

NATIONAL SURVEY OF U.S. LONG HAUL TRUCK DRIVER INJURY AND
HEALTH

Request for Office of Management and Budget (OMB) Review and Approval
for a Federally Sponsored Data Collection

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A. JUSTIFICATION

A1. Circumstances Making the Collection of Information Necessary

Background

This is a new information collection request from the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention. The proposed information collection will address the need for occupational hazard data for an estimated 1,672,580 workers employed as heavy and tractor-trailer truck drivers. [Bureau of Labor Statistics 2008b]

Surveillance of occupational injuries, illnesses, and exposures has been an integral part of the work of the NIOSH since its creation by the Occupational Safety and Health Act [29 CFR § 671] in 1970 (Attachment A). The NIOSH Surveillance Strategic Goal 3 (Attachment C) is to “Strengthen surveillance of high-risk industries and occupations, and of populations at high risk, including special populations.” NIOSH and stakeholders have recognized truck driving as a high-risk occupation due to the large number of on-the-job deaths among truck drivers, and their increased risk for cardiovascular disease, cancer, injury, and obesity, and other health problems [Saltzman and Belzer 2007, Transportation Research Board 2007].

This study will provide current important information on the health and safety of truck drivers that is not available elsewhere. Truck drivers experience high rates of illness and occupational injury, but little is known about the prevalence of specific health conditions or the factors suspected to place them at increased risk. Operational characteristics of the trucking industry (e.g., long work hours and irregular schedules) predispose truck drivers to fatigue, which is implicated in transportation accidents, and may contribute to stress and chronic disease. Long work hours may increase drivers’ exposure to health risks associated with vibration, chemicals, dusts, noise, and vehicle emissions. There is a need for better information on the interrelationships between work organization, work hours, fatigue, and workplace exposures among truck drivers.

In order to identify the most important future occupational safety and health research and prevention activities, NIOSH has organized national sector councils for each major industry sector. These councils include representatives from NIOSH, companies within the industry sector, organized labor, and research organizations, and they are responsible for outlining the important occupational safety and health goals for their industries. The proposed data collection will achieve several prioritized strategic goals identified by the Transportation, Warehousing, and Utilities (TWU) National Sector Council. The goals addressed by this survey include:

? Work environment factors related to obesity include stress, social isolation, opportunities for physical activity, nutritional support, and fatigue

Activity Goal 3.2.1: Use survey research methods to establish prevalence of health risk factors and work-related illnesses among commercial drivers.

Activity Goal 3.2.3: Quantify and report the prevalence of health risk factors and work-related illnesses among commercial drivers.

Activity Goal 3.2.4: Disseminate and promote the findings describing the prevalence of health risk factors and work-related illnesses among commercial drivers to expand awareness of the issues and provide a baseline for measuring the effectiveness of prevention activities.

Activity Goal 3.3.1: Establish prevalence, identify risk factors, including work environment¹, associated with obesity among commercial drivers.

Activity Goal 3.4.1: Establish prevalence and identify risk factors, including work environment, associated with cardiovascular disease in the TWU sector.

Activity Goal 3.5.1: Establish prevalence and identify risk factors associated with smoking and exposure to tobacco smoke in the TWU sector.

Activity Goal 3.6.1: Identify work-related psychological stressors that exist within the TWU sector, including the diversity, extent, magnitude, and the worker populations affected.

Activity Goal 4.4.2: Evaluate Personal Protective Equipment practices (use, provisions, appropriateness, training, maintenance and care) in the TWU sector

Additionally, this study is related to the NIOSH U.S. Transportation Initiative, which was put in place in 2004 to address safety and health issues among workers in road transportation industries, and to further efforts to reduce work-related crashes [National Institute for Occupational Safety and Health 2004].

This survey will allow NIOSH to explore the inter-relationships among the dimensions of occupational injury, health status, individual risk factors, fatigue, and putative environmental exposures. It will also provide detailed demographic data on truck drivers, which have not been available previously, and could provide baseline data to inform future cohort and prospective studies. The following outlines the importance of collecting information on each of the proposed topic areas.

Occupational Injury

Historically, truck drivers have sustained more occupational fatalities each year than workers in any other occupation. Between 1992 and 2002, the Census of Fatal Occupational Injuries (CFOI) recorded 8,864 truck drivers who died on the job, an

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average of 806 per year. Of these fatalities, 67% (5,964) were highway transportation incidents [Bureau of Labor Statistics 2006a]. In 2008, the fatality rate for drivers/sales workers and truck drivers was 22.8 per 100,000 full-time equivalent workers, compared with an average of 3.6 per 100,000 for all workers,[Bureau of Labor Statistics 2008a] and at 715 fatalities, heavy and tractor-trailer drivers contributed more deaths than any other single occupation.[Bureau of Labor Statistics 2008c].

Heavy and tractor-trailer truck drivers also had the second highest number of non-fatal occupational injuries and illnesses among all occupations in 2007 [Bureau of Labor Statistics 2007a]. The Survey of Occupational Injuries and Illnesses (SOII) estimated 57,050 non-fatal injuries and illnesses among heavy and tractor-trailer truck drivers resulting in days away from work. The most common events causing these nonfatal injuries were overexertion (24.4%), contact with object/equipment (19.9%), and fall on the same level (13.0%) [Bureau of Labor Statistics 2007b].

Other than the SOII, few surveys have captured injury information on the truck driver population. One regional study that emphasized the effects of economic aspects of trucking operations on drivers contained only one general question on injuries [Monaco and Belman 2004]. Although SOII generates national estimates of non-fatal occupational injuries by industry and occupation, it has a number of limitations. First, it may underestimate the magnitude of nonfatal occupational injuries among truck drivers because it excludes public sector workers and self-employed workers such as owner-operator truck drivers. It is estimated that self-employed truck drivers accounted for 10% of all heavy truck drivers [Bureau of Labor Statistics 2006b]. In addition, the most detailed SOII data cover only injuries that are serious enough to require days away from work. As a result, minor injuries may be excluded by SOII. For a variety of reasons, workers may choose not to report work-related injuries to their employers. Further, they may be unable to take days away from work while they are on the road, or may lack health insurance. Finally, it is an employer-based survey, which precludes collecting data from individual drivers.

The injury questions within the survey will address coverage limitations of the SOII. More important, it will complement the SOII by gathering data from truck drivers on topics that have not been addressed by previous research.

Truck Driver Health and Wellness

Truck drivers are at risk for numerous preventable diseases and health conditions. Previous studies have shown truck drivers to be at increased risk for heart attack [Leigh and Miller 1998, Bigert et al. 2003, Robinson and Burnett 2005]; hypertension [Sato et al. 1999; Koda et al. 2000]; and ulcers [Koda et al. 2000]. Researchers have observed excess lung cancer in studies of truck drivers conducted in New Caledonia [Menvielle et al. 2003], Sweden [Jarvholm and Silverman 2003], and the U.S. [Steenland et al. 1998, Garshick et al. 2008]. Additionally, studies have found truck drivers to be at excess risk for cancers of the bladder and gastric cardia [Boffetta and Silverman 2001, Cocco et al. 1998].

? Department of Transportation (DOT): the National Transportation Safety Board (NTSB), Federal Highway Administration (FHWA), Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), Federal Aviation Administration (FAA), Maritime Administration, Department of Homeland Security, U.S. Coast Guard.

Several studies have found a general pattern of unhealthy lifestyles among truck drivers. Truck drivers are also more likely to smoke cigarettes, not exercise regularly, and be overweight compared with the general population [Korelitz et al. 1993]. These habits seem relatively consistent, even in other countries [McCullagh 2005]. Being a truck driver can restrict opportunities for healthy food and exercise. Drivers cited poor food choices available at truck stops and inability to adequately preserve fruits and vegetables as obstacles to good nutrition, and 81% said they would welcome gym equipment at the docks where they waited for their loads [McCullagh 2005]. Additionally, work factors such as monotony and the need to maintain vigilance might contribute to the negative health behaviors. Australia's national survey of 1,007 long-distance truck drivers asked drivers what methods they used "at least sometimes" to fight fatigue: a large percentage of drivers reported eating while driving (45.9%), stopping to eat (69.0%), and smoking (48.7%) to help stay awake [Williamson et al. 2001].

While individual risk factors play a role in the high disease risk of drivers, the extent to which occupational exposures contribute to disease, individual risk factors, and health behaviors is largely unknown. Truck drivers experience a unique constellation of exposures – diesel exhaust, shift work, irregular schedules, sleep disturbances, isolation from their family, sitting for long hours in the truck cab, and stress from a prolonged state of vigilance. Any of these exposures could negatively impact health. While quantitative measures of drivers' environmental exposures will not be collected in this survey, the work history of individual drivers will be captured. The longitudinal work history will describe the typical working pattern, tasks, and driving history of each driver over his lifetime.

Knowing the prevalence of health conditions such as diabetes, cardiovascular disease, and hypertension among U.S. truck drivers is important for determining the potential impact of interventions and rulemaking. In evaluating the potential health effects of the revised hours-of-service rules for trucking (effective October 1, 2005), the Federal Motor Carrier Safety Administration (FMCSA) stated, "Because relatively little of the available evidence was derived from motor carrier operations, the Agency had to evaluate and weigh information from different fields and adapt it to a trucking environment [70 Fed. Reg. 49978 (2005)]. The health and wellness portion of the survey will try to close this knowledge gap by providing prevalence estimates for important health conditions, and by exploring the associations among health status, individual risk factors, and occupational exposures related to work organization and hours of service.

Fatigue

Fatigue is a known contributor to roadway crashes among the general public, commercial motor vehicle (CMV) drivers, and numerous government transportation agencies². In-depth investigations have shown that fatigue increases the likelihood that a driver will not pay sufficient attention to the driving task or will commit other mental errors [Brown 1994; Dinges 1995]. The FMCSA recently estimated that 15% of all fatal large-truck-

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related crashes involved fatigue as either a primary or secondary factor; 4.5% were estimated to have had fatigue directly involved, and the remaining 10.5% were attributed to the mental lapses and inattention associated with fatigue [65 Fed. Reg. 25540 (2000)]. Other research suggests long-haul truck drivers are almost 20 times more likely, on a per mile basis, to be involved in a fatigue related crash relative to other forms of trucking [Massie et al. 1987].

Fatigue may be expressed primarily as mental symptoms of boredom and loss of alertness, as physical symptoms such as eyestrain and muscular discomfort, or as changes in brain function detectable through psychophysiological methods such as the electroencephalogram (EEG) [Fairclough 1993; Matthews and Desmond 1998]. However it is expressed, most fatigue researchers agree that there is a prototypical fatigue state that is potentially detrimental to performance [Craig and Cooper 1992]. This state often leads to the lowering of standards for performance or shedding of subsidiary task components [Hockey 1997], posing a serious threat to safe driving operations. The survey will measure this fatigue state among truck drivers.

The extent to which irregular work schedules, varied driving/rest cycles, timing of sleep, and other daily events contribute to subjective levels of fatigue in truck drivers is unknown. Few studies to date have examined how working conditions such as the hours worked per week, drivers' degree of control over their work schedule, type of compensation, and other characteristics of work schedules interact and relate to health and safety in general, and levels of fatigue in particular. Drivers may be exposed to external factors that are known to provoke fatigue.[Matthews et al. 2000] Such factors include, 1) driving for long durations; 2) sleep deprivation and disruption of circadian rhythms due to overnight driving; 3) excessive hours of work, sub-optimal work/rest schedules and vehicle discomfort; 4) stressful organizational climates that promote the 'burnout' syndrome of fatigue, apathy, and emotional distress. The Survey of U.S. Long-Haul Truck Driver Injury and Health will specifically examine how such working conditions affect a driver's level of fatigue.

Privacy Impact Assessment

No information in identifiable form (IIF) will be collected during the survey. The data collection system will not host a website, although results may be made available on public NIOSH web pages. Information will not be directed at children under the age of thirteen years.

Overview of the Data Collection System

Data collection will take place at selected truck stops throughout the 48 continental United States. Randomly selected truck drivers entering truck stops will be asked a series of five questions to determine if they are eligible to participate in the survey. Data collection from eligible consenting drivers will include: a personal interview, which will

take approximately 40 minutes to complete; completion of a 48-hour sleep and activity diary, which will take approximately 4 minutes; and physical measurements of the driver's height, weight, and neck size, which will take another 4 minutes. The interviewer taking the measurements will be the same sex as the driver.

Individuals who decline participation will be given the opportunity to participate in a short interview designed to compare respondents to non-respondents. These questions will be administered through personal interview.

All data collection and data management will be conducted by the survey contractor, Westat, Inc. Once the data has been completely entered into an electronic database, all data and forms will be transferred to NIOSH and stored securely at NIOSH facilities.

Items of Information to be Collected

No information in identifiable form (IIF) will be collected.

Information will be collected on year of birth, sex, race, education, height and weight, county of residence, marital status, occupation and industry, work status, work history, working conditions and occupational exposures, health conditions, health behavior, sleep quality and quantity, work-related injuries, training, safety climate of the workplace, stimulant use, fatigue state, activities over the previous 48 hours, and neck size. This information will be kept until all analyses have been completed. While some of the information may be considered sensitive, no identifiable information will be collected from participants, and consent will be verbal to avoid collecting signatures.

Identification of Website(s) and Website Content Directed at Children Under 13 Years of Age

The proposed research will not involve the collection of information through websites, and will not direct any website content at children under 13 years of age.

A2. Purpose and Use of Information Collection

The purpose of this project is to develop and conduct a national survey that provides current occupational safety and health data on truck drivers that is not available elsewhere. This information will 1) allow NIOSH to identify the risk factors most strongly associated with poor health and safety outcomes within the truck driver population, which NIOSH will use to prioritize research and develop interventions to improve driver health and reduce injuries; 2) help regulatory bodies evaluate the health and safety impact of the hours-of-service rules and inform policies related to driver health and fitness for duty; and 3) provide information to drivers, the trucking industry, and the transportation research community that will guide health and safety promotion, interventions, and future research.

NIOSH has fully funded this project, with an additional contribution from the Federal Motor Carrier Safety Administration (FMCSA).

As evidenced by the included letters of support (see Attachment D), numerous stakeholders agree that a survey of truck drivers focusing on occupational safety and health will help Federal agencies, researchers, and worker advocates to improve health and reduce injuries among truck drivers.

The Federal Motor Carrier Safety Administration (FMCSA) is one proponent of this project. In 2003, FMCSA promulgated new hours-of-service rules for trucking, and these rules have twice been successfully challenged in Federal court [70 Fed. Reg. *3339 (2005); U.S. Court of Appeals 2007]. In evaluating the potential health effects of the revised hours-of-service rules, FMCSA stated, “Because relatively little of the available evidence was derived from motor carrier operations, the Agency had to evaluate and weigh information from different fields and adapt it to a trucking environment [70 Fed. Reg.* 49978 (2005)]. The data provided by the proposed survey will aide FMCSA in making evidence-based policy decisions, and reduce the likelihood of lawsuits brought against them by consumer and worker advocates. In addition, detailed information on drivers will help FMCSA develop better safety and health programs, and provide valid baseline data on driver health for evaluating the impact revised hours-of-service rules.

The proposed survey will provide data that have been requested by several governmental organizations, academia, and labor. In 2003, NIOSH, Wayne State University, the Owner-Operator Independent Drivers Association, the International Brotherhood of Teamsters, and the Alfred P. Sloan Foundation sponsored the Truck Driver Occupational Safety and Health Conference. Several presenters at this conference made specific recommendations for research targeting issues of long work hours and fatigue [Saltzman and Belzer 2007]. Similarly, participants in the 2005 International Truck & Bus Safety & Security Symposium and the National Occupational Research Agenda (NORA) town hall meeting for the TWU industry sector (December 5, 2005), called for improvements in injury and illness data collection so that effective interventions to promote driver health and reduce injuries can be developed [National Institute for Occupational Safety and Health 2005]. The proposed survey will provide this data.

Privacy Impact Assessment Information

The information is being collected to provide safety and health data on long-haul truck drivers to federal agencies, researchers, the trucking industry, and the public (including truck drivers). The information will be used to inform public policy and rule making, and guide health and safety promotion, interventions, and future research.

No information in identifiable form (IIF) is being collected.

A3. Use of Improved Information Technology and Burden Reduction

The majority of the data collection will be accomplished through personal interview. This decision is based on both focus group discussions and expert opinion. In focus group discussions, truck drivers indicated they would prefer a personal interview to computer-assisted formats. The interviewer-administered format reduces respondent burden by removing the need for the respondents to read the questions, and by ensuring that respondents do not spend time reading and responding to questions that do not apply to them. It also ensures that low literacy individuals are not barred from participation in the survey.

A small component of the data collection will use paper and pencil forms; it is not cost efficient to administer these short forms with computer-assisted technology.

The data collection instrument has been through multiple iterations of review and revision, with the goal of excising any questions that were not essential to the survey's purpose.

A4. Efforts to Identify Duplication and Use of Similar Information

NIOSH has searched the scientific literature, contacted colleagues at both NIOSH and FMCSA, and examined variables available in major national surveys such as the National Health Interview Survey [National Center for Health Statistics 2006] and Behavioral Risk Factor Surveillance Survey [Centers for Disease Control and Prevention 2008]. To date, we are unaware of any single survey that has collected data that would allow examination of the associations among health conditions, injuries, fatigue state, sleep quality and quantity, health behavior, and working conditions among truck drivers. As evidenced by the included letters of support (Attachment D), numerous stakeholders agree that there is a need for a survey of truck drivers focusing on occupational safety and health.

FMCSA has funded research projects on various aspects of truck driver health and safety, but has not conducted a comprehensive survey targeting long-haul truck drivers. The most recent was the Fatigue Management Survey, [Federal Motor Carrier Safety Administration 2006] which included information on body mass index (BMI) and some information on smoking, sleep behavior, and work schedules. The goal of the FMCSA study was to learn fatigue management strategies used by unionized drivers working for companies with good safety records. As indicated in the report, these drivers represent some of the most experienced and highly paid drivers in the industry; therefore, they are not typical of the truck driver population. Furthermore, they were not long-haul drivers as their routes were designed to return them to their home daily.

Some national surveys collect a limited amount of data on truck drivers, but none of them meet the goals of the proposed survey. For example, the Survey of Occupational Injuries and Illnesses (SOII) generates national estimates of non-fatal occupational injuries and illness by industry and occupation, but it has a number of limitations. First, only diseases that are recognized as 'occupational diseases' – for instance, skin irritation or rashes – are included in SOII. The proposed survey will collect data on a variety of health conditions without regard to the perceived origin of the condition. Second, the magnitude of nonfatal

occupational injuries and illnesses among truck drivers may be underestimated, since public sector workers and self-employed workers such as owner-operator truck drivers are excluded. Finally, the most detailed SOII data cover only injuries and illnesses that require days away from work [Bureau of Labor Statistics 2008d; Chen 2009].

The National Health Interview Survey collects both detailed health data and information on occupation. However, it does not routinely collect detailed information on working conditions, nor do they collect the information needed to differentiate long-haul drivers of heavy trucks from other truck drivers

A5. Impact on Small Businesses or Other Small Entities

Self-employed and contract workers such as owner-operator truck drivers will be included in the survey, as well as drivers that work for small businesses. Participation is voluntary, and will not be conducted while the driver is actively working. All drivers will be asked to complete the entire survey, but questions have been held to the minimum required for the intended use of the data.

A6. Consequences of Information Collected Less Frequently

This request is for a one-time data collection. If this data collection does not take place, federal programs will not be able to make evidence-based policy decisions regarding the safety and health of long-haul truck drivers. There are no legal obstacles to reduce the burden.

A7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

There are no special circumstances associated with this data collection activity. This request fully complies with regulation 5 CFR 1320.5.

A8. Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency

The 60-day Notice was published in the Federal Register on October 28, 2009, as required by 5 CFR 1320.8(d) [see Attachment B]. One comment was received. The comment and response to the Federal Register notice are provided in Attachment B1.

NIOSH has consulted with numerous individuals and organizations outside the agency regarding the availability and usefulness of the proposed data collection, including the Federal Motor Carrier Safety Administration, the International Brotherhood of Teamsters, the Owner Operator Independent Driver Association, the American Transportation Research Institute, researchers, motor carriers, and truck drivers. In addition, we have contracted with Westat to provide guidance on the survey protocol, sampling design, and questionnaire development.

The following chronology documents these contacts:

2006

The survey proposal was peer-reviewed and rated based on project approach, potential

impact, innovation, and significance. The project received favorable scores and was chosen for funding by NIOSH.

2007

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A public stakeholder meeting was held in Chicago, Illinois on November 1, 2007 (see Attachment B2 for the Notice of Public Meeting, and Attachment B3 for the list of attendees). This meeting was to provide interested stakeholders the opportunity to comment on the content and operational aspects of the survey. Stakeholders had the option of providing comments during the meeting (which were audio recorded), or by email.

NIOSH also featured this project in the NIOSH Science blog. Comments received are available at http://www.cdc.gov/niosh/blog/nsb111907_truck.html.

2008

The Transportation Research Board (TRB) of the National Academies provides leadership in transportation innovation and progress through research and information exchange. Members include academic researchers, representatives of transportation companies, and government personnel. To stimulate discussion and engage stakeholders, presentations on the progress of the survey project were made to the TRB Committee on Trucking Industry Research, and the TRB Committee on Truck and Bus Safety.

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NIOSH and ATRI organized a webinar to gain input from motor carriers that were unable to attend the stakeholder meetings in Washington DC. 22 motor carriers participated (see Attachment B4 for a list of participants).

2009

To stimulate discussion and engage stakeholders, presentations on the progress of the survey project were made to the Transportation Research Board Committees on Trucking Industry Research and Truck and Bus Safety.

The survey instrument was sent to the following individuals for review:

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The American Transportation Research Institute (ATRI) raised some objections that could not be resolved. In particular, ATRI suggested that; 1) the study be conducted through trucking companies, rather than at truck stops, and 2) information collection be done through mail and/or web-based methods. NIOSH considered these recommendations, but concluded that a representative sample of the target population of long-haul truck drivers could not be practically obtained using these methods.

A9. Explanation of Any Payment or Gift to Respondents

It is important to achieve the highest possible response rates during this information collection. Typical methods for improving response include, 1) following up with non-respondents via mail or telephone, and 2) offering a financial incentive during survey recruitment. Since the proposed survey will be completely anonymous, following up with non-respondents will not be possible. Therefore, we will offer a financial incentive during recruitment. It has been demonstrated that incentives increase participation and reduce nonresponse bias among drivers (Dillman 1996, as reported by Shettle and Mooney 1999). Belman et al. (1998) offered a monetary incentive of \$20 for participation in their study, achieving a 70% participation rate for the 40 minute interview.

We will offer a \$25.00 incentive to respondents that complete the main interview. If a truck driver completes only the non-respondent interview we will offer a \$2 incentive. These incentives will be in a form that can be used at multiple locations by the driver; if the interview is conducted at a truck stop that is part of a chain, the \$25 incentive will take the form of a gift card that will be accepted at any stop in that truck stop chain, and if the interview is conducted at an independent truck stop, the \$25 incentive will take the form of a cash card useable anywhere that accepts major credit cards. The \$2 incentive will always be in the form of cash. These incentives will not only reward the respondents, they will also encourage the truck stop owner/manager to grant the survey team access to the facility since the incentives can be spent at the truck stop. The gift cards will be especially attractive to large chains, since the money must be spent within their network.

Based on stakeholder and focus group input, and the considerable experience of our contractor Westat, we feel this reward will improve participation rates for both drivers and truck stop owner/managers. This incentive, along with wide-spread publicity of the

survey and vigorous attempts at refusal conversion, will help us to achieve an 80% response rate.

A10. Assurance of Confidentiality Provided to Respondents

The interview will collect potentially sensitive information about health status, injury, and safety/health behaviors. Risks to participants are low, since no information in identifiable form (IIF) is being collected.

Benefits to the participants include increased knowledge of the health and wellness of truck drivers, and increased understanding of how working conditions may affect their health and safety.

IRB approval for this data collection has been obtained (see Attachment E1).

Privacy Impact Assessment Information

A. The CDC's Information Collection Review Office has reviewed this application and has determined that the Privacy Act is not applicable. No individually identifiable information will be collected.

B. Access to individual data will be limited to authorized NIOSH researchers and contractors. Physical controls: NIOSH facilities have 24-hour security guards, and key card ID badges must be used to enter the buildings. Data in hardcopy form will be stored in locked rooms or cabinets. Technical controls: all electronic data will be stored on secure servers that are protected with firewalls and passwords. Any contractor charged with data collection, preparation, or management tasks to be performed away from a NIOSH facility will be required to follow equivalent procedures.

The process for handling security incidents is defined in the system's Security Plan. Event monitoring and incident response is a shared responsibility between the system's team and the Office of the Chief Information Security Officer (OCISO). Reports of suspicious security or adverse privacy related events should be directed to the component's Information Systems Security Officer, CDC helpdesk, or to the CDC Incident Response Team. The CDC OCISO reports to the HHS Secure One Communications Center, which reports incidents to US-CERT as appropriate

C. Oral consent will be obtained from study participants (Attachment E2), and respondents will also be provided with a written consent document (Attachment E3). Both the oral script and the written document will explain the intended use of the information collected, describe any risks participants may face, and inform them that their participation is voluntary. Participants will not be asked to sign the informed consent document; a signed consent document would increase the risk of harm to the participant, as it would provide the only link between the participant and the information collection. Without a signed consent form, there is virtually no risk of a privacy breach.

D. Respondents will be informed that their participation is voluntary, and that they may discontinue the survey at any time. They will also be advised that they will not lose any benefits to which they are otherwise entitled if they chose not to participate. The Privacy Act does not apply, since no individually identifying information is being collected.

A11. Justification for Sensitive Questions

The proposed survey contains one question on legal and illegal stimulant use; the question is constructed so that the interviewer will not know if the driver has used an illegal drug. Use of stimulants is not uncommon among truck drivers; two U.S. studies found that approximately 9.5% of drivers had central nervous system stimulants in their body fluids [Couper et al. 2002; Schwilke et al. 2006], and in Australia, up to 30% of drivers report at least periodic use of stimulants to manage fatigue [Williamson 2007]. Recently it has become public knowledge that drivers can "beat" drug testing through relatively simple measures, so current estimates of stimulant use may be not reflect reality [U.S. Government Accountability Office 2007].

Information on use of stimulants among U.S. truck drivers will help determine the extent to which stimulants might contribute this population's injury risk and poor health. Truck drivers are at significantly increased risk for myocardial infarction [Bigert et al. 2003; Robinson and Burnett 2005], and stimulants such as cocaine and amphetamines are known to induce intense vasoconstriction, hypertension, and blood clot formation, potentially leading to a heart attack. Repetitive use of stimulants can permanently damage the heart muscle [Libby and Braunwald 2008].

Other questions that may be sensitive include the number of hours worked, previous crash history, and level of fatigue. These questions are all needed to examine the associations among working hours, safety, and fatigue. Answering these questions poses little risk to the driver since no information in identifiable form (IIF) is being collected.

A12. Estimates of Annualized Burden Hours and Costs

A. Annualized Burden to Respondents

No direct costs will accrue to respondents other than their time to complete the survey. We estimate that a total of 3,500 truck drivers will take part in the eligibility screening interview. Of this total, 2,457 truck drivers will be eligible and take part in the main interview and 560 will take part in the non-respondent interview. The main interview is estimated to take 48 minutes to complete, based on pilot testing. The eligibility screening and non-respondent interviews are each estimated to take 2 minutes to complete. The

number of non-respondent interviews is based on an estimated 20% driver refusal rate to take part in the eligibility screening interview followed by 20% refusal rate for participation in the non-respondent interview [Federal Highway Administration 2002].

Table A.12-1. Estimated Annualized Burden to Respondents

| Type of Respondent | Form Name | Number of Respondents | Number of Responses per Respondent | Avg. Burden per Response (in hours) | Total Burden (in hours) |
|--------------------|---------------------------------|-----------------------|------------------------------------|-------------------------------------|-------------------------|
| Truck Drivers | Eligibility Screening Interview | 3500 | 1 | 2/60 | 117 |
| | Non-respondent Interview | 560 | 1 | 2/60 | 19 |
| | Main Interview | 2457 | 1 | 48/60 | 1,966 |
| | | | | Total | 2,102 |

B. Annualized Cost to Respondents

The total estimated annualized cost to respondents is \$ 39,140, as summarized in Table A.12-2. The mean hourly wage rate for Truck Drivers, Heavy and Tractor Trailer is \$18.62.[Bureau of Labor Statistics 2008b].

Table A.12-2. Estimated Annualized Cost to Respondents

| Type of Respondent | Form Name | Number of Respondents | Number of Responses per Respondent | Average Burden per Response (in hours) | Total Burden (in hours) | Average Hourly Wage Rate | Total Cost |
|--------------------|---------------------------------|-----------------------|------------------------------------|--|-------------------------|--------------------------|------------|
| Truck Drivers | Eligibility Screening Interview | 3500 | 1 | 2/60 | 117 | \$18.62 | \$2,179 |

| | | | | | | | |
|--|--------------------------|------|---|-------|-------|---------|----------|
| | Non-respondent Interview | 560 | 1 | 2/60 | 19 | \$18.62 | \$354 |
| | Main Interview | 2457 | 1 | 48/60 | 1,966 | \$18.62 | \$36,607 |
| | | | | Total | 2,102 | | \$39,140 |

A13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

There are no capital or maintenance costs to respondents.

A14. Annualized Cost to the Government

Total costs include work performed by the research contractor and CDC personnel. The contractor, Westat, will work in collaboration with NIOSH and will be responsible for recruiting and training interviewers, conducting the survey in the field, and data management. Contractor costs include tasks such as: (1) development of survey materials; (2) development of sample frame and sample selection; (3) survey conduct; (4) sample tracking; (5) data receipt and processing; and (6) data entry and delivery. The data analysis will be done by a team of CDC/NIOSH researchers including a senior statistician, epidemiologists, psychologist, and medical officer and will require three or four months of full time effort. There will be additional dissemination costs to NIOSH (not yet determined) for preparing reports and publications that NIOSH anticipates following analysis of the data captured in this survey. CDC personnel costs are estimated at \$171,888 for the project officer and \$244,521 for staff that will provide project oversight in the field.

Estimated annualized costs to the Federal Government for the survey period are presented in Table A.14-1 below.

Table A.14-1. Estimated Annualized Cost to the Federal Government

| | 2010 | Annualized Cost |
|---------------|-----------|-----------------|
| CDC Personnel | 416,409 | 416,409 |
| Contractor | 696,859 | 696,859 |
| Supplies | | |
| Total | 1,113,268 | 1,113,268 |

A15. Explanation for Program Changes or Adjustments

This is a new data collection.

A16. Plans for Tabulation and Publication and Project Time Schedule

Statistical Analysis of the Data

Data collection will be completed in one year, followed by statistical analysis and dissemination of data. Both descriptive and analytical methods will be employed during the statistical analysis of the data. Tables and charts will be used to present a variety of statistics such as frequency and percent; percentile; mean, median, and standard deviation; chi-square, and odds ratio, other measures of association, and prevalence (rate) estimates. Each statistic will be appropriate for the variables being analyzed.

The prevalence estimates of conditions such as overweight/obesity and hypertension, as well as behaviors such as seat belt use and smoking, will be reported. Where possible, survey results will be compared with results from the National Health Interview Survey to determine if respondents are significantly different from the general U.S. population [National Center for Health Statistics 2006].

Multivariate techniques including logistic regression will be used to investigate associations between health conditions, fatigue, injuries, years worked as a truck driver, and other risk factors. Factor analysis will be used to group those factors most highly associated with fatigue. The activity log will document potentially risky patterns such as sleepiness at the end of work periods and very long work shifts, and will be used to supplement findings in analyses.

Crude and adjusted odds ratios for excessive sleepiness from the Epworth Sleepiness Scale will be calculated using a multiple logistic regression model. These results of this analysis will be compared to a national survey of risk factors for sleep disorders conducted in 2005 [National Sleep Foundation 2005]. The Multivariable Apnea Risk Index [Maislin et al. 1995] will be calculated and compared to results from studies of sleep apnea among commercial truck drivers [Pack et al. 2001].

The prevalence of truck crash injuries and other work-related injuries will be computed. These findings will be compared to the BLS data [BLS 2008d]. The following null hypotheses will be tested: that there is no difference between company drivers and owner operators in regards to 1) crash rate, 2) injury rate, 3) safety training received, 4) length of driving hours, 5) opinions on issues related to trucking safety, or safety related behavior. Poisson and logistic regressions will be used to assess the association of injury with other potential risk factors such as age, gender, smoking status, safety training, years of work experience, and hours of work. The associations between injury and safety training, company safety climate, driver behavior will also be assessed.

Results will be made available through publication in scientific journals and notices in trade publications, and through digital media such as the Internet.

Project Time Schedule

Table A.16-1. Project Time Schedule

| Activity | Time Schedule (Months After OMB Approval) |
|---|---|
| Select sample of truck stops for survey | Within 1 months after OMB approval |
| Secure cooperation/Verify contact information for sampled truck stops | Within 1 months after OMB approval |
| Prepare all survey materials | Within 1 months after OMB approval |
| Train surveyors | Within 1 months after OMB approval |
| Data collection/Conduct interviews at truck stops | Within 2-6 months after OMB approval |
| Data entry and verification | Within 4-8 months after OMB approval |
| Data Analysis | Within 8-14 months after OMB approval |
| Prepare survey report and technical documentation | Within 16 months after OMB approval |
| Begin dissemination of data on driver health to regulatory agencies and to interested stakeholders | Within 17 months after OMB approval |
| Develop print and web-based resources to provide drivers and trucking companies with easily understood, accurate information that can be used to improve driver health and safety | Within 18 months after OMB approval |

A17. Reason(s) Display of OMB Expiration Date is Inappropriate

There is no request for an expiration date display exemption.

A18. Exceptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions being sought to the certification statement.

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LIST OF ATTACHMENTS

Attachment A: Occupational Safety and Health Act [29 CFR § 671]

Attachment B: 60-Day Federal Register Notice

Attachment B1: Summary of Public Comment and CDC Response

Attachment B2: Notice of Public Meeting November 1, 2007

Attachment B3: List of Public Meeting Attendees

Attachment B4: List of Webinar Attendees

Attachment C: NIOSH Surveillance Strategic Goal 3

Attachment D: Stakeholder Letters of Support

Attachment E1: NIOSH HSRB Approval and CDC Form 0.1379
Signature Page For Human Research Review

Attachment E2: Oral Consent Script For All Participants

Attachment E3: Printed Material Available For Participants