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Reducing Home Heating Costs in One Maine County

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Abstract: Eighty-percent of Maine households heat their homes with fuel oil. Rising home heating costs are creating hardships for many lower income families. The Keep ME Warm Program provided homeowners with the means to reduce their home energy consumption. In Washington County, Extension used the train the trainer model to educate homeowners about energy conservation methods through trained volunteers. As a result, the program helped 164 households save on their heating bills and directly affected over 300 individuals. The train-the-trainer model was an ideal method for delivering effective energy education and could be used throughout the country.

Introduction

In 2007, state officials predicted Maine consumers would experience high fuel oil prices during the 2008-2009 heating season due to severe weather conditions in oil-producing states and political turmoil in the Middle East. In response to growing concerns about the possible impacts of high fuel oil prices on lower income families, the University of Maine Cooperative Extension's Executive Director offered to partner with the Maine State Housing Authority to implement Keep ME Warm, a statewide energy conservation and education program. This article reports on the activities and impacts of the Keep ME Warm program in one rural and economically distressed county.

Fuel Oil Use in Maine

According to the US Department of Energy/Energy Information Administration (US DOE/EIA, 2009), 80% of Maine's households use fuel oil for heating. This leads all other states in the percentage of households using fuel oil to heat their homes. The average Maine household uses 1,009 gallons of fuel oil per year (Elder, Vanags, & Nagusky, 2007). In 2005-2006, the Maine statewide average price of fuel oil was \$2.37 per gallon. By March 2008, the price had risen to \$3.79 per gallon, significantly increasing the average Maine household expenditure for fuel oil (Governor's Office of Energy Independence and Security, 2009).

Program Goal

The Keep ME Warm Program was designed to reduce household fuel oil consumption by educating lower income homeowners about practical conservation measures that they could undertake in their own homes. In addition, homeowners were provided with the means to implement these practices by the distribution of free Keep ME Warm kits from the Maine State Housing Authority. The kits contained rope caulking, switch and outlet gaskets, foam tape, lathe and clear plastic for windows and banking basements, pipe insulation, low energy light bulbs, nails, and smoke alarms.

Educational Approach

Extension staff in Washington County, Maine elected to use the "train the trainer" model to facilitate the distribution of energy conservation information and Keep ME Warm kits. The train-the-trainer model was selected for several key reasons. First, Extension actively partners with other community and non-profit organizations. These organizations, together with Extension, have access to a large number of dedicated community-based volunteers. Second, staff believed that with appropriate training volunteers could be highly effective in educating homeowners about energy conservation and the installation of the Keep ME Warm kits, thus increasing chances of program success. Third, training a cadre of active community volunteers about energy conservation builds community capacity for future programs.

Recruiting and Training Volunteers

Extension facilitated the recruitment process by engaging community leaders from local food pantries, meal sites for the elderly, and faith-based organizations to recruit volunteer teams and identify families who could benefit from the program. In addition, Extension recruited University of Maine student volunteers by contacting campus service organizations.

Extension provided training for 16 volunteer leaders representing 13 work teams. The 90-minute program included a 25-minute video that consisted of a brief introduction by Maine Governor John Baldacci and a presentation by an Extension faculty member demonstrating simple home energy conservation measures.

Following the video, Extension staff reviewed the contents of the kits, discussed installation techniques, and responded to questions. In addition, volunteers were introduced to 10 energy conservation measures that were detailed in a pamphlet authored by Maine's Office of Energy Independence and Security (MOEI&S). Volunteers were asked to distribute the pamphlet and review its contents carefully with each homeowner. The training concluded with a discussion about program evaluation and distribution of the energy kits.

The volunteer training was a key program component because it provided basic instruction on properly installing the kits, emphasized the importance of talking with homeowners about additional conservation measures, and added a measure of accountability by stressing Extension's intent to evaluate program impacts.

Outcomes and Impacts

The number of homeowners identified by community leaders needing assistance exceeded the number of kits available. Consequently, staff secured a \$2,500 grant to purchase additional kits and materials. As a result, Keep ME Warm Kits were installed in 164 homes in November and December 2008. Eighty-eight trained volunteers contributed approximately \$8,000 in labor and transportation costs assisting homeowners and delivering energy conservation education to households throughout Washington County. Overall, the program directly affected over 300 family members.

To determine program impact, a survey instrument was developed to identify which energy tips contained in the MOEI&S brochure homeowners implemented. Estimates of savings per household that accrued for each conservation measure are based on MOEI&E figures. In the spring of 2009, a random sampling of 41 program participants who received the kits was selected for follow-up telephone interviews.

Survey respondents reported using the contents of the Keep ME Warm kits to complete many of the energy conservation tips outlined in the brochure. Estimates by Extension faculty using the survey results and secondary data sources indicate that each household saved approximately 145 gallons of fuel oil. Extending the survey findings to the entire population of 164 households receiving kits, the program saved program participants approximately 23,780 gallons of fuel oil.

The success of Keep ME Warm was driven by the expectation of high heating oil prices, which likely contributed significantly to the number of participating households and their willingness to adopt energy conservation practices, an interaction predicted by Verma, 1980.

Conclusion

Kirby, Chilcote, and Guin (2009) argue that energy has emerged as a critical public issue and that Extension is strategically positioned to play a key role in energy education. Their argument is supported by research demonstrating that people who participate in Extension's environmental educational programs value them highly and view Extension as a reliable and trusted information source (Clancy, Karim, Sakany, & Burbank, 2009).

The Keep ME Warm program demonstrates Extension's ability to address this critical national priority. Perhaps most notable was its effective use of community leaders and trained volunteers and partnership with state government, which could serve as a model for other states wishing to develop high-impact, cost-effective energy education and conservation programs.

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