



Using Mobile Phone Marketing Technology to Increase Safety Meeting Frequency among Small Residential Construction Companies

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Using Mobile Phone Marketing Technology to Increase Safety Meeting Frequency among Small Residential Construction Companies – Oregon Fatality Assessment and Control Evaluation (OR-FACE)

Abstract

The Oregon Fatality Assessment and Control Evaluation research plan (NIOSH grant U60 OH008472) had a specific aim to “Establish and evaluate a mobile push notification system to promote and evaluate safety ‘Toolbox Talks’ in logging and construction.” Even with strong partnerships, researchers struggled to enroll supervisors from small construction firms into the study. A contract with CPWR increased research staff time and incentive levels for participants. As a result, we successfully enrolled our target sample size of 60 supervisors in the study. Supervisors received toolbox talks on their mobile phones every other week for 14 weeks. Supervisors and their crews were invited to complete PRE- and POST-program surveys. This report focuses on the enhanced recruitment procedures enabled by the CPWR contract, characteristics of the sample, and reasons for attrition. Most supervisors who completed the POST-survey stated they would like to receive similar toolbox talks on a regular basis.

Key Findings

- 1) Passive recruiting, even through established industry trade associations, was ineffective for recruiting small residential construction supervisors into the project. Active and direct recruitment methods, including networking, along with increased incentive levels, were more effective.
- 2) Supervisors are interested in receiving content for their safety meetings, including stories about fatalities with prevention recommendations. However, they want these toolbox talk topics tailored to their trade and the current phase of construction.
- 3) Retention in the 14-week study was 55% for construction supervisors. Crew participation was very low. Reasons for attrition were documented to inform future research.
- 4) Data analyses suggest that the mobile delivery of toolbox talks to supervisors had a neutral impact on safety meeting frequency.
- 5) Trumpia, the mobile marketing software used in the project, proved to not be well suited for a field research study. It was very cumbersome for scheduling conditions and collecting certain types of data. However, the system may be well-suited for more pure outreach purposes. Given our experiences, we would encourage potential users to complete their own assessment and evaluation of Trumpia or other mobile marketing platforms prior to adoption for their specific purposes.

Introduction

Construction ranks among the deadliest professions in the United States. In 2016, “Construction and Excavation” was the deadliest industry in terms of total fatalities in the US. Workers employed by residential construction firms have an elevated risk of being killed on the job relative to other workers in this high-risk

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industry (Dong et al., 2014; Sa et al., 2009). Between 2003 and 2010, nearly 62% of fatal falls in residential construction occurred at companies with fewer than 10 employees. In contrast, only 43% of fatal falls in non-residential construction occurred at companies of the same size category (Sa et al., 2009). Fall protection programs are also less common in residential construction. In one study, only 58% of residential roofers affirmed that they had a fall protection safety program, compared to 97% of commercial roofers (Sa et al., 2009). Despite Oregon OSHA's minimum requirements that construction companies hold monthly safety meetings, as well as additional safety meetings at the start of each project lasting at least a week (Oregon Occupational Safety and Health Administration, 2009), it is suspected that many construction firms fall short of these requirements. The disproportionately high burden of occupational fatalities in construction motivated the Oregon Fatality Assessment and Control Evaluation program (OR-FACE) to design research plans to create resources and study outreach methods for preventing fatalities with this population.

OR-FACE (NIOSH grant U60 OH008472) designed and evaluated a scripted safety "Toolbox Talk" format to help construction supervisors share fatal stories and prevention recommendations with their crews (Olson et al., 2016). This scripted format, while developed through its own empirical process, is highly aligned with the format and approach identified through a different line of NIOSH-funded research and used by CPWR-the Center for Construction Research and Training's (CPWR) toolbox talk series (Eggerth, 2018; The Center for Construction Research and Training, 2019). Results indicated that the format saved supervisors preparation time and increased time spent discussing prevention recommendations with crews. With an effective "toolbox talk" structure in place, OR-FACE planned a specific aim (2015-2020) to evaluate the impact of delivering toolbox talks to residential construction supervisors by mobile phone. Specifically, this "Mobile Toolbox Talk Study" was designed to assess whether the delivery system increased the frequency and quality of supervisors' safety meetings.

The Mobile Toolbox Talk Study employed a within subjects, PRE- and POST-test design with a target enrollment of 60 supervisors. OR-FACE partnered with the Oregon Home Builders Association (OHBA) to recruit supervisors. The OHBA distributed invitations to participate in the study as part of their member newsletters and through in person meetings. Additional recruitment efforts focused on visiting the Oregon OSHA Construction Advisory Council Meeting, and directly visiting active residential construction sites in Portland, OR and asking to speak with supervisors. Incentives for participation were relatively small (\$5) and funded research staff time to recruit was also limited. These methods resulted in 4 supervisors enrolling in the study protocol.

CPWR's r2p program learned about the OR-FACE study and encouraged the program to apply for funding to increase participant incentive levels and staff time dedicated to recruitment. While preparing the

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application, OR-FACE was also encouraged to include objectives focused on documenting reasons for supervisors declining participation, or for dropping out. The additional staff time allowed the team to alter recruitment methods and expand direct outreach and networking. In sum, funding from CPWR allowed for strengthening study recruitment methods, and resulted in meeting our study enrollment target of 60 supervisors.

Objectives

When designing the study, we estimated that the mobile delivery of toolbox talks would increase the number of supervisors from small construction firms who were holding regular safety meetings (meeting the Oregon OSHA standard) by 20 percent. A statistical power analysis indicated that a sample of 60 construction supervisors would have an 82 percent chance of detecting our estimated increase in safety meetings.

Our specific objectives in the proposal for supplementary funding from CPWR were to:

Objective 1: Increase recruitment incentives - Increase incentives for supervisors from \$10 to \$30 per survey to help us reach our supervisor target (n=60). We will also increase employee recruitment incentives from \$10 to \$15 per survey (the employee survey was recently reduced in length to less than half the length of the supervisor survey). Our proposal also asked to fund a research assistant for .20 FTE to help recruit participants.

Objective 2: Improve understanding of why some contractors did not participate - Add to the study the collection of “consort-style” reasons that contractors state for declining to participate along with their number of employees. This will be available only for contractors who are contacted in person, or who are screened for eligibility by phone and decline.

Objective 3: Identify toolbox talks that were used - Add a question to the post-survey and/or an exit interview to ask which (if any) CPWR toolbox talks were selected and used during the three-month study period (the survey currently asks for them to share the most useful talk, favorite talk format, and provide feedback on usefulness of receiving talks by phone).

Objective 4: Track website analytics - Collaborate with CPWR to track website analytics to assess whether CPWR toolbox talks are accessed from Oregon in correlation with our schedule of text messages to supervisors.

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Methods

Development and Topics of Toolbox Talks

The toolbox talks were developed based on OR-FACE fatality investigation reports using an evidence-based structure developed with NIOSH funding [please see (Olson et al., 2016) for a description of the talk format]. The scripted two-page talks were available in English and Spanish. In addition to the scripted version of each talk, YouTube movies of a person reading the talk with appropriate pauses for discussion were created (English only). The talks were distributed to supervisors by text message and email on Sunday evening every other week, with a survey poll sent during the intervening weeks. On weeks where talks were distributed, a Trumpia® (Anaheim, CA) “auto-campaign” sent two messages to each enrollee, where the first contained a topic description with PDF and video links, while the second included a link to additional resources (OR-FACE, <https://www.ohsu.edu/oregon-fatality-assessment-control-evaluation/toolbox-talks>; CPWR Toolbox Talks, <https://www.cpwr.com/publications/toolbox-talks>). For example, one message read “OHSU: Our featured safety toolbox talk is about FALLS FROM SCAFFOLDS” and was followed by appropriate PDF and video links. Polling questions were automatically distributed by Trumpia® every other week (on non-toolbox talk weeks) as part of an automated messaging campaign. The polls asked the supervisors: 1) did you give the safety talk? (if so) 2) how many people attended? In addition to a link to a featured OR-FACE toolbox talk, each text message included a link to the CPWR toolbox talk library to browse for other talks if the one received was not relevant to their work.

The schedule of our 14-week program of distributed talks was as follows:

- 1) “Novice drywall installer dies in 7-foot fall from scaffold” (OR-2006-03)
 - a) Link to Video: https://www.youtube.com/watch?v=j_GTNI-Mn-s&t=13s
 - b) Link to PDF: [Novice drywall installer dies in 7-foot fall from scaffold](#)
- 2) “Worker falls when ladder slips” (OR-2005-01)
 - a) Link to Video: <https://www.youtube.com/watch?v=jxQEr4Db5ec>
 - b) Link to PDF: [Worker falls when ladder slips](#)
- 3) “Load of lumber shifts and falls on construction worker” (OR-2003-16)
 - a) Link to Video: <https://www.youtube.com/watch?v=Fg5mr7y3JLw>
 - b) Link to PDF: [Load of lumber shifts and falls on construction worker](#)
- 4) “Collapsing roof trusses kills carpenter foreman” (OR-2013-27)
 - a) Link to Video: <https://www.youtube.com/watch?v=mh0ExOjRICM>
 - b) Link to PDF: [Collapsing roof trusses kills carpenter foreman](#)
- 5) “Home construction worker falls down elevator shaft” (OR-2003-10)

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- a) Link to Video: Missing
 - b) Link to PDF: [Home construction worker falls down elevator shaft](#)
- 6) “Roofing material lands on worker standing on ladder” (OR-2005-64)
- a) Link to Video: <https://www.youtube.com/watch?v=e2m-55iqkoI>
 - b) Link to PDF: [Roofing material lands on worker standing on ladder](#)
- 7) “Young worker dies after falling through skylight” (OR-2003-01)
- a) Link to Video: <https://www.youtube.com/watch?v=KE4J1ixBv9Q>
 - b) Link to PDF: [Young worker dies after falling through skylight](#)

Recruitment Methods

Recruitment for the Mobile Toolbox Talk study began by partnering with the Oregon Homebuilders Association (OHBA). OHBA leaders shared the study opportunity at meetings, and also included a study advertisement in several of their subscriber newsletters. A limited response to these efforts caused researchers to seek advice and guidance from other researchers with construction industry experience, and from regional construction safety professionals on the Oregon OSHA Construction Advisory Committee. A lack of direct contact with company owners and supervisors, and low study compensation, were identified as two potential barriers to participation in the study. In response to these issues, researchers located and mapped active residential construction sites in the Portland Metro area and visited sites to talk with supervisors and workers directly, and/or leave study fliers. This resulted in about a dozen conversations with workers, supervisors, and safety professionals at work sites, and a similar number of fliers left at sites where no active work was in progress on the day of the visit. Safety professionals at two larger multi-unit apartment construction sites shared that they subscribed to services that provided them with toolbox talks, and emphasized the importance of having safety content relevant to each phase of construction for their project. Most of the smaller residential sites did not tend to have supervisors present on site, and so the study was described to the workers and they were asked to share a flier with their supervisor.

While working to improve recruitment, OR-FACE was approached by CPWR’s r2p program as part of their efforts to understand how toolbox talks and other products could be used to reach and influence the safety and health practices of small contractors and their employees (r2p & p2r at Work, <https://www.cpwr.com/research/research-practice-library/r2p-and-p2r-work/reaching-vulnerable-workers>). CPWR provided supplemental funding for the Mobile Toolbox Talk study, allowing OR-FACE to increase study incentives from \$10 to \$30 for supervisor surveys, and from \$5 to \$15 for crew surveys. We also increased research assistant time dedicated to the project by .20 FTE, and enhanced data collection regarding contacts and reasons for declining participation and drop out. This research assistant helped form a renewed

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strategic plan and timeline for recruitment, which was enacted along with increased incentives beginning in March, 2018.

In the updated recruitment method, researchers used free online resources - such as Angie's List® - to compile a list of potential construction partner organizations and their contact information (the list was updated and added to as necessary). "Partner organizations" were *construction firms and/or trade organizations that committed to either participate in or support the Mobile Toolbox Talk study, thus vesting them as a stakeholder in the outcome of our work*. Researchers cold-called potential partner organizations with the goal of identifying a primary contact at each organization. They did not ask respondents to phone calls whether or not their organization wished to participate, but instead redirected the conversation towards acquiring additional contact information for the potential primary contact. Researchers then followed up with all primary contacts via email, explaining the study in more detail and asking for a commitment to participate. Once a partner organization was identified, researchers worked with the primary contacts to request a meeting with all eligible supervisors. For the purposes of the study anyone who "delivered safety talks" was considered a supervisor, and anyone who "received safety talks" was a crew member.

At in-person recruitment meetings, researchers explained the purpose of the study and the procedures involved, and subsequently identified those supervisors at each partner organization that were willing to participate in the study. Once participants had been identified, researchers obtained informed consent, administered a PRE-survey, and enrolled participants in the automated SMS messaging system for receiving toolbox talks and responding to short questions via text.

Surveys and Interviews

PRE- and POST-program surveys for supervisors included items adapted from (Olson et al., 2016) and additional items created for the study. The supervisor survey included demographics and industry experience, company information, and questions measuring safety meeting/toolbox talk frequency and their impacts. Our decision process was focused on describing the sample we recruited (e.g., trades, size), and being able to determine compliance with the Oregon OSHA standard for safety meeting frequency. A separate set of surveys were created for crew members with similar items about safety talk frequency and impact, but with added safety climate, safety participation, and safety compliance scales from Griffin and Neal (2000). Surveys were translated into Spanish and made available to any participant who requested one. Researchers administered the paper-based surveys as face-to-face meetings with supervisors and employees at each partner organization. Surveys were then manually entered into a REDCap database, and entry was visually verified by a second data enterer.

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Retention

At the conclusion of the Trumpia® automated messaging campaign researchers communicated with the primary contact at each partner organization to schedule face-to-face meetings for POST-survey administration. Primary contacts were requested to aid researchers in ensuring that all enrolled contractors returned for the POST-survey meeting, though not all attended. When participants failed to show at follow up meetings, they were contacted directly on five separate occasions before being marked as “lost to follow up.” The first four attempted contacts were by phone call while the final attempted contact was by email. In a few instances, primary contacts were non-responsive in coordinating POST-survey appointments. When this occurred, researchers worked directly with enrolled participants to schedule survey administration meetings. Whenever possible, OR-FACE documented reasons for attrition such as employee turnover.

Results

Results for Objective 1: Increase Recruitment

With our increased incentive level, increased staff time, and more direct recruitment methods we recruited and enrolled a total of 60 supervisors in the study. Fifty-six of these supervisors were recruited after these enhancements to recruitment methods were made. One supervisor completed the survey in Spanish. One participant owned their own company. We provide a demographic description of the sample at baseline in Table 1 on the next page.

Crew members for each supervisor were also invited to participate in both PRE- and POST-surveys. We recruited a total of 31 crew members from 3 different companies to participate in the PRE-survey, and 2 of those surveys were in Spanish. We retained 13 of those for the POST-survey. Of the 13, all but one was from the same company.

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Table 1: Supervisor Demographics

	Average	Range
Age	47.96 years	27-64 years
Tenure in Industry	23.85 years	1-45 years
Tenure at Organization	8.38 years	5 months – 44 years
		Count
Sex		60
Male		50
Female		6
Declined to Respond		4
Racial / Ethnic Background		60
Caucasian		44
Hispanic / Latino		6
More Than One Race		3
American Indian		2
No Response		5
Company Size (# Employed)		60
Less than 5		2
5 to 10		2
10 to 25		7
25 to 50		13
More Than 50		31
No Response		5

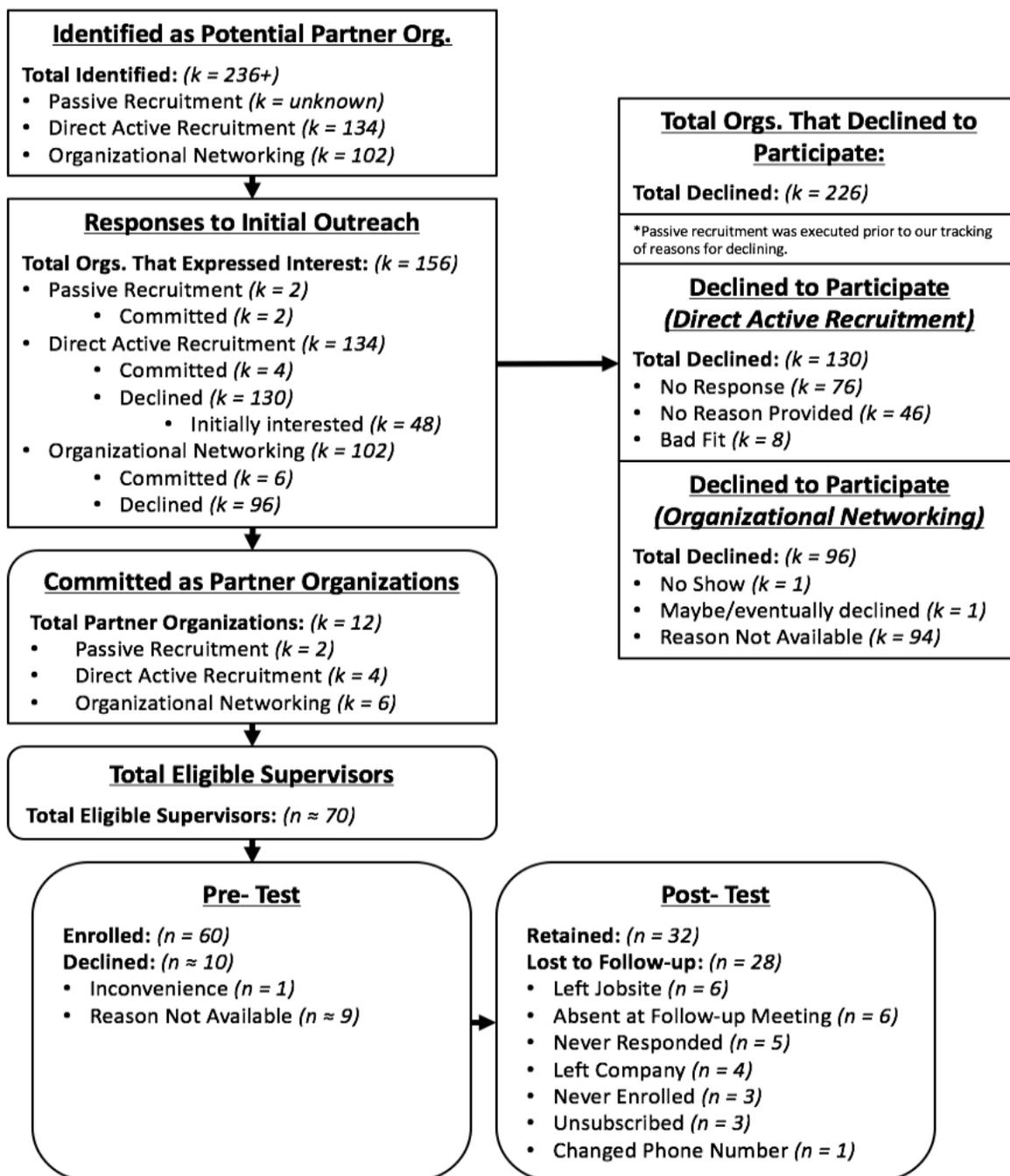
Results for Objective 2: Consort Diagram and Reasons for Declining Participation

Over 236 potential partner organizations were contacted, with 156 expressing some level of interest. Twelve partner organizations ultimately committed to the project, and from those organizations we recruited a total sample of 60 supervisors into the study. A consort-style diagram below (Figure 1) summarizes number of contacts, reasons for declining participation at baseline, enrollment numbers, and reasons for attrition at follow-up. Please see the Figure note for definitions of recruitment methods and reasons for declined participation or attrition.

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Figure 1: Consort Diagram of Recruitment.

NOTE: **Recruitment:** Passive Recruitment = Oregon Home Builders Association newsletter distribution with unknown total distribution reach; Direct Active Recruitment = Cold calls, emails, and face to face; Organizational Networking = “Study champions” providing contact info or contacted orgs. **Reasons Declined:** Bad Fit = orgs. that declined citing timing or compatibility misalignment; Maybe/eventually declined – Showed initial interest, but never committed; Absent From Follow-up Meeting = Participant’s org scheduled follow up, participant was absent; Never enrolled = Completed pre-survey, did not enroll in automated messaging system.



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Retention for POST-Survey

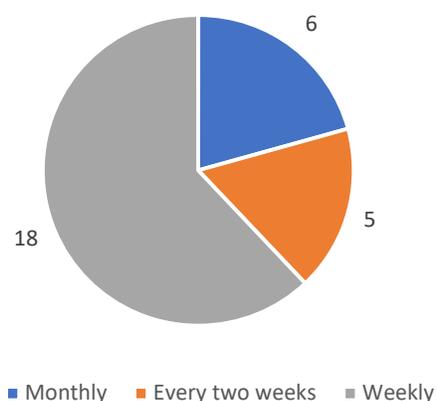
We retained 32 supervisors for the Post Survey. There were several reasons why we lost the remaining supervisors to follow-up, including never responding to our inquiries (follow-up attempts included 4 calls and 1 email). Others left that particular jobsite or company during the study window, or were absent at the time of a scheduled meeting. Others never actually enrolled in the toolbox talk mobile program after the PRE-survey, or unsubscribed from the program halfway through (see Figure 1 on the prior page).

Results for Objective 3: Exit Interview Feedback & Anecdotes

Our exit interviews, added through the collaborative project, collected useful qualitative feedback to implement in future projects. The modal desired frequency of receiving toolbox talks was on a weekly basis, although meaningful proportions of supervisors would prefer receiving them on a bi-weekly or monthly basis (see Figure 2 below).

Figure 2: Desired Frequency of Receiving Toolbox Talks

If OHSU made a free subscription to regularly receive toolbox talks like this in the future.... I would like to receive a toolbox talk.



Supervisor feedback about features they liked and didn't like, or what they would recommend to improve the process in the future are summarized in Table 2. Positive notes included liking the reminder to give a safety talk, receiving the material direct to their mobile phone, liking the video version of talks, and that the set of talks were a good foundation of content. Feedback on points for improvement included not liking receiving text messages Sunday night, technical problems with the automated system used to deliver toolbox talks and polling questions, a need for talks to be tailored to the business/building environment.

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Table 2: Exit Interview Feedback from Supervisors

Please describe what you liked and what you did not like about the digital delivery system and the toolbox talks that you received.
<ul style="list-style-type: none"> • Timing would be the big thing to change. Materials good. Convenience good. Having to find a topic and make copies more difficult (old system). Idea is great but needs better execution. • The polling questions may not allow you to respond. Polling questions may not be working Monday 26th Feb; texted "60" - system did not allow. Average 60 people per talk. • liked: reminded to safety talk, easy to access talks didn't like: timing (Monday better) • Videos and narrative are great. Wants to see it set up [on] a screen to display on jobsite. Set about making this an ongoing resource. • Didn't like Sunday night thing (double hit - email/text them on Mon/Tues morning) consistency was great - did not feel like spam. • Message was not valid, could be useful with alternate subject matter, specific issues: ...fall protection; dust; hydration; lifting, unique niche
Please provide us with any feedback that could improve our talks or delivery system for future participants.
<ul style="list-style-type: none"> • Subject matter worked well. Just has to fit into schedule. Residentially-based carpenter lead to the unusual scheduling of safety meetings. Subcontractors give their own talks. • Receiving the additional resources text message twice at same time point. (Did you give the talk and how many were there?) • Hone them in to be more specific to the business receiving them. Some [are] so far off that they were not useful at all. • Good foundation. More choice. Expanded to all industries. • If there were more talks in each message and we could track the engagement for each topic. • Has 1 full time carpenter - hard to get feedback from carpenters. • Great way to deliver messages; tailgate meeting; each carpenter to reply; to see reply to message, awareness; tracking ability -OSHA -allowed requirements combine texts to make less texts -prompts awareness; engagement - needs a tracking component

Several supervisors commented on which toolbox talk was most impactful to them. Falling through a skylight and scaffolding safety were mentioned the most often. One supervisor noted that they started translating “important bullet points” into Spanish. So, while talks were available in Spanish and one supervisor presented talks in Spanish, we believe most were presented in English and then verbally translated with the help of a co-worker.

There was also anecdotal evidence that supported a program involving mobile delivery of toolbox talks:

- As a direct result of their participation, one organization (4-5 supervisors, and about 30-50 employees), created an entirely new safety program and promoted a supervisor to “Safety Manager.” Our primary contact described this as a shift towards a better workplace safety culture.

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- Several participants admitted that they were unaware of OSHA regulations prior to the study, but that they were made better aware by the study.
- Many primary contacts were willing to go out on a limb to help us recruit additional participants.
- One supervisor called OR-FACE staff on the first Monday after the study had ended when he no longer was receiving talks. He shared how useful they had been, and admitted that that he felt unprepared for that day's safety meeting without our resource available.

Quantitative Results

Due to the current project's focus on enhanced recruitment methods and recruitment/retention outcomes, a complete statistical analysis of the impact of the intervention on safety meeting frequency will be reported in a future OR-FACE publication. However, we can share preliminary high-level quantitative findings to compliment exit interview data from the current project focused on recruitment. Our preliminary analysis shows that 28% of supervisors had 6 to 10 meetings (at least twice a month) over a 3-month period in the POST survey, compared to 16% in the PRE survey. Compliance with the OR-OSHA standard for safety meetings is dependent on the number and duration of projects (minimum of one talk per month required, plus a talk for each new project lasting longer than one week in duration). While poor quality and missing data on project number and duration for supervisors in the study limits strong conclusions, a frequency of 2 or more safety meetings per month indicates a high likelihood of compliance with the OSHA standard for safety meetings in Oregon.

Results for Objective 4: Web Analytics

Our fourth aim was to collect website analytics. Due to some issues with changing the name in the URL, there is some uncertainty about the reliability of the data available for the study period. In addition, we had planned to send out the toolbox talks to blocks of supervisors enrolled at the same time, which would allow easier tracking of downloads. However, after implementing a rolling recruitment, talks were sent out to individuals one or two at a time, rather than to blocks. We do know the following:

- At least one of the provided toolbox talks was one of OR-FACE's top 3 downloads during the study period.
- The provided toolbox talks were downloaded more often during the study period compared to the previous years across the same months.
- Of the seven talks, the most popular / most downloaded talk was about a ladder fall.

In Table 3 below, we compare the average number of monthly page views for some of the OR-FACE website pages between the 2017 calendar year and the period of January 2018 to April 2019. We also

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show the top 4 downloaded Toolbox Talks for the latter period; we observe that three of these talks were not among our highlighted talks, which may indicate that supervisors were using other talks as needed for their projects.

Table 3: Page views and Downloads of OR-FACE and Toolbox Talk Webpages

	2017 Monthly Average	*2018-2019 Monthly Average
Website Pages Viewed		
OR-FACE Toolbox Talk Index	35	57
Toolbox Talk – “Construction” Category	6	48
Toolbox Talk – “Other” Category	2	15
Total OR-FACE pageviews	480	511
Talks Downloaded		*2018-2019 Totals
Toolbox Talk – Fall from ladder that slipped		175
Toolbox Talk – Worker falls from pump jack scaffold		272
Toolbox Talk – Worker dies from electrocution		136
Toolbox Talk – Trench Collapse Kills Worker		182

Note: *calculated through April of 2019

Changes

Instead of adding a survey question to gather reasons for supervisors declining, dropping out, or staying in the study (Objective 2), we asked such questions in recruitment conversations and/or exit interviews if a person opted out of receiving text messages during the study. We had hoped to have large blocks of supervisors engaged in the study so that we could identify the impact of our study on use of FACE and CPWR toolbox talks. However, because recruitment occurred in small incremental steps, the numbers were expected to be too small to have a noticeable impact on website traffic. Therefore, we did not assess study participants’ use of CPWR toolbox talks via web analytics.

Future Funding Plans

Our experience, lessons learned, and data generated from the project will inform both CPWR’s and our research and outreach plans. For our research, this includes our competing renewal application for the OR-FACE program and its parent occupational health surveillance grant (NIOSH grant U60 OH008472). We may also pursue additional smaller grant applications in the future to support our continued efforts to reach and engage residential construction supervisors, and help them share fatality stories and prevention recommendations with their crews.

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Presentations & Publications

The project methods and/or preliminary findings were presented at the following meetings:

Olson, R. (May, 2019). Oregon Fatality Assessment & Control Evaluation Update. OR Occupational Public Health Program Advisory Board Meeting. Portland, OR.

Mansfield, L. (February, 2019). Oregon Occupational Public Health Program: OR-FACE Chalk Talk. Presentation at the Directors' Meeting. Portland, OR.

Olson, R., & Mansfield, L. (November, 2018). Oregon Fatality Assessment & Control Evaluation Update. OR Occupational Public Health Program Advisory Board Meeting. Portland, OR.

Mansfield, L. (August, 2018). OR-FACE Field Studies: Mobile Toolbox Talks Study. Associated General Contractors (AGC) Oregon-Columbia Chapter Meeting. Wilsonville, OR.

Olson, R., & Mansfield, L. (April, 2018). Oregon Fatality Assessment & Control Evaluation Update. OR Occupational Public Health Program Advisory Board Meeting. Portland, OR.

Dissemination Plan

Dissemination of our findings will include a presentation on our findings during a web-based meeting with CPWR's roundtable on reaching and influencing small employers and vulnerable workers, a presentation at the national annual meeting of FACE states in the Fall of 2019, a manuscript to be prepared and submitted for publication on the full study results, and adjustments to our outreach efforts to promote the use of our toolbox talks in construction. We also plan to investigate and find a suitable mobile phone-based system, or a partnership with an existing smart phone App, to distribute OR-FACE toolbox talks to supervisors in residential construction. In this effort to find a suitable mobile delivery system, we believe our talks will need to be integrated with a larger library of talks in order to provide users with sufficient choices based on their trade, or the phase of construction.

Specific planned outreach adjustments include re-organizing our talks online according to phase of construction and/or trade on our website to address supervisors' interest in findings talks specific to their work. We also plan to establish an annual "Share a Story, Save a Life" campaign during the National Safety Stand Down focused on residential construction to encourage supervisors to pick and share a fatality-based toolbox talk with their crews, and notify OR-FACE if they participated through our Institute's social media and email channels.

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