JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH

Project Connect: Protecting Phoenix Families from Fire

Phoenix Fire Department: *Shelley Jamison, Chris Ketterer, Sonya Contreras, and firefighters*

Nurse Family Partnership: *Denise Tiemeier and nurse home visitors*

Appy & Associates: *Meri-K Appy*

Johns Hopkins Center for Injury Research and Policy: *Andrea Gielen, Shannon Frattaroli, Eileen McDonald, Elise Omaki, Nick Rizutti, and Wendy Shields*

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Project Partners

- **Nurse-Family Partnership**
  - Empower first-time mothers living in poverty to successfully change their lives and the lives of their children through evidence-based nurse home visiting
- **Phoenix Fire Department**
  - Provide emergency and prevention services to the community
  - Protect lives and property through fire suppression, emergency medical and transportation services, disaster management, fire prevention and public education
- **Appy & Associates**
  - Provide subject matter expertise, consultation and training on injury prevention and fire safety
- **Johns Hopkins Center for Injury Research and Policy**
  - “Close the gap between research and practice to reduce the burden of injury”

Background

- Fire Departments have used a number of approaches to increase the uptake of smoke alarms with mixed success
  - Weekend, door-to-door canvassing
  - Dispatch via non-emergency number
  - Media buys

- Nurses serve vulnerable moms in the home
  - Children are at increased risk of fire mortality
  - Low-income families face barriers accessing safety products

Gielen AC, Shields W, Frattaroli S, et al. Enhancing fire department home visiting programs: results of a community intervention trial. *J Burn Care Res*. 2013;34(4):e250–6.

Aims

Aim 1: Demonstrate the feasibility and impact of having local fire service personnel partner with home visiting nurses; and to increase the number of high-risk homes protected by working smoke alarms and carbon monoxide alarms

Aim 2: Solicit feedback on the strengths and weaknesses of the program, the barriers and facilitators to achieving the project objectives, and recommendations for improvements and dissemination

Aim 1: Feasibility Study

- **Nurse-Family Partnership**
  - Offer Smoke Alarm referral to client
  - Enroll client in study
  - Distribute baseline and follow up surveys
  - Send contact and schedule information to PFD
- **Phoenix Fire Department**
  - Respond to smoke alarm request
  - Install smoke alarms and carbon monoxide alarm
  - Provide fire safety education
- **Appy & Associates**
  - Liaison to PFD
  - Training support for PFD and NFP
- **Johns Hopkins Center for Injury Research and Policy**
  - Coordinate and oversee collaboration
  - Evaluate the program using mixed-methods research

Aim 1. Methods

- **Baseline Visit -- During an NFP appointment**
  - Eligibility and recruitment
  - Informed consent
  - Baseline knowledge survey, referral to PFD
- **FD Home Visit – With NFP nurse**
  - Installed up to 3 lithium battery smoke alarms, 1 CO alarm (if CO source in the home)
  - Safety education and brochure
- **Follow Up Visit -- 3 months after FD visit, during an NFP appointment**
  - Follow-up knowledge survey and testing alarms

PROJECT CONNECT

Welcome to Project Connect!

We have come together to connect you with life-saving information and alarms. This booklet contains facts about carbon monoxide and alarms, fire safety and alarms, and fire escape planning steps. Use this booklet to remind yourself of what you learned today. Share the safety information with your family. Connect with others to help us make all Phoenix families safer in their homes.

Carbon Monoxide (CO) Safety

What we did today:

- Installed a new carbon monoxide alarm in your home.
- Provided an alarm that has a battery that will last for 10 years.

Why it's important:

- Carbon monoxide (CO) is a gas.
- You cannot see, smell or taste carbon monoxide.
- CO can make people in the home very sick. CO can kill people if it gets in your home.
- A CO alarm will make noise if there is too much CO in your home.

What you can do:

- Do not take the battery out of the alarm. The alarm will not work if the battery is missing.
- Take everyone outside if the CO alarm makes noise. Then call 911.

Smoke Alarms and Fire Safety

What we did today:

- Installed new smoke alarms in your home.
- Discussed special features of the alarm:
  - The alarm has a long-life battery that will last for 10 years. It is sealed inside the alarm.
  - There is a hush button that allows you to silence the alarm if it goes off by accident.

Why it's important:

- Home fires are a leading cause of injury death.
- Most people die from fire when they are sleeping, between 12 midnight and 6 a.m.
- Fires are fast. You may have only 3 minutes to get to a safe place outside.
- Smoke alarms save lives. The smoke alarm will wake you up if there is a fire while you are sleeping so you have time to get to safety.

What you can do:

- Do not take the battery out of the alarm. The alarm will not work if the battery is missing.
- Press the hush button or fan away the smoke if the alarm goes off while you are cooking.
- Make a fire escape plan and practice it with your family.

Five Steps for Fire Escape Planning

1. Make sure everyone in the home knows two ways out every room (especially the bedrooms).
2. Agree on a meeting place outside.
3. Agree who will help children, older adults, or someone with a disability.
4. Write down the fire escape plan.
5. Practice the fire escape plan with everyone who lives in your home.

Did you know...

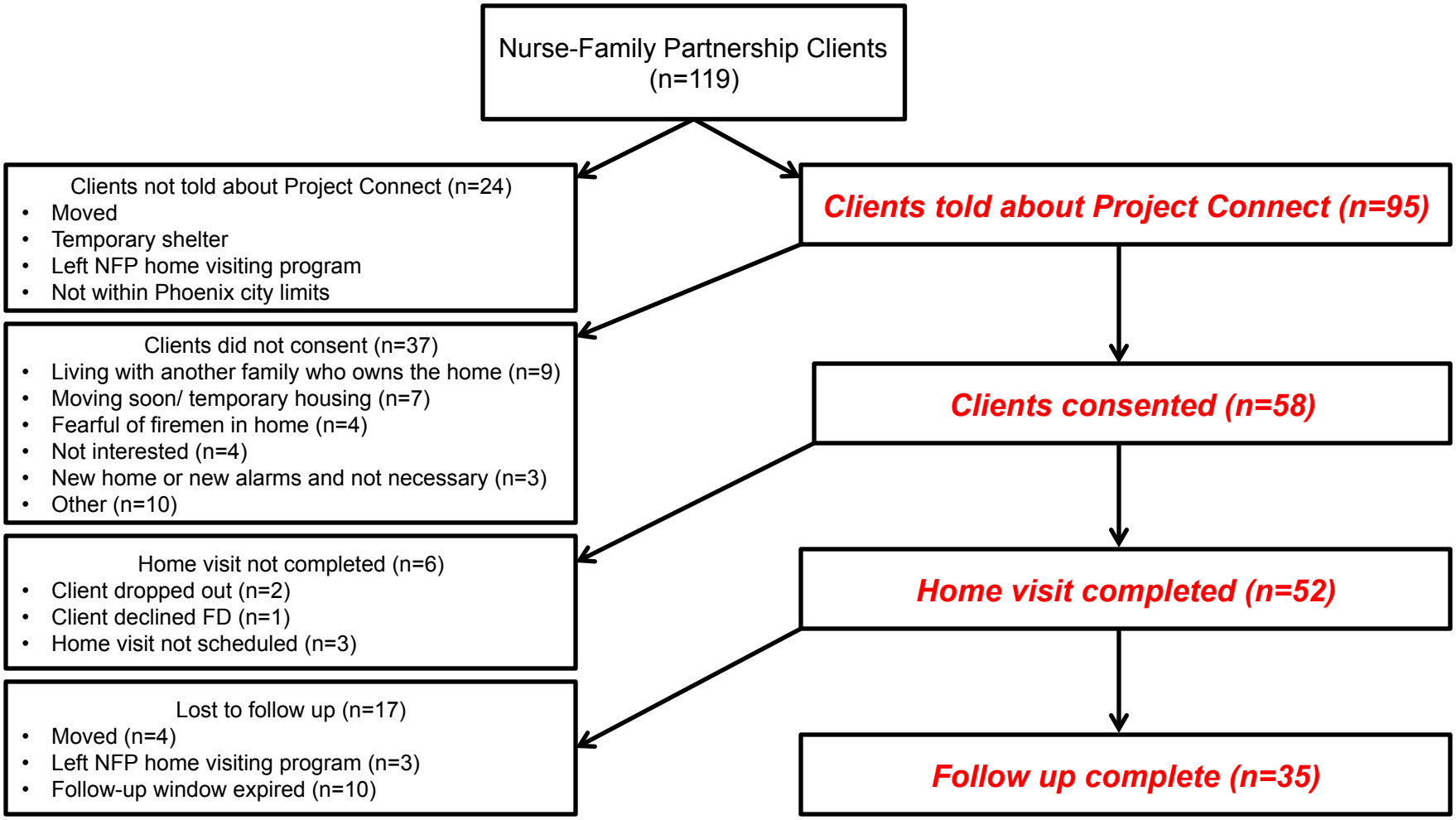
- Cooking is the most common cause of home fires.
- Most cooking fires start when someone is frying food. Hot oil and grease can burn people and start fires.
- You should stay in the kitchen when you cook.
- Carbon monoxide (CO) occurs any time a fuel (like gas, wood, or heating oil) is burned. Fuel burning appliances have a vent to take the CO outside.
- A broken or clogged vent can cause CO to build up in your home. This can make people sick.

Nurse-Family Partnership
Helping First-Time Parents Succeed®

Johns Hopkins
Bloomberg School
of Public Health

Phoenix Fire Dept.

Aim 1. Results
Number of Homes Reached

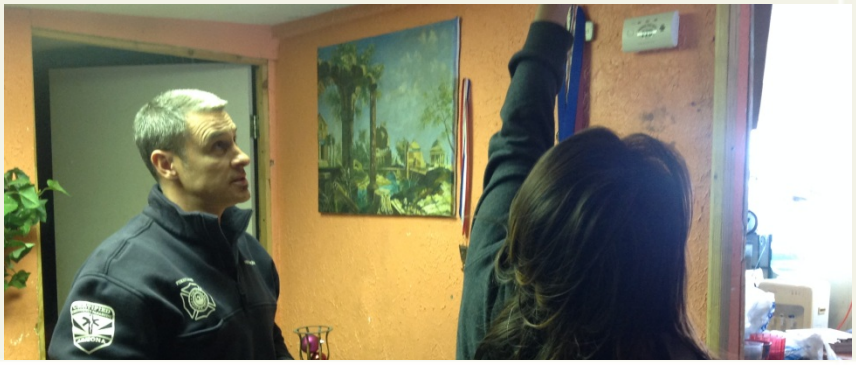


Families reached (N=52)	
Average Age of Mothers	20.3 years
3+ People in the Home Seniors in the Home Disabled in the Home	88% 10% 8%
White Race Reported No Race Reported Other	40% 37% 23%
Hispanic Ethnicity	86%
Less than High School Education High School Diploma/GED More than High School Education	36% 46% 18%
Rental Property	69%

Number of homes and working smoke alarms before and after Project Connect home visits

BEFORE HOME VISIT	
0 alarms	**27 (55%)**
1 alarm	**11 (22%)**
2 alarms	**1 (2%)**
3 or more alarms	**10 (21%)**
TOTAL	**49 (100%)**

AFTER HOME VISIT	
0 alarms	**0 (0%)**
1 alarm	**14 (29%)**
2 alarms	**16 (33%)**
3 or more alarms	**18 (38%)**
TOTAL	**48 (100%)**



Number of homes and working smoke alarms after home visit and at follow-up

Percent of alarms still working at follow-up in 31 homes					
AFTER HOME VISIT	AT FOLLOW-UP				
	0 alarms	1 alarm	2 alarms	3+ alarms	TOTAL (N=31 homes)
0 alarms	0	0	0	0	**0**
1 alarm	0	6 (100%)	0	0	**6 (100%)**
2 alarms	0	5 (42%)	6 (50%)	1 (8%)	**12 (100%)**
3+ alarms	0	1 (8%)	3 (23%)	9 (69%)	**13 (100%)**

Knowledge Outcomes	Baseline (N=35)	Follow up (N=35)
1. What is the most common cause of home fires? (Cooking)	34%	51%
2. When do most fatal fires happen in homes? (Between midnight and 6am)	**43%**	**66%***
3. Do you have a home fire escape plan? (Yes, with a meeting place outside the house)	17%	35%
4. Some smoke alarm batteries last for 10 years. (True)	**49%**	**94%***
5. Carbon Monoxide is: (A gas that cannot be seen)	**66%**	**89%***
6. What should you do FIRST if your CO alarm goes off? (Get everyone out of the house and dial 911)	**66%**	**89%***
7. How often should you change the battery in your CO alarm? (Twice a year OR Every 10 years)	**17%**	**69%***
8. You can smell carbon monoxide. (False)	**46%**	**83%***
Total Average Percent Correct	**43%**	**71%***

Aim 2: Solicit Feedback

- 10 in-depth phone interviews with nurses (n=6) and PFD representatives (n=4)
- Recorded and transcribed all interviews, coded transcripts using a codebook developed from the interviews
- Results speak to issues of partnership, motivation, implementation, and sustainability

Partnership

- Project Connect was the first significant partnership between NFP and PFD. Interviewees from both organizations spoke positively about the partnership.
- Interviewees described their Project Connect partners and clients as generally supportive and enthusiastic about the project.

Motivation

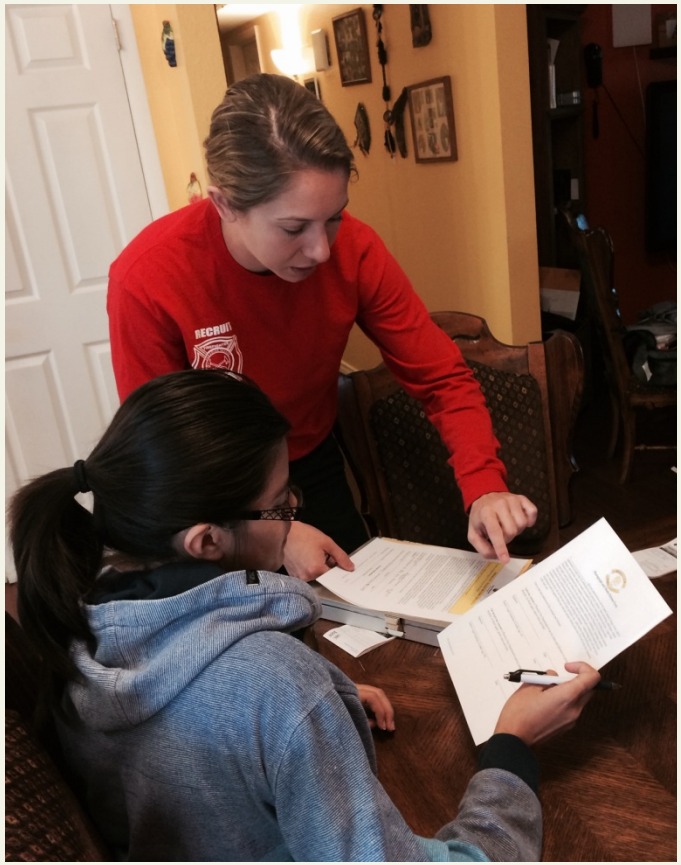
- Motivation for participating in Project Connect related to the real residential fire risks Phoenix families face, and the opportunity to address that risk in meaningful way.

- Project Connect is consistent with the missions of both NFP and PFD.

Implementation

- Recruitment and scheduling generally went well.
- Initial challenge associated with clients' after school availability conflicting with PFD end of shift was resolved.
- NFP interviewees were particularly impressed by PFD's ability to put their clients at ease through supportive conversation, special attention to children in the home, and generally going the extra mile to make clients' homes safe.

Sustainability



- Interviewees from both NFP and PFD would like to continue the program.
- NFP would like to expand the program to include clients outside of the Phoenix area.
- Resources for smoke alarms and carbon monoxide alarms are needed for sustainability.

Conclusions

- Potential for widespread adoption by NFP providers and fire departments across the country
- Opportunity to reach highly vulnerable population that is priority for fire prevention
- Need for further study to identify best practices for implementing these partnerships in a variety of communities