

# Testing the Collection of Occupational Requirements Data

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## Abstract

In FY 2013, the Bureau of Labor Statistics (BLS) is working in conjunction with the Social Security Administration (SSA) to design, develop, and carry out a series of tests to assess the feasibility of using the National Compensation Survey (NCS) platform as a means to accurately and reliably capture data that are relevant to the SSA's disability programs. These tests will include but are not limited to collecting data on an indicator of "time to proficiency," physical demand (PD) characteristics/factors of occupations, and environmental conditions. This year, the BLS is evaluating survey design options, developing protocols, aids, and a collection approach to meet SSA data needs, collecting data to test and refine the protocols and aids, and documenting the work performed, conclusions drawn and recommendations for future data collection. This work is being done with three general phases of testing: an initial proof of concept phase, collection protocol testing, and broad scale testing. This paper will describe the approaches being used to test the feasibility of this potential data collection effort and describe the current status of the testing efforts.

**Key Words:** Collection Testing; Field Testing; Sample Design; Collection Tools; Survey Design

## 1. Introduction/Background

In addition to providing Social Security benefits to retirees and survivors, the Social Security Administration (SSA) administers two large disability programs which provide benefit payments to millions of beneficiaries each year. Final determinations about which citizens, or claimants, are eligible to receive benefits are based on a five step process that evaluates the capabilities of the worker, the requirements of their past work (prior job), and their ability to perform work for any job in the U.S. economy. If an applicant is denied disability benefits, SSA policy requires adjudicators to document the decision by citing examples of jobs the claimant can still perform despite their restrictions (such as limited ability to balance, stand, or carry objects)<sup>1</sup>.

For over 50 years, the Social Security Administration has turned to the Department of Labor's Dictionary of Occupational Titles (DOT)<sup>2</sup> as its primary source of occupational information to process the disability claims<sup>3</sup>. SSA has incorporated many DOT conventions into their disability regulations. However, the DOT was last updated in its entirety in the late 1970's, although a partial update was completed in 1991. Consequently, the SSA adjudicators who make the disability decisions must continue to refer to an increasingly outdated resource because it remains the most compatible with their statutory mandate and is the best source of available data at this time.

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<sup>1</sup> See and Social Security Administration, Occupational Information System Project

<sup>2</sup> See U.S. Department of Labor, Dictionary of Occupational Titles

<sup>3</sup> See Occupational Information Development Advisory Panel, 2010

So, when an applicant is denied SSA benefits, SSA documents the decision by citing examples of jobs that the claimant can still perform. But some of the jobs in the American economy are not even represented in the DOT and other jobs, in fact many often cited jobs, don't exist in large numbers in the American economy any longer. For example, a job that is often on the list for applicants is "envelope addressor." If this job still exists in our economy, there aren't too many of them and the positions are hard to find.

SSA has investigated numerous alternative data sources for the DOT such as adapting the Employment and Training Administration's O\*NET<sup>4</sup> (occupation information network), using the BLS Occupational Employment Survey<sup>5</sup> (OES), and developing their own survey. But they were not successful with any of those potential data sources and turned to the National Compensation Survey (NCS) at the Bureau of Labor Statistics.

NCS is a national survey of business establishments conducted by the Bureau of Labor Statistics<sup>6</sup> (BLS). Initial data from each sampled establishment are collected during a one year sample initiation period. Many collected data elements are then updated each quarter while other data elements are updated annually for at least three years. The data from the NCS is used to produce the Employer Cost Index (ECI), Employer Costs for Employee Compensation (ECEC), and various estimates about employer provided benefits. Additionally, data from the NCS is combined with data from the OES to produce statistics that are used to help the President's Pay Agent and the Federal Salary Council recommend changes in GS pay under the Federal Employee's Pay Comparability Act.

In order to produce these measures, the NCS collects information about the sampled business or governmental operation and about the occupations that are selected for detailed study. Each sample unit is classified using the North American Industry Classification System (NAICS). Each job selected for study is classified using the Standard Occupational Classification system (SOC). In addition, each job is classified by work level – from entry level to expert, nonsupervisory employee to manager, etc. These distinctions are made by collecting information on the knowledge required to do the job, the job controls provided, the complexity of the tasks, the contacts made by the workers, and the physical environment where the work is performed. Many of these data elements are very similar to the types of data needed by SSA for the disability determination process.

All NCS data collection is performed by professional economists or statisticians, generically called field economists. Each field economists must have a college diploma and is required to complete a rigorous training and certification program before collecting data independently. As part of this training program, each field economist must complete several calibration exercises to ensure that collected data are coded uniformly no matter which field economist collects or codes the data.

So SSA asked the NCS to partner with them under an annual interagency reimbursable agreement to test the NCS ability to use the NCS platform to collect data on three groups of information related to the demands of work for each occupation:

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<sup>4</sup> See O\*NET OnLine at [www.onetonline.org](http://www.onetonline.org)

<sup>5</sup> See U.S. Bureau of Labor Statistics, Handbook of Methods, Chapter 3

<sup>6</sup> See U.S. Bureau of Labor Statistics, Handbook of Methods, Chapter 8

- physical demand (PD) characteristics/factors of occupations (e.g. strength, hearing, or stooping)
- an indicator of "time to proficiency", and
- environmental conditions in which the work is completed.

If BLS is able to collect these data about work demands, SSA would have new and better data to use in its disability programs. SSA cited three key advantages of using NCS to provide this updated data:

- Reputation - SSA was impressed with the BLS reputation for producing high quality, statistically accurate data that are trusted by our data users and follow statistically accepted methods and principles.
- Trained Workforce – SSA was also impressed that NCS field economists have experience collecting information about occupations in America's work force and collecting data similar to that needed by SSA.
- Survey Infrastructure - After attempting to develop their own survey (without success), SSA was also impressed with the fact that NCS has a complete management infrastructure across the country to manage and implement a new survey to meet their data needs as well as systems and processes to support all the steps of the survey.

In summer 2012, NCS began an effort to test our ability to collect these new data elements using the NCS survey platform. Initial testing plans focused on developing procedures, protocols, and collection aids using the NCS platform. The initial testing phases were analyzed primarily using qualitative techniques. Once testing shows that it is feasible to collect this data, more quantitative analysis and testing will be conducted. The rest of this paper will describe the FY 2013 feasibility tests, provide some initial results from those tests, discuss the work being done to develop a sample design for this survey, and provide an overview of the steps of work for this effort.

## 2. FY2013 Test Plan and Initial Results

In FY 2013, the BLS worked to design, develop, and carry out a series of tests to assess the feasibility of using the National Compensation Survey (NCS) platform as a means to accurately and reliably capture data that are relevant to the SSA's disability program purposes. These tests include but are not limited to collection of the following target data elements:

- 1) An indicator of "time to proficiency," defined as the amount of time required by the typical worker to learn the techniques, acquire the information, and develop the facility needed for average job performance, comparable to the Specific Vocational Preparation (SVP) used in the Dictionary of Occupational Titles (DOT).
- 2) Physical Demand (PD) characteristics/factors of occupations measured in such a way to support SSA disability determination needs, comparable to measures currently defined in the Selected Characteristics of Occupations<sup>7</sup> (SCO).
- 3) Environmental conditions (e.g., high risk due to extreme temperatures) that replicate as closely as possible those that the SSA currently uses and as listed in the SCO, or specific revisions or additions to these factors.

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<sup>7</sup> See U.S. Department of Labor, Selected Characteristics of Occupations Defined in the Revised Dictionary of Occupational Titles

This year, BLS is collecting data from a set of establishments and State and local government units that are within the scope of the NCS but are not fully representative of the universe of all businesses in the United States. The data collected during the tests include SSA-specific data elements and selected NCS data elements but will not be used to generate any weighted estimates representative of the population of interest.

BLS conducted three phases of field testing in FY 2013: an initial proof of concept phase, a collection protocol testing phase, and a broad scale testing phase. The next three sections of this paper will describe the goal, approach, and initial results of each of these phases of testing.

### **2.1 Initial Proof of Concept Testing – Phase 1**

The primary goal of this phase of testing was to ensure that the BLS field economists knew how to describe the survey and ask for the new data elements. In addition, the BLS created and tested an initial set of data collection protocols and a preliminary set of data collection aids.

Field collection for Phase 1 testing was conducted in the greater Washington, D.C. area from November 28, 2012 through December 6, 2012. The target sample size for Phase 1 testing was 25 – 30 establishments representing as broad a mix of industries as possible given the size and time constraints of the test. Experienced NCS field economists (FE) from the BLS regional offices collected the data and each interview was observed by a BLS national office staff member or an SSA representative.

Interviewer training for Phase 1 collection followed regular BLS practices and consisted of three components:

- Self-study – BLS field economists read several SSA background materials, researched the SSA website, and reviewed the Dictionary of Occupational Titles (DOT), among other documents.
- In-person training – In an ORS Orientation meeting in October, 2012, project managers introduced BLS field economists to the ORS program and SSA representatives presented an overview of the disability determination process and the required data elements. At the Phase 1 Test Kick-off Meeting in November, 2012, SSA provided additional background about the disability adjudication process (including physical residual functioning capacity assessment), and the BLS field economists received training and a document with detailed instructions for this phase of testing.
- On-the-job training (OJT) – Leading up to and throughout the Phase 1 Test fielding period, BLS field economists engaged in a number of activities designed to reinforce formal ORS training concepts. Prior to data collection, each field economist conducted at least two practice interviews with BLS staff unaffiliated with the ORS and NCS (e.g., Human Resources personnel, program managers), and participated in a calibration exercise in which all ORS field economists observed the same practice interview, individually recorded ORS information, and then compared and discussed their answers with one another. During data collection, OJT was provided through formal daily debriefing sessions and informal conversations between BLS field economists and other staff in which ‘lessons learned,’ ‘best practices,’ and challenging issues were identified.

BLS field economists tested three alternative collection approaches. Each approach was designed to collect the required data elements (i.e., Specific Vocational Preparation (SVP), Physical Demands (PD), and Environmental Conditions (EC)), but they varied in their format, question flow, and collection method.

- Collection Approach A was designed to obtain the occupational requirements one occupation at a time.
- Collection Approach B also collected occupational requirements one occupation at a time. The main difference was that the response options in Approach B were grouped together under a single question stem where appropriate. The purpose of this approach was to obviate the need for field economists to repeat the same question for related items.
- Collection Approach C collected the occupational requirements of all selected occupations simultaneously.

In order to test the effectiveness of each collection approach, field economists were asked to use a different collection approach during each of their three personal visit interviews.

A set of aids for respondents and interviewers was also developed. The field economist visual aid listed the SSA-provided definition and examples for each data element, as well as definitions of the measurements of frequency (i.e., *never, occasionally, frequently, constantly*). BLS field economists were encouraged to consult this aid during the interview, and to share it with the respondent as necessary. An additional, two-sided respondent visual aid provided a place for BLS field economists to list each of the jobs being surveyed, the frequency definitions, and examples for the noise intensity level response categories. BLS field economists were told to use the respondent aid during every interview. Finally, BLS field economists were provided with a document that contained answers to questions the respondent may ask; they familiarized themselves with this document prior to the interview, and could refer to it in the event that questions arose during the appointment.

Upon completion of the ORS data collection, respondents were asked to complete a short questionnaire to gauge their reactions to the survey. Daily debriefing sessions were held with field economists, observers, and other staff for the purposes of discussing interviewing experiences, identifying potential issues with the materials and procedures, and sharing lessons learned. A final end-of-phase debriefing session summarized the major findings identified during the test field period and allowed for expanded discussion of these and other issues between ORS and SSA staffs.

The results of the Phase 1 test were very promising overall.<sup>8</sup> Test objectives were successfully met and ORS had a strong foundation on which to build for future development and testing.

- BLS field economists completed interviews with 27 establishments, collecting detailed information for 104 occupations. It took between 8 and 10 minutes to collect information for each occupation.
- BLS field economists had minimal difficulty gaining cooperation of sampled establishments. Many BLS field economists noted that one of the most effective pieces of information to gain cooperation was the high name recognition of the SSA.

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<sup>8</sup> See U.S. Bureau of Labor Statistics, "Occupational Requirements Survey, Phase 1 Summary Report, Fiscal Year 2013"

- Most data were collected from traditional NCS respondents such as human resource directors, small business owners, and location managers.
- Cooperating establishments were able to answer the vast majority of questions asked in the survey resulting in a very high item response rate.
- The training approach used in Phase 1 worked very well and will be repeated in subsequent tests.
- The use of daily debriefings where BLS field economists, observers, and other staff could exchange information and suggestions about collection issues was particularly successful.
- The materials prepared to aid ORS cooperation were very well received by respondents.
- It is not enough to simply record the respondent's answer; it is important to verify consistency across questions. For example, is it possible to sit 6 hours a day and also climb stairs frequently?
- Certain words and concepts proved to be unclear or confusing to respondents. These included "required," "accommodations" and prior work experience.

## **2.2 Collection Protocol Testing – Phase 2**

The primary goals of Phase 2 testing were to expand the number of BLS field economists that understand how to describe and collect the ORS data elements from respondents and to obtain information on new additions to the Phase 1 collection procedures. Some key additions to the tests were:

1. Probability Selection of Occupations (PSO) – used a disaggregating technique to select occupations randomly from a list of employees working for an establishment;
2. Rarely /“Almost Never” – offered an additional frequency choice in order to better capture the existence of elements that occur very infrequently (approaching never);
3. Phone Interviews – provided guidance for the use of this collection method;
4. Dictionary of Occupational Titles (DOT) Coding – matched establishment jobs to the occupational list within the DOT; and
5. Work Setting – determined the work environment in which the job occurs.

Another goal of the Phase 2 test was to assess the effectiveness of revised ORS collection tools. BLS staff created streamlined collection tools based on the results of the Phase 1 test and the Phase 2 test objectives and evaluated a modified set of data collection protocols and data collection aids.

Field collection for Phase 2 testing was conducted in the Indianapolis - Anderson - Columbus, IN metropolitan area (January 28, 2013 – February 20, 2013) and the Portland - Vancouver - Hillsboro, OR-WA metropolitan area (February 28, 2013 - March 21, 2013). Probability Selection of Occupations (PSO) was used to determine the occupations selected for collection of detailed job requirement information.

Experienced NCS field economists from each BLS regional office collected the data and more than 40 percent of the interviews were observed by BLS staff. The senior field economists who had participated in Phase 1 testing also collected in both Phase 2 test cities and served as mentors to the field economists new to ORS. Interviewer training for Phase 2 collection followed regular BLS practices and consisted of five components:

- Self-study – The self-study program from Phase 1 was repeated.
- Webinars – In the week prior to the start of test data collection, field economists participated in web-based training sessions in which they were given an overview

of the SSA disability process and information about the ORS test objectives, procedures, and materials. There were two webinar training sessions prior to Indianapolis collection and one prior to Portland collection. The imbalance in webinar sessions between test cities was offset by an additional day of in-person training in Portland.

- In-person training – In-person training consisted of: review of the technical memorandum; practice with the data capture spreadsheet; an overview of instrument edits and data analysis objectives; a calibration exercise; mock interviews; and a mock interview debrief session.
- Mentoring - In addition to formal training, each field economist new to ORS was assigned a mentor who collected in prior ORS testing. The mentor served as the field economists' primary resource for technical advice. Mentors made all first-week appointments for the mentee. Mentees observed mentors conducting two interviews prior to conducting their own interviews, and then were themselves observed by their mentor on their first two interviews. Mentors also reviewed the mentees' write-up of their initial schedules.
- On-the-job training (OJT) – The OJT program from Phase 1 was repeated.

Three paper data collection tools were tested in Phase 2. Each version was designed to collect the required data elements: Job Details (e.g., title, occupational employment size, SOC/DOT code, worker characteristics, and work environment); Specific Vocational Preparation (SVP); Physical Demands (PD); and Environmental Conditions (EC).

- A Single Quote Tool was designed to obtain the occupational requirements one occupation at a time. Definitions for select terms were provided at the bottom of the page.
- A Multiple Quote Tool was designed to collect the occupational requirements of all selected jobs simultaneously. Field economists were instructed to ask each item about all occupations before proceeding to the next item.
- An Advanced Multiple Quote Tool was developed for small-scale feasibility testing in Portland. This tool changed the order in which the elements were asked (e.g., asking Environmental Conditions questions prior to Physical Demand items), and was designed to allow field economists to first determine whether each job required certain characteristics or not (e.g., does the job require the worker to be exposed to extreme heat *or not?*), and then to go back and administer follow-up questions only for eligible occupations (e.g., how often does the job require the worker to be exposed to extreme heat?).

Based on feedback received from field economists and observers during the Indianapolis data collection, all three versions of the collection tools were modified prior to the start of Portland collections in an effort to improve the understanding of questions related to literacy, reaching, the frequency of lifting/carrying items, and crawling/kneeling/stooping questions.

Use of the Advanced Multiple Quote tool was restricted to limited testing by senior BLS field economists in Portland. For all remaining Phase 2 interviews, the decision of whether to use the Single Quote tool or standard Multiple Quote tool (or combination thereof) was left up to the individual field economists, though the Multiple Quote tool was recommended for schedules in which it appeared likely that many of the selected occupations would have similar requirements. Field economists were instructed to read

the questions as worded on the tool for testing consistency, but were permitted to provide additional explanations and ask follow-up questions as necessary.

In addition to these collection forms, a number of aids were developed to help clarify the survey task and definitions. Respondent visual aids provided frequency definitions and examples for the noise intensity level response categories and of the type of frequency and weight information that respondents should consider when answering the lifting/carrying items. Field economist aids provided definitions and clarifying examples of ORS elements and answers to commonly asked questions. Field economists were encouraged to consult these aids during the interview and to share them with respondents as necessary.

Both in-person and remote data collection were tested in Phase 2. The preferred method of collection was personal visit; if the respondent indicated a willingness to provide information by personal visit and another method (e.g., phone, email), it was mandatory to select personal visit. In the event that a respondent refused or was unable to schedule an in-person appointment, field economists were permitted to collect information over the phone or by email. In addition, a small group of schedules was assigned to phone collection conducted by senior BLS field economists in each Phase 2 test city. Remote collection protocols were very similar to those for in-person collection. Field economists were required to use the collection tools, collect all of the ORS Phase 2 elements, ask questions as worded, and probe unclear answers or in situations in which respondents' answers did not match expected job patterns. They also were encouraged to frequently refer to the field economist aids to provide more detailed definitions, explanations, and examples to the respondent as needed.

The results of the Phase 2 test overall were very promising<sup>9</sup>. Test objectives were successfully met and ORS had a strong foundation on which to build for future development and testing.

- BLS staff completed interviews with 227 establishments from a wide variety of industry groups, collecting detailed job information for 1,094 occupations.
- The materials prepared to explain the background, purpose, and methods of the Phase 2 test and aid ORS cooperation were well received by respondents.
- Probability Selection of Occupations was implemented successfully in more than 90% of Phase 2 interviews.
- Most data were collected from traditional NCS respondents such as human resource directors, small business owners, and location managers.
- Cooperating establishments were able to answer the vast majority of questions asked in the survey, resulting in a very high item response rate. This was true of both personal visit and phone interviews.
- The training approach used in Phase 2 worked well and will be used in subsequent tests.
- The use of daily debriefings where BLS staff could exchange information and suggestions about issues was particularly successful.
- Certain words and concepts continued to be unclear or confusing to respondents. These include “required,” “accommodations,” and time to “average performance.”

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<sup>9</sup> See U.S. Bureau of Labor Statistics, “Occupational Requirements Survey, Phase 2 Summary Report, Fiscal Year 2013”



- Some respondents struggled to provide frequency estimates for tasks that were short but repetitive, or which varied from day to day or between employees in a given occupation, and for nonstandard work shifts (e.g., 12 hour shifts).

### **2.3 Broad Scale Testing – Phase 3**

The main objective of Phase 3 was to test whether ORS field economists from across the country could collect all of the ORS data elements and occupational wages and leveling information in a uniform and efficient manner. In addition, BLS ran supplemental tests to assess the feasibility of Central Office Collection (COC), assess the feasibility of joint collection of ORS and Employment Cost Index (ECI) elements, and identify more efficient ways to conduct the ORS interviews. Throughout these activities, BLS continued to refine its methods and tools to advance the broad goal of meeting SSA's data needs in an efficient and uniform manner. To this end, Phase 3 activities included testing of a new data capture/write-up system and new schedule review procedures.

Feasibility of COC collection: Some large firms provide data for all sampled establishments across the country to the NCS from a central office in a single location. For the traditional ECI data elements, central office reporting can be a straight-forward activity for large firms when wage and employee benefit data are stored in computer systems that are managed centrally. But NCS needs to know if information about the environmental conditions and physical demands of work will be available from a central location. The goals of this supplemental test were to assess the extent to which remote respondents could provide ORS data; determine whether current NCS Central Office Authorization (COA) and COC collection procedures will need to be changed to accommodate ORS; develop an initial list of best practices for handling COC/COA establishments; and document situations where ORS data are not available through central office respondents.

Feasibility of Joint ORS/ECI Collection: Although a final sample design has yet to be developed, there will almost certainly be establishments that will be asked to provide data to both the NCS (in support of the ECI, ECEC, and benefits products) and ORS. It will be important to ensure that NCS field economists can obtain high quality data for both surveys when needed. The goals of this supplemental test were to develop an initial list of best practices and evaluate the feasibility of incorporating fully integrated benefits collection in future testing.

Efficient Collection Interviewing: Throughout Phases 1 and 2 of the ORS testing efforts, field economists were required to ask every question of every respondent using the exact same wording in a structured interview process. This approach is very different than the typical NCS data collection experience of conversational interviewing and seemed to take longer than many field economists felt was necessary to collect all the needed data for ORS. So a small Efficiency Burden supplemental test was added to Phase 3 testing to identify some collection best practices that produce high quality data but were more efficient than the current structured interview; and to determine the impact of modified collection protocols on data quality.

Test Collection Activities: Field collection for Phase 3 testing was conducted in areas surrounding six cities: Nashville, TN; Providence, RI; Cincinnati, OH; Kansas City, MO; Pittsburgh, PA; and Orange, CA. Tests ran concurrently in all of these cities between April 22, 2013 and July 19, 2013. In addition, some data collection was done in Baltimore, MD in order to provide SSA staff the opportunity to observe interviews.

Phase 3 data were collected by more than twice the number of experienced NCS field economists from BLS national and regional offices than participated in Phase 2 testing. The field economists who had participated in previous ORS phases served as field data collectors in Phase 3 and as mentors to the field economists new to ORS. Interviewer training for Phase 3 collection followed regular BLS practices and consisted of five components:

- Self-study – The self-study program from Phase 2 was repeated.
- Webinar – The webinar program from Phase 2 was repeated.
- In-person training – As in the second part of Phase 2 testing, this occurred over a two day period in each test city and consisted of the same material as in Phase 2.
- Mentoring – The Phase 2 mentoring program was repeated.
- On-the-job training – Throughout the Phase 3 Test fielding period, field economists engaged in a number of activities designed to reinforce formal ORS training concepts. During data collection, on-the-job training was provided through daily debriefing sessions, formal technical guidance. In addition, informal conversations between field economists and project staff helped to identify challenging issues, lessons learned, and best practices.

For the Phase 3 broad scale test, field economists used separate tools to collect SVP and leveling-related data elements and information on Physical Demands and Environmental Conditions. A two-sided, paper Quote Info Leveling and SVP tool collected information about education, experience, training, and core function requirements for a specific job, and captured job characteristics such as union/non-union, full time/part time, supervisory duties, number of incumbents and work setting. On the back of the tool were fields to capture the amount of time the incumbent spent driving, the type of vehicle driven, and information regarding Generic Leveling as captured in NCS.

To capture the Physical Demands and Environmental Conditions elements, field economists had three paper data collection tool options: a Single Quote tool, a Multiple Quote tool, and an Advanced Multiple Quote tool. Each tool was designed to collect all of the required data elements, but they differed in their visual format and collection method. The Single Quote tool was configured to collect the occupational requirements one occupation at a time. The Multiple Quote tool was designed to collect this information by element for all selected jobs simultaneously. The Advanced Multiple Quote tool was designed to allow field economists to first determine whether each job required certain elements or not (e.g., does the job require the worker to be exposed to extreme heat or not?), and then to go back and administer follow-up questions only for eligible occupations (e.g., how often does the job require the worker to be exposed to extreme heat?).

Use of the Advanced Multiple Quote tool was restricted to field economists who collected in prior ORS test phases. For all remaining Phase 3 test interviews, the decision of whether to use the Single Quote tool or Multiple Quote tool (or combination thereof) was left up to the individual field economists. Regardless of the tool selected, field economists were instructed to read the questions as worded on the tool for testing consistency, but were permitted to reorder the elements and provide additional explanations and ask follow-up questions as necessary.

In addition to Phase 3 collection tools, a number of aids were developed to help clarify the survey task and definitions. A Respondent Visual Aid provided frequency definitions. The Field Economist Reference Guide provided definitions and clarifying examples of ORS elements. Field economists were encouraged to consult these aids during the interview and to share them with respondents as necessary.

Both in-person and remote data collection were tested in Phase 3. The goal was to collect data through personal visit for 85% of the establishments and through telephone for the remaining 15% of schedules. In the event that a respondent refused or was unable to schedule an in-person appointment but was willing to participate, additional phone interviews were permissible. Phone collection protocols were very similar to those for in-person collection. Field economists were required to use the collection tools, collect all of the ORS Phase 3 elements, ask questions as worded, and probe unclear answers or situations in which respondents' answers did not match expected job patterns.

Field economists entered data from the collection tools into a new web-based data capture system on a flow basis. The data capture tool was designed to permit easy data entry by field economists, the ability to review the captured data, and capacity to tabulate results. Review parameters were developed for Phase 3 and were used to evaluate data elements for internal consistency. Specifically, three internal consistency review types (i.e., data capture system edits; secondary review edits; cross-schedule edits) were used in the data review and analysis. The parameters identified expected relationships within individual ORS data elements and compared these against DOT coding.

Initial Phase 3 Results<sup>10</sup>: In Phase 3, BLS field economists completed interviews with 638 companies representing a total of 667 establishments. Personal visit interviews were conducted for 92.3% of the schedules, 6.3% were conducted by telephone, and 1.2% involved some combination of phone and personal visit collection. During these interviews, field economists collected ORS and NCS data elements for a total of 3,259 sampled occupations, representing 496 eight-digit classification levels within the SOC structure.

The field economists were very positive about the set of materials and resources that were developed or refined for Phase 3 to explain the background, purpose, and methods of the test and to secure respondent participation. In particular, a two-sided ORS flyer with a supporting letter from SSA on back was widely used, as were area economic summary sheets and an introductory letter tailored to industry sectors and BLS region.

Phase 3 training activities were effective in conveying the key ORS concepts and procedures. Field economists particularly valued the pre-collection 'mock' interviews, the debriefing following the mock interview, and the personal-visit mentoring appointments. The daily and weekly debriefing sessions continued to be an excellent training tool as well, offering field economists the opportunity to exchange information, clarify their understanding of materials, and share suggestions about collection issues. The Phase 3 mentoring process also was well received, though field economists recommended that in future rounds of testing mentees should observe schedules before training and have additional time to write up their schedules and have them reviewed before independent collection. Field economists recommended that ORS expand training

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<sup>10</sup> See U.S. Bureau of Labor Statistics, "Occupational Requirements Survey, Phase 3 Summary Report, Fiscal Year 2013"

content and explore different delivery options to maximize engagement and decrease the time needed to independently collect ORS.

The Multiple Quote tool – which collected information by element for all jobs simultaneously – was the most popular choice among the field economists collecting data in Phase 3 and seemed to provide a good balance between collecting quality data and reducing respondent burden. Field economists would have liked additional space on the tool to record explanatory notes. As in previous rounds of tests, certain words and concepts continued to be unclear or confusing to respondents (e.g., required; time to average performance). Field economists relied on their professional understanding and professional judgment when interpreting respondent-provided information and administering follow-up probes. Applications of professional judgment were most common when there were apparent inconsistencies among elements, with combination jobs and combined tasks, and when respondents reported higher-than-expected frequency estimates (e.g., especially for speaking and reaching). Field economists emphasized that the use of professional judgment is essential when collecting ORS information and recommended additional training be developed on this topic to ensure that it is applied consistently and documented with sufficient detail. They noted the need for additional refinements to question wording, probing guidelines, and development of better examples for each physical demand and environmental factor (possibly tailored to specific industries or establishment types). Despite these areas for improvement, respondents reported quite positive responses about the ORS initiative and experience, and there was consensus among field economists that the ORS materials and procedures significantly improved between test phases and throughout Phase 3.

The results of the small-scale supplemental tests conducted in Phase 3 also were very promising. For example, although only 60 schedules were completed in the efficiency burden test, the results point to the potential benefits of asking questions about combination elements (i.e., driving, keyboarding, and writing) at the start of the interview to provide better context for the subsequent elements and improve the application of professional judgment. Together, the findings from these supplemental tests underscore the importance of continuing to develop strategies for increasing the efficiency of ORS element collection, collecting high-quality NCS and ORS data simultaneously, and securing ORS elements from large employers with multiple locations.

The introduction of a new internet-based system for data capture in Phase 3 also yielded valuable information. Overall, field economists and reviewers liked the web-based system, but cited the inability to use the system without internet access as a shortcoming. Some field economists expressed the need for a wage-import feature for bigger establishments and the ability to enter compound wages. Field economists and reviewers also recommended that additional development and testing be carried out in fiscal year 2014 to better integrate the data capture system with other components (e.g., the appointment calendar, review questions, time-reporting spreadsheets, etc.).

The main objective of the work that was completed as part of the ORS project in fiscal year 2013 was the assessment of whether it was feasible for BLS to collect data relevant to the SSA's disability determination program. The results of this broad scale test suggest that the collection of the ORS data elements using a probability selection of occupations in conjunction with selected NCS data elements is viable.

### **3. FY 2013 Survey Design Research and Administrative Activities**

In addition to the three phases of feasibility testing, BLS began research and evaluation for several other activities associated with creating new federal surveys. This work broadly fits into three categories, sample design research, estimation and data dissemination vision, and administrative activities.

Research into potential survey designs has begun with the focus on two general survey designs. Under the first design being evaluated, a sample of establishments to support the ORS would be selected each year. The sample of NCS establishments would be selected from the ORS sample yielding a fully integrated survey where all NCS establishments would be asked to provide ORS data in addition to the NCS data elements. Under the second design, two independent samples would be selected each year – one for ORS and a second one for NCS. When the same establishment appears in both samples, the respondent would be asked to provide data for both surveys. Initial alternatives for both designs have been identified and are being tested. Research has also looked into the types of occupations for which SSA needs data and the industries in which those occupations appear and the various potential survey rotation schemes. While this research continues, we have learned that it is possible to build a single survey platform to support both the NCS and ORS samples and collection processes. However, it has been difficult to identify a single sample design to meet the different estimation goals of the two surveys. For NCS, it is critical to be able to publish estimates by industry and Census Regions and Divisions. ORS estimates are needed for detailed occupations across the entire country. So, research continues and alternatives are being explored which could permit separate sample designs with joint collection for establishments selected by both surveys.

BLS has developed an initial vision for the types of estimates to be produced for the ORS survey which is still subject to refinement based on input from SSA and other potential data users. In general, this would include estimates of the proportion of workers in each occupation that are required to perform a given physical demand or are exposed to a given environmental condition with different frequencies. For example, one estimate could be the proportion of workers in a given occupation who are exposed to toxic chemicals less than 1/3 of the time or the proportion of workers in that occupation who need to reach above their shoulders more than 2/3 of the time. All estimates will be generated with a measure of standard error or relative standard error as appropriate and will be reviewed to ensure that they meet standard confidentiality restrictions. Initial ideas for disseminating the data are being developed based on stakeholder needs. Plans at this time call for making all data that meets publication criteria available to all users in a variety of forms, possibly including tables, query tools, charts, and graphs.

BLS has also completed many administrative activities related to the ORS this year including procuring clearance from the Office of Management and Budget for the tests, reporting on the project to the SSA and Congress, learning about the disability community and potential data users by attending several professional conferences, and planning for future testing activities.

### **4. Future Work**

While the FY 2013 testing was successful, there are several areas where further testing is needed before BLS will be ready to move into production with the Occupational Requirements Survey. In addition, SSA has notified BLS that some new data elements

are desired for the disability determination process, specifically the mental-cognitive demands of work. NCS would also like to validate the tasks performed for each occupation to help field economists understand the jobs being collected better and help explain any data estimates that do not match expectations obtained from other data sources including the DOT and O\*NET. In FY 2014, NCS plans to conduct several additional feasibility tests, each focused on a specific issue as listed below.

- Design, develop, and conduct a test to determine how best to collect occupational requirements data elements and NCS data elements from the same establishment.
- Design, develop, and conduct a test to determine how best to collect occupational requirements data elements from America's largest firms.
- Design, develop, and conduct tests for the new mental and cognitive demands of work data elements for use in SSA's disability evaluation process, and evaluate the use of occupational task lists as developed by the Employment and Training Administration's O\*NET program during data collection.
- Design, develop, and conduct a test to refine the methods to develop more efficient approaches for data collection as identified during FY 2013 testing.
- Design, develop, and conduct a test to determine how best to collect occupational requirements data elements when a personal visit is not optimal due to respondent resistance, collection costs, or other factors.
- Capture and evaluate changes in data coding as a result of observing the work environment, the sampled occupation, or both.

At the conclusion of Feasibility Testing, the BLS will conduct a nationwide test to evaluate all aspects of the survey in a possible production environment. Data collection and capture for this Pre-Production Test are expected to run for two or more quarters and will conclude in FY 2015. The data capture portion of this test will be followed by a full evaluation of data, processes, survey design, and other program elements. This evaluation will include qualitative reviews of the processes and procedures as well as quantitative analysis of the collected data, response rates, respondent burden, test estimates, and other survey processes.

The BLS will use data collected in testing, input from SSA, analysis from internal BLS experts, and/or its institutional survey knowledge to research various issues identified in FY 2013. These research projects include the following:

- Sample selection, data review, estimation, validation, and other issues related to survey design;
- Development of measures of reliability of estimates;
- Measurement of survey error; and
- Resolution of how best to handle jobs whose duties and responsibilities cross multiple occupational classifications.

If testing is successful, BLS plans to move into a production mode in FY 2015 with the goal of releasing some initial estimates in FY 2016.

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