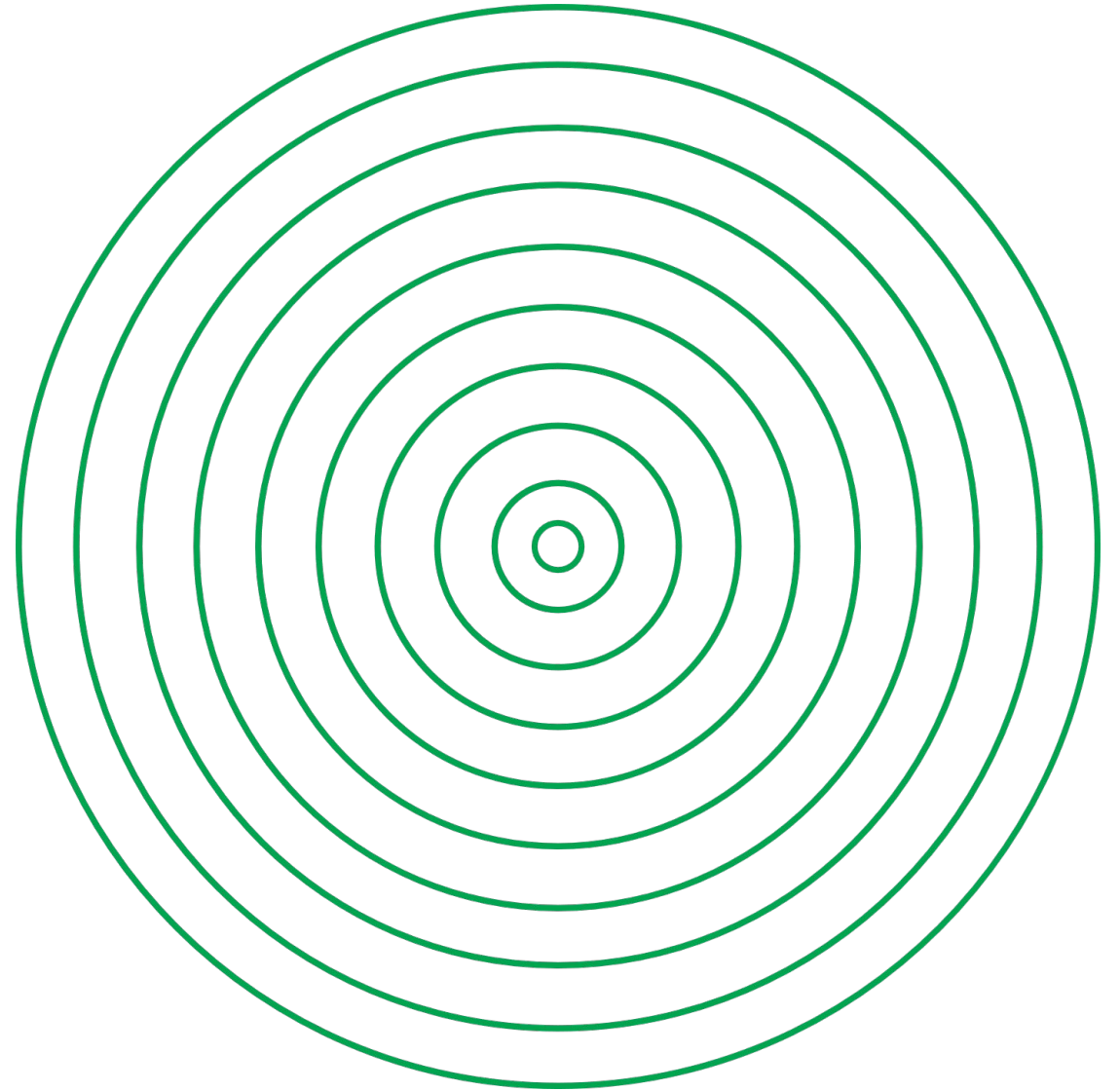


Understanding the Silent Threat:

Early Detection and Prevention of Carbon Monoxide Poisoning

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Over **1,700** standards and documents published

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Objectives & Methodology

Objectives

- Measure U.S. consumer awareness, sentiment, behavior related to CO and fire safety
- Catalog high-risk behaviors for portable generators and other fuel-burning appliances
- Assess consumer risk beliefs, as well as actions taken to reduce risks
- Identify unintentional CO poisoning risk-landscape of the U.S. consumer population

Methodology

Total results from **four ULSE surveys**:

- August 30 – September 3, 2023
 - September 29 – October 4, 2023
 - October 28 – November 1, 2023
 - December 14 - 18, 2023
- Each survey targeted n=2,000 U.S. adults (ages 18+) conducted resulting in an **overall sample size of n=8,078**
 - Completed interviews were weighted by five variables to ensure reliable and accurate representation of the total U.S. population:
 - Age, sex, geographic region, race/ethnicity, education
 - Margin of sampling error at 95% confidence for aggregate results is +/- 2.2%

Key takeaways: Concern about carbon monoxide exposure is low

More than one-third of U.S. homes have no CO detection

Americans assume CO protection in public places

Generator owners do not feel at risk - or know there is one

More than one-third
of U.S. homes have
no CO detection



MISPLACED SENSE OF SECURITY AND HIGH LEVELS OF RISK

153.7M

U.S. adults **do not perceive any risk of CO exposure** to themselves or their households

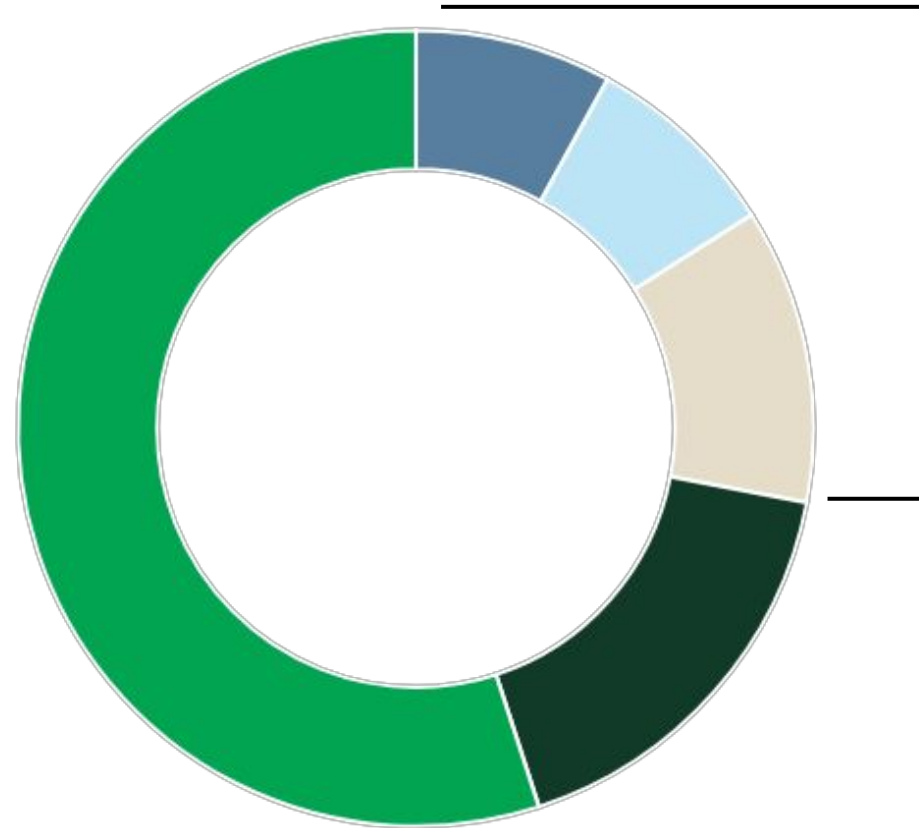
AN ABSENCE OF CO DETECTION

69M

American adults say they **do not need or are unsure if they need a CO alarm** where a smoke alarm is present

72% disagree with the statement...

“You don’t need carbon monoxide (CO) alarms in the home if you already have smoke detectors installed.”



69M

do not need or are unsure if they need a CO alarm when a smoke detector is present

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q. To what extent do you agree or disagree with the following statement? 'You don't need carbon monoxide (CO) alarms in the home if you already have smoke detectors installed.' Base: Total Respondents (n=8078)

LOW AWARENESS OF CO EMISSION SOURCES

45%

of those who own fuel-burning appliances **are unaware that these can be potential sources of accidental CO exposures**

Level of consumer UNAWARENESS of CO sources

CO Source	% Unaware
Gas clothes dryer	63%
Gas-powered pressure washer	59%
Gas-powered tools such as saws, chainsaws	51%
Gas water heater	49%
Gas room heater/fireplace stove combination	47%
Hybrid vehicle that uses both gas and battery power	43%
Cooking grill (either charcoal, gas or wood burning)	42%
Gas cooktops, wall ovens, or cooking ranges (stovetop and oven combination)	38%
Gas-powered lawn equipment such as mowers, trimmers	37%
Freestanding stove (either wood or gas burning)	35%
Fireplace (either gas or wood burning)	32%
Furnace or boiler	26%
Portable gas generator	23%
Gas-powered vehicle	21%

RISKY BELIEFS LEAD TO RISKY BEHAVIORS

17%

of U.S. adults **incorrectly think that CO alarms remain effective indefinitely** and never require replacement, regardless of age

Americans assume CO protection in public places




WIDESPREAD ASSUMPTION OF SAFETY IN PUBLIC PLACES

50%

of American **do not worry about exposure to CO in public spaces** because they trust that CO alarms are installed

Parties most responsible for minimizing CO risks

Responsible Parties	% Responsible (fully + mostly)
Product manufacturers	65%
Utility company (i.e., gas, electric provider)	62%
Consumers, like yourself	61%
Certified HVAC/utility technician	60%
Government agencies (e.g., Consumer Product Safety Commission, Federal Trade Commission, Federal Aviation Administration)	55%
Policymakers (i.e., federal, state, or local representatives)	49%
Industry trade associations (i.e., non-profit organizations that represent companies or professionals in a specific industry)	44%
Consumer safety non-profits	42%
Online product review websites (e.g., Wirecutter, Consumer Reports)	35%
Retailers (e.g., Target, Amazon, Walmart)	33%



**Generator owners
do not feel at risk
— or know there
is one.**

MOST GENERATOR OWNERS ARE UNAWARE OF CO DANGERS

62%

of generator owners **said they do not feel that they or their households are at risks of CO exposure** from their generators

GAPS IN KNOWLEDGE CAN LEAD TO TRAGEDY

29%

of generator owners mistakenly **believe it's safe to operate a generator in a garage** with the door open

GAPS IN KNOWLEDGE CAN LEAD TO TRAGEDY

23%

of generator owners are under the misconception that
**a CO detector is unnecessary when
running a portable generator**



Keeping Life in Progress Through Safety Standards

Key CO and generator documents in our library

At UL Standards & Engagement, we work with stakeholders to achieve a safer world through standards. There are **more than 75 standards** developed by ULSE that address CO safety in residential, commercial, and industrial environments.

Examples of ULSE safety standards include:

UL 2034
Standard for Single and Multiple Station Carbon Monoxide Alarms

UL 2201
Standards for Safety for Carbon Monoxide (CO) Emission Rate of Portable Generators

ANSI/CAN/UL 1008M
Standard for Transfer Switch Equipment, Meter-Mounted



Standards &
Engagement

Access the full report



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