

SUPPORTING STATEMENT–Part A: Justification

National Occupational Safety and Health Professional Workforce
Assessment: Employer and Education Provider Survey Data
Collection

M. Chris Langub, PhD
Scientific Review Officer
Office of Extramural Programs
National Institute for Occupational Safety and Health
email: MLangub@cdc.gov
404-498-2543 (Office)
404-498-2571 (Fax)

December 2010

Table of Contents

A. Justification.....	1
1.0 Circumstances Making the Collection of Information Necessary.....	1
2.0 Purpose and Use of Information.....	6
3.0 Use of Improved Information Technology and Burden Reduction.....	6
4.0 Efforts to Identify Duplication and Use of Similar Information.....	7
5.0 Impact on Small Businesses or other Small Entities.....	7
6.0 Consequences of Collecting Information Less Frequently.....	8
7.0 Special Circumstances Relating to the Guidelines of 5 CFR 1320.5.....	9
8.0 Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency.....	9
8.a Comments in Response to the Federal Register Notice.....	9
8.b Efforts to Consult Outside the Agency.....	9
9.0 Explanation of any Payments or Gifts to Respondents....	11
10.0 Assurance of Confidentiality Provided to Respondents...	11
11.0 Justification for Sensitive Questions.....	12
12.0 Estimates of Annualized Burden Hours and Costs.....	12
13.0 Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers.....	14
14.0 Annualized Cost to the Government.....	15
15.0 Explanation for Program Changes or Adjustments.....	15
16.0 Plans for Tabulation, Publication, and Project Time Schedule.....	16
16.a Plans for Tabulation.....	16
16.b Plans for Publication.....	18
16.c Project Time Schedule.....	18
17.0 Reason(s) Display of Expiration Date is Inappropriate..	18
18.0 Exceptions to Certification for Paperwork Reduction Act Submissions.....	19

List of Attachments

Attachment A: Authorizing Legislation
Attachment B: Federal Register Notice (60-day)
Attachment B-2: Federal Register Notice (30-day)
Attachment C: Employer Screener (Phases I and II)
Attachment D: Employer Invitation Letter (Phases I and II)
Attachment E: Provider Invitation Letter
Attachment F: Employer Questionnaire (Phases I and II)
Attachment G: Provider Questionnaire
Attachment H: Follow-up Nonresponse Letters for Employers
(Phases I and II) and Providers
Attachment I-1: Employer Telephone Follow-Up Prompt and
Questionnaire (Phases I and II)
Attachment I-2: Provider Telephone Follow-Up Prompt and
Questionnaire
Attachment J: Privacy Act Guidance
Attachment K: Public Comments and Response
Attachment L: NIOSH IRB Memo

A. Justification

1.0 Circumstances Making the Collection of Information Necessary

This supporting statement describes a new information collection proposed by NIOSH, entitled, "National Occupational Safety and Health Professional Workforce Assessment: Employer and Education Provider Survey Data Collection."

The mission of the NIOSH, as authorized in the Occupation Safety and Health Act (29 U.S.C. 669) (Attachment A), is to generate new knowledge in the field of occupational safety and health and to transfer that knowledge into practice for the betterment of workers. To accomplish this mission, NIOSH conducts scientific research, develops guidance and authoritative recommendations, disseminates information, and responds to requests for workplace health hazard evaluations. NIOSH also provides national and world leadership to prevent work-related illness, injury, disability, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services, including scientific information products, training videos, and recommendations for improving safety and health in the workplace.

Developing and supporting a new generation of practitioners is critical to the future of occupational safety and health. As part of its mission to increase safety and protect worker health, NIOSH funds programs to support occupational safety and health education through 17 regional university-based Education and Research Centers and 31 Training Project grants that train occupational safety and health professionals to meet the increasing demand for these professionals.

Because of this central role NIOSH plays in the education and training of OS&H workers and because of the continually changing

nature of the workplace, over the last 38 years, NIOSH has sponsored OS&H workforce assessments in 1977, 1985 and 2000. In 2000, the Institute of Medicine conducted a fourfold assessment addressing (i) demand and supply of OS&H professionals, (ii) changes in workforce and work environment affecting the roles of OS&H professionals, (iii) gaps in current OS&H education and training, and (iv) critical curricula and skills needed to meet the evolving OS&H concerns.

Recognizing the fast-paced changes occurring in today's workplace, NIOSH is planning to perform another assessment to examine the current and anticipated future OS&H workforce. The assessment will collect information from two groups—employers of OS&H professionals and providers of training programs for OS&H professionals. The assessment will do the following:

- Assess the current supply and future demand for OS&H professionals; and
- Determine the desired professional competencies (i.e., knowledge, skills, and abilities) required for the next 5 years.

This work builds on and updates the work done in 2000 by the IOM. The study is needed because the overall impact of contextual changes in the workforce since 2000 are not known nor are the implications of these changes for the development and implementation of new curriculum and training modules within academic and non-academic settings.

These research activities are not required by regulation, and will not be used by NIOSH to regulate or sanction either employers or educational providers.

Privacy Impact Assessment: Overview of Data Collection System

The data will be collected through a web survey system from two groups, providers of OS&H professional education and employers of OS&H professionals using separate questionnaires.

The sample population for providers is college and university programs that provide at least bachelor's degrees in some OS&H profession. This includes approximately 400 programs. The data collection process is as follows:

- Invitation letter mailed to all eligible educational providers (Attachment E) inviting them to participate and directing them to the website where the provider questionnaire is located.
- Data collection will be conducted primarily by web questionnaire (Attachment G).
- Follow-up with non-respondents will be conducted once by mail two weeks after initial mailing (Attachment H). This will be followed by up to 7 attempted telephone contacts (Attachment I) (with an offer to conduct the questionnaire by telephone at that point).

For the survey of employers, the sample universe is all employers of OS&H professionals. We reviewed Bureau of Labor Statistics (BLS) data to include the NAICS codes of key manufacturing industries and all other industries covering at least 75 percent of all OS&H specialists. This review showed that about 12% of establishments would employ at least one professional in a relevant health and safety profession and be eligible to participate in the survey. Therefore, we concluded that we first would need to conduct a substantial screening operation to identify eligible establishments. The following summarizes how the employer survey will be conducted:

- We estimate that we will need to draw a stratified sample of at least 9,211 establishments (assuming that we will be able to reach at least 85% of them during the screening process).
- We will conduct telephone screening of employer establishments (Attachment C) to determine eligibility and to correct or secure contact information for the most appropriate respondent. If we assume we can successfully complete screening interviews with at least 85 % of these

establishments (e.g., some will have gone out of business), we estimate that we will need to screen 7,829 establishments by telephone to identify 1,000 establishments eligible (i.e., eligible establishments employ one or more OS&H professionals) to participate in the survey. When we establish eligibility we will obtain or confirm mailing contact information.

- An invitation letter will be mailed to all 1,000 eligible establishments (Attachment D) inviting them to participate and directing them to the website where the employer questionnaire is located.
- Data collection will be conducted primarily by web questionnaire (Attachment F). We will follow-up with non-respondents once by mail two weeks after initial mailing (Attachment H). This will be followed by up to 7 attempted telephone contacts (Attachment I) (with an offer to conduct the questionnaire by telephone at that point).
- We have divided the employer survey into two phases to allow for any needed adjustments in methodologies. We first will complete Phase I using a subsample of 875 of the total population of 8,735 establishments to assess survey methods. The remainder will be screened and surveyed in Phase II.
- Further, if we assume a 40% response rate to the data collection efforts, our total yield will be completed survey instruments with 400 establishments.
- Although significant efforts will be made to obtain the highest possible response rates, as described above, some nonresponse is inevitable. We assumed a 40 percent response rate for the survey based on our recent experience with similar establishment surveys. We will conduct an assessment of the potential for bias due to non-response. To reduce any potential bias resulting from nonresponse, we will adjust the sampling weights for nonresponse. We expect to need to address both unit and item nonresponse.

Privacy Impact Assessment: Items of Information to be Collected

No individually identifiable information will be collected from either employers of OS&H professionals or educational providers to OS&H professionals.

Information will be collected from employers of OS&H professionals about the current number of OS&H employees at their establishment, expected hires in the next five years, types of OS&H employees employed, their specialties, the amount of time they spend on OS&H, their certifications, their ages, the likelihood of their retiring, need for additional competencies in OS&H employees in general, ongoing training of OS&H employees, and general information about the establishment (Attachment F).

Information will be collected from education providers about OS&H programs offered at their educational institutions, numbers of expected graduates, trends in enrollment, trends in continuing education, trends in quality of students, barriers to students wishing to study OS&H, trends in funding to their programs, trends in employment for their graduates, faculty characteristics and future hiring and expected retirements. (Attachment G).

Privacy Impact Assessment: Identification of Website(s) and Website Content Directed at Children Under 13 years of Age

Data will be collected using two separate web-based questionnaires, with some questionnaires completed by telephone. No respondents will be children under the age of 13. Only respondents with a valid password will have access to the website. No cookies will be used and the web questionnaires do not allow one user to interact with another; therefore, it has no privacy policy or rules of conduct.

2.0 Purpose and Use of Information

The purpose and use of the data collected from both the employers of OS&H professionals and the providers of OS&H professional education will be to assess the demand for OS&H professionals and the current adequacy of the OS&H professional supply. The assessment will determine the number and types of personnel currently employed by discipline and their roles, and determine changes in the workforce that will affect these roles over the next 5 years. In conjunction with this, the data will be used to identify the demand by employment sector for college graduates of OS&H training programs and the desired level of college education required. It will also determine the supply and demand for appropriately licensed and certified personnel.

These data also will be used to identify real and perceived deficiencies in the current scope and/or depth of OS&H education and training. They will also be used to identify expected core and specialized areas of knowledge skill, and competency that will address OS&H demands over the next 5 years.

Privacy Impact Assessment

No IIF information is being collected. Attachment J provides a brief narrative that provides guidance for the review of the ICR for Privacy Act acceptability.

3.0 Use of Improved Information Technology and Burden Reduction

The data will be collected via two web questionnaires—one for the employers of OS&H professionals and one for providers of OS&H education and training. Non-responders may request that a telephone interviewer collect the information, but it is expected that most responders (about 88%) will go to the website

identified in their invitation letters and complete the appropriate questionnaire there. The use of a web questionnaire will reduce burden (compared to a paper questionnaire) in that questions about OS&H professionals not employed at an establishment will never be asked of respondents. It also will obviate the need for data entry, prevent or discourage respondent error, and provide real-time item- and participant-level response rate information. The telephone questionnaire administration will use the web system and will have the same burden reduction benefits.

4.0 Efforts to Identify Duplication and Use of Similar Information

Duplication of this effort neither exists with respect to other Federal agencies nor with respect to the private sector. These data will provide the only current information available on this topic. The only other efforts, of which we are aware, are the assessments conducted in 1977, 1985, and the IOM assessment in 2000.

5.0 Impact on Small Businesses or Other Small Entities

We expect that some employers and educational providers sampled for each data collection will be located in small businesses or small academic departments. We do not expect that our data collection procedures will result in any significant additional burden for small entities. Rather the data collection efforts are designed to minimize burden on all respondents, especially small businesses with few OS&H professionals. We have determined that a cutoff of establishments of fewer than 100 employees will increase the efficiency of screening for employers who hire OS & H professionals and substantively decrease the cost of screening. Excluding smaller employers will decrease the probability of

trying to screen closed businesses or businesses that do not employ OS&H professionals. We would not use these cutoffs for consulting groups that might be primarily composed of OS&H experts. Here, we recommend there be no size cutoff. Also, automatic skips in both web and telephone questionnaires will eliminate the need for small businesses with few OS&H employees to respond to questions about current or future needs for OS&H specialties irrelevant to their work.

6.0 Consequences of Collecting the Information Less Frequently

At the time this data collection is conducted, it will have been a more than a decade since similar information has been collected. This has been a decade of dramatic change in the workplace in the United States due to technological advances and global economic restructuring, including downsizing, off-site work, use of temporary labor, self-employment, growth in small and medium sized enterprises, and increased diversity in the workforce by age, gender, race, and nationality. In addition, during this time period, the initial cohort of OS&H professionals trained after the passage of the Occupational Safety and Health Act of 1970 will be approaching retirement age and little is known about how these professionals will be replaced. Employers may or may not encourage current employees to pursue formal education or those in training now may be sufficient to meet the demand. Without this data collection, it is unclear what both the educational supply and workforce demands will be. This is a one-time data collection.

7.0 Special Circumstances Relating to the Guidelines of 5CFR 1320.5

This request fully complies with the regulation 5 CFR 1320.5.

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

8.a Comments in Response to the Federal Register Notice

A 60-day Federal Register Notice was published in the Federal Register on November 13, 2009, vol. 74, No. 218, pp. 58631-32 (see Attachment B). Several comments were received and are summarized (see Attachment K).

8.b Efforts to Consult Outside the Agency

NIOSH established a Task Force to guide the work of this assessment. These members represent academic and business leadership in the areas of OS&H. They have been consulted in a face-to-face meeting held on June 9-10, 2009 and by telephone and email as needed.

The members of the Task Force are as follows:

NAME	AFFILIATION	EMAIL ADDRESS	PHONE
Corinne Peek-Asa	University of Iowa	corinne-peek-asa@uiowa.edu	319-335-4895
Dean Baker, MD, MPH	University of California-Irvine	dbaker@uci.edu	949-824-8690
Patricia Bertsche, MPH, RN	Abbott Laboratories	pat.bertsche@abbott.com	847-772-2198
Michael Bisesi, Ph.D., REHS, CIH	Ohio State University	michael.bisesi@utoledo.edu	419-205-1469
Wesley Bolch	University of Florida		

NAME	AFFILIATION	EMAIL ADDRESS	PHONE
Thomas Broderick	Construction Safety Council	Tbroderick@buildsafe.org	708-997-1948
Peter Chen, Ph.D.	Colorado State University	peter.chen@colostate.edu	970-266-8927
Lorraine Conroy, Sc.D., CIH	University of Illinois at Chicago	lconroy@uic.edu	773-276-8334
Sue Davis, Ph.D., RN	University of Cincinnati	L.Sue.Davis@uc.edu	513-607-6431
Sarah Felknor, Ph.D.	University of Texas	Sarah.A.Felknor@uth.tmc.edu	713-254-4698
Kimberly Gordon, MSN, MA, COHN-S	University of Iowa	kimberly-gordon@uiowa.edu	319-354-0539
W. Monroe Keyserling, Ph.D.	University of Michigan	wmkeyser@umich.edu	734-769-7825
William Kojola. MS	AFL-CIO	Bkojola@aflcio.org	202-637-5003
Jeffrey Levin, MD, MSPH	University of Texas Health Science Center	jeffrey.levin@uthct.edu	903-539-3565
Elizabeth Maples, Ph.D., MPH	University of Alabama - Birmingham	emaples@ms.soph.uab.edu	205-209-2783
Chris Martin, MD, MS	West Virginia University	cmartin@hsc.wvu.edu	304-293-3693
Keshia Pollack, Ph.D., MPH	Johns Hopkins University	kpollack@jhspk.edu	410-502-6272
James D. Ramsay, Ph.D., MA, CSP	Embry-Riddle Aeronautical University	james.ramsey@erau.edu	386-405-5260
Bonnie Rogers, Dr.PH, COHN-S, FAAN	University of North Carolina at Chapel Hill	rogersb@email.unc.edu	

NAME	AFFILIATION	EMAIL ADDRESS	PHONE
Lee Saperstein, Ph.D.	University of Missouri-Rolla (retired)	saperste@mst.edu	508-680-1337
Charles Shields	USDOL/OSHA	Shields.Charlie@dol.gov	
Pam Wilkerson	CDC-NIOSH	PXJ2@cdc.gov	404-498-2530
Frank White	ORC Worldwide	frank.white@orcww.com	202-293-2980

9.0 Explanation of Any Payment or Gift to Respondent

No payments or gifts will be offered to respondents.

10.0 Assurance of Confidentiality Provided to Respondents

No individually identifiable information will be collected. Participants are assured that their individual employees will not be identifiable; nor will the establishment contact information be made public. In the advance letter, potential respondents are told "Westat is required to protect the privacy of all information collected to the full extent of the law. Under no circumstances will information be released in a form that allows for the identification of individual establishments or employees."

Data for each establishment or provider will be assigned a unique identifier. Contact information for that establishment or provider linked to the unique identifier will be kept in a separate file accessible only to the Westat project staff. At the end of the project, that file will be destroyed before the data are delivered to NIOSH.

NIOSH HSRB determined that this study is an exempt category of research involving human subjects (see Attachment L).

Privacy Impact Assessment

- A. No IIF will be collected. Therefore, the Privacy Act does not apply.
- B. As stated above, data linking the establishment/organization contact and the information collection will be kept secure and separate from the study data.
- C. With web and telephone questionnaires, we assume that the respondent has consented to participate if they complete the questionnaire on the web or agree to complete the questionnaire by telephone.
- D. Potential participants are told that their participation is voluntary in the advance mailing (Attachments D and E).

11.0 Justification for Sensitive Questions

No questions of a sensitive nature are included in the either the employer or provider questionnaires.

12.0 Estimates of Annualized Burden Hours and Costs

Table 1 shows the estimated annualized burden hours for the respondents. These estimates are based on pretesting of the final questionnaires. The table shows, as described in Section 1, that the provider survey will be conducted in a single phase. We pre-tested the provider questionnaire with representatives from 8 OS&H education and training providers. We are assuming that 180 providers will participate.

We pre-tested the employer questionnaire with 9 employers of OS&H professionals. We are assuming that we will have to sample 9,211 employers to complete screening for 7,829 employers. By screening 7,829 employers we expect find 1,000 that are eligible (employ at least one OS&H professional. Next, we will invite the eligible establishments to take the survey over the web. We assume 40% of those participate in the actual survey. The time burden per response will be highly variable, but we expect it to average 32 minutes for the employer survey, and 22 minutes for the provider survey, including the time necessary to retrieve information. It should be noted that the employer survey will ask the respondent to report detailed characteristics for a maximum of eight OS&H professionals (we expect that most establishments will have fewer than 5 professionals on which to report).

Table 1: Estimated annualized burden hours

Type of Respondent	Form Name	Number of Respondents	Average Number of Responses per Respondent	Average Burden per Response in Hours	Total Burden Hours
Employer	Employer Screening	7829	1	5/60	652
Employer	Employer Questionnaire	400	1	32/60	213
Provider	Provider Questionnaire (Web or Telephone)	180	1	22/60	66
Total					931

Table 2 shows the estimated annualized cost burden for the respondents. The Bureau of Labor Statistics reported that the average hourly wage for "education administrators" in the United States was \$44.67 in May, 2008. We expect that such administrators will be completing the provider survey. For the employer survey, we expect that a manager of occupational safety

and health (OSH) activities at the location will complete the survey. However, wage information for such a position is not available from BLS data. The wage information reported for the occupational health and safety specialist would be inappropriate because it is not a management position. We determined that the wage for a human resources administrator, which involves management, would be comparable. Therefore, to be conservative, we used the wage information reported for human resource administrators (\$49.96 per hour) for the calculation of the burden estimates below. The total estimated cost burden for respondents is \$44,514.94, based on the total estimated annualized burden of 898 hours.

Table 2. Estimated annualized cost burden

Form Name	Number of Respondents	Total Burden hours	Average Hourly Wage Rate*	Total Cost Burden
Provider Questionnaire	180	66	\$44.67	\$2,948.22
Employer Screening	7829	652	\$49.96	\$32,573.92
Employer Questionnaire	400	213	\$49.96	\$10,641.48
Total	8,409	931	—	\$46,163.62

*Based upon the average wages, "May 2008 National Occupational Employment and Wage Estimates," U.S. Department of Labor, Bureau of Labor Statistics.

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

Capital and maintenance costs include the purchase of equipment, computers or computer software or services, or storage facilities for records, as a result of complying with this data collection. There are no such direct costs to respondents other than their time to participate in the study.

14.0 Annualized Cost to the Government

The total cost to the Government is approximately \$900,500.00. This covers the cost of the survey development, data collection, non-response follow-up, analysis and reporting, developing and piloting a long-term monitoring mechanism, identifying deficiencies in training, and establishing the protocol for conducting regional OS&H workforce needs assessments for the future.

Contractor	\$600,000
Office, supplies, printing, mailing.....	\$50,500
NIOSH personnel costs	\$150,000
Travel	\$100,000
Total figure	\$900,500

These figures are based on a total of 400 respondents to the employer survey and 180 respondents to the provider survey.

15.0 Explanation for Program Changes or Adjustments

This is a new data collection. It does not replicate the earlier assessments.

16.0 Plans for Tabulation, Publication, and Project Time Schedule

16.a Plans for Tabulation

The research goals and questions addressed by this data collection are as follows:

1. Describe the current labor force of Occupational Safety and Health Professionals (OSHP);
2. Assess the anticipated future demand for OSHP;
3. Assess the anticipated future supply of OSHP; and
4. Determine the professional competencies (i.e., knowledge, skills, and abilities) that will be required in the future.

Analytically, we first will address each of these goals separately for the 9 OS&H specialties of interest to NIOSH: safety professionals, industrial hygienists, occupational medicine physicians, occupational health nurses, ergonomists, occupational health physicists, occupational health psychologists, occupational injury prevention specialists, and occupational epidemiologists. However, occupational health psychology, occupational injury prevention, and occupational epidemiology are so rare that we may not be able to provide stable estimates from them at this time. As the unit of analysis, our employer sample design uses employer establishments (e.g., plants) and our provider sample design uses college or university programs. Within each, we will collect data for each of the 9 professions present at that location. We will make estimates concerning supply and demand for each of the 9 groups. We will synthesize our 9 sets of findings to draw conclusions about the general state of the field in our final report. We selected this approach to create the most cost effective and statistically precise estimates from 9 groups of significantly varying sizes. Our approach will provide more precise estimates for some groups than others because of the differences in underlying sizes of the different specialties and ability to locate practitioners in these specialties.

The estimates can also be affected by potential biases resulting from nonresponse to the survey. We assumed a 40 percent response rate for the survey based on our recent experience with similar

establishment surveys. To reduce any potential bias resulting from nonresponse, we will adjust the sampling weights for nonresponse. We expect the weighted estimates produced using these adjusted weights, will have much reduced bias, if any. We will use the information available for both respondents and nonrespondents from the sampling frame to develop response propensity models to carry out these weight adjustments. We will also conduct nonresponse bias analysis producing tabulations of respondents and nonrespondents that compare their known characteristics. To deal with unit nonresponse, standard practice is to inflate survey weights to reflect this loss in participation. In addition, where possible, we will benchmark the adjusted weights to known population totals, either by post-stratifying, raking or calibrating. This second step is contingent on having information, control counts or universe totals, available for the entire universe.

In addition, our estimates will be affected by several sources of nonsampling bias, including memory errors, as we are not asking respondents to check records; difficulty in forecasting future employment demand accurately because of the current unusual instability in the economy; and ongoing changes in the ways that these positions are staffed by establishments (e.g., the increasing use of consultants).

16.b Plans for Publication

NIOSH will publish the results and reports in peer-reviewed publications as well as other public information repositories using NIOSH publication policy and guidelines.

16.c Project Time Schedule

The start of data collection activities is contingent on receiving approval from OMB clearance. The table below shows the anticipated schedule.

Table 3: Anticipated schedule

Activity	Time schedule
OMB Clearance	To be determined
Employer Phase I Data Collection	1-3 months after OMB approval is received.
Employer Phase II Data Collection	2-7 months after OMB approval is received
Provider Data Collection	1-3 months after OMB approval is received.
Database Preparation	2-7 months after OMB approval is received (Concurrent with Employer Phase II data collection.)
Submit Provider Database	1 month after the conclusion of Provider Data collection.
Submit Employer Database	2 months after the conclusion of Employer Data collection.
Analyses	3-5 months after NIOSH receives data from contractor.
Publication	3-6 months after analyses of data.

17.0 Reason(s) Display of OMB Expiration Date is Inappropriate

NIOSH does not seek this exemption.

18.0 Exceptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions to the certification.