

**Assessment of Occupational Injury among Fire Fighters Using a Follow-back Survey (Information Collection Request -- Extension, OMB # 0920-1244)**

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

**Section B**

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## Table of Contents

### **B. Collection of Information Employing Statistical Methods**

B1. Respondent Universe and Sampling Methods.....	2
.....	
B2. Procedures for the Collection of Information.....	3
B3. Methods to Maximize Response Rates and Deal with Nonresponse.....	6
B4. Tests of Procedures or Methods to be Undertaken.....	7
B5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data.....	8

### **References**

## B. Collections of Information Employing Statistical Methods

### ***B.1 Respondent universe and sampling methods***

The respondent universe of interest for the proposed study includes all firefighters treated for occupational injuries and exposures in a national probability based sample of U.S. hospital emergency departments (EDs). Potential telephone interview respondents will be identified through the occupational supplement to the National Electronic Injury Surveillance System (NEISS-Work). This is a request to extend an existing information collection request for one additional year from the date of approval. Approval is being requested for a one year period (2021 through 2022). There are no changes in objectives or methodology to the existing information collection (OMB # 0920-1244) in the requested extension.

Through a collaboration between the Consumer Product Safety Commission (CPSC) and the National Institute for Occupational Safety and Health (NIOSH), NEISS-Work data are collected through a national stratified probability sample of approximately 5,400 rural and urban hospitals in the U.S. and its territories. To be included, hospitals must have a minimum of six beds and operate a 24-hour ED. General, specialty care, and military hospitals are included in the sample population. Prison, psychiatric, rehabilitation and long-term care facilities, and Veterans Administration hospitals are excluded. While selection of the current hospital sample was based on a 1995 census of U.S. hospitals, weights are adjusted annually to account for changes to the sampling frame. The sample is stratified by hospital size based on the number of annual ED visits. In addition, the sample is stratified geographically. Data collection of work-related cases using the current hospital sample began in 1997 at approximately 67 hospitals.

NEISS-Work includes all work-related injuries, illnesses, and exposures treated in EDs and is based on standardized information abstracted from emergency medical records. Since medical record data are limited, it is often necessary to collect additional information to better understand a worker population of interest. This has successfully been done through follow-back interviews using cases identified in NEISS-Work as potential respondents. For the proposed study, our goal is to conduct telephone follow-back interviews with firefighters to gain a detailed understanding of their injuries and exposures. Potential firefighter respondents for the telephone interviews will be identified from the NEISS-Work data. Selection of cases will be restricted to injured or exposed firefighters who are 18 years of age or older, due to the added complication of obtaining parental or guardian consent for interviews from those younger than 18. (Less than 1% of the firefighter workforce from NEISS-Work fall below this age threshold.) As most firefighter-related illnesses in NEISS-Work involve potential contact with heat or smoke, or harmful substances such as chemicals or bloodborne pathogens, the term “exposures” will be used to refer to illnesses and exposures combined. Common on-duty functions that will be targeted include fighting fire; salvage and overhaul; responding to/returning from an incident; training; equipment and building maintenance; public education; and fundraising. Firefighters are often cross-trained as emergency medical services (EMS) workers so firefighters providing patient care will be included. We will exclude occupations such as administrator, EMS worker with no indication of concurrent firefighter employment, clerk, communications operator, dispatcher, mechanic, fire investigator, forest service ranger, lifeguard, maintenance worker, cook, and ambulance driver. Given that almost 70% of the firefighters in the U.S. are volunteer, this study will seek to include both paid (i.e., career) and volunteer firefighters. Since we do not plan to translate the questionnaire into a language other than English, non-English speaking firefighters will be excluded from the study if they are reached and unable to communicate. Prescreening

using the basic NEISS-Work data elements will be used to restrict potential respondents to individuals most likely to meet the respondent definition.

Based on the first three years of data collection, we estimate that another 35 firefighter interviews will be completed in the requested one-year extension. Given the lower than expected response rate for the current study, a case series approach will be used to analyze the completed interviews.

## ***B.2 Procedures for the collection of information***

As described above, NEISS-Work is based on a national stratified probability sample of U.S. EDs. For telephone interviews proposed in this study, all firefighters captured in the NEISS-Work data will be considered potential participants. NEISS-Work data will be used by CPSC and DSR to identify all firefighters treated in the sampled hospitals during this additional one-year extension (2021 through 2022). Every firefighter identified in NEISS-Work meeting our case criteria will be offered an opportunity to participate in a telephone interview given initial contact is made.

Once cases are identified, CPSC will contact participating hospitals and request contact information. Potential respondents will be sent a pre-interview letter notifying them of the study and giving them an opportunity to opt out by calling a toll-free number within 10 days of receiving the letter. The letter describes the study and measures that will be taken to protect confidentiality should they choose to participate. The letter also contains the elements required in an informed consent although a waiver of written informed consent has been granted by the NIOSH Institutional Review Board (IRB). For firefighters who do not opt out initially, CPSC will conduct interviews through contracts with trained interviewers. The interview script will ask each firefighter to provide verbal consent prior to proceeding. Once consent is given, the interview will proceed. Data will be collected on the firefighters themselves, their injury or exposure, and injury or exposure outcomes. NIOSH will not receive contact information or request any personal identifiers during the interview. Data collected through this study will be treated as a case series and any findings will be reported as unweighted frequencies.

### ***B.2.1 Collection of Telephone Interview Data***

Experienced telephone interviewers are contracted through CPSC to complete the follow-back interviews. At the start of this project, interviewers received additional training specific to the firefighter questionnaire.

Prior to being contacted by telephone, potential participants will receive a letter describing the study and their protections as a participant, should they choose to participate (Attachment D). This letter also provides them with the opportunity to opt out of participating in the study by calling a toll-free number. While the time for the telephone interview is not initially scheduled with the participant, participants do have the option at the time of contact to state that it is not a good time and to schedule a better time to complete the interview. Also, if the potential participant initially declines to participate, the telephone interview script includes text that provides more detail about the study and its importance, allowing time for the respondent to consider the initial refusal.

### ***B.2.2 Data Quality Control***

Quality control of the data will not involve any additional contact with participants. Rather, data within the telephone interview dataset will be reviewed for logical consistency and continuity. Data from NEISS-Work and the telephone interview dataset may also be broadly compared to check for consistency and accuracy. Finally, an assessment of the non-participants versus the participants in the telephone interview portion of the study may be made to determine potential non-response bias.

### ***B.3 Methods to maximize response rates and deal with nonresponse***

We acknowledge that our current response rate of 10 to 11% for this project is low. However, it must be noted that this response rate includes hospitals that will not release contact information, respondents whose correct contact information is unavailable, and respondents who refuse to participate. Additionally, we've experienced several issues that were out of our control that have caused interviews to be paused for short periods of time (e.g., interviews were not being conducted during an earlier partial government shutdown and during the early days of the pandemic). For these reasons combined, we're requesting this one-year extension. .

We took several steps to help access potential participants and facilitate their willingness to participate. These steps include:

1. Sending a letter describing the study to potential participants in advance of the initial phone call. This letter alerted and prepared potential participants for the phone call requesting their participation.
2. Using the support of several partners and stakeholders that have interest in this area, including the National Fire Protection Association (NFPA), the U.S. Fire Administration (USFA), National Fallen Fire Fighters Foundation (NFFF), the National Volunteer Fire Council (NVFC), and the U.S. Department of Interior. It is expected that NIOSH staff will approach many of our stakeholders to garner support among the members of their organizations to encourage them to participate if contacted.
3. Making at least ten attempts to reach potential respondents. The contact attempts are made at varying, but reasonable, hours of the day and on varying days of the week. When no personal contact is made after a number of attempts, the contact information is set aside and contact attempts are made at a later date as time permits to maximize the response rate. Interviewers are trained to be considerate of respondents and their families, leaving a minimal number of messages or speaking with the respondent or another individual of the residence to arrange a convenient interview time. Messages include a toll-free response number so that the respondent may call at their convenience. When personal contact is not made or no message system is available, the interviewer typically spreads their call attempts over a longer time period and commonly makes more than 10 contact attempts over the initial contact attempt period and the subsequent missed interview follow-ups.
4. The use of trained telephone interviewers who are experienced at conducting interviews. This will facilitate ease of survey participation for the respondent, increasing the likelihood that they will complete the survey in its entirety.

5. Emphasizing the importance of participation if the participant refuses the initial offer. The interviewer inquires as to whether they would be willing to participate at another time of their choosing. The training and experience of the telephone interviewers will be a key factor to understanding the reactions of potential participants and appropriately encouraging their participation in cases of refusal.
6. Using a questionnaire that has been designed to be as easy and non-burdensome as possible. This includes ordering the questions in a logical sequence and asking only those questions that are needed for analysis purposes.

Despite the low response rate, we are confident that the information from this study will have certain benefits, including the capture of basic demographic and injury information on potential participants. Ultimately, we may compare the information we have on respondents and non-respondents using the NEISS-Work dataset to provide insight on any potential response bias.

#### ***B.4 Tests of procedures or methods to be undertaken***

The questionnaire to be used in this study was designed based on information gathered from published literature and input from firefighter professionals. It was pilot tested on nine firefighters that were identified through a convenience sample. Firefighters were asked to either use a real event or fabricate an event. Pilot tests were performed by NIOSH project staff. In addition to these pilot tests, the questionnaire was reviewed by researchers both internal and external to NIOSH with expertise in firefighter safety and health and/or survey administration. Revisions were made to the questionnaire as a result of the pilot test results and reviewer comments. In addition to these earlier tests, the questionnaire has been used since 2018 to gather information from firefighters. No issues have been identified with the questionnaire during the last three years.

#### ***B.5 Individuals consulted on statistical aspects and individuals collecting and/or analyzing data***

Contact information for those responsible for collection and analysis of the NEISS-Work data and NEISS-Work follow-back interviews:

##### Individuals who designed the data collection

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