



## Implementing a Successful Smoke Alarm Installation Program with At-Risk Populations

**Presented by:** Ann Marie Wolf, Sonora Environmental Research Institute, Inc. (SERI), 3202 E. Grant Rd., Tucson, AZ 85716,

### I. Background

SERI is a community-based, non-profit organization that has been extensively involved with environmental, health and safety issues in southern Arizona for over twenty years. We conduct risk assessments and healthy homes interventions, provide technical assistance and training and conduct community participatory research. We address environmental, health and safety issues in the home in a coordinated fashion, rather than addressing a single hazard at a time. Over the past four years we have installed over 15,000 smoke alarms in over 3,500 households in the low-income, minority community in southern metropolitan Tucson. We also conducted an aggressive outreach campaign together with Tucson Fire Department (TFD) and formed a new partnership with the Community Outreach Program for the Deaf (COPD) to more effectively reach the deaf and hard-of-hearing.

### II. Formative Evaluation - Planning

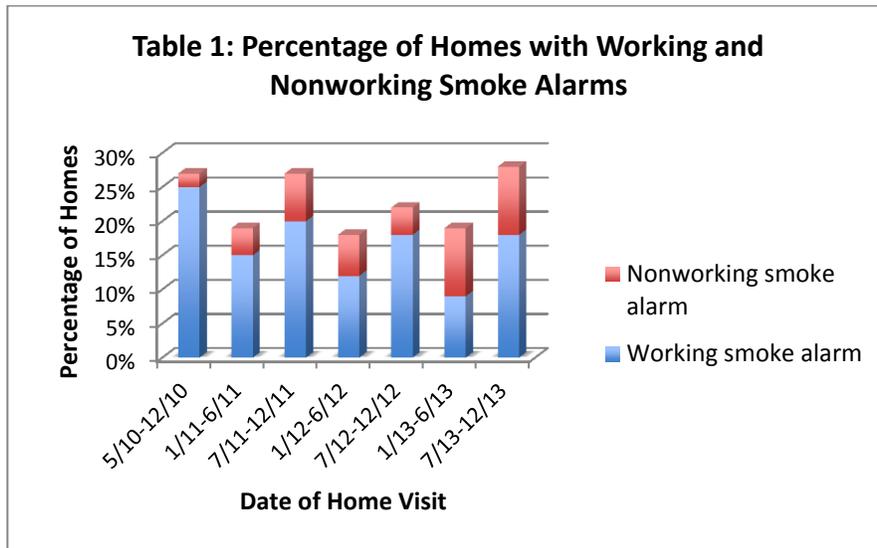
The **target audience** was the residents living in the census tracts with the highest poverty rates in the Tucson metropolitan area. This population is highly vulnerable because of lack of resources, lack of knowledge and lack of preparedness. Over 45% of the families in the target area earn below 50% of the Area Median Income. Over 70% of the families live in pre-1979 housing stock compared to 37% for Tucson. Over 47% of adults lack a high school education compared to just 13% for Tucson. Over 75% in the target area are Hispanic with many linguistically isolated. Nearly 60% of the residents are members of sensitive populations including both children and the elderly.

We **determined risk** by an in-house review of statistics collected during our previous home visit and smoke alarm installation program. Previously only 17% of the families we visited had a working smoke alarm. None of the families had the recommended number of alarms; most families with alarms had only one, nonworking or working. Our statistics clearly demonstrated the great need for continued and additional fire safety interventions.

The key **measurable objectives** were to: (1) Install a minimum of 5,250 smoke alarms with a minimum of 250 of the alarms being for deaf/hard of hearing individuals; (2) Evaluate the effectiveness of our installation programs by conducting follow-up visits with a minimum of 300 households; and (3) Evaluate the effectiveness of our outreach campaign by conducting surveys during initial home visits in a minimum of 900 households.

### III. Process Evaluation

**Smoke alarm installation** - Table 1 demonstrates the continued vulnerability of our community. It gives the percentage of homes with working and nonworking smoke alarms prior to our visit. None of the families had the recommended number of alarms; most families with alarms had only one, nonworking or working. The cumulative statistics for 2010 - 2013 are 16% of the homes had at least one working smoke alarm and an additional 6% had at least one nonworking smoke alarm. Because of the great need in our community and our partnerships with TFD and COPD we easily met our installation goals.



**Outreach Campaign** - Our outreach campaign consisted of items such as health fairs, bus and bench posters, advertising and newspaper articles. 27% of those surveyed saw some of our outreach materials, but less than 10% of those installed alarms. The main reasons families stated why they did not install alarms was because they thought it was too expensive (43%), followed by they didn't get around to it (25%) and they didn't think it was necessary (13%). Unfortunately, as shown in Table1, we have seen no increase in the percentage of homes having working alarms as we continue our installation program.

**Follow-up Visits and Telephone Calls** - In 2010, we installed alarms with 1-year batteries and taught the families to change them. We conducted follow-up visits to many of these homes in 2012 and 2013, and only 23% of the homes still had the recommended number of working alarms with 35% of the homes having no working alarms. This is in contrast to the homes where we installed alarms with long-life batteries.

#### IV. Impact Evaluation

Almost 100% of those surveyed more than a year after their home visit and installation of alarms with long-life batteries still had the recommended number of working alarms. We believe that this result demonstrates the importance of installing alarms with long-life batteries, as it appears to increase the chance of a working alarm being present in the home for several years.

#### V. Recommendations and Conclusions

Our program demonstrates that community organizations can conduct effective installation programs and in many cases may be more effective at reaching hard to reach populations than governmental organizations. Home visits are a very effective method to conduct installation and outreach programs once trust is established within the community and with the families. Even though our outreach campaign seemed to have resulted in only a small behavioral change, we believe that it is an additional tool to help us reach our community. Because our percentage of homes with working alarms remains low, we must continue outreach and educational campaigns that encourage installation of alarms by families. The challenge for us is what type of outreach method and message. Our evaluation indicated that the primary barrier to installation in our community is price, which we did not address in our outreach program, and we did not previously address during home visits, and we still have families that do not understand the importance of alarms. These are two of the issues we are now emphasizing as we continue our outreach, educational and installation programs.