



# Carbon Monoxide Summit



**November 30, 2016**

## **Sponsors:**

**Injury Prevention Center, Children's Hospital at Dartmouth-Hitchcock  
Dept. of Community & Family Medicine at Dartmouth Geisel Medical School  
Northern New England Geriatric Center  
Eastern Propane & Oil  
Propane Gas Association of New England  
Norman Miller Family  
National Electrical Manufacturers Association  
United States Consumer Product Safety Commission (CPSC)**

# Mission of the CO Alliance



The CO Alliance seeks to understand the preventable, structural, and personal causes of carbon monoxide incidents in our region and take action to remedy them.

# Current Members of the CO Alliance

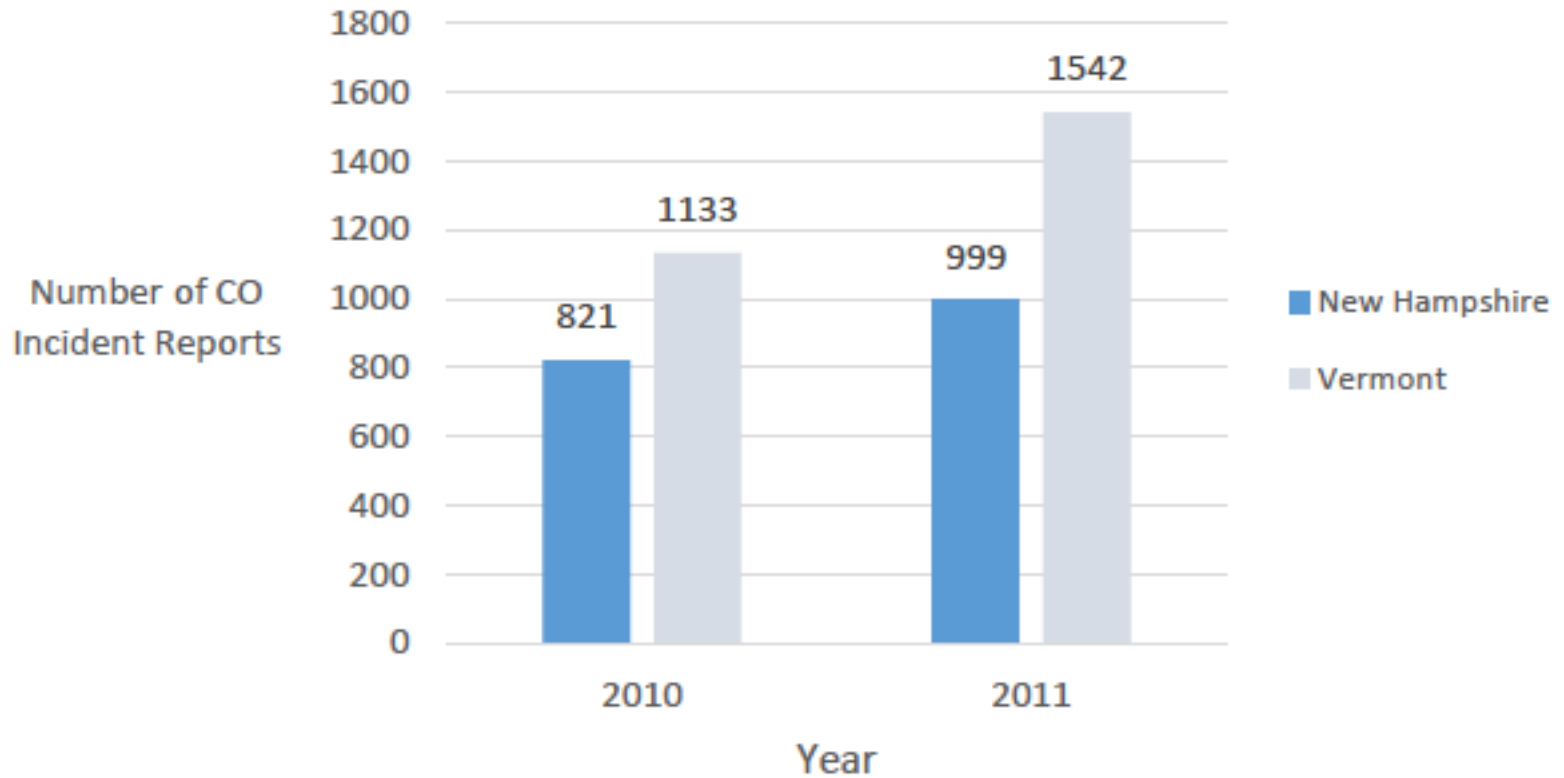
Jeffrey Cyr	Office of the New Hampshire State Fire Marshal
J. William Degnan	State of NH Department of Safety, Division of Fire Safety
Jim Esdon	Injury Prevention Center at CHaD
Micheal Greenia	Vermont Division of Fire Safety, Public Education & Information Section
Bill Irwin	Vermont Department of Health
Deborah Johnson	Dartmouth Geisel School of Medicine
Mary MacCaffrie	NH State Fire Marshal's Office
Bruce Martin	Vermont Division of Fire Safety, Department of Public Safety
Norman Miller	Community Member, CO survivor
Ardis Olson	Dartmouth Geisel School of Medicine
Joe Rose	Propane Gas Association of New England
Debra Samaha	Injury Prevention Center at CHaD-Safe Kids NH

# The Problem in VT and NH



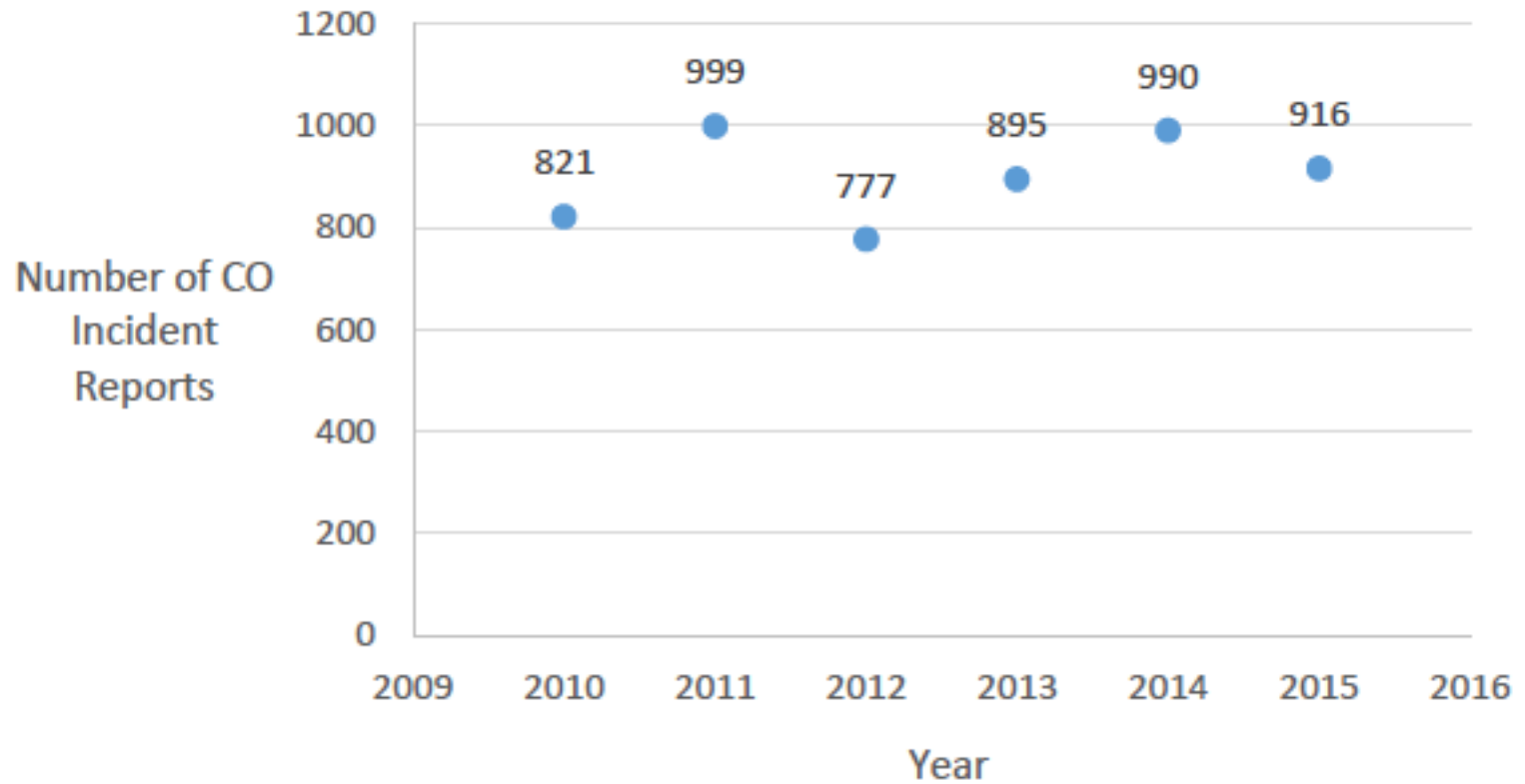
- Recurring fatal and near fatal incidents in our region
- Disconnect between efforts to address fire safety and Carbon monoxide safety
- Increased risk for aging population
- Heating systems common in the long Northeast winters are CO producing:
  - Gas, Oil, Propane, Wood
- Severe winter weather and rural settings increase generator use

**Figure 2. Total CO Incident Reports in New Hampshire & Vermont**



Source: National Fire Incident Reporting System (NFIRS)

**Figure 1.** Total CO Incident Reports in New Hampshire



Source: National Fire Incident Reporting System (NFIRS)

# Data Gathering in NH and VT

- Perspective of Fire Departments  
Current Activities and Future Roles
- Perspective of Community Members  
Interviews with survivors of CO incidents  
Attitudes and knowledge survey
- Perspective of Gas Heating Technicians  
Current Activities and Future Roles



# Survey of NH/VT Fire Chiefs

- Responses from 229 Departments (172 NH, 57 VT)
- In both states ~ 2/3 served communities < 5000.
- Volunteer or On Call fire department staffing model
  - 80% if population served < 5000
  - 25% if population served ≥ 5000

# Survey of NH/VT Fire Chiefs

➔ *We have CO monitoring equipment and use it on a regular basis for:*

	NH	VT
Every apparatus	52%	23%
EMS Rig Only	4%	5%
Fire apparatus only	32%	72%
Other	12%	0%

Communities with population served  $\geq 5000$  are more likely to have CO monitoring equipment on every rig. (59% vs. 38%)

# Survey of NH/VT Fire Chiefs

- ➔ *Our program includes CO and/or Smoke alarm distribution for our community residents:*

NH 28% (47 fire depts.), VT 17% (8 fire depts.)

If yes, alarm provided	NH	VT
Smoke	45%	33%
Carbon Monoxide	2%	2%
Both	53%	65%

# Survey of NH/VT Fire Chiefs

- ➔ *Our fire department would like more information, education materials or training for staff on increasing awareness and use of alarms in our community:*

Yes: NH 72% (123 depts.), VT 64% (33 depts.)

*Not needed, but would like CO alarms to distribute:*

NH 22% (38 depts.), VT 17% (9 depts.)

# Survey of NH/VT Fire Chiefs

- ➔ *If our department was provided CO and smoke alarms free of charge, we would distribute and install them for our residents. Yes: 80% No: 4% Unsure: 16%*

If yes, which type of alarm	NH
Smoke	1%
Carbon Monoxide	1%
Both if needed	98%

# Lessons from Fire Chief Survey

- Variable availability of equipment to monitor CO levels at site of incident.
- Strong interest at the local department level to educate and support use of CO monitors
- Different issues for fire departments in smaller communities

# Community Survey

- Survey in variety of community events (138 responses)
- 96% had working smoke alarms and 75% had CO alarms
- 12% replied someone close to me has had a CO incident

There was no difference in answers whether respondent rented or owned their dwelling

# Community Attitudes and Knowledge

	CO alarm	No CO alarm
Knows the cause of CO emissions	68%	50%
Knows the symptoms of CO poisoning*	65%	44%
Accidental CO poisoning could easily happen to me	14%	6%
Previous experience with CO poisoning	14%	6%
I would feel nervous living without a CO alarm*	91%	38%



# Lessons from Community Survey

- Perceived risk of a CO incident is low
- Perceived risk of an event related to prior personal experience
- Messages that personalize and localize risk may be more effective
- Need to explore if Younger and Older populations respond to similar messages

# Certified Heating Technician Survey

- Surveys conducted at certification training sessions this past year. The Propane Council's Certified Employee Training Program is required in NH and VT.
- The Propane Education and Research Council has developed voluntary guidelines for conducting residential and small commercial safety inspection. The council provides online training materials for using the GAS Check form during safety inspections
- Data collected on over 400 technicians. Data presented data is on the 278 technicians who are certified/licensed in Vermont (n= 104) or NH ( n=241)
- Survey responders had been certified gas service technicians for an average of 11 years with 15% for over 20 years

# Technician Current Actions

	Always*
Ask if home has CO Alarm(s)	43%
Ask if the home has smoke alarm(s)	33%
Provide customers with written information about safety issues found	54%
Inform customers if potential safety issues exist with exhaust systems	89%
Use Gas Check or other written form to record appliance inspections	65%

\*Always vs. usually, sometimes and never

# Technician Roles

*It is my responsibility to inform the customer about potential problems/code violations with exhaust systems for the heating systems/appliance I am servicing.*

Strongly agree: 85%      Agree: 14%      Disagree/Strongly disagree: 0.8%

*Do you believe barriers exist to communicating safety concerns to customers?*

Yes: 42%      No: 40%      Unsure: 18%

*If available, would you be willing to install CO alarms and provide CO educational information to customers?*

Yes: 79%      No: 7%      Unsure: 14%

# Technician Actions if use Gas Check

	Always Uses Gas Check	Does Not Always Use
Always asks if home has CO Alarm(s)*	50%	30%
Always provides customers with written information about safety issues found*	65%	33%
Always informs customers if potential safety issues exist with exhaust systems	93%	81%

# Lessons from Technician Survey

- Technicians could have expanded role asking about CO/smoke alarms in the home. Potential exists to assist in installation.
- Consistent use of written forms to record inspections can enhance consumer communication about inspection, but technicians perceive barriers to communication about safety.

# Lessons

- Issue can be addressed from multiple fronts
  - Improved educational messages that engage the public
  - Heating inspection could address CO risks
  - Combine smoke alarm and CO alarm messages
  - Public policies that promote CO alarm installation
  - Community initiatives to install CO alarms