

Evaluation of an Occupational Safety and Health Program
For the Small Business Wood Pallet Industry

Supporting Statement Part A

Request for Office of Management and Budget Review and Approval
for Federally Sponsored Data Collection

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A. Justification

A.1. Circumstances Making the Collection of Information Necessary

Small business entrepreneurship is a vital component of the U.S. economy, however, occupational safety and health activities including research, regulation, enforcement, and intervention historically have not focused on small businesses despite their predominance and relatively large numbers of employees overall. Few small business establishments provide on-site occupational health units, medical screening tests, pre-placement physicals, or employ or use industrial hygiene or safety personnel/consultants (Lentz et al., 2001). As a consequence, prevention of occupational injury and illness is often difficult in small business establishments because they generally have few safety and health resources, do not hire staff devoted to safety and health activities, and often lack the ability to identify occupational hazards and conduct surveillance (Okun et al. 2001, Lentz et al., 1999). Small business owners have a multitude of concerns and occupational safety and health issues are only one of them. Promoting occupational safety and health in small businesses is often a difficult task because of the dispersion of work sites, variability of work settings, receptiveness of the small business owner to government intervention, and number of workers who can be reached at any one workplace or through an effective network.

NIOSH has developed an educational/informational manual for small businesses in the wood pallet manufacturing industry and proposes to conduct a new data collection to determine whether receipt of the manual results in forward movement along the continuum of change, as described in the transtheoretical model (TTM) of Prochaska and DiClemente (1984). NIOSH

researchers need to collect this data to see if the educational/informational manual is having an impact on the person receiving the document, namely the small business owner. This new data collection is being requested for two years and will allow CDC to determine if targeting the owners or managers of the small business is an effective way of implementing change at these establishments.

TTM states that there are 5 stages of change through which one passes before a change is made. These stages are defined as follows:

- *pre-contemplation*-people are unaware of problems and are not thinking seriously about changing within the next six months
- *contemplation*-the stage where people become aware that a problem exists and intend to take action within the next six months
- *preparation*-intending to take action in the next 30 days
- *action*-people change their overt behavior and made changes less than six months ago and
- *maintenance*-people continue the gains obtained during the action stage.

The TTM has been used to address a wide range of public health concerns but has rarely been applied to occupational safety and health.

This project fits into both the NIOSH and CDC research agendas. Currently, NIOSH is transitioning the National Occupational Research Agenda (NORA) to reflect industry sectors, cross-sector programs and coordinated emphasis areas. This proposal addresses the industry sector of manufacturing and the cross-sector programs of traumatic injuries, musculoskeletal disorders, and hearing loss prevention as well as the coordinated emphasis area of small business

assistance. Through NORA, NIOSH and collaborating public and private partners provide a framework to guide occupational safety and health research in 21 high-impact priority areas, including traumatic injury.

Healthy People 2010 (DHHS, 2000) identifies the most important public health concerns facing the U.S. during the first decades of the 21st century. One goal of *Healthy People 2010* is to decrease the number of work-related injury deaths that occur in the United States (5,524 reported in 2002), and to decrease the number of new nonfatal injuries and illnesses in private industry (more than 4.7 million reported in 2002 alone). The direct costs of occupational injuries and illnesses are estimated at \$45.8 billion, and indirect costs may range up to \$229 billion.

The proposed data collection addresses the goals of *Healthy People 2010* because the pallet manufacturing industry has higher rates of nonfatal injuries when compared to general industry. The incidence rate for non-fatal injuries in the wood pallet and skid (NAICS 32192 [SIC 2448]) manufacturing industry was 226% greater than that for general industry (Okun et al., 2001). In 2002, the type of injuries sustained at wood pallet manufacturers and their rates of increase, compared to general industry, included amputations (2,220% higher or over 20 times higher), cuts and punctures (378% higher), fractures (237% higher), bruises (221% higher) sprains and strains (133% higher) and back pain (305% higher) [Bureau of Labor Statistics, 2002].

Public Law 91-596, 91st Congress, S.2193, December 29, 1970, Section 20 (a)(1) of the Occupational Safety and Health Act (29 U.S.C. 669), enables CDC/NIOSH to carry out research relevant to the safety and health of workers in the pallet industry (see Attachment A).

A.2. Purpose and Use of Information Collection

Two telephone surveys will be used to screen and assess employers' receptivity and use of an educational/informational manual designed for pallet manufacturing plant owners or managers. Data will be collected twice, first in an initial baseline survey, which will include a screening process to determine , and again in a follow-up survey five months later. Respondents will be assigned to one of two groups. Respondents assigned to the treatment condition will receive the NIOSH educational manual shortly after the initial call and enrollment in the study, and prior to the follow-up survey. Respondents assigned to the control condition will receive the educational manual after completing both the initial survey and the follow-up survey. The pre-post study design will allow NIOSH researchers to determine if there were any positive effects in the TTM continuum from receiving the educational/informational manual. It is expected that the information contained in the manual will be part of the general program of occupational safety and health and will be used weekly by the industry. This study will evaluate the effectiveness of these materials before they are routinely distributed to end users.

A.3. Use of Improved Information Technology and Burden Reduction

The data will be collected entirely by telephone questionnaires that will be administered by a contractor. All information will be entered into an electronic database by the contractor as the questionnaire data is collected. Based on pilot studies with small business owners, phone interviews are considered less burdensome to these employers than written surveys. An internet survey would not be feasible since our pilot work indicates that not all pallet owners use computers or have internet training.

A.4. Efforts to Identify Duplication and Use of Similar Information

This data collection is necessary to evaluate the usefulness of the NIOSH manual. Additionally, NIOSH researchers have searched databases and the literature for the use of TTM in the occupational setting in the manner proposed in this study. There was only one study available and that one used a modification of the model (Lederman 2004). That paper described an adapted Stage of Change (SOC) model that analyzed the effectiveness of the “Integrated Management System,” a training program. The groupings of the SOC were modified by the researchers and do not directly correspond to the original categories of Prochaska and DiClemente. There are no studies of the use of the TTM in the occupational setting, published in the medical or psychological literature, which employ the original categories as described by Prochaska and DiClemente. Discussions with James Prochaska, who formulated the model, suggested that this was a new application of the model.

The proposed data collection will supplement existing information because it will validate use of the TTM in the field of occupational safety and health. The goal of the project is to determine if the carefully constructed NIOSH manual will motivate owners and managers to progress in the stage of change continuum, become more aware of occupational safety and health problems at their company, and then implement a change that will improve occupational safety and health.

A.5. Impact on Small Businesses or Other Entities

This project is designed to impact small businesses and NIOSH will make every effort to minimize the burden on these companies. NIOSH is in an alliance with the Occupational Safety and Health Administration and the National Wood Pallet and Container Association and the questionnaire was developed in coordination with the National Wood Pallet and Container Association and has been piloted with small business companies. The phone questionnaire will be conducted in a conversational manner and has been held to the minimum length necessary to answer the research questions posed by this study.

A.6. Consequence of Collecting the Information Less Frequently

The proposed study design requires both an initial baseline data collection and a follow-up data collection. NIOSH researchers cannot collect the information less frequently. A negative consequence of not having this information would be that NIOSH would be unable to ascertain whether this publication was effective and had any impact on its goal, which is to motivate small business owners to take actions leading to improvements in their safety and health programs.

There are no legal obstacles to reduce the burden.

A.7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

There are no known circumstances that would cause information collection to be conducted in a special manner. This request fully complies with the regulation.

A.8. Comments in Response to the Federal Notice and Efforts to Consult Outside the Agency

NIOSH published an announcement in the Federal Register (April 23, 2007 Volume 72, page 20128). One comment was received that did not pertain to the study and one individual requested a copy of the study. The publication notice may be found in Attachment B1. The public comments and NIOSH's response are included in Attachment B2.

The executive director of the National Wood Pallet and Container Association (Mr. Bruce Schonnick (703) 519-6104) has assisted NIOSH in developing the educational/informational material for the owners and reviewed all aspects of the protocol, questionnaire and employee material. The Executive Director of the NWPCA Pallet Association and three more owners of pallet manufacturing companies were contacted and sent the manual and questionnaire for review (the contact information is listed below). Consultations regarding the research design and questionnaire have been held with James Prochaska (Univ. of Rhode Island, (401- 874-2830), Robyn Gershon (Columbia University (212-305-1186) and Carol Rice (University of Cincinnati 513-558-1751), all of whom have reviewed the protocol.

Consultation with Bruce Scholnick, President, National Wood Pallet and Container Association (703-529-6104) occurred in 2005 and no problems were encountered with the study. Additionally, three pallet companies, Anderson Pallets, RNL Pallets and Kenka Box were consulted during the pilot phase. None had any objections to the proposed study. No other public contacts about the project were made.

OSHA's Small Business Group has been given a copy of the study.

A.9. Explanation of Any Payment or Gift to Respondents

All participants in the study will receive the NIOSH educational/informational manual, similar to other free government publications. There will be no other remuneration of respondents.

A.10. Assurance of Confidentiality Provided to the Respondents

This submission has been reviewed by ICRO, who determined that the Privacy Act is applicable. The applicable System of Records Notice is 09-20-0147, Occupational Health Epidemiological Studies and EEOICPA Program Records. After the study is final a disk will be made with responses to questions –both pre- and post- evaluation to the survey instrument. The disk will comply with Privacy Act requirements pertinent to System 0147. Only the manager of the Privacy Act system of records will have access to this disk, which will be maintained in a locked file cabinet in a secure file room.

Convergys Corporation, the NIOSH contractor, will conduct the telephone interviews and record respondents' name and contact information, as well as response information into an electronic database containing responses to survey questions. The contractor has signed a non-disclosure agreement (Attachment E). Only the contractor and project officer will have access to the master file linking name and company and this will only be maintained until the study is complete. The time period for someone to be able to link respondent name and their response will be a minimum of six months. This disk will only have their pre/post test responses. A numerical indicator will be assigned to each company by the contractor. The control and treatment group will also be contacted after five months, using the same numerical indicator

system. Responses from the companies will be entered into an electronic response sheet. No paper will be generated. The project officer will keep a disk with their responses, linking the companies by number. The information linking the number to names of company will be destroyed after study is complete.

Only the company official who has the ability to implement or change the safety and health plan will be the one responding to the survey questions.

A distinct numeric code will be assigned to each respondent to track and cross reference data points. The electronic data base will be password protected. The master list, linking assigned numeric codes to individual names, will be kept in a separate secured location. Analyses will be conducted on back- up copies of a master copy of the data set, without personal identifiers. Once data coding is complete, keys linking codes to personal identifiers will be destroyed.

No guarantee of total confidentiality will be made. Data will only be reported and published anonymously. Participants will be informed that their participation is voluntary and that the data supplied will be kept private by NIOSH and will be treated in a secure manner unless otherwise compelled by law. CDC's IRB approval can be located at Attachment C.

A.11 Justification for Sensitive Questions

No sensitive questions will be asked. Race and ethnicity data are not being collected for this study since they are not considered to be a risk factor. From the perspective of a safety

manager, questions regarding number and type of on-the-job injuries and current safety and health programs could be viewed as potentially sensitive. However, few small business establishments provide an on-site occupational health unit, medical screening tests, pre-placement physicals or use industrial hygiene or safety personnel/consultants. As a consequence, prevention of occupational injury and illness is often difficult in small business establishments. NIOSH is trying to determine if targeting owners or managers of the small business is an effective way of implementing change at these establishments.

A.12 Estimates of Annualized Burden Hours and Costs

This survey is directed to the owners and managers of wood pallet manufacturing companies. Company names will be obtained from a commercial list of pallet companies. Companies will be contacted and an eligibility screening will be conducted. If the person on the telephone is capable of making decisions regarding OS&H and is eligible to enroll in the study, NIOSH researchers will continue with the survey. NIOSH researchers will contact a total of 228 companies (114 for the treatment group and 114 for the control group). Of those companies, approximately 36 will either not pass the eligibility screening or not complete the first questionnaire, leaving 192 companies which another 12 will not be available to complete the Follow-up questionnaire 5 months later. A total of 180 companies previously screened will be included in the experimental analysis, which includes approximately 90 companies in the experimental group and approximately 90 in the control, group making this 80% of total of companies recruited. If the response rate falls below 80% then we will conduct a non-response bias analysis in the data. Data collection will occur over a two-year period. The estimated annualized burden for this data collection is 40.

Table A.12-A Estimated Annualized Burden Hours

Type of Respondents	Form Name	Number of Respondents	Number of Responses per Respondent	Average Burden per Response (in hours)	Total Burden (in hours)
Pallet company safety and health managers Treatment Group	Initial Questionnaire (screening only)	9	1	3/60	1
	Initial Questionnaire (complete)	48	1	12/60	10
	Follow-up Questionnaire	45	1	15/60	11
Pallet company safety and health managers Control Group	Initial Questionnaire (screening only)	9	1	3/60	1
	Initial Questionnaire (complete)	48	1	12/60	10
	Follow-up Questionnaire*	45	1	9/60	7
Total					40

* The control group second survey is shorter because no questions are asked about the 'product' since the control group will not see the manual until the conclusion of the study.
The burden was estimated by administration of the questionnaire to fewer than 10 respondents.

B. Estimate of annualized costs to respondents. Hourly wage is calculated based on surveying pallet managers for what the average hourly wage is (March 2006). Department of Labor statistics (2005) show high level managers in manufacturing to have salary rates comparable to this.

Table A.12-B Estimated Annualized Burden Costs

Type of Respondents	Form Name	No. of Respondents	Avg. Burden per Response (in hours)	Hourly Wage Rate	Hourly Cost Per Respondent	Total Respondents Cost
Treatment group,	Initial	9	3/60	\$42.5	\$2.12	\$19.00

pallet manufacturing company owners/managers	questionnaire (screening only)					
	Initial questionnaire (complete)	48	12/60	\$42.5	\$8.50	\$408.00
	Follow-up questionnaire	45	15/60	\$42.5	\$10.62.	\$478.00
Control group, pallet manufacturing company owners/managers	Initial questionnaire (screening only)	9	3/60	\$42.5	\$2.13	\$19.00
	Initial questionnaire (complete)	48	12/60	\$42.5	\$8.50	\$408.00
	Follow-up questionnaire	45	9/60	\$ 42.5	\$6.37	\$287.00
Total Cost						\$1,619.00

A.13 Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

a. There is no capital or start up costs to respondents for collecting information in this project.

b. There is no cost to respondents for operation or maintenance in this project.

Respondents are not asked or expected to purchase any services.

A.14 Annualized Cost to the Government

Table A14- Estimated Personnel Costs

RESEARCHER	Base And Benefits	Time on project	Cost for two years
Robert Malkin Epidemiologist	124,838	40%	49,939 * 1= \$49,935
Donald Eggerth Supervisory Team Leader	103,690	20%	20,738 *1 = \$20,738
Thomas Lentz Supervisory Team Leader	130,150	10%	13,015 *1= \$13,015
			Total Salary Cost = \$83,688

2008

Contractor for Data Collection	\$24,555
Annualized Salary and benefits (see above)	\$74,635
Travel to pallet conference	\$ 3,000
Printing of educational/informational manuals	\$1,800

2009

Annualized Salary and benefits (see above)	\$83,688
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Total Cost to government for 2 years \$187,678

Annualized cost \$ 93,839

A.15 Explanation for Program Changes or Adjustments

This is a new data collection.

A.16 Plans for Tabulation and Publication and Project Time Schedule

Project Time Schedule	
Lists of companies and telephone questionnaire given to contractor	1-3 months after OMB approval
Data collection-Questionnaires administered to pallet company owners by the contractor	1-24 months after OMB approval
Analysis	24-36 months after OMB approval
Publication	36 months after OMB approval

Data Analysis Plan

Initial Telephone Survey

The analysis of these data will consist of both descriptive statistics and logistic regression. Descriptive statistics will be presented to determine the number of owners/managers displaying a certain feature, such as the TTM stage of change, the education level of the owners, number of workers in the plant, existence of safety and health programs, who teaches the safety and health program, and how the owner/manager gets information for the program. These data will be generated by the telephone questionnaire (Attachment D1 and D3).

In order for changes in the stages of change to be attributed to the educational/informational material, it is necessary to determine the stage of change of the owner/manager at the start of the study. This will be done by analyzing one question that asks how the owner feels about implementing a new safety and health program for him/her-self or the employees. Answers will correspond to stages of change of the TTM model. Information about demographic and descriptive variables that may be related to the owners' present stage of change will also be collected. These include:

- Size of the company (i.e. number of workers per site)
- Whether the manager is the owner of the plant
- Number of years running the pallet company
- Organization of company – i.e. with or without a safety person or OSH program
- Safety culture – safety instruction, safety requirements, presence or absence of safety equipment provided for employees
- Types and amount of safety and health education provided for employees
- Whether there have been any recent injuries or worker's compensation claims
- Worker characteristics – age ranges, languages, educational/informational levels

- Pay structure of employees– hourly or by piece
- Membership in the NWPCA or other organizations
- Questions about local exhaust ventilation, personal protective equipment, existence of a hearing conservation program and carbon monoxide controls

The existing stage of change will be determined by the responses to the questionnaire. Participants will be asked “Which of the following statements best describes your feelings today regarding starting a safety and health program?” Responses correspond to the various stages of change. The data will be analyzed using logistic regression techniques to determine if the present stage of change of the owner/manager is related to any of the demographic or descriptive variables.

Follow up Telephone Survey

The telephone questionnaires will ask questions that will allow us to determine the owner/managers’ present stage of change after receiving the NIOSH educational document (Attachments D2 and D4). By asking the same question previously asked five months ago, and determining if the stage of change has progressed since then, researchers will determine whether change has taken place. We will also ask other questions identical to those asked in the first survey and will repeat questions regarding carbon monoxide control, hearing conservation programs, personal protective equipment, and the presence of local exhaust ventilation to see if there has been any change in those programs since the educational manual was received. Questions particular to this questionnaire will ask whether the owner has done anything to

improve OSH since receiving the NIOSH material, whether the manual was easy to understand, whether the manual was helpful and which sections of the manual were most helpful.

A chi-square test will be done to determine if receipt of the manual resulted in greater progression of the stage of change in the treatment group compared to the control group for the entire set receiving the educational manual and for each of the strata.

The proportions of companies reporting TTM score responses of interest will be modeled by logistic regression; responses of interest are any change in TTM stage and changes indicating that a commitment to improving safety and health at the worksite (e.g., purchasing newer equipment, increasing the required use of PPE, or implementing a hearing conservation program) has been made. A statistical test for a treatment effect will be based on a logistic regression model adjusted for strata. Additional logistic regressions incorporating covariates using demographic and descriptive variables will also be performed to assess potential confounding and modifications of the treatment effect associated with these covariates. The effects of these covariates will be examined both one at a time and jointly.

A.17. Reason Why Display of OMB expiration is Inappropriate

The OMB approval number and expiration will be displayed on all questionnaires given to the contractor.

A.18. Exceptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions to the Paperwork Reduction Act in this project.

