

Attachment A: Summary of Protocol

Title: Spanish Trench Safety CD-ROM: HMTS

Investigators: Michael Flynn, MA, & Donald Eggerth, PhD

Funding Sources: Internal NIOSH funds (NORA)

Study Timeline: Data will be collected through September 2014.

Study Overview.

The goal of the NIOSH field study, *Spanish Trench Safety CD-ROM*, is to determine the most effective way to disseminate trench safety information to Latino immigrant workers using computer based training. Specifically this study will develop, implement, and evaluate an interactive and non-interactive Spanish language trench safety CD-ROM tailored for Latino immigrant workers.

Many Spanish language safety training materials are ineffective because they are simply translations of English materials whose content and approach are ineffective with Hispanic immigrant workers (HIW) (National Research Council, 2003). These problems are compounded by Hispanics, particularly recent immigrants, being overrepresented in the most dangerous jobs (Dong & Platner, 2003; Richardson, Ruser & Saurez, 2003; Loh & Richardson, 2004). Even by construction standards, trenching and excavation work is very dangerous. The Occupational Safety and Health Administration (OSHA) estimated that the fatality rate for excavation workers is 112% higher than the rate for general construction. During 1992 – 2001, there were 542 fatalities associated with trenching and excavation. A review by OSHA of its trenching fatality reports for 2003 shows that of the 34 cases reviewed 52% of the decedents were Hispanic (OSHA, 2004). In addition, 47% of the decedents used Spanish as their primary language which suggest that many, if not all of them, were likely immigrants. Perhaps most importantly 62% of the decedents had not been provided with any trench safety training.

Computer-based training (CBT) has been proven as an effective training tool and is increasingly being used for worksite training. It is also relatively inexpensive to produce, easy to distribute, flexible to implement and requires little communication between employer and their employees, therefore making it an attractive option when considering how to reach Spanish-speaking Latino workers with trench safety training. In order to better understand how best to tailor this training for Latino immigrant workers, NIOSH is developing two versions of a Spanish-language trench safety CD-ROM to test with the target audiences.

Health Message Testing System (HMTS) Component. This project will produce a Spanish language trench safety CD-ROM that can be used by employers and community groups to promote trench safety among Latino immigrant workers and serve as a template for computer based trainings on additional topics in the future. An essential step in determining the most effective content and format for the computer based training is gathering data from the target audience regarding message effectiveness, distribution channel preferences and participant recall. These data will be collected using the Spanish version of the survey (Attachment B, Attachment C – English Translation). All items on the attached instrument were either taken verbatim or represent modifications of items contained in the Health Message Testing System (HMTS) Question Bank (OMB No. 0920-0572) dated February 2011.

The study will create and test an interactive and non-interactive Spanish language trench safety CD-ROM. The key messages include: (1) do not enter an unprotected trench, (2) talk about safety concerns with your employer or co-workers, and (3) seek help outside of work if you do not feel comfortable talking to your employer about your safety concerns. The following sections in this document discuss details regarding the HTMS part of the study.

The enclosed survey on attitudes and behavioral intentions (Attachments B & C) together with the knowledge test questions at the end of the training will be used to determine the effectiveness and preferred format (interactive or non-interactive) for the computer-based training.

Subjects. One hundred Latino immigrants who work in and around trenches will be recruited by a NIOSH contractor from local construction companies in the Washington DC area. Participants will fill out the attached assessment (Attachment B), and then half of the participants will be shown the interactive version of the CD-ROM and half the non-interactive version. A follow-up assessment will be conducted with all participants immediately following the training. Pregnant women are allowed in the study but not targeted. There is no additional risk for them. No workers under the age of 18 or prisoners are to be included in the study as they are not a targeted population of the study. There are no other exclusions.

In addition to items directly related to the CD-ROM, some basic demographic information from participants regarding income, employment status, and education level will be collected as it will inform the analysis of some central questions of the study. For example, it is important to know the effectiveness of the different computer-based training formats (interactive versus non-interactive) with individuals who have a limited formal education and/or experience with computers. Asking for annual income will allow for analysis on how economic security may impact an individual's attitudes and behaviors towards confronting safety concerns at work. These are just some examples of how the demographic data will inform the analysis of the data regarding message effectiveness, format preferences and participant recall.

Recruitment. This study will recruit 100 Latino immigrants who work in or around trenches in the United States. This is in keeping with the intervention priorities established by the National Research Council (2003). These priorities were:

1. workers and employers who speak and write little or no English;
2. recent immigrants as opposed to established populations;
3. workers with low literacy levels in both English and Spanish; and
4. Workers in high-risk occupations and industry sectors.

Additionally, the following inclusion criteria will be used for the Latino immigrant workers in this study:

- participants must be at least 18 years of age,
- participants should have been born in Latin America,
- participants should have a 12th grade or less educational level,
- participants' job should require them to spend time in a trench on a weekly basis.

Because the study proposes to create an educational tool targeting Latino construction workers all the workers recruited for the study will be Latino. Latina women make up only 4% of the construction

workforce, including administrative support positions; therefore, while women will not be intentionally excluded from participating in the study, it is likely that no women trench workers will be recruited to participate (Tinajero, 2005).

Participants for this data collection will be recruited with the assistance of Social Solutions, International, located in Silver Springs, MD (see Attachment D: Recruitment Script – Spanish & Attachment E: Recruitment Script – English Translation). Social Solutions, International is a community based research and evaluation firm with extensive experience working with underserved populations. Social Solutions International will work with local construction companies and community organizations in the Washington DC area to recruit participants. To overcome literacy barriers the tests will be verbally administered by bilingual NIOSH contractors.

Data collection. Data will be collected in Spanish using the survey (Attachment B) which will be administered by a NIOSH contractor. Participants will be randomly assigned so that half receive the interactive version of the CD-ROM and half receive the non-interactive version. The participants will be administered the survey both before and after the training to document participant recall, message effectiveness, attitudinal change, and self-reported trenching safety behavior intentions. The English translation of the survey (Attachment C) is attached. The survey will be administered verbally by the contractor and the responses will be recorded using paper and pencil. The 30 minute training will be taken once and the survey should take 15 minutes to complete each of the two times it is administered, totaling 1 burden hour per participant.

Sensitive and/or personally identifiable information will not be collected as part of this study. Data from the study will be entered into a computer program which will be kept on a password protected computer and/or on CDs that will be stored in locked cabinet in offices with locked doors. Only the investigators will have access to the data once the contractor sends them to the PO. Upon completion of the project the hard copies of the data will be shredded and the electronic data files erased.

Informed consent. The interviews will begin with a consent statement (see Attachment D and Attachment E). The CDC Human Subjects Review Board has granted a waiver for documenting informed consent because the research presents no more than minimal risk of harm to participants and involves no procedures for which written consent is normally required outside of the research context. This is consistent with previous Human Subjects Review Board decisions on similar studies. We will be conducting consent verbally and will ask each individual to assent verbally before beginning the survey.

Risks. We do not anticipate any significant risks. Participation/non-participation is entirely voluntary.

Confidentiality. The hard copies of the survey instruments will be stored in a locking file cabinet for the duration of the project (5 years) in the Taft Building of National Institute for National Occupational Safety and Health (NIOSH) in Cincinnati, OH. The electronic data files will be stored by the PO on a password protected computer. Only the investigators will have access to the data once the contractor sends them to the PO. Upon completion of the project the hard copies of the data will be shredded and the electronic data files erased.

Incentives. Participants will receive \$25 for their participation in the study. The incentive schedule is consistent with the average salary for construction workers in Washington DC which is \$23 an hour. See Attachment G for a justification of the incentive amount.

References

- Dong, X. & Platner, J.W. (2004). Occupational fatalities of Hispanic construction workers from 1992 to 2000. *American Journal of Industrial Medicine*, 45, 45 – 54.
- Loh, K. & Richardson, S. (2004). Foreign-born workers: Trends in fatal occupational injuries, 1996 – 2001. *Monthly Labor Review*, pp. 42 – 53.
- National Research Council (2003). Executive Summary. In *Safety is Seguridad*, pp.1 – 32. Washington, DC: The National Academies Press.
- Occupational Safety and Health Administration (2004). OSHA Trenching/Excavation Initiative: Report from the Directorate of Construction. Stakeholders meeting April 7, 2004.
- Richardson, S., Ruser, R., & Suarez, P. (2003). Hispanic workers in the United States: An analysis of employment distributions, fatal occupational injuries, and non-fatal occupational injuries and illnesses. Contained in *Safety is Seguridad*, pp.43 - 82. Washington, DC: The National Academies Press.