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### A Model Health and Safety Intervention for Hispanic Immigrants Working in the Dairy Industry

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# A Model Health and Safety Intervention for Hispanic Immigrants Working in the Dairy Industry

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## INTRODUCTION

As dairy producers in the United States modernize and expand their operations, Hispanic immigrant workers play an increasingly important role. In Wisconsin, the country's second leading producer of dairy, an estimated 40–60% of the dairy workers are Hispanic immigrants.<sup>1,2</sup> By and large, these workers have limited formal education, do not speak English, and have low literacy skills. They have limited to no training on how to do their job safely.<sup>2,3</sup> Although there are no official statistics specific to undocumented workers in Wisconsin dairy, an estimated 48% of hired agricultural workers in the United States are not legally authorized to work in this country,<sup>4</sup> which exposes both producers and workers to increased risk and deepens the vulnerability of immigrants in the work place.<sup>1</sup>

The National Farm Medicine Center and Migrant Clinicians Network, with support from the National Institute for Occupational Safety and Health (NIOSH)-funded Upper Midwest Agricultural Safety and Health Center, are piloting a 5-year project to offer a culturally appropriate popular education (CAPE) model to address the health and safety training needs of immigrant workers in dairy. The goal of this

project, entitled *Seguridad en las Lecherías: Immigrant Dairy Worker Health and Safety*, is to bridge the gap in worker health and safety training in dairy production by testing a culturally appropriate occupational safety and health intervention to reduce worksite hazards and to improve knowledge and practices among immigrant dairy workers in Wisconsin.

## METHODS

The development and implementation of this worker health and safety project is based on the following components.

### Formative Research

During this stage, project staff conducted a needs assessment to design the project. This included listening to workers and producers to understand their perspective and needs regarding workplace safety, engaging other key stakeholders about the content and execution of the project, and observing dairy worksites. Additionally, project staff conducted an extensive literature review to understand the hazards and injuries in dairy and reviewed existing training curricula and resources.

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## Curriculum Design

The project conducted a series of steps to develop and test a culturally relevant, bilingual health and safety train-the-trainer curriculum for Hispanic dairy workers. The curriculum is based on adult learning pedagogical theories,<sup>5,6</sup> the taxonomy of significant learning,<sup>7,8</sup> principles of hazard control,<sup>9</sup> and the Health Belief Model.<sup>10,11</sup> The curriculum is designed to educate workers with lower literacy levels and for the trainings to be easily replicated for use by farmers or managers or other workers to train workers. The curriculum addresses workers' practices, beliefs, and attitudes and fosters knowledge and behavioral changes within the current dairy farm working context.

## Adaptation of the Community Health Worker Model to the Dairy Setting

This project is piloting an intervention to train immigrant workers and reinforce key safety messages and promote safe practices through the *promotor de salud* (community health worker) model. The use of *promotores* is a proven approach in community health promotion<sup>12–14</sup> in which community members are trained to promote health. It has not been utilized among the dairy workforce nor extensively tested in an occupational setting. The use of *promotores del salud* for reduction of occupational and environmental health problems in agriculture is less common, but the use of *promotores* been successfully applied to reduce pesticide exposure, promote eye safety, and improve sanitation and hygiene.<sup>15–18</sup> In this project, the *promotor* will conduct monthly safety reviews, reinforce safety knowledge and best practices, facilitate new worker health and safety training, and serve as a liaison between producers and workers. The project will assess the model through a randomized controlled study on a total of 90 farms and aims to provide health and safety education to an estimated 675 Hispanic workers. An evaluation will be conducted to determine reduction in hazards, changes in knowledge, attitudes, and practices among immigrant Hispanic workers, and its acceptability in the dairy industry.

## Farm Safety Audits

Lastly, this project partners with National Farm Medicine Center's Agricultural Safety Consulting (ASC) to help farmers reduce hazards and comply with regulations required by the Occupational Safety and Health Administration (OSHA). ASC offers safety audits and recommendations to farms participating in the intervention.

## PRELIMINARY RESULTS THROUGH OCTOBER 2013

### Needs Assessment

Project staff designed and conducted five focus groups with 37 workers, one focus group with 15 agriculture extension agents, 16 interviews with key informants including farmers, insurers, clinicians, and trainers, and observations of 16 dairy farms varying in herd size, parlor design, number of hired workers, and ownership structure. Additionally, project staff conducted an extensive literature review regarding hazards and injuries in dairy as well as training curricula and resources.

Understanding the workplace safety needs of the immigrant dairy workforce and operationalizing these findings into the intervention were key components of the formative research efforts in this project. The worker focus group participants included both men and women from a variety of dairy farms in terms of size and design. The workers tasks largely involved milking and pushing. The educational backgrounds ranged from no formal education to completion of high school. Most did not have previous experience working on large dairies. An in-depth qualitative analysis of the five worker focus group narratives is forthcoming. Preliminary results from the focus group suggest the following:

- By and large, workers are not being provided health and safety training and receive limited job training.
- There is confusion with and misunderstanding of the term workers'

compensation—only 2 out of 37 workers fully understood the concept of workers' compensation.

- Workers expressed a fear of job loss were they to report injuries.
- Workers described experiencing discrimination from other Hispanic workers as well as from employers.
- Workers expressed a very strong interest to learn about health and safety in dairy as well as workers' rights.
- Workers reported a strong need and desire to improve communication between workers and farmers.
- Injuries—from minor to debilitating injuries—were described by workers.
- Immigrant women are an important, possibly growing, component of the workforce.

Actively engaging and listening to producers as well as other stakeholders was also central to the formative process. A more in-depth description is forthcoming. Initial results from interviews, the focus group, and observations suggest the following:

- OSHA's Local Emphasis Program to address the hazards in Wisconsin's dairy industry is motivating producers to improve health and safety.
- There is a lack of resources to help producers understand how to minimize or eliminate hazards and improve safety and to train immigrant workers.
- There is a limited understanding of workers' compensation and OSHA regulations on the part of producers.
- There is interest in and desire among dairy producers to offer immigrant workers health and safety training.

### **Worker Health and Safety Training**

Project staff developed and tested five core modules to train immigrant dairy workers. The topics include

- Introduction to health and safety in dairy—Identifying and controlling hazards
- Animal handling

- Machinery and equipment
- Workers' rights and responsibilities
- Chemicals and confined spaces

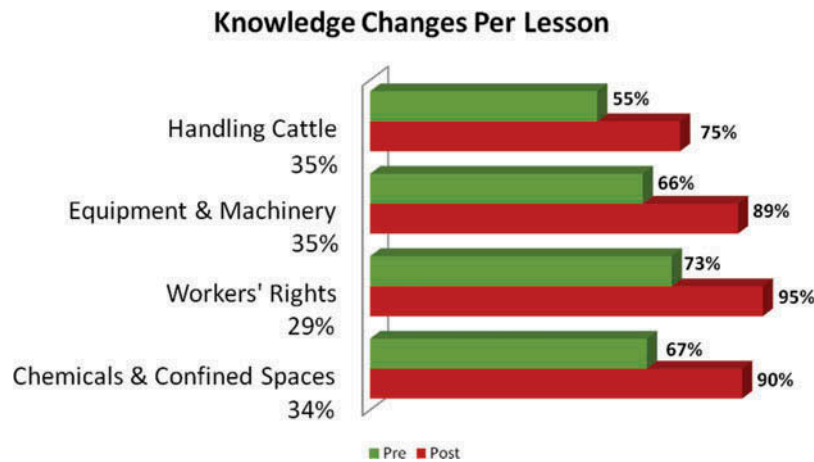
Each module is carefully written with a step-by-step facilitators guide and is thoughtfully designed to engage participants. Project staff not only worked to ensure effective content delivery in Spanish, but also that the safety content was appropriate for workers with low levels of literacy and limited formal education. Each module includes a culturally sensitive assessment to ascertain changes in knowledge.

To date, this project has trained 161 workers, facilitating 629 worker training hours on 10 farms. Preliminary results suggest an increase in knowledge among workers participating in these trainings. During each training, the facilitator conducted pre and post assessments with a range of 102 to 118 participants per training. The preliminary results, outlined in [Figure 1](#), suggest an increase in participants' knowledge, with an effect size from 29% to 35% in knowledge changes per lesson.

A randomized study will be conducted in the next phase of this project to further examine the applicability of the knowledge transferred to workers through this new comprehensive training curriculum. Briefly, the study will examine the changes in workers' safety practices, the reduction of hazards in participant farms, and the usefulness of the inclusion of a *promotor de salud* in reinforcing knowledge and promoting safety practices. Data collection includes walkthrough observations and interviews with farmers and workers to compare practices and hazards prior and after the intervention. The study is planned to launch in 2014.

### **Partnerships**

This project involves extensive outreach and involvement with producers and other stakeholders. This project benefits greatly by partnerships with the Professional Dairy Producers of Wisconsin, the University of Wisconsin River Falls, and the Mexican Consulate of Saint Paul. It also benefits from the guidance of an expert advisory committee of producers, trainers, and clinicians.

FIGURE 1. Pre and post assessment results for the *seguridad en las lecherías* training.

### CONCLUSION

As the immigrant worker population grows in dairy agriculture, it is incumbent upon the industry to address the risks associated with bringing a naïve workforce into one of most dangerous areas (large-animal agriculture) of one of the most dangerous industries (agriculture) in the country. Finding language and culturally appropriate training methods is essential and our work suggests that these workers are hungry for training both about doing their job well and doing it safely. However, the knowledge gaps are formidable and aggravated by the vulnerability of the workforce. Most of these immigrant workers are still unfamiliar with and or uninformed about workplace conventions such as workers' compensation and hesitant to report injuries or even identify workplace hazards that beg abatement for fear of job loss. The application of CAPE such as the *promotor de salud* may be an effective and efficient way to provide training to immigrant workers and open the communication between workers and employers. Our project will explore and evaluate the potential benefits of the *promotor* training model in dairy agriculture over conventional didactic methods.

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