

## **Reducing Falls and Silica Exposure in the Construction Industry—Preliminary Lessons Learned**

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### **Introduction**

The construction industry is a dynamic and changing environment with a highly mobile workforce. Frequently, it has very tight deadlines, and worksites on which a wide range of partners from contractors and subcontractors move on and off (Gervais 78). The work differs from many other industrial jobs because it is constantly evolving. Worksites do not look the same from day to day and hazards may come from everywhere, because tasks are carried out simultaneously by contractors and subcontractors with different levels of awareness about safety and health practices. The industry attracts a large workforce and especially Hispanic immigrants due to the availability of jobs, ease of entry, relatively high income, and limited need for experience and English literacy (Jaselkis 605).

In 2009, the number of fatalities in construction declined 16 percent in 2009 after a decline of 19 percent in 2008, although workers in construction incurred the most fatal injuries of any industry in the private sector (BLS 2009). Dong's study of more than 7,000 construction workers included in the national Medical Expenditure Panel Survey found that Hispanics were nearly 30% more likely to have medical conditions due to work-related injuries than white, non-Hispanics, after controlling for occupation, gender, age, and education. Their injuries were also more likely to be severe enough to cause lost workdays (Dong 563).

Additionally, silica exposure among Latino construction workers is much less well characterized, yet also likely to be a problem because Hispanic workers have high participation in most of the occupations that involve exposure to silica. Causes of high injury rates among Latino workers should be analyzed in detail because immigrant Hispanic workers are an ever-growing population segment of the workforce in the United States, and their working conditions and treatment will affect the treatment of all United States construction workers (Nissen, 64).

Protección en Construcción (PenC) is a community-based participatory research project designed to identify opportunities for the prevention of falls and silica exposure among Hispanic construction workers in Lawrence, Massachusetts. As a result of focus groups and consultation with workers, contractors and community members, PenC developed an organizational intervention focused on contractors who employ Hispanic workers. The purpose of this paper is to share preliminary lessons learned from the initial phase of PenC project conducted in late 2010.

## **Background**

Protección en Construcción is an institutional partnership which includes of the University of Massachusetts Lowell Department of Work Environment, City of Lawrence, Mayor's Health Task Force (MHTF), Laborers Local 175 (LIUNA), and Lawrence Community Connections LCC. PenC developed the Leaders in Safe Construction (LISC) program as a means to enhance contractor effectiveness in preventing falls and silica exposure to their workforce. LISC project staff work with contractors to: encourage participation of all employees in their company's safety and health efforts regardless of language, ethnicity or culture; increase supervisors' capacity for effective leadership and health and safety management; improve health and safety planning on the construction site, and provide a systematic and proactive approach to preventing hazards.

The organizational intervention focuses on managerial changes that will result in consistent and effective use of controls in compliance with OSHA fall prevention standards. These include proper ladders, scaffolds, guardrails, and training programs. LISC was based on similar programs, such as Fall Safe<sup>1</sup>, which has been demonstrated to be effective in other settings. We modified them for the Lawrence environment in a collaborative effort with the community, contractors, supervisors and construction workers. Elements of the Fall-Safe program include developing company policies, training supervisors and workers, site-specific fall hazard control plans and communication, accountability systems on-site to manage fall hazards, and regular site inspections by contractor personnel (Becker et. al. 1965). LISC and Fall Safe share some elements but present important differences around approaches for training supervisors, regular inspections, and mechanisms to be visible to the community contractors' progress and achievement through the program.

The first stage of the project was conducted in late 2010 and involved recruitment of construction contractors and initiation of hazard assessments at the workplace. In this first stage, protocols for recruitment, as well as roles and duties, were designed to begin the intervention phase with enrolled contractors.

## **Methods**

During the early stages of PenC, features of the construction industry were discussed with those directly and indirectly involved. Unionized and non-unionized workers and supervisors, small and large contractors, construction workers' families, Lawrence residents and community members participated actively in discussions regarding health and safety conditions at construction sites. They answered questions about the problems faced by Hispanic construction workers, ideas for solutions to hazards on the job, and resources in the community to make

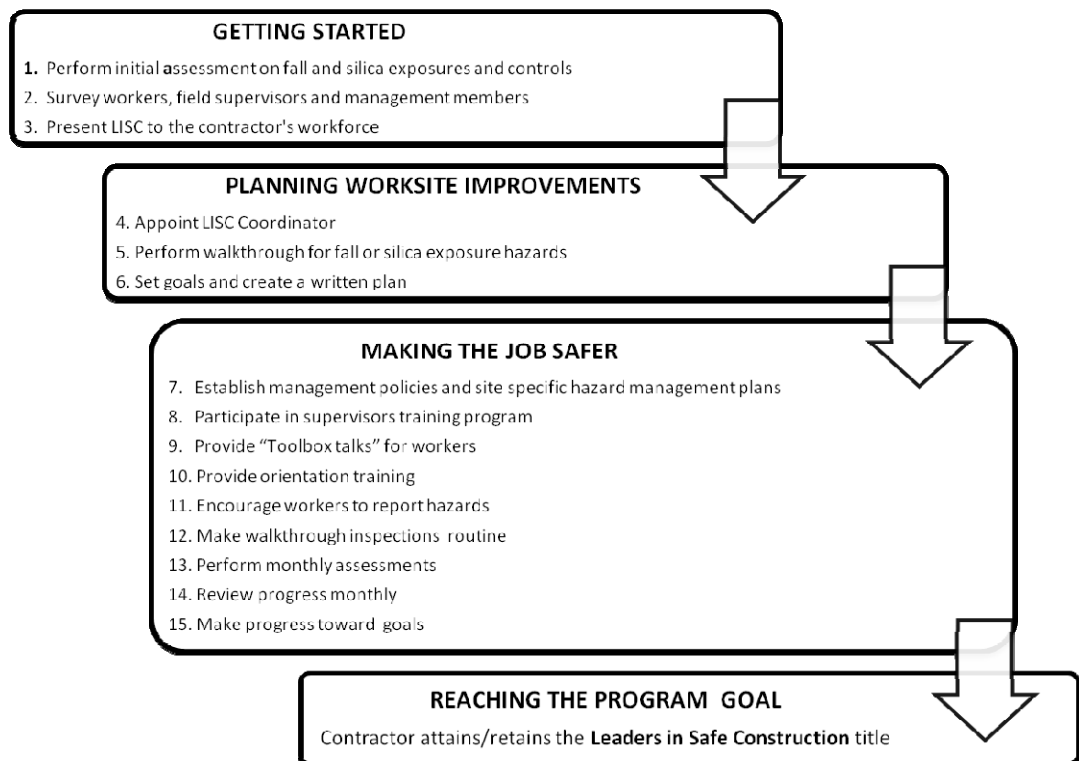
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<sup>1</sup> Fall Safe is a program developed by the Safety and Health Extension at West Virginia University (WVU). Fall Safe is a partnership program between West Virginia University and construction contractors to implement a fall hazard management system and obtain "Fall-Safe" status. The overall objective is to promote an "organizational intervention that will provide construction contractors with knowledge, a fall hazard control management accountability system, and incentives to decrease fall hazards on their construction sites".

construction safer. Knowing the daily situations faced by Hispanic construction workers at construction sites allowed for the integration of specific elements into LISC.

Data collected from participants showed workers' fear of being fired as a consequence of reporting hazards, difficulties in communication with supervisors, gaps in safety planning, and needs for external coaching to improve safety and health performance. All these aspects were used to set up the LISC's framework, and they were integrated into elements such as a non-retaliation policy, cultural and leadership training for supervisors, toolbox talks, and goal-setting.

Stakeholders' input was incorporated into the 15 elements of LISC (Figure 1). The first three elements are the foundations for starting the program. Through conducting an initial assessment and surveying workers, field supervisors and members of management, the PenC researchers and contractors obtain an overview of needs and gaps to reach minimum levels of safety and health performance at the worksite. During the next three LISC elements, PenC and contractor representatives work together to establish the goal-setting plan and written plan for further activities. Steps 7 to 15 are focused on actions such as establishing written policies and site-specific hazard management plans, participating in leadership training for field supervisors, encouraging workers to report hazards, and conducting walk-throughs, among others. Contractors who successfully complete the 15 steps are certified as "LISC Certified Contractors,"



**Figure 1. Leaders in Safe Construction LISC. 15 elements to complete the program.**

Through all 15 steps of LISC a coaching relationship is developed between PenC and contractor representatives. Contractors have to promote workers' participation as well as encourage workers to report hazards without fear of retaliation. They should conduct regular site inspections, assessing working conditions with support of external safety experts. Contractors promote supervisors' participation in a training program with a focus on identifying barriers and enhancing supervisors' skills in working with people from different backgrounds and in getting beyond language challenges. At the same time, contractors develop goals for implementing the LISC program and train supervisors to conduct effective toolbox talks. The steps are contained in the LISC Participants' Handbook with the main purpose of providing the participating contractor with the necessary information to implement and keep the LISC Program working successfully in their worksites.

## **Lessons Learned**

Below are three lessons learned in the first phase of LISC program that we have found useful in later phases of our project and that could be useful in designing effective programs in other locations.

### Lesson 1: Design a Flexible Intervention Project

The LISC program is developed around 15 elements that are linked and that aim to reduce workers' exposure to fall and silica hazards. PenC is not a stranger to the fluctuations of work in the construction industry, and it is aware that seasonal and economic factors affect contractors' employment levels. Construction contractors may have periods of high employment followed by periods without jobs or with few jobs. Therefore, LISC and its 15 elements should be flexible enough to keep its essence, while adapting effectively to daily changes that the construction market brings to companies, especially for small residential contractors.

Originally, LISC was planned to conduct each element sequentially. However, after initial discussion with contractors regarding their schedule and availability to conduct LISC, some changes were implemented. First, key elements for starting the program such as the initial assessment and walk-throughs for falls and silica hazards, or appointing a LISC coordinator for the contractor were identified. Other elements that could be implemented according to the contractor's job schedule and availability were identified.

In this context, LISC elements were rearranged, allowing participants to start with steps that they could complete based on their previous experiences, even if they did not have active job sites at that moment. Thus, activities such as assisting the company to establish written program management policies and site-specific hazard management plans can be developed although they do not currently perform any task related to falls or silica hazards but will do in the near future. This approach brings advantages for both contractors and LISC staff, because contractors do not have to move away from their daily activities and the researchers can continue to work closely with contractors and progress with the goals of LISC.

### Lesson 2: Identify Benefits from Construction Contractors' Perspectives

Part of being effective in enrolling construction contractors in the LISC program involves understanding and supporting their vision for their business. Contractors do not incur additional costs for taking part. They receive high-quality consultation from experienced health and safety

professionals at no cost. Despite the apparent benefits of improving health and safety conditions in worksites through free, specialized and experienced support, construction contractors may have different reasons and expectation for wanting to be involved in LISC. Their main motivations may be related to concerns about compliance with OSHA regulations and other laws. Discussions between researchers and contractors related to the benefits of taking part in a research program have revolved around positive impacts on their budget because they may be less likely to get citations and fines; will have lower workers' compensation insurance rates; will develop health and safety plans as a tool to obtain better jobs; and will improve their professionalism as contractors, helping them position themselves for bigger jobs. Due to tight job deadlines, explaining that this program would not interrupt the daily work activities is relevant for potential participants.

Another important element for contractors is how to communicate to the community and potential customers their efforts and continuous progress in achieving a safer worksite. Contractors enrolled in LISC can get free marketing for their business through LISC. They will be visible to the community members, government agencies, and their customers through different mechanisms. Contractors' firms will be marketed in the media through regular press releases, local newspapers, radio stations and the PenC Newsletter. Additionally, a banner installed at their construction sites allows contractors to showcase their workplaces and shows the community members where they are. All PenC members are aware of the importance of focusing on contractors' benefits in order to reach the recruitment goal. Moreover, all materials developed from the project for potential participants and the communities, such as brochures and newsletters, have communicated consistent messages.

Generally, contractors are not familiar with academic research nor with benefits they would gain from participating in these sorts of projects. Some of them could even have negative past experiences or prejudices about working in a research project. Free consultation or improving workers' health and safety conditions might not be seen as a relevant benefit for construction contractors. However, in times of economic crisis, few job opportunities and a highly competitive labor market, helping contractors to stand out from their competitors could become the deciding factor between being successful or being out of business.

### Lesson 3: Investing Time to Create Trust

Taking part in a research program may require that construction contractors open their work world to academic researchers and allow them to see their successes and failures. Therefore, trust between the partners involved allows a strong commitment to successfully completing the program. PenC has been developed on the basis of community-based participatory research, involving community leaders, local government representatives, community members, and union organizations. This range of participants has allowed to LISC to create an effective relationship network to enroll contractors.

First contact with potential contractors mainly happens through community, government and union members who are well-known to the contractors and have the information to introduce LISC and answer their initial questions. This initial contact does not necessarily mean the contractor has been recruited, but has opened the door to next steps in the recruitment process. Through this process, contractors has communication with specific PenC members which have been selected based their background (residential or commercial construction) and contractor' preferred language (English or Spanish).

Enrolling participants in LISC is the foundation of the program; thus investing enough time in this stage may positively influence its development. Although this stage is highly time consuming, it should be considered an investment because part of the LISC program's success will depend on the effective, long-term relationships created in this stage of the project.

## Conclusion

Implementing research programs to improve health and safety at construction sites requires not only that these are adjusted to hazards inherent to the industry. They must respond to the dynamics of construction sites, being flexible enough to achieve their goals while being mindful of contractors' schedules and availability. This synchronicity between academic research and contractors' daily activities can be managed more effectively if it has the support of individuals and community organizations well-known by both parties which help to build a trusting atmosphere for program implementation. These considerations are regarding to the early stages of our project which will continue until July 2012.

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