



CASE STUDY:
**Tailoring a Workplace Smoking Cessation
Intervention for Hispanic/Latino
Construction Workers**

Tailoring a Workplace Smoking Cessation Intervention for Hispanic/Latino Construction Workers

GOAL/PURPOSE:

Develop a sustainable smoking cessation intervention for the construction sector tailored to Hispanic/Latino construction workers (HCWs), to meet their life/work circumstances and enhance their access to smoking cessation support.

The intervention was developed based on formative research and the feedback from workers and safety managers. Hispanic/Latino construction workers face challenges due to their high mobility and turnover, limited access to smoking cessation services, and the lack of interventions tailored to their culture and workplace environment.

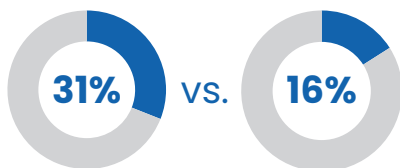
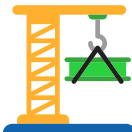


BACKGROUND:



21%
smoking prevalence among construction workers

30% of construction workers were Hispanic/Latino



smokers among Hispanic construction workers vs. that of Hispanics in the general population

In 2018, a scientific paper analyzing the 2014 to 2016 National Health Interview Survey of U.S. workers found that while cigarette smoking had declined among U.S. workers, smoking rates remained higher among construction workers. In fact in 2018, smoking prevalence among construction workers in the United States was 21% compared to the national average of 14.1% among workers in all U.S. industries.¹

Exposure to workplace hazards, such as carbon monoxide and fibers, combined with smoking, puts this group of workers at a higher risk for lung cancer and respiratory diseases. In 2020, 30% of construction workers were Hispanic/Latino, significantly higher than their 17.6% representation in the Hispanic workforce across all industries.² Moreover, pooled data from 2003–2010 of the National Health Interview Survey showed that the rate of traditional cigarette smoking among Hispanic construction workers was twice that of Hispanics in the general population (31% vs. 16%).³

¹ Center for Construction Research and Training. *Coronavirus and Health Disparities in Construction. Data Bulletin* May 2020.

² Asfar, T., Arheart, K. L., McClure, L. A., Ruano-Herrera, E. C., Dietz, N. A., Ward, K. D., Caban-Martinez, A. J., Samano Martin Del Campo, D & Lee, D. J. (2020). *Implementing a novel workplace smoking cessation intervention targeting Hispanic/Latino construction workers: A pilot cluster randomized trial. Health Education & Behavior, 48(6), 795–804.* <https://doi.org/10.1177/1090198120960395>

³ Asfar, T., McClure, L. A., Arheart, K. L., Ruano-Herrera, E. C., Gilford, C. G., Moore, K., Dietz, N. A., Ward, K. D., Lee, D. J., & Caban-Martinez, A. J. (2019). *Integrating worksite smoking cessation services into the construction sector: Opportunities and challenges. Health Education & Behavior, 46(6), 1024–1034.* <https://doi.org/10.1177/1090198119866900>



Three of the main leading causes of death in the Hispanic community⁴ are connected to tobacco use: heart disease, cancer, and stroke, according to the Centers for Disease Control and Prevention (CDC). This, along with factors such as nearly half (48%) of Hispanic construction workers being uninsured, lack of after work hours cessation support services,⁵ lack of culturally proficient smoking cessation services, workplace hazards, and construction workers not benefiting from anti-smoking policies due to the outdoor nature of their work, highlights the importance of prioritizing smoking cessation interventions for this population.

Although Hispanic smokers report a desire to quit smoking (at 73% compared to 68% of White non-Hispanics, 70% of Asian, and 56% of American Indian/Alaska Native adults), they are less likely to receive cessation advice from health care professionals, according to CDC.⁶



Desiring to quit smoking:

73%

Hispanic smokers

68%

White non-Hispanic smokers

70%

Asian smokers

56%

American Indian /Alaska Native smokers

In addition, very few smoking cessation efforts⁷ have targeted construction workers and their environment, including high mobility and turnover in the industry. Furthermore, none have been tailored to Hispanic/Latino construction workers.⁸

The intervention described in this brief, sought to provide language and culturally proficient cessation support services at worksites, making it convenient for workers by eliminating the need to make appointments or travel. More importantly, the tailored intervention aims to reach those who are less likely to seek treatment.⁹



⁴ K. Keisler-Starkey & L. N. Bunch. *Health Insurance Coverage in the United States: 2020*. U.S. Census Bureau. (September 2021). Retrieved from <https://www.census.gov/content/dam/Census/library/publications/2021/demo/p60-274.pdf>

⁵ Center for Construction Research and Training. *Health Insurance Coverage in the Health Care Industry*. Data Bulletin April 2020.

⁶ Centers for Disease Control and Prevention. (n.d.). *Hispanic and Latino People Encounter Barriers to Quitting*. Retrieved from <https://www.cdc.gov/tobacco/health-equity/hispanic-latino/quitting-tobacco.html>

⁷ Sorensen, G., Barbeau, E. M., Stoddard, A. M., Hunt, M. K., Goldman, R., Smith, A., Brennan, A. A., & Wallace, L. (2007). *Tools for health: The efficacy of a tailored intervention targeted for construction laborers*. *Cancer Causes & Control*, 18(1), 51–59. <https://doi.org/10.1007/s10552-006-0076-9>

⁸ Sorensen G., Barbeau E., Hunt M. K., Emmons K. (2004). *Reducing social disparities in tobacco use: A social-contextual model for reducing tobacco use among blue-collar workers*. *American Journal of Public Health*, 94, 230–239

⁹ Asfar, T., McClure, L. A., Arheart, K. L., Ruano-Herrera, E. C., Gilford, C. G., Moore, K., Dietz, N. A., Ward, K. D., Lee, D. J., & Caban-Martinez, A. J. (2019). *Integrating worksite smoking cessation services into the construction sector: Opportunities and challenges*. *Health Education & Behavior*, 46(6), 1024–1034. <https://doi.org/10.1177/1090198119866900>

DESCRIPTION:

The implementation of a tailored worksite-based smoking cessation intervention provided an opportunity to address the challenges faced by Hispanic/Latino construction workers. This intervention considered personal, environmental, and social factors specific to the target population, such as age, education, place of origin, discrimination, and acculturation, among others. The approach was assessed by comparing two groups of workers, one that received the worksite-based intervention (Enhanced Care) and one that received a standard cessation approach (Standard Care).¹⁰



The Enhanced Care component of the intervention consisted of a one-group behavioral counseling session delivered at work sites near the lunch truck, covering topics such as preparing to quit, setting a quit attempt, coping with the initial days without smoking, developing long-term relapse prevention, and effective use of nicotine replacement therapy (NRT). Additionally, participants received an eight-week supply of NRT (two weeks through the tobacco quitline program and six weeks of patches or gum provided by the researchers), two brief follow-up phone calls (one day before the quit date and 15 days after the quit date), and a fax referral to the tobacco quitline by faxing a one-page form to the Florida tobacco quitline giving permission to be contacted by the quitline to receive up to 4 phone counseling sessions.

In contrast, the Standard Care component of the intervention consisted of a fax referral to the tobacco quitline and two weeks of free NRT. In this intervention, participants received an additional 6 week supply of NRT from the research staff and were informed that the quitline counselor would work with them to develop a quit smoking plan.

This study aimed to assess the feasibility, acceptability, and potential efficacy of the developed intervention Enhanced Care (EC) compared with Standard Care (SC), in a pilot, two-arm, parallel cluster randomized controlled trial. Feasibility outcomes were enrollment rate, adherence to treatment, and 6-month retention rates. The primary efficacy outcome was 6-month prolonged abstinence (no smoking, not even a puff, following a grace period of 2 weeks from the quit date). Secondary outcomes were 7-day point prevalence abstinence (no smoking during the 7 days preceding the follow-up interview), and reduction in smoking rate for individuals who did not quit.

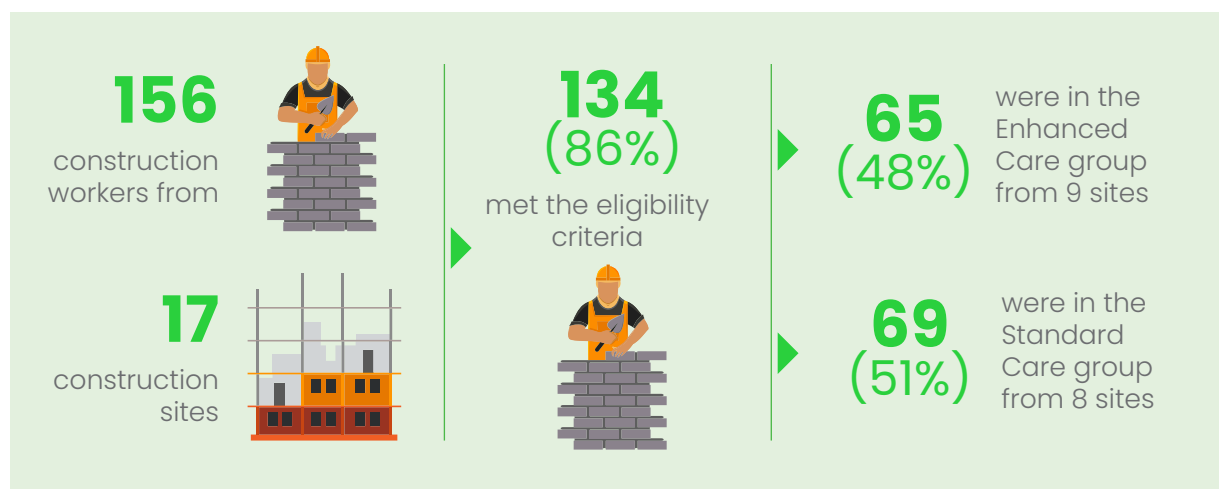
To recap, all participants received 8 weeks of NRT and completed two follow-up assessments at 3 and 6 months after quitting.

¹⁰ Asfar, T., Arheart, K. L., McClure, L. A., Ruano-Herrera, E. C., Dietz, N. A., Ward, K. D., Caban-Martinez, A. J., Samano Martin Del Campo, D., & Lee, D. J. (2020). Implementing a novel workplace smoking cessation intervention targeting Hispanic/Latino construction workers: A pilot cluster randomized trial. *Health Education & Behavior, 48*(6), 795–804. <https://doi.org/10.1177/1090198120960395>

IMPLEMENTATION:

The program was implemented from April 2017 to February 2018, enrolling 156 construction workers at 17 construction sites selected through a computer-based algorithm randomization to balance site characteristics such as the number of workers.¹¹ Various construction companies were contacted via telephone or email to introduce them to the study. Once introduced, they met with the leadership of the construction sites to discuss study procedures and identified a contact person to serve as the research partner/ coordinator (safety manager).

Construction safety managers played a crucial role in recruiting workers by introducing the research team and the study during their daily safety briefings. They also facilitated interactions with the research team near the lunch truck for those interested in quitting smoking. Four bilingual researchers with public health backgrounds assisted in recruiting Hispanic construction workers. To ensure confidentiality, screening and consenting procedures were conducted individually in the safety managers' field office.



Of the 156 construction workers recruited from the selected 17 construction sites, only 134 met the eligibility criteria (86%). Among them, 65 were in the Enhanced Care group from 9 sites (48%), and 69 were in the Standard Care group from 8 sites (51%). Participants were informed that their construction site was enrolled in the study, but they were unaware of their allocation status.



¹¹ Asfar, T., Arheart, K. L., McClure, L. A., Ruano-Herrera, E. C., Dietz, N. A., Ward, K. D., Caban-Martinez, A. J., Samano Martin Del Campo, D., & Lee, D. J. (2020). Implementing a novel workplace smoking cessation intervention targeting Hispanic/Latino construction workers: A pilot cluster randomized trial. *Health Education & Behavior*, 48(6), 795–804. <https://doi.org/10.1177/1090198120960395>

The inclusion criteria were:

- Being older than 18 years old.
- Hispanic/Latino male.
- Smoking more than 5 cigarettes a day for the past year.
- Interested in making a quit attempt in the next 30 days.
- Having telephone access.
- Not planning to move in the next six months.

Exclusion criteria were:

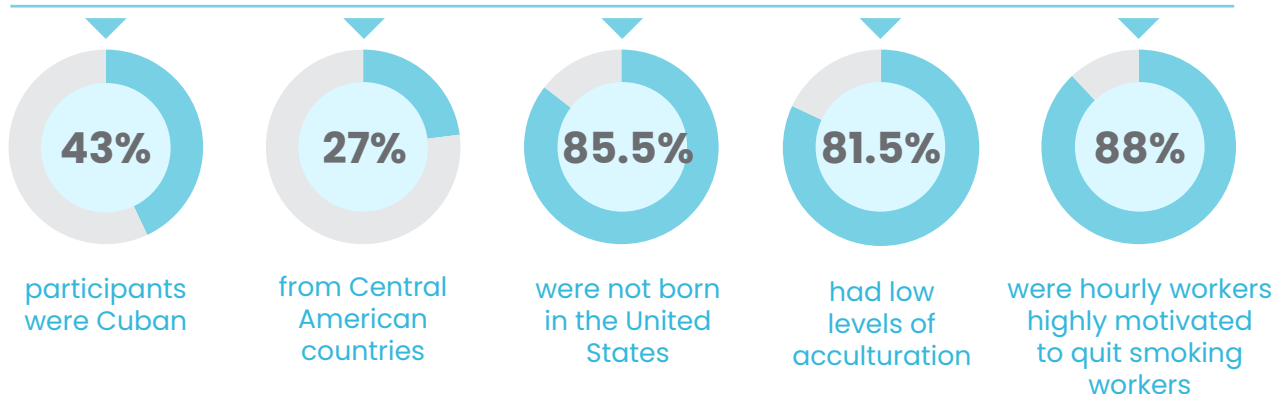
- Having contraindication to nicotine replacement therapy (e.g., recent myocardial infarction, history of serious arrhythmias).
- Inability to understand consent procedures.

All study activities were conducted during breaks over a 2-day consecutive period to avoid disturbing workflow. Screening, enrollment, and baseline assessments took place on the first day, while the second day involved separate group interventions in either English or Spanish, based on the group's preferences.

Participants who reported quitting smoking at 6 months were visited to obtain breath samples to assess exhaled carbon monoxide (eCO) levels for validating smoking cessation status. Although saliva samples were also collected for cotinine assay to further verify abstinence, they couldn't be used due to a storage error.

A total of 134 Hispanic/Latino construction workers were enrolled in the study, with an average of 10 participants per site. The baseline assessment indicated that the majority of participants were Cuban (43%), and 26.86% were from Central American countries. About 85.5% were not born in the United States, and 81.5% had low levels of acculturation. Most of the Hispanic/Latino construction workers were hourly workers (88%) and highly motivated and confident in their ability to quit smoking.

134 



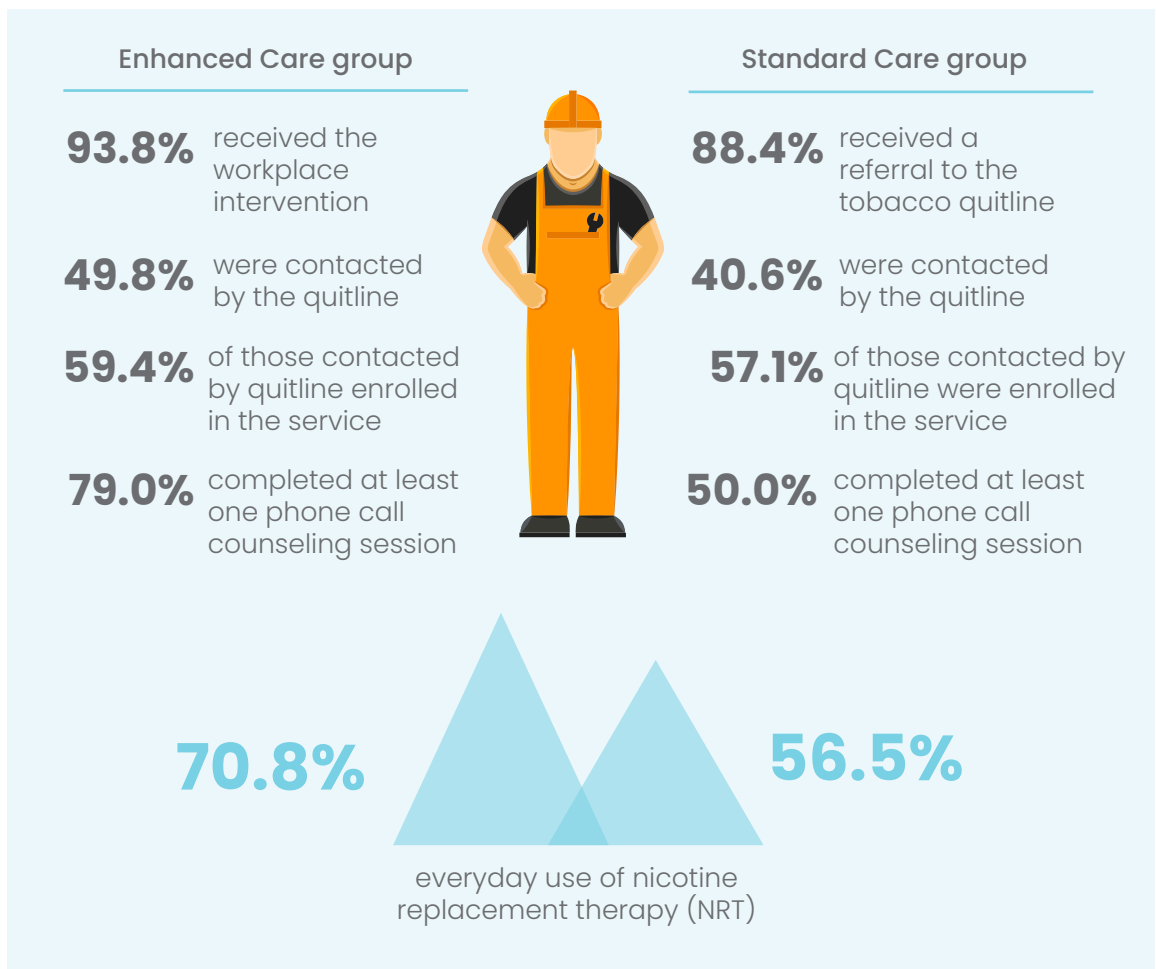
RESULTS AND OUTCOMES:

Retention rates were better for the Enhanced Group.

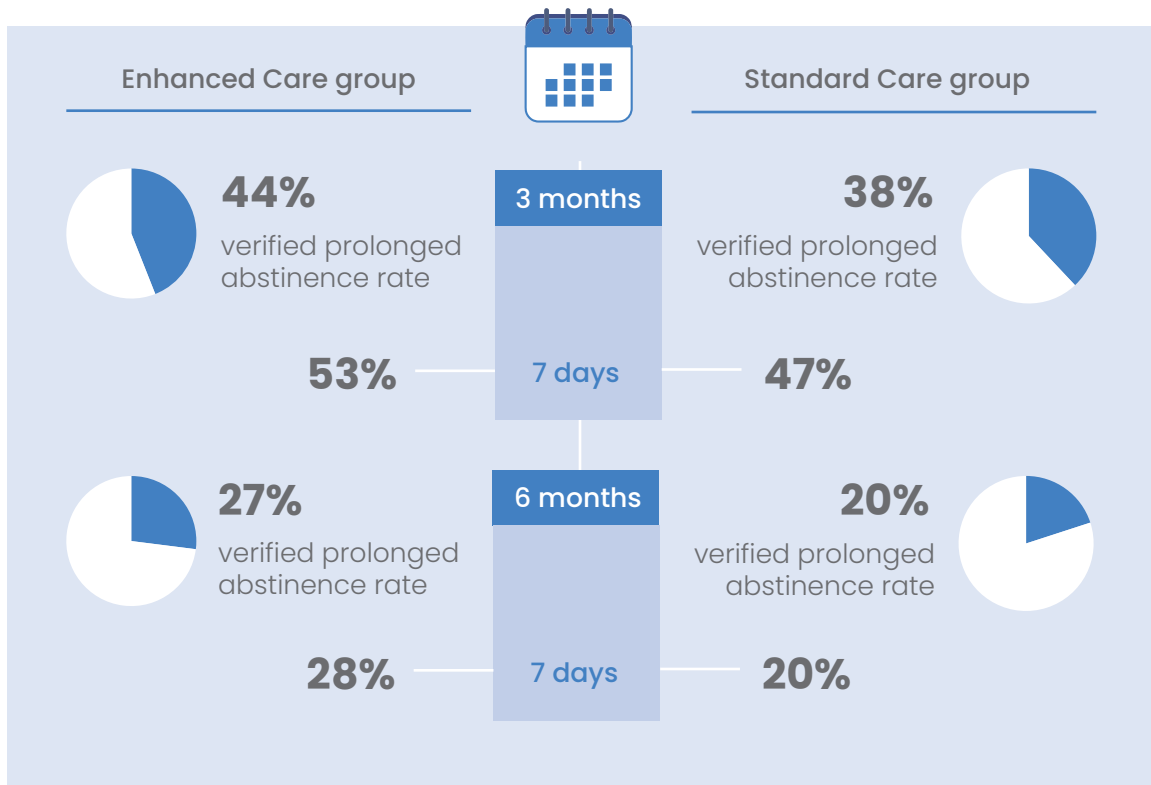
The six-month retention rates were 76.9% in the Enhanced Care group compared with 66.6% in the Standard Care group.



Treatment adherence was also higher in the Enhanced Care.



Abstinence rates were better in the Enhanced Care group.



RESEARCH SUCCESSES:

This study represented the first attempt to develop and evaluate a tailored workplace-based smoking cessation intervention for Hispanic/Latino construction workers. Formative research conducted with Hispanic/Latino construction workers and worksite managers informed the development and implementation of this intervention. Findings from this pilot trial showed that implementing the Enhanced Care intervention in the construction worksite was feasible, acceptable, substantially improved smoking cessation among Hispanic/Latino construction workers, and resulted in high satisfaction reported by participants.¹²

85.4%

were very satisfied with the program and carried out most of the recommended strategies



87.8%

totally agreed that the program fit their life/work circumstances

¹² Asfar, T., Arheart, K. L., McClure, L. A., Ruano-Herrera, E. C., Dietz, N. A., Ward, K. D., Caban-Martinez, A. J., Samano Martin Del Campo, D., & Lee, D. J. (2020). Implementing a novel workplace smoking cessation intervention targeting Hispanic/Latino construction workers: A pilot cluster randomized trial. *Health Education & Behavior*, 48(6), 795–804. <https://doi.org/10.1177/1090198120960395>

The successes from this study included a high enrollment rate of 86% which reflects the high interest in quitting smoking and participating in smoking cessation interventions among Hispanic/Latino construction workers. Based on two other studies that included construction workers, Tool for Health and MassBuilt, this study had a higher level of adherence to treatment and retention rates.^{13,14}

Two factors mentioned in this study that drove their research success were first, the intervention was delivered at the worksite and during work hours in a group setting, which may help increase access to treatment and change the social norm about smoking within the organization. Second, the intervention was implemented in collaboration with company leadership, and workers were introduced and invited to participate in the study directly by their safety managers, who promote worker safety and well-being.



RESEARCH CHALLENGES AND LIMITATIONS:

This study did reveal some limitations and challenges. The small sample size limits the ability of the findings to be generalizable to the US Hispanic/Latino construction worker population as a whole. This only presents a limit rather than a challenge to the validity of the findings based on the circumstances presented. The hope is that this study can be replicated on a larger scale and in states where the population of construction workers, particularly Hispanic/Latino workers, varies in numbers across construction sites.

The trial also gathered data on barriers and facilitators for future implementation of smoking cessation on construction sites, tested the effectiveness and costs of various tobacco treatment intensity levels, and provided insights from company leaders, safety managers, construction workers, and researchers on how to sustain this service if implemented in the construction industry.

The study demonstrates the need for policymakers to support and health departments to utilize workplace models and, in particular, target culturally proficient efforts to Hispanic construction workers to reduce smoking through cessation. In 2023, the Florida Department of Health awarded a grant to the University of Miami Miller School of Medicine, to help construction workers quit smoking utilizing strategies identified in this brief including training worksite safety managers and expanding access to cessation counseling.

¹³ Sorensen G, Barbeau E. M., Stoddard A. M., Hunt M. K., Goldman R., Smith A., Brennan A. A., Wallace L. (2007). Tools for health: The efficacy of a tailored intervention targeted for construction laborers. *Cancer Causes & Control*, 18(1), 51–59. <https://doi.org/10.1007/s10552-006-0076-9>

¹⁴ Okechukwu C. A., Krieger N., Sorensen G., Li Y., Barbeau E. M. (2009). MassBuilt: Effectiveness of an apprenticeship site-based smoking cessation intervention for unionized building trades workers. *Cancer Causes & Control*, 20(6), 887–894. <https://doi.org/10.1007/s10552-009-9324-0>

CONCLUSIONS AND LESSONS LEARNED:

This study represents the first attempt to develop and implement a smoking cessation intervention specifically for Hispanic/Latino construction workers at their worksite. Key lessons include the following. Key lessons include the following:

- **The workplace is an effective environment for smoking cessation services.** Tailoring the intervention to Hispanic/Latino construction workers in their work environment by using the construction site as the intervention setting and delivering it through the lunch truck, increased the reach to such a highly mobile and high risk population. In addition, the involvement of company leadership proved crucial to the successful implementation of this worksite intervention as it created a supportive environment.¹⁵
- **Fostering a supportive environment is critical to success.** Factors such as the collaboration with safety managers, delivering the intervention face-to-face during work hours, and making the services available in Spanish¹⁶ created a supportive environment that had a positive impact on smoking cessation outcomes. The group setting for the intervention was also beneficial because it fostered social support among workers, allowing them to help each other in quitting, and contributed to changing the norms surrounding smoking.¹⁷

The workplace model described in this brief has a number of public policy implications for advancing smoking cessation in the Hispanic community. These include the following.

- **Public/Private partnerships can be effective models for cessation.** State and local tobacco control and public health agencies can expand limited resources by fostering workplace settings. Support can include placement of smoking cessation teams in workplaces, providing seed grants for workplace programs, and collaborating with key workplace leaders. The model also benefits industry by reducing sick days, reducing insurance costs, and fostering a healthier workforce.
- **Connection to and availability of quitlines and other State and local cessation supports are critical.** As demonstrated in this effort, quitlines were critical supports. State and local authorities can enhance cessation by ensuring quitlines have full time language access and efforts are made to ensure cultural proficiency of services. Workplace interventions can be further enhanced by making available community-based support programs; family focused services, including for youth at increased risk of vaping; and, text messaging support for workplace cessation programs.

¹⁵ Asfar, T., Arheart, K. L., McClure, L. A., Ruano-Herrera, E. C., Dietz, N. A., Ward, K. D., Caban-Martinez, A. J., Samano Martin Del Campo, D., & Lee, D. J. (2020). Implementing a novel workplace smoking cessation intervention targeting Hispanic/Latino construction workers: A pilot cluster randomized trial. *Health Education & Behavior, 48*(6), 795–804. <https://doi.org/10.1177/1090198120960395>

¹⁶ Asfar, T., McClure, L. A., Arheart, K. L., Ruano-Herrera, E. C., Gilford, C. G., Moore, K., Dietz, N. A., Ward, K. D., Lee, D. J., & Caban-Martinez, A. J. (2019). Integrating worksite smoking cessation services into the construction sector. Opportunities and challenges. *Health Education & Behavior, 46*(6), 1024–1034. <https://doi.org/10.1177/1090198119866900>

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- **Policies that support access to medical interventions are central to an effective cessation support program.** As shown in this study, access to medical interventions and supports such as nicotine replacement therapy (NRT) were critical to success. In this case, the program expanded access to NRT from two to eight weeks. Policymakers can support cessation through expanded access to NRT, support for enrollment in Medicaid or public insurance, and funding to community health centers to partner with workplaces to support cessation initiatives.

As the number of Hispanics in the construction industry continues to grow, tailored smoking cessation efforts such as this intervention need to be expanded and integrated as a worksite intervention into the industry's wellness activities and funded in all US State, Commonwealth, Territories and localities Tobacco Control Programs and health equity plans.

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