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STUDY DESIGN ARTICLE

Encouraging the installation of rollover protective structures in New York State: the design of a social marketing intervention

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Abstract

Aims: Increasing the percentage of rollover protective structure (ROPS) equipped tractors has been the focus of many agricultural safety campaigns. Traditionally efforts have attempted to persuade farmers through education or community awareness interventions. These efforts have lead to marginal change. In response, a social marketing approach was tested as a means for increasing interest in ROPS retrofitting in New York. *Methods*: An initial phone survey was conducted with a random sample of New York farmers to identify a potential target population. Following target selection, in-depth interviews were conducted to isolate barriers and motivators to retrofitting. This information was used to develop message prototypes which were tested in small focus group discussions. Selected and revised messages, as well as various other incentives developed in response to feedback from interviews, were then tested in a prospective, quasi-randomized controlled trial. *Results*: Small crop and livestock farms were selected as the intervention target since they represent 86% of New York farms with none or only one ROPS protected tractor. Barriers to retrofitting which were identified in interviews were: 1) constant exposures normalize risk, 2) risk is modeled by significant others and 3) safety in general and retrofitting in particular requires too much time and money. The piloting of ROPS incentives led to a marked increase in ROPS sales in New York. ***Conclusions:*** **Social Marketing provides a promising framework for the design of agricultural injury prevention programs. The potential implications for other health initiatives seeking to promote behaviour change are also discussed.**

Key Words: *Health behaviour theories, health campaigns, health interventions, intervention evaluation, risk, rollover protective structures, ROPS, safety, social marketing, stages of change theory, theory of planned behaviour*

Introduction

Tractor overturns are responsible for the greatest number of agricultural fatalities in the United States [1–3]. These occur when a tractor flips over (either sidewise or backwards), crushing the operator under the weight of the tractor. The most reliable way of preventing injury or death to the operator in this situation is the use of a rollover protective structure (ROPS). These devices (which can take the form of either a roll bar or a reinforced cab) are 99% effective in protecting an operator wearing a seatbelt, as they form a protective zone [4]. Legislation mandating ROPS in Sweden over the past 27 years has reduced the rate of overturn deaths from 20 per 100,000 workers to practically zero.

In 1985, US tractor manufacturers voluntarily decided to equip all new tractors with these safety devices. Prior to 1985, ROPS were optional features and many tractors were purchased without them. These older tractors, still operational today, are typically more dangerous than newer tractors (narrow front ends, high centre of gravity, more prone to operational failures such as faulty brakes)

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and are used frequently on New York farms [5]. To adequately protect the operators of these tractors would require the installation of ROPS retrospectively at considerable cost (US$600–1500).

Recent research conducted in New York indicates that despite the knowledge of tractor overturns and the benefits of ROPS, relatively few New York farmers (17%) have considered installing them [5,6]. Although considerable education has been directed at increasing ROPS installation, the rate of ROPS protected tractors in New York has not increased markedly over the past 2 decades [4,7,8]. Current estimates predict that around 50% of tractors in New York have ROPS [5,9,10].

In order to more effectively encourage farmers to retrofit tractors, a social marketing intervention was developed in New York. Social marketing is a departure from previous intervention techniques in that it does not assume that knowledge of risks alone will create behaviour change. Instead, the intervention goal is to weigh the community's perceived costs and benefits relating to a specific behaviour, so that the intervention can be tailored to make behaviour change desirable [11].

Although several specific aspects of this intervention have been covered more thoroughly in other publications, this article attempts to provide an overall picture of how these components work together to create a social marketing intervention. For this reason, all aspects of the intervention, from the social marketing strategies, to the health behaviour theories and methods of evaluation are featured and discussed.

Study area

There are approximately 35,600 [12] farms in New York engaged in the production of a variety of commodities (field crops, livestock, dairy, vegetables, fruit, and organic produce). The scale of farming is widely divergent, ranging from smaller diversified hobby farms to large-scale agricultural enterprises, such as industrial dairy farms, which milk several thousands of cows. The average age of a New York farmer, 54 [13], indicates this workforce is older compared to the average age of workers in other occupations, 40 [14], and may be due to the fact that the profit margin in agriculture, particularly for small farms, continues to narrow. New farmers faced with the costs of purchasing land, equipment and produce would find it hard to generate enough profits to pay off debt, leaving farmers who have been well established in the industry decades ago, to occupy this niche.

Steep slopes and hilly terrain are common in many areas of New York. In addition, many formerly rural areas of New York have become increasingly urbanized, making travel over public roads with farm machinery more hazardous. These risk factors for overturns, along with the subsequent lack of profitability in small farming and the resulting prevalence of unmaintained or older equipment, increases the likelihood for overturns in New York. When compared to other regions of the United States, the northeast has the highest rate of overturns in the country (8.4 per 100,000 workers as compared to 6.1, 6.2, and 1.9 for the midwest, south and west) [15].

Social marketing of ROPS in New York

Social marketing has been used with success to address a wide array of health concerns, from issues such as drunk driving, to encouraging physical activity in inactive adults [16,17]. Most social marketing initiatives follow a prescribed series of steps that serve to isolate the most effective intervention target and then engage the target community in the design and evaluation of the social marketing campaign. The steps and tenets required to conduct a social marketing campaign are laid out in Figures 1 and 2 [18]. For the New York ROPS social marketing campaign, every effort was made to conform to this structure. As a result, quantitative surveys were used initially to select a viable target population, qualitative interviews and focus groups were used to design and evaluate intervention incentives, and a quantitative survey based on health behaviour theories was used to evaluate the impact of the intervention components in a pilot study.

Due to the fact that intervention development and evaluation occurred in stages, with each step in the process building on results from the previous step, the methods and results are presented together in stepwise, chronological order. This structure makes it possible to illustrate the iterative process that was utilized in intervention development.

All human participants research discussed in this paper was approved by the Mary Imogene Bassett Internal Review Board in accordance with the principles outlined in the International Guidelines for epidemiological studies.

Intervention development process

Audience segmentation

In the initial stages of intervention design, the New York farming population was segmented by several

- **Behaviour change is the ultimate goal.** Although education or awareness can be part of the process, these outcomes will not be used to evaluate the success of the intervention campaign.
- **Segmentation of the population is essential.** Not everyone in a population has the same motivators and barriers to action. Thus it is very important to carefully target the intervention to the community's stated wants and needs.
- **Formative research is essential.** It is difficult to understand how to create an intervention that addresses the community's needs unless diligent efforts have been made to understand their perspective relating to the behaviour in question (experiences, perceptions, issues, impacts).
- **Strategies must be customer-centred.** Instead of trying to make the target population do what researchers believe they should do, efforts are made to understand what the population wants and adapt the behaviour accordingly.
- **Product** (how to make the behaviour attractive), **Price** (increasing the benefits and reducing the costs), **Place** (making behaviours easy and accessible/getting the message out) and **Promotion** (mobilizing all key players to get the word out) should all be carefully considered and employed.
- **Competition should be carefully considered.** Researchers must understand that inaction or alternative unhealthy behaviours are often attractive options. In addition, safe behaviours often lack immediate beneficial effects.

Figure 1. Key elements to developing a social marketing campaign.

key demographic variables (farm owner's age, commodity, farm size, geographic location, presence of child operators, etc) to identify a viable intervention target. Several possibilities were discussed as selection criteria, such as readiness for change, or risk exposure. Selecting those farmers most ready for change would ensure the greatest results with the least amount of effort and selecting those farmers most at risk would ensure the greatest impact on injury and fatality reduction once change had occurred. To identify the most viable target, a phone survey was conducted with a random sample of New York farmers [7]. Farmers were asked a series of questions designed to assess their readiness for change, based on Prochaska's Stages of Change Model [19] (See Figure 3). Risk exposure data were collected as well, using the following criteria: hours of time spent on tractors, proportion of tractors with ROPS, and presence of tractor operators under age 18.

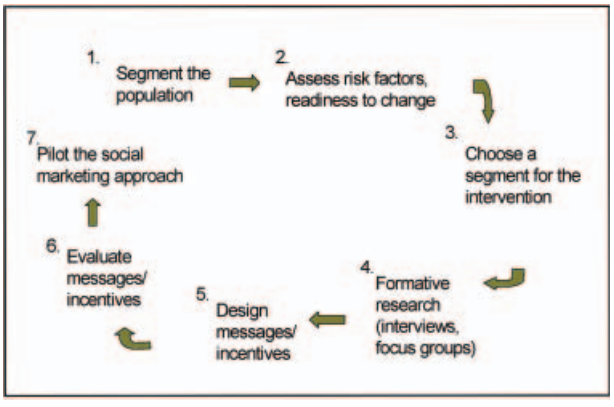

Figure 2. A process model employed in the social marketing of rollover protective structures in New York.

Results indicated that regardless of demographic factors, the majority of New York farmers were in the Pre-contemplation (Motivation) stage, i.e. they were aware of the risk of overturns, but hadn't considered retrofitting. When examining risk exposures, there were no real differences between the different segments of the farming community, except with regards to the number of tractors with ROPS. The survey indicated that 86% of farmers with only one or no ROPS protected tractors were small-scale crop and livestock farmers. In discussing these results, researchers felt the goal of having at least one or two ROPS protected tractors on every New York farm would be ideal, as this would insure a protected tractor on every farm for use with potentially more hazardous tasks. For this reason, small-scale crop and livestock farmers were targeted for the intervention.

Formative research

Having selected the target, a qualitative research assessment was then conducted to explore how these farmers perceive risk and what the potential benefits and motivators would be related to retrofitting [20] In-depth interviews were conducted with 20 informants representing a variety of perspectives, such as principal male farmers, farm wives, principal female farmers, hobby farmers (farmers not relying on the farm for income), and farmers who had retrofitted a tractor previously.

The major themes that emerged from these interviews were: "Constant exposures with positive

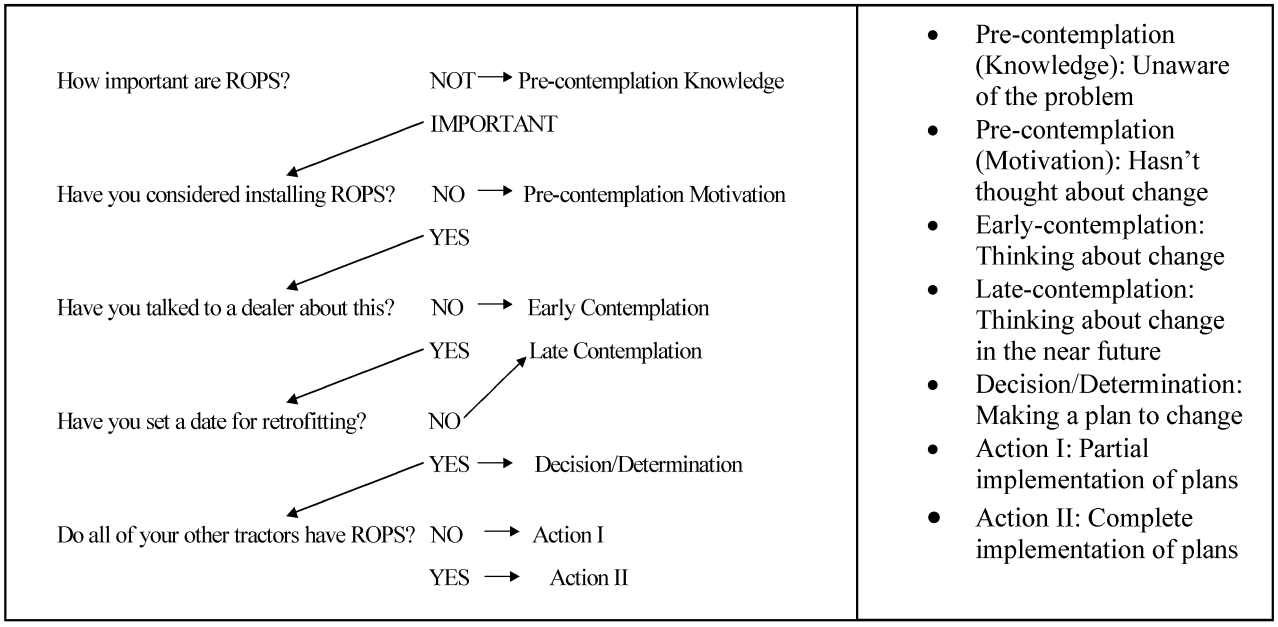

Figure 3. Stages of change survey questions related to audience segmentation.

outcomes normalize risk'', ''Risk is often modelled by significant others'', and ''There is tremendous pressure to reduce costs, save time and accept risk''. A significant aspect of constant exposures was that they led farmers (specifically, prinicipal male farmers) to believe they were not personally susceptible to an injury or fatality because of their experience in operating tractors. This data indicated that safety messages aimed at principal male farmers would then be relatively ineffective. Another extension of the constant exposures and risk modelling themes was the concern regarding the danger to family or workers. According to farmers (specifically, principal male farmers), they believed that children, employees or wives were much more likely to be injured, as they lacked experience. They also appeared to understand their role as safety role models, having admitted their own risk taking behaviours were often extensions of training received from their fathers, grandfathers or other role models. Farmers also revealed a constant concern with the financial viability of the farm. Although farmers felt pressure to accept risk, they also mentioned there was pressure to avoid injury, if it were to result in the inability to work even on a temporary basis. Another potentially motivating aspect of retrofitting was the protection from sun and/or cold weather that cabs and ROPS awnings can provide.

In reference to barriers, farmers shared concerns relating to the financing and installation of ROPS. Cost, in particular, made retrofitting an unrealistic safety goal for farmers ($600–1500 for parts and installation). In addition, farmers indicated that researching and installing ROPS kit required more time and effort than they could afford. Previous research conducted in New York revealed that farmers who had retrofitted tractors encountered a considerable ''hassle factor'' which made the process difficult [21]. In order to create a successful intervention aimed at increasing ROPS on New York tractors, the formative research phase indicated that: 1) ROPS must be more affordable; 2) researching kits and scheduling installation needs to be easier; and 3) messages need to target the risk to less experienced tractor operators, the inability to work as a consequence of injury or the comfort and protection that cabs and awnings can provide.

Designing and evaluating incentives/messages

The results from the formative qualitative studies were used to develop the two major components of the ROPS social marketing initiative. For the first component, an incentive package was proposed to remove the financial and logistical barriers. This package provided a rebate for 70% of the cost to retrofit up to $600 and a hotline that would provide assistance locating and researching the different ROPS models available. Previous research with New York farmers who were offered different levels of financial incentives to retrofit, allowed for an evaluation of the rebate amount [21]. According to this research, ''an incentive of 75% to 90% funding showed the most activity per dollar of any of the

levels''. In order to stretch rebate money to cover as many retrofits as possible, the incentive level was set slightly under the maximum activity level and capped at $600. Money for rebates was provided by the New York State legislature which approved $200,000 in annual rebate funding. Although more annual rebate funding was requested, $200,000 was the maximum financial support the legislature was able to approve.

To motivate farmers to take advantage of these rebates, a second intervention component was organized to develop messages emphasizing the perceived benefits outlined in interviews. With considerable input from social marketing consultants, message prototypes were created. To evaluate these message prototypes, triad discussions (smaller focus groups of usually three to five individuals) were conducted with small-scale crop and livestock farmers at county fairs. Participants were recruited with the assistance of cooperative extension personnel and asked to review message prototypes. Twenty focus groups were conducted, 10 with lead (male or female) farmers and 10 with their spouses. Study participants were asked to review eight ads, one at a time, and discuss: 1) the message being conveyed; 2) the visual appeal; 3) what they liked or disliked; 4) what was confusing; and 5) what they would change or not change. Participants were also asked to select two of their favorite ads.

Focus group results indicated that ads featuring the danger to families or the potential permanent disability that could result from an overturn were the most emotionally powerful and motivating. Messages aimed at the comfort of awnings or cabs were not as appealing, as farmers indicated they would not spend the money required to outfit an old tractor (the majority of tractors lacking ROPS) with a cab or ROPS awning. One ad was selected simply on the basis that it caught participants' attention and they found the humour in the ad appealing.

A variety of other topics were discussed in focus groups as well (popular informational media channels that farmers consult, safety beliefs likely to influence message approval, and differences in message receptivity between farmers and farm wives, etc) and are fully described elsewhere [22]. In addition to feedback given in focus groups, a phone survey regarding message channels was conducted with 1399 New York farmers. According to the survey, farmers consulted Cooperative Extension (13%), peers (10%), Country Folks magazine (10%), veterinarians (9%) and Farm Bureau (6%) for information regarding good farm management practices. Equipment dealers (24%), peers (14%), farm magazines (14%) and mechanics (11%) were listed as some of the most popular sources for information on machinery upgrades. Based on this, information targets for message circulation were Cooperative Extensions, veterinarians, equipment dealers, Country Folks magazine, and Grassroots magazine (Farm Bureau Newsletter).

Using the feedback given in focus group discussions and the media channels survey, the following three messages were selected for a pilot intervention (see Figures 4, 5 and 6) and featured in popular farm media sources.

Piloting the social marketing campaign: establishing measures of change/launching the campaign

One of the final steps in the development of the ROPS social marketing campaign was to evaluate the incentive's impact on behaviour change. In order to evaluate the effect of the various intervention components (i.e. rebates, messages, and rebates and messages together), four regions were selected for campaign pilot testing, one of which would serve as a control region. Figure 7 indicates each region and its designated intervention component. As the figure illustrates, two regions in New York were selected and two in Pennsylvania. Due to the fact that all New York farmers were eligible for the rebate, it was necessary to pilot the effects of just messages and to select the controls from Pennsylvania. This option seemed feasible as the differences between Pennsylvania's agricultural population and New York's are few.

In addition, regions were selected based on the following criteria: 1) high percentages of small crop and livestock farmers; and 2) geographically distant enough to minimize the potential for message bleed over from one region to the other (i.e. Region 1 and Region 2 are separated by the Adirondack state park and have separate newspapers, radio stations and cooperative extension offices).

After region selection, messages were distributed using a ''marketing mix''. ''Marketing mix'' is a message dissemination strategy often used in social marketing, which aims to utilize a variety of delivery channels. These channels are:

- ADVERTISEMENTS: Paid media/advertising in the form of ads or periodical inserts. Ads were run with an effort to maximize reach and repetition.
- STORIES: Unpaid media/public relations as a means for distributing messages. Messages about the rebate or the importance of retrofitting were ''pitched'' to reporters, editors and other gatekeepers for radio stations, TV stations and newspapers.

Figure 4. Message featuring the danger to others. Reproduced with kind permission from the Academy for Educational Development.

- SPOKESPEOPLE: Partnerships and outreach as a means for building a supportive environment for the campaign. Project collaborators (the Northeast Equipment Dealers Association, New York Farm Bureau, and Farm Family Insurance) were recruited to assist with this project and were prominently featured on all posters and ads as an indicator of peer endorsement. These collaborators assisted considerably in distributing the intervention message.

Table I provides a summary of the intervention components used in each region and the marketing mix that was employed.

To evaluate the intervention components, researchers designed a baseline and post-intervention survey to assess: readiness to retrofit [19], attitudes, social norms, perceived behavioural control, and behavioural intentions relative to retrofitting [23]. Measures of actual behaviour change were also included in the survey. The focus of analysis would be to assess which of these variables showed the most change between the pre and post surveys and which of the disposition variables (readiness to change, attitudes, social norms and perceived behavioural control) were most highly correlated with behavioural intention and actual behaviour change.

A stratified sample of small-scale crop and livestock farmers was randomly selected from a National Agricultural Statistics Service (NASS) database. NASS was appointed to administer the survey 5 months before the launch of the intervention and then at the end of the pilot (see Table II). In addition to surveys, a random sample of New York dealers was selected to measure differences in sales of ROPS kits before, during and after the intervention campaign.

Although the pilot survey and retrofit tracking evaluations were not completed in time for this publication, the initial response to the intervention appears very promising. Over the course of the 6-month pilot evaluation, the retrofitting hotline received 720 phone calls from interested farmers and 329 have applied for rebate funding. Data from ROPS manufacturer indicates there was a 10 fold increase in ROPS sales to New York following the intervention launch [24]. National supplies of some

Figure 5. Messages featuring the risk of a permanent handicap. Reproduced with kind permission from the Academy for Educational Development.

ROPS models have been temporarily depleted and other health and safety organizations have discussed similar campaigns in other states. Due to the timeliness of this information, the interest from other states in similar programmes and the unprecedented response from farmers, researchers felt it was important to publish an overview of the intervention prior to the more formal analysis which will be completed in the next year. Researchers plan to use the information from the final analysis to provide further improvements to the programme. Efforts will be made to use the most effective mix of incentives, to maximize exposures in media channels that proved most highly effective, to continue to use a ''marketing mix'' and to expand support from the farming community. Evaluation of efforts will be ongoing, with a survey and evaluation planned for the revised and expanded statewide ROPS social marketing campaign. Following increases in ROPS tractors, researchers intend to employ the same process in encouraging New York farmers to use protected tractors during dangerous tasks and to use seatbelts when using ROPS protected tractors.

Discussion

In order to pursue the goal of encouraging New York farmers to retrofit unprotected tractors, researchers were required to address several significant issues. Initial research revealed that farmers were aware of the risk of operating unprotected tractors, as well as the efficacy of ROPS in preventing injury or death. To get New York farmers to act required an initiative that would motivate these individuals to respond to their knowledge of risks.

This scenario is not uncommon in the realm of public health initiatives. In fact, it would seem the majority of health interventions are aimed at motivating individuals to do what they know is healthy. It is reasonable to assume that if individuals know what is healthy and continue to choose the unhealthy option, it is perhaps because the

Figure 6. Humorous advertisement. Reproduced with kind permission from the Academy for Educational Development.

unhealthy option is more appealing. The benefit of social marketing is that it insists on the thorough exploration of barriers and motivators to action. One useful example of this ''customer-centred'' approach is the use of social marketing to recruit pregnant smokers into a smoking cessation service [24]. Researchers conducted focus groups to assess the issues smoking women encountered when trying to

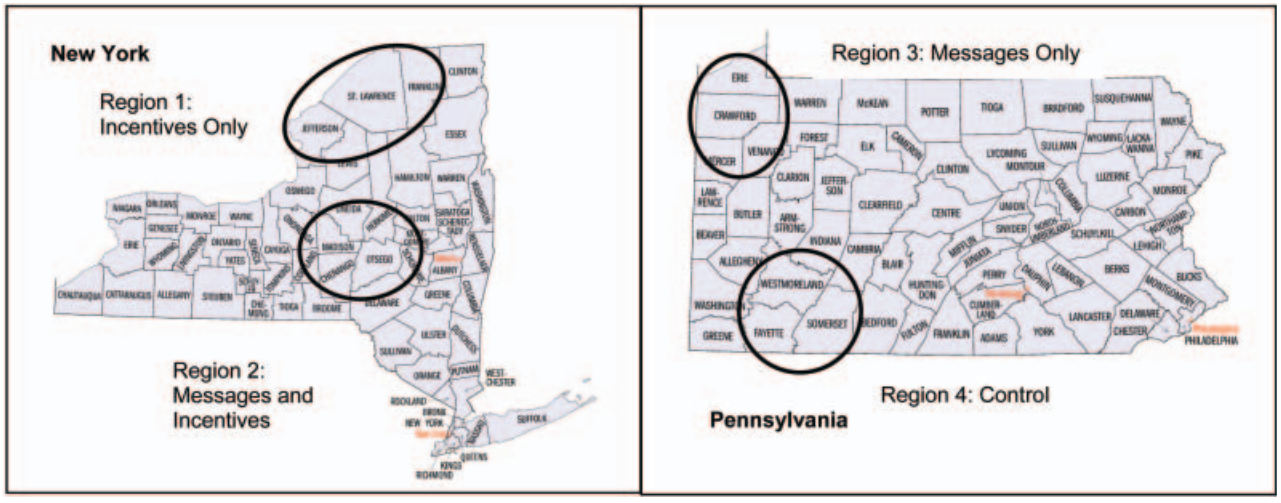

Figure 7. Rollover protective structure social marketing regions.

Table I. Intervention components and marketing strategies utilized in each of the four pilot study regions.

Region 1* Rebate and hotline	Region 2** Rebate, hotline, messages	Region 3*** Messages, hotline	Region 4**** Control
Ads: Generic ads were run in popular farm periodicals. These ads featured only the who, what, how and where of the intervention. The focus of the ad was simply to make farmers aware of the rebate and hotline	Ads: Ads which were developed based on formative research and tested in focus groups were run in popular farm periodicals. All ads included information about the ROPS rebate and hotline. Ads were ''flighted'', i.e. each ad was run for several months then followed by the next, to maximize message vitality and farmer interest	Ads: Ads which were developed based on formative research and tested in focus groups were run in popular farm periodicals. All ads included information about the importance of retrofitting and the hotline. Ads were ''flighted'', i.e. each ad was run for several months then followed by the next, to maximize message vitality and farmer interest.	No advertising was conducted
Stories: A few stories were featured in papers and on radio and TV spots. Again the stories simply featured the availability of rebates and how to access the hotline	Stories: Stories were featured in papers and on radio and TV spots. These stories featured testimonials from farmers who had been adversely affected by an overturn or messages related to concerns raised in the formative research phase. Information on the ROPS rebate and hotline was also offered	Stories: Stories were featured in papers and on radio and TV spots. These stories featured testimonials from farmers who had been adversely affected by an overturn or messages and information that focused on concerns raised in the formative research phase. Information on the hotline was also offered	No stories were run
Spokespeople: Generic ads were mailed to cooperative extension offices and tractor dealerships	Spokespeople: Posters based on the particular ads being flighted in paid advertisements were mailed to cooperative extension offices, tractor dealerships and veterinarians. Coffee mugs, note pads and other promotional items were mailed as well. Fabric billboards of ads were created and posted at farms near high traffic areas	Spokespeople: Posters based on the particular ads being flighted in paid advertisements were mailed to cooperative extension offices, tractor dealerships and veterinarians. Coffee mugs, note pads and other promotional items were mailed as well. Fabric billboards of ads were created and posted at farms near high traffic areas	No collaborators were contacted

* Region 1 farmers were offered a 70% rebate up to $600 for retrofitting and hotline assistance for researching and scheduling a retrofit. **Region 2 farmers were offered a 70% rebate up to $600 for retrofitting, hotline assistance for researching and scheduling a retrofit, and social marketing messages regarding retrofitting were delivered via popular farm media channels and project collaborators. ***Region 3 farmers were offered hotline assistance for researching and scheduling a retrofit, and social marketing messages regarding retrofitting were delivered via popular farm media channels and project collaborators. ****Region 4 farmers received none of the intervention components.

quit. Participants listed issues such as a lack of information on solutions to quitting, dealing with cravings, coping with anxiety and addressing the weight gain associated with smoking cessation. Incorporating this desired information into a smoking cessation programme led to increased recruitment in the study area when compared with a control area. As this study indicates, when barriers are removed it is possible to make healthy behaviours more appealing.

In the case of the New York ROPS social marketing campaign, the financial investment required to install ROPS on tractors turned out to be a considerable barrier. Knowledge of this reinforced the suspicion that continued efforts relating to education or community awareness would do nothing more than to encourage farmers to shut out the safety message, as these messages call on farmers to address a situation which they believe they are powerless to change. For that reason, a retrofit rebate was an essential part of the intervention development process. In extrapolating what has been learned in this process, a vital step to the development of any health intervention should be an

Table II. Sampling strategy for pilot study evaluation of changes in dispositional variables relative to retrofitting.*

	Region 1		Region 2		Region 3		Region 4	
	Crop	Livestock	Crop	Livestock	Crops	Livestock	Crop	Livestock
No ROPS	44	49	44	49	44	44	50	46
One ROPS	43	20	41	20	46	44	45	43

*Table lists the number of farms contacted in each stratum.

initial assessment of whether the change that is encouraged is within people's reach. Research conducted in Uganda on condom use also supports this conclusion [25]. Focus groups conducted with residents in the Kabarole district of Uganda revealed that significant barriers to condom use were accessibility and expense. The removal of these barriers was followed by an increase in condom sales in the study region.

As well as making health behaviours accessible, social marketing programmes seek to create messages that align with the ''consumer's'' perceived concerns. In the case of the ROPS project, discussions with farmers revealed that there were a number of concerns to target in messages, i.e. the safety of family or workers, financial concerns and the impact of debilitating injuries. Other health initiatives (reductions in drink driving among teens, smoking cessation, and use of asthma health management programmes) provide good examples of the beneficial effects of tailored messages [26–28]. In combining tailored messages with a means for making ROPS affordable much has been done to alter the cost/risk equation that makes inaction preferable to action.

The New York social marketing campaign also provides an example of how the placement and promotion of messages should be carefully considered. Releasing messages through popular media channels increases message exposure frequency for less cost. Utilizing non-paid media advertising opportunities such as public service announcements and special interest stories offers wider and more varied distribution of the intervention message. Enlisting the farm service community (i.e. veterinarians, tractor dealers, Farm Bureau), in the case of the ROPS project, enabled the distribution of message channels via potentially trusted and influential members of the community. In using this marketing mix, not only do researchers maximize the reach of intervention messages, but they keep the message ''fresh'' because it is presented in numerous formats in varied locations.

The New York ROPS social marketing initiative also provides an example of how incorporating behavioural theories into evaluation can provide more sensitive measures of intervention results. Weaknesses noted in other social marketing initiatives include the lack of effective measures regarding intervention impact [29]. In the case of the ROPS social marketing initiative, researchers predicted that evaluation measures that simply focused on the final outcome (% of tractors with ROPS) could potentially miss other significant positive changes, such as changes in attitude or readiness to retrofit. With the use of behavioural theories such as the Stages of Changes theory and the Theory of Planned Behaviour, evaluation measures were created based on behavioural antecedents and stages proven to effect intention and outcome. By applying these theories in the design of the evaluation it is possible to detect predecessors to change as well as their association with actual change. This knowledge can have a significant influence on the final intervention design.

Conclusion

Although the design of the ROPS social marketing initiative has involved a great deal of energy and investment, much has been learned in the development process. The selection of a population segment, assessment of motivators and barriers, and the design of an intervention that competes effectively with unsafe behaviour options has not only brought a more in-depth understanding of the target community, but has allowed for the creation of a competitive and appealing safe alternative (retrofitting). We would suggest that the ''customer-centred'' approach of social marketing is a worthy option for researchers intending to motivate communities to engage healthy or safe behaviours.

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ERRATUM

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In the above article, one of the authors' names was spelt incorrectly. The correct author list is published here. We apologise for this error.

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