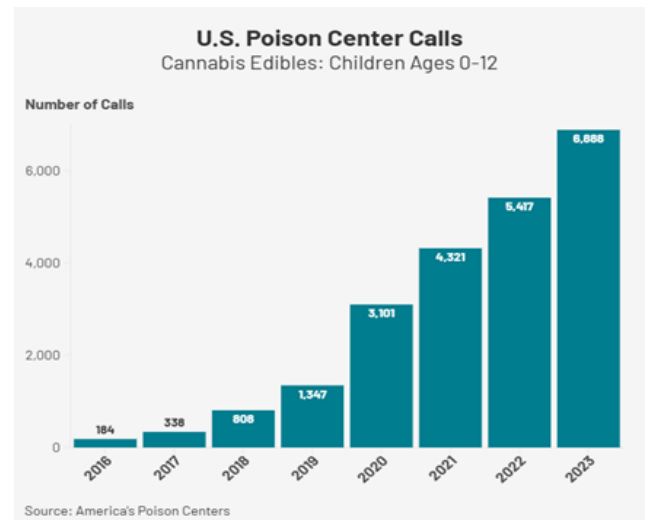
If 80% of the children cannot open the container within 10 minutes, the container passes and can be certified as child resistant. But the testing is not over! In order to be certified as child resistant, a container must also prove that it’s not too difficult for older adults to open and



“The need to keep cannabis products in child resistant containers is a new and very serious problem,” Wenger continues. **“The number of calls to U.S. poison centers about children who got into cannabis—particularly edibles—is skyrocketing.”**

(see chart at right)

*Who can help?* If a child gets into any medicine or product, do not hesitate to call the Blue Ridge Poison Center. Our experts are also parents and caregivers who understand that kids are unpredictable. Our guidance is confidential, judgement-free, and costs nothing. We are always open: 1-800-222-1222.



## Winter is the Deadliest Month for Carbon Monoxide

**CASE 1:** A group of teens was having a party in the garage of a house. They were using a propane space heater for heat. After a while, they all developed a headache and felt sick. One person fainted. All were treated at the emergency department and recovered. The fire department detected high levels of carbon monoxide gas (CO) in the garage.

**CASE 2:** A man called 9-1-1 because his wife was slurring her words. He thought she might be having a stroke. When first responders arrived, they discovered a car had accidentally been left running in the garage. The whole house smelled like gasoline. Tests showed very high levels of carbon monoxide inside the home.

The stories above are all true cases reported to the Blue Ridge Poison Center. Winter brings risks of carbon monoxide poisoning because more people are using fuel-burning appliances for heat or electricity, especially if the power goes out. In fact, more people die from accidental CO poisoning in winter than any other time of year.

### POISON TRIVIA

*TRUE or FALSE?* If you broke this thermometer, you could get mercury poisoning from the liquid inside.

Answer on page 4



**CO is a sneaky poison** because it has no smell, no taste, and no color. People may not know that they are breathing it. According to the U.S. Centers for Disease Control and Prevention, nearly 50,000 people in the U.S. visit an emergency department each year--and over 400 people die-- from accidental CO poisoning.

**Symptoms of CO poisoning** are often mistaken for the flu or other illness, and include:

- Headache
- Nausea and vomiting
- Chest pain
- Feeling tired, weak, or dizzy
- Confusion
- Loss of consciousness (“passing out”)

**Poison Trivia Answer: False.** Liquid mercury is silver-colored. Thermometers with red, blue, or any other color liquid do not contain mercury. The non-silver colored liquid likely contains alcohol, which could cause minor irritation to the mouth, eyes, or skin. Digital thermometers and those that measure temperature in the ear or against the forehead also do not contain mercury.

Very high concentrations of CO can cause loss of consciousness and even death in only a few breaths. A person who survives CO poisoning may suffer permanent damage to the brain or other organs.

A large number of carbon monoxide poisoning cases are the result of portable power generators placed too close to a home. Other common sources include: oil or gas furnaces with faulty duct work; automobile engines; woodstoves and fireplaces with blocked or leaky chimneys; and fuel-burning appliances like grills or camp stoves.

#### **Protect your family:**

- ❄ Never run a portable generator or other fuel-burning appliance in an enclosed space, such as in a basement, attic, storage shed, or garage. Instead, place them at least 20 feet away from your home.
- ❄ Have all chimneys and furnaces inspected and cleaned by a professional once a year.
- ❄ Do not heat your home with a gas-powered oven or stove.
- ❄ Do not run your car engine in the garage, even with the garage door open.
- ❄ Make sure the tailpipe of your car is not blocked, especially by snow or leaves. A blocked tailpipe causes CO gas produced by the engine to build up quickly inside the car.

The most important thing is to **install carbon monoxide detectors in your home**. If the alarm sounds—or if you suspect someone may be suffering from carbon monoxide poisoning—move all people and pets outdoors to fresh air immediately. Then call 9-1-1 for help. Do not ignore an alarm, or try to find the source of the gas yourself. Carbon monoxide is invisible and can act very quickly.

The [Blue Ridge Poison Center](#) is affiliated with University of Virginia Health. Other funding sources include the Virginia Department of Health and HRSA. We are accredited by America’s Poison Centers. Proudly serving the Commonwealth since 1978. [Join the mailing list](#) to receive this quarterly newsletter.

