

Evidence-Based Injury Prevention and Research



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A presentation to the
Evidence Based Injury Prevention Action Group

Presentation Outline

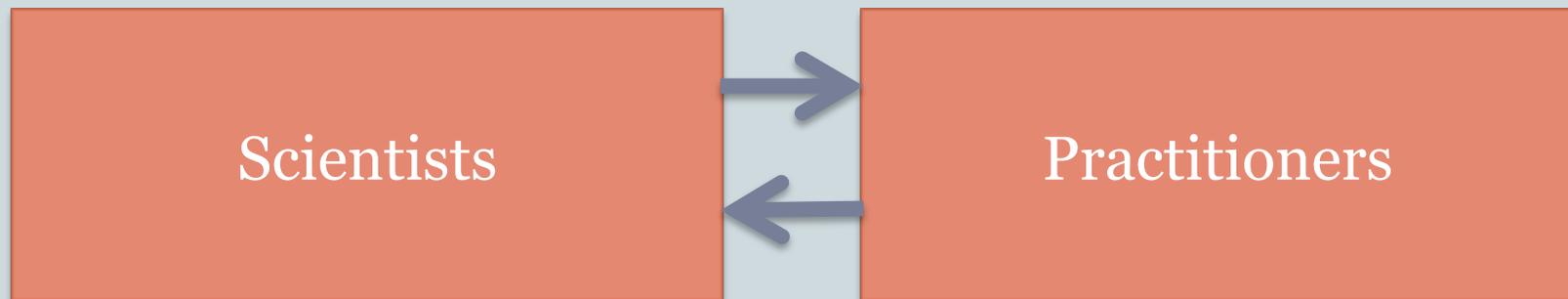


- How do you know when a prevention approach will work for your community?
- Just 3 easy steps
- Examples of evidence-based IP research
 - Safety Boost
 - Project CODE

Expectations are High



- Drive for rapid solutions
- Demands for research accountability
- Scientists expected to produce findings that can be used in public health practice
- Practitioners expected to identify and incorporate interventions with demonstrated effectiveness



Effective Interventions



“Interventions should be comprehensive, use varied teaching methods, deliver a sufficient dosage of the intervention, be theory driven, encourage positive relationships, be appropriately timed, be socioculturally relevant, include an outcome evaluation, and have well-trained staff.”

Nation, Crusto, Wandersman, Kumpfer, Seybolt, Mourissey-Kane, Davino (2003).
What works in prevention programs. *American Psychologist*, 58, 6-7, 449-456.

How do we evaluate the evidence?



Just 3 Easy Steps

1. Find existing evidence
2. Understand important factors
3. Understand other factors important for translation



1. Finding Evidence of Effectiveness

- Search databases
 - Medline, PubMed, OVID, Google Scholar
- Publication bias*
- Systematic reviews and meta-analyses
 - Strongly recommended
 - Recommended
 - Insufficient evidence
 - Discouraged
- Cochrane Injuries Group (reviews by subtopic)



2. Evaluating the Evidence

- Criteria to evaluate evidence
 - Study design
 - Measures of association



3. Consider Other Criteria

- Other criteria to consider
 - Strength of the evidence
 - Knowledge of why the program worked
 - Integration with other IP activities
 - Generalizability to your community
 - Equity
 - Feasibility
 - Acceptability



Safety Boost



NATIONWIDE INSURANCE FOUNDATION

Project Objectives

- Develop an innovative educational tool using PAPM to guide families toward correct and consistent booster seat use
- Evaluate effectiveness of tool
- Deliver tools to insurance agents for distribution

the effectiveness of this tool;

e tools to Nationwide for
rough their insurance agents;



Safety Boost

- Theory-based
- Tailored messaging appropriate for different stages
- Educational tool distributed by insurance agents
- Increased knowledge
- Improved (self-reported) booster seat use



Safety Boost

SAFETY BOOST
A booster seat is the safest way for children 4 to 8 years old to travel.

Here are some tips to keep your child safe:

- Children are safest in the back seat.
- There are two types of booster seats, high-back and backless booster seats. You can buy a booster seat at most toy stores, department stores, and other retail outlets for as little as \$14.00.
 - Use a high-back booster seat if the car's seat does not have a headrest or if the back of the car's seat is below your child's ears.
- Ask a car seat technician to check your child's seat. Call 1-866-SEATCHECK to find a technician near you.

Keep your child safe by using the right seat every time.

Age	Weight/Height	Seat Type
Birth to at least 1 year	Up to 20 pounds minimum* (check the weight limit listed on seat)	Rear-facing infant or convertible seat
1 to 4 years	At least 21 pounds up to 65 pounds*	Rear-facing convertible OR forward-facing seat with internal harness
4 to 8 years	At least 40 pounds and up to 4 feet 9 inches tall*	Booster seat (booster seats do not have an internal harness)
8+ years	At least 4 feet 9 inches tall*	Take the 5-STEP TEST to see if your child is ready for a seat belt alone.

*Always follow the seat's weight and height guidelines.

SEATING CHART

Backless Booster Seat

High-back Booster Seat

Congratulations! By learning about booster seats you can give your child a **SAFETY BOOST**.

I like my booster seat. It lifts me up so I can see out the window.

To find out more about booster seats and child passenger safety, visit www.boosterseat.gov or www.aap.org.

To learn more about **SAFETY BOOST**, please call the Center for Injury Research and Policy at 614-722-4343 or visit www.injurycenter.org.

Shoulder belt fits snugly across the chest, crossing the shoulder between the neck and arm.

Lap belt fits snug and low over the hips and thighs.

Nationwide Foundation **Children's Center for Injury Research and Policy**

← PULL TAB TO TAKE THE 5-STEP TEST.

Is your child ready to use a seat belt without a booster seat?

IS YOUR CHILD READY TO USE A SEAT BELT WITHOUT A BOOSTER SEAT? TAKE THIS 5-STEP TEST:

Step 1: Does your child sit all the way back against the car's seat?
 Step 2: Do your child's knees bend comfortably at the edge of the car's seat?
 Step 3: Does the shoulder belt fit snugly across the chest, crossing the shoulder between the neck and arm?
 Step 4: Is the lap belt as low as possible, snug over the hips or upper thighs?
 Step 5: Can your child stay seated like this for the whole ride?

If you answered **YES** to **ALL 5** questions, your child is ready for the seat belt alone.
 If you answered **NO** to **ANY** of the questions, then your child still needs a booster seat.
 Use the tips to see which type of booster seat is best for your child.

PULL

Age/Weight/Height/Seat Type

Evaluation Results



	Pre-Assessment	Post-Assessment
Knowledge Score (highest possible score was 14)	8.86 mean	10.16 mean, significantly higher than pre-assessment mean, p
Has a Booster Seat	36%	59%
Correct Booster Behavior (correct booster seat use every time)	20%	48%
Incorrect Booster Behavior (no seat, incorrect type of seat and/or not using a seat every time)	80%	52%

Carbon Monoxide Detector Education Project CODE

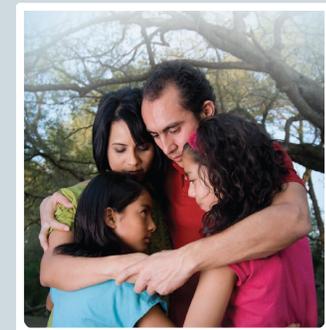


**NATIONAL INSTITUTE OF CHILD HEALTH
AND HUMAN DEVELOPMENT**

Everyone is at Risk for CO Poisoning



- CO poisoning is a substantial public health burden
- Burden borne by children
- Prevention is effective
- <50% own a CO detector and most are unsure where to place or how many to install
- Common misuses: incorrect placement and failure to replace the batteries



Specific Aims

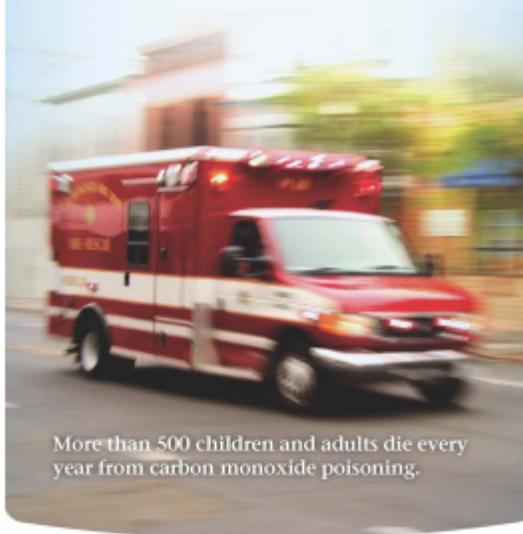
- Determine whether a brief intervention (educational tool + CO detector) will increase CO detector use
- Determine whether and what extent socioeconomic status moderates the effect of the intervention
- Outcomes: CO knowledge, stage in model, observed behavior



Fast Facts About Carbon Monoxide



Carbon Monoxide is called the silent killer because it cannot be seen, smelled or tasted.



What is Carbon Monoxide?

- Carbon monoxide is a deadly gas you breathe in that comes from appliances or equipment that burn fuel
- Carbon monoxide cannot be seen, smelled or tasted
- If too much carbon monoxide is breathed in, you can become sick and it can kill you
- The symptoms of carbon monoxide poisoning are similar to symptoms of the flu and are often ignored
- Everyone is at risk for carbon monoxide poisoning

Why does my home need a carbon monoxide alarm?

The only way to know if you have dangerous levels of carbon monoxide in your home is to install a carbon monoxide alarm.



Intervention



Design and Methods



- Randomized controlled trial
- Recruited 300 parents from ED
- Eligibility
- Randomization
 - Intervention Group – receives a ***Fast Facts About Carbon Monoxide*** educational tool and a CO alarm
 - Control Group– receives a CO flyer from the Central Ohio Poison Control Center
- Participants complete enrollment survey in ED on tablet computer, followed by home observations at 2-weeks and 6-months

Home Observations



- Survey on tablet computer and observation of safety practices (2-week, 6-month, and 1-year follow-up by phone for IG*)
- At the conclusion of the 6-month visit control group receives educational tool and CO alarm
- Participant payments
- Referrals for smoke alarms
- Equipment

Participants



- Participant mean age: 35 yrs
- Study child mean age: 7.55 yrs
- Relationship to child: Mother/Step-mother (85%)
- Reason for visit: Illness (76%)
- Ethnic background:
 - White, Non-Hispanic (48%)
 - Black/African American (43%)
- Marital Status: Married (57%)
- Education: HS grad or GED (32%)
- Income: <\$14,000 (34%); living in poverty (59%)
- Receiving assistance: WIC, Medicaid or Section 8 housing (56%)

Self-Reported CO and SA Use



Self-reported behavior	Enrollment		Home Visit 1		Home Visit 2	
	Intervention	Control	Intervention	Control	Intervention	Control
CO Detectors						
Safe	8%	11%	23%	9%	34%	13%
Unsafe	92%	89%	49%	91%	66%	87%
Smoke Alarms						
Safe	45%	53%	51%	53%	53%	56%
Unsafe	55%	47%	49%	47%	47%	44%

Observed CO and SA Use



Observed Practices	Home Visit 1		Home Visit 2	
	Intervention	Control	Intervention	Control
Carbon Monoxide				
Perfect CO (has CO detector, works, correct place)	46%	11%	47%	16%
Safe CO (has CO detector, works, not in sleeping area)	74%	24%	59%	24%
Unsafe CO (CO detector failed test)	5%	1%	5%	0
No CO detector present	21%	75%	36%	76%
Smoke Alarms				
Perfect SA (has working SA on all levels)	57%	68%	57%	62%
Unsafe SA (< working on all levels)	39%	28%	36%	36%
No SA present	4%	4%	7%	2%

Results of RCT in Pediatric ED



- Project CODE intervention is effective in increasing CO detector use
- Need innovative ways to ensure detectors are properly maintained and batteries replaced
- Efficacious in a clinical setting—need to test in real world community settings