



# CDC's CO Poisoning Prevention Communication

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Kansas City, MO

# A little history . . .

**Deaths associated with Hurricane Hugo -- Puerto Rico 1989**

**Unintentional Carbon Monoxide Poisoning Following a  
Winter Storm -- Washington, January 1993**

**Deaths Associated with Hurricane Georges -- Puerto Rico,  
September 1998**

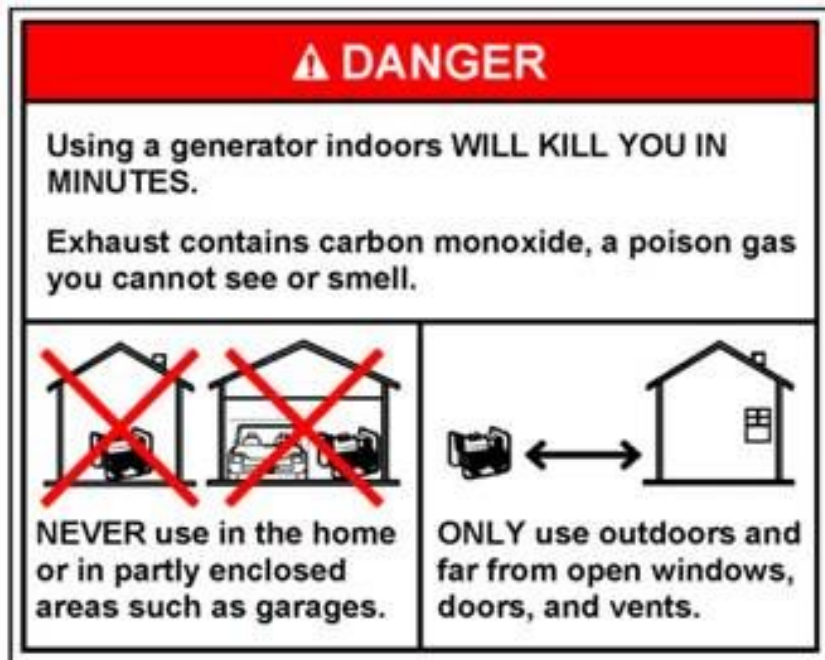
**Community Needs Assessment and Morbidity Surveillance  
Following an Ice Storm -- Maine, January 1998**

**Carbon Monoxide Poisoning from Hurricane-Associated Use  
of Portable Generators --- Florida, 2004**

**Carbon Monoxide Poisoning After Hurricane Katrina ---  
Alabama, Louisiana, and Mississippi, August--September  
2005**



# Partners are essential



United States  
Consumer Product Safety Commission



# Quantitative audience data: HealthStyles

- Mailed (in 2005 and 2006) panel survey that measures health knowledge, attitudes, and behaviors of adults in the U.S.
- A random sample, based on region, household income, population density, age, and household size, is combined with a low-income/minority supplement to create a nationally representative sample.

In this section, there are a number of statements with which you may or may not agree. For each statement listed, please indicate whether you personally agree or disagree with it.

Likert scale response  
(1 = strongly disagree and 5 = strongly agree)

2005 items

It is safe to run a generator in a basement as long as a window is open. 1 2 3<sup>a</sup> 4<sup>a</sup> 5<sup>a</sup>

It is safe to run a generator in a garage as long as the door is open. 1 2 3<sup>a</sup> 4<sup>a</sup> 5<sup>a</sup>

2006 items

If you use a gas-powered generator, you should also use a carbon monoxide detector. 1<sup>a</sup> 2<sup>a</sup> 3<sup>a</sup> 4 5

It is safe to run a generator in a garage that is not attached to the home. 1<sup>a</sup> 2<sup>a</sup> 3<sup>a</sup> 4 5

I don't need a carbon monoxide detector in my house if I have a new furnace. 1 2 3<sup>a</sup> 4<sup>a</sup> 5<sup>a</sup>

It is safe to run a generator in a garage as long as the door is open.<sup>b</sup> 1 2 3<sup>a</sup> 4<sup>a</sup> 5<sup>a</sup>

It is important to have fuel-burning appliances inspected professionally at the beginning of each heating season. 1<sup>a</sup> 2<sup>a</sup> 3<sup>a</sup> 4 5

How often do you check the battery in your CO detector? ("X" all that apply)

Do not have a CO detector  Every six months

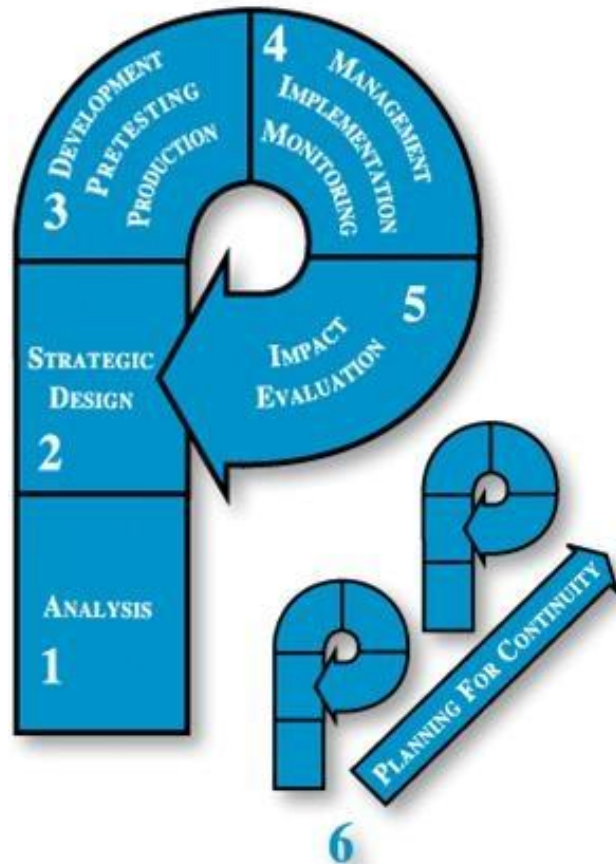
It beeps when the battery needs to be changed  Once a year

King ME, Damon SA. "Attitudes about Carbon Monoxide Safety in the United States: Results from the 2005 and 2006 HealthStyles Survey." *Public Health Reports*, 2011; 126 (S1): 100-107

# Main HealthStyles findings (2005 & 2006)

- Majority of homeowners recognized that a CO detector was needed even with a new furnace
- A large proportion of adults in the U.S. believe that it is safe to operate a gas-powered generator in an enclosed space, such as a garage
- Most of the respondents surveyed—the majority of whom were homeowners—did not own a CO detector.

# Audience research process



## Qualitative research

- Literature and Data Review
- Summer Storm Focus Groups
- Winter Storm Focus Groups
- Nonemergency residential poisonings
- Data Analysis & Prototype design
- Field testing

# CO Knowledge

2009 Focus groups of homeowners and risk behavior related to residential poisoning

- Participants have heard of CO and know it is an odorless, colorless gas.
- Many know symptoms of CO poisoning: headache, drowsiness and dizziness.
- Most participants could name CO sources: furnaces, grills, cars and gas appliances.
- If CO were present, most participants knew to leave the house and call the fire department. Some would take less appropriate actions (e.g., turning off natural gas, opening windows, checking CO detector for malfunction).
- Damon SA, Poehlman JA, Rupert DJ, Williams PN. "[Storm-Related Carbon Monoxide Poisoning: An Investigation of Target Audience Knowledge and Risk Behaviors.](#)" *Social Marketing Quarterly*. 2013: 19:188-199.
- Rupert DJ, Poehlman JA, Damon SA, Williams PN (2013). "[Risk and protective behaviours for residential carbon monoxide poisoning.](#)" *Injury Prevention*; 19(2): 119-123.

# Detector knowledge

- Most participants have a CO detector, but many do not have adequate alarm coverage.
- Participants were unsure how many CO detectors to install or where to place them. Many place detectors near furnaces or in basements/utility rooms.
- Few participants placed detectors in or near bedrooms. None acknowledged a connection between detector location and the ability to hear it.
- Participants poorly maintain CO detectors. Many do not change batteries regularly.



# Storm related knowledge

Both summer & winter storms

- Most participants were familiar with CO and had heard about CO poisoning. Specifically, participants were familiar with its characteristics (e.g., colorless, tasteless, odorless), knew it often affects sleeping individuals, and recalled that victims were unlikely to know they were being poisoned.
- Participants also recalled most symptoms of CO poisoning (e.g., headache, drowsiness, dizziness) and knew that it could be fatal.
- Ventilation, fumes, and CO poisoning were the second most common concerns among participants (after electrocution). Most participants said they were not highly concerned about CO poisoning.
- None of the participants acknowledged that their generator placement might have exposed them to some level of CO in the past.
- Almost all participants talked about the need to properly ventilate generators. Few could actually define that
- Storm precautions rarely included a CO detector. Almost all participants were aware of CO detectors and their purpose, although only half of participants had CO detectors installed in their homes.
- Most participants believed that installing a CO detector would be easy—as opposed to generator relocation.

# Qualitative Research Summary Findings: Lack of Awareness of CO Sources and Detectors

- Many do not consider themselves at risk.
- Homeowners service their furnaces sporadically; few have annual inspection/ maintenance contracts.
- Many portable generator owners place their generators in enclosed spaces.
- Most are unsure where to place CO detectors or how many they should install.
- Most change batteries “when a detector chirps” rather than every 6 months.

# Easy to Use Materials


**CARBON MONOXIDE POISONING PREVENTION**

**A TOOLKIT**

Working Together to Keep Communities Safe

DECEMBER 2010

PRESENTED BY



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

**WHEN THE POWER GOES OUT, KEEP YOUR GENERATOR OUTSIDE**

Portable back-up generators produce the poison gas carbon monoxide (CO). CO is an odorless, colorless gas that kills without warning. It claims the lives of hundreds of people every year and makes thousands more ill. Follow these steps to keep your family safe.


**PORTABLE GENERATORS**

- ✓ Never use a generator inside your home or garage, even if doors and windows are open.
- ✓ Only use generators outside, more than 20 feet away from your home, doors, and windows.


**CO DETECTORS**

- ✓ Install battery-operated CO detectors near every sleeping area in your home.
- ✓ Check CO detectors regularly to be sure they are functioning properly.

**CARBON MONOXIDE (CO) POISONING**



**CAN BE STOPPED**



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

**PROTECT YOUR FAMILY FROM CARBON MONOXIDE POISONING WHILE YOU PROTECT THEM FROM THE COLD.**

**CARBON MONOXIDE (CO) POISONING**



**CAN BE STOPPED**



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

Carbon monoxide (CO) is an odorless, colorless gas that kills without warning. It's produced by gas- and oil-burning furnaces. Keep your family safe by following these steps:

- install battery-operated CO detectors near every sleeping area;
- check CO detectors regularly to be sure they are functioning properly; and
- have your furnace inspected every year.

**CARBON MONOXIDE (CO) POISONING**




**CAN BE STOPPED**




U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

**WHEN YOUR FURNACE KICKS ON, BE SURE POISON GAS ISN'T COMING OUT**

**CARBON MONOXIDE (CO) POISONING**



**CAN BE STOPPED**



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

Gas- and oil-burning furnaces produce carbon monoxide (CO), an invisible, odorless, poison gas that kills hundreds every year and makes thousands more sick. Keep your family safe this winter by following these steps:

- Have your furnace inspected every year.
- Install battery-operated CO detectors near every sleeping area in your home.
- Check CO detectors regularly to be sure they are functioning properly.

# Today

- **Evergreen materials well used**
- **No full national campaign**
- **Some successes**
- **Materials evergreen but old**

<https://www.cdc.gov/carbon-monoxide/about/>

[scd3@cdc.gov](mailto:scd3@cdc.gov)

For more information, contact NCEH

1-800-CDC-INFO (232-4636)

TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

Follow us on X [@CDCEnvironment](https://twitter.com/CDCEnvironment)

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