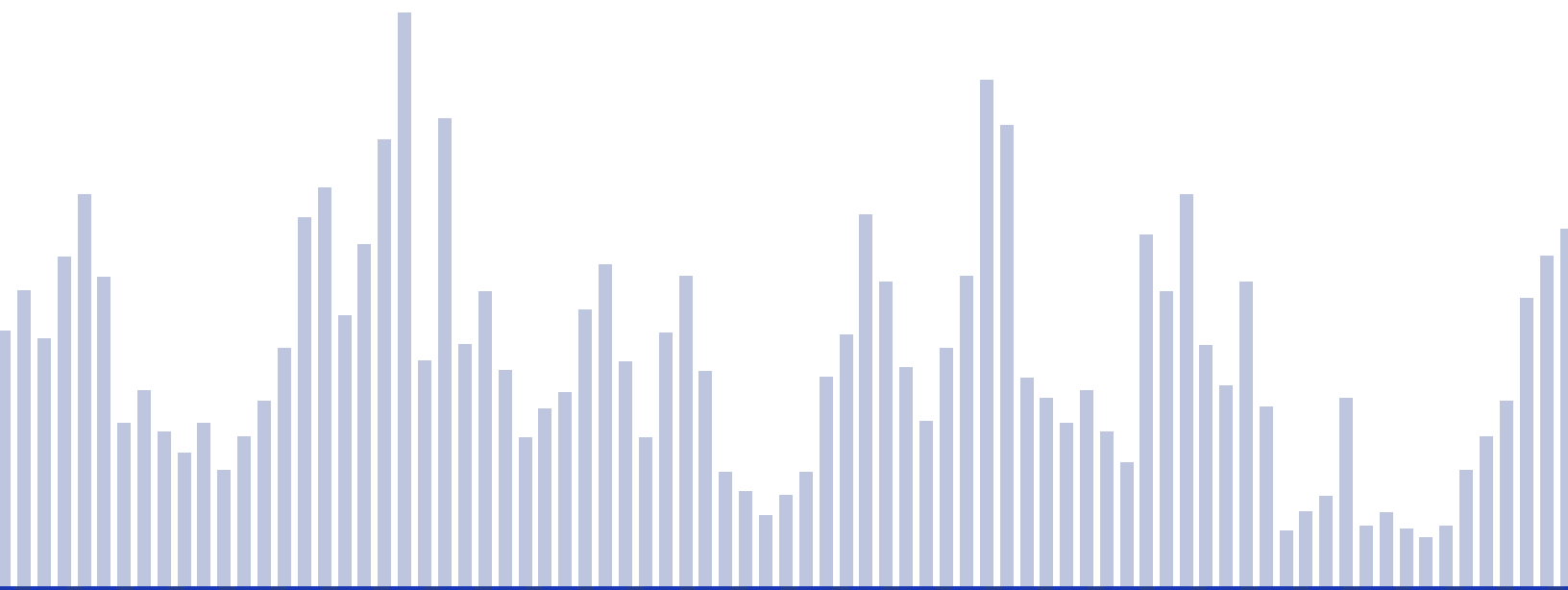


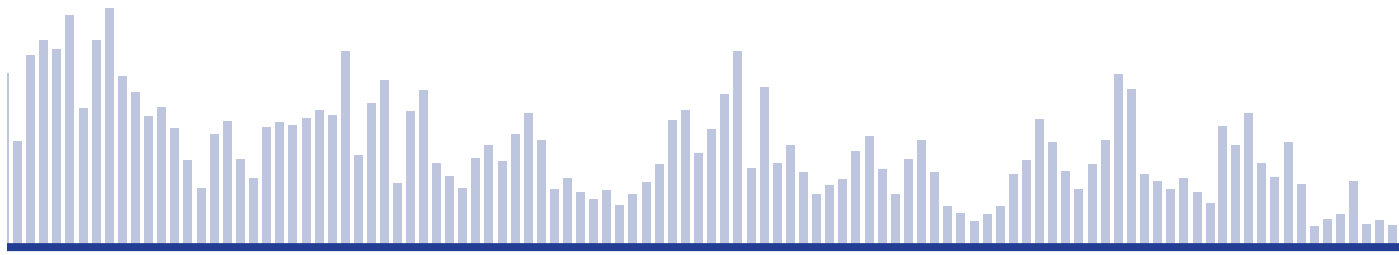
TECHNICAL REPORT

# A Guide to the Collection of Occupational Data for Health: Tips for Health IT System Developers



**Centers for Disease Control  
and Prevention**  
National Institute for Occupational  
Safety and Health

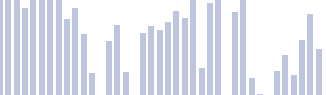




TECHNICAL REPORT

# A Guide to the Collection of Occupational Data for Health: Tips for Health IT System Developers

DEPARTMENT OF HEALTH AND HUMAN SERVICES  
Centers for Disease Control and Prevention  
National Institute for Occupational Safety and Health



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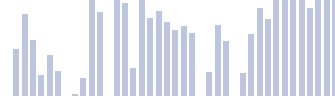
October 2021



# Acknowledgements

This guide was produced as part of a project to demonstrate the collection of Occupational Data for Health (ODH), a set of core data elements about a patient's work. It is based on work done by subject matter experts at the National Institute for Occupational Safety and Health (NIOSH)/Centers for Disease Control and Prevention (CDC) and through contracts with Attain, LLC and Professional Staffing Partners.

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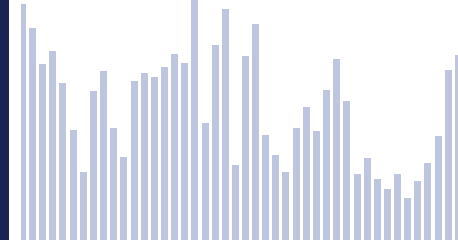


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# A Guide to the Collection of Occupational Data for Health (ODH)

## Background

U.S. workers often spend large amounts of their time at work. While there, they may be exposed to hazards such as heat, dusts, chemicals, injury, and infectious diseases. Workers may also experience long hours, strenuous tasks, and irregular schedules that can affect their health and risk of injury. When work characteristics are considered by medical providers who are helping patients manage chronic or infectious disease or injury, outcomes may be improved. If the demands of a patient's job are known, a more successful return to work after an illness or injury may be achieved. Work-related illnesses are more likely identified when a person's work information is known and cases can be reported to public health authorities, supporting interventions and the reduction of further exposures.

Occupational Data for Health (ODH) is a framework for self-reported, structured, and standardized patient work information. It is broadly applicable in healthcare as part of the medical record; it is suitable for many use cases supporting patient care, population health, and public health. The ODH framework is organized around seven salient topics, each topic containing related data elements. Health IT vendors and healthcare organizations can choose which topics and data elements are most beneficial to collect and use as well as where in their work-flow it belongs. It is essential for health IT vendors to modify their medical record systems to satisfy the needs of their healthcare customers.

Information about paid work, unpaid work (e.g., work on a family farm), and some volunteer work, especially positions that are most likely to pose health and safety risks, are included. Although the focus is primarily on the patient's work information, the potential to use components of ODH for household members for some patients (e.g., newborn or other minor) is also described.

More information can be found at: <https://www.cdc.gov/niosh/topics/ehr/default.html>.

## About This Document

This document is intended to assist health IT system developers who are implementing collection of ODH in a system such as an EHR. NIOSH performed usability testing of a series of prototypes to collect ODH and this document describes requirements and suggestions based on lessons learned from that work. The goals of this document are to reduce the burden of ODH implementation in health IT systems and to improve the patient experience while using the systems to self-report work information. Additional requirements are expressed in the HL7® EHRs-FM Release 2 Functional Profile: Work and Health, Release 1 – U.S. Realm, Informative Document 2019 Apr (WHFP), sponsored by the HL7 Electronic Health Records Work Group ([http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=498](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=498)). Please refer to the WHFP for requirements about other aspects of managing and using ODH (e.g., maintaining, rendering, exchanging, analyzing, etc.).<sup>1</sup>

<sup>1</sup>The bracketed numbers throughout this document refer to reference numbers found in Appendix A, Select Conformance Criteria from the WHFP.



## General Guidance

The collection of Occupational Data for Health (ODH) can be organized around seven topics:

1. Employment Status
2. Retirement Dates
3. Jobs (Past or Present)
4. Longest Held (Usual) Work
5. Volunteer Work
6. Combat Zone Periods
7. Work of Household Members of Minors

ODH data are to be part of the patient's social history within the medical record and made available to clinicians and to clinical decision support and population health applications [17].<sup>1</sup> The collection of topics 1 – 6 is appropriate for individuals of working age. Depending on state and local laws, such as those pertaining to family-run businesses (e.g., farms and restaurants), “working” can start as young as 5 years old and has no upper age limits [16]. At a minimum, it is recommended to offer collection of ODH for persons age 16 years old or more.

Topic 7, Work of Household members of minors, is work information that an organization might want to collect about the working members of a household where a minor resides [1]. Data collected according to topic 7 is to be in the medical record of the minor (not the household member).

Local implementations of ODH may be customized to collect a subset of the ODH topics and data elements found in each topic. This supports a phased-in approach as the collection and use of ODH matures within a healthcare organization. Please note, the data elements required for interoperability must be collected. Some ODH data elements are also in progression to be included in U.S. Core Data for Interoperability (USCDI; <https://www.healthit.gov/isa/united-states-core-data-interoperability-uscdi>).

## Interoperability

The ODH topics are related to sections of HL7 and IHE ODH interoperability messaging templates listed here. These templates are being updated to reflect the most recent vocabulary and cardinality requirements. The value sets for ODH employment status, work classification, and work schedule are currently referenced in interoperability standards as HL7 terminology; they are suitable for both U.S. realm and non-U.S. realm use cases.

- HL7 Structured Documents, Public Health and Emergency Response, and Health Standards Integration Work Groups, sponsors. HL7 CDA® R2 Implementation Guide: Consolidated CDA Templates for Clinical Notes; Occupational Data for Health, Release 1 STU 1 Update 1 – U.S. Realm. 2021 XXX. [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=522](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=522).
- HL7 Orders and Observations Work Group, Infrastructure and Messaging Work Group, Conformance Work Group, et al., sponsors. HL7 Version 2.9 Messaging Standard – An Application Protocol for Electronic Data Exchange in Healthcare Environments 2019 Dec. [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=516](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=516).

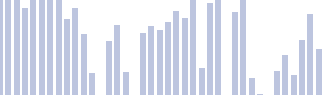
- HL7 Public Health Work Group, sponsor. HL7 FHIR Release 4.0.1 Profile: Occupational Data for Health (ODH), Release 1.1 (Standard for Trial Use). 2021 XXX ##. <http://hl7.org/fhir/us/odh/history.html>.
- IHE PCC Technical Committee. IHE Patient Care Coordination (PCC) Technical Framework Supplement: CDA Content Modules, Revision 2.7 – Trial Implementation. 2021 Feb 26. [https://www.ihe.net/resources/technical\\_frameworks/#pcc](https://www.ihe.net/resources/technical_frameworks/#pcc).

### ODH topics are also included in these products:

- IHE PCC Technical Committee. IHE Patient Care Coordination (PCC) Technical Framework Supplement: Query for Existing Data for Mobile (QEDm), Revision 2.2 – Trial Implementation. 2020 Jul 17. [https://www.ihe.net/resources/technical\\_frameworks/#pcc](https://www.ihe.net/resources/technical_frameworks/#pcc).
- IHE PCC Technical Committee. IHE Patient Care Coordination (PCC) Technical Framework Supplement: International Patient Summary (IPS), Revision 1.1 – Trial Implementation. 2020 Jun 17. [https://www.ihe.net/resources/technical\\_frameworks/#pcc](https://www.ihe.net/resources/technical_frameworks/#pcc).
- IHE PCC Technical Committee. IHE Patient Care Coordination (PCC) Technical Framework Supplement to Volume 1, CDA Occupational Data Options, Revision 1.0 – Trial Implementation. In press. Approved 2020 Jul. [https://www.ihe.net/resources/technical\\_frameworks/#pcc](https://www.ihe.net/resources/technical_frameworks/#pcc). This adds ODH to three profiles that are in the PCC Technical Framework: Cross-Enterprise Sharing of Medical Summaries (XDS-MS), Exchange of Personal Health Record (XPHR), Emergency Department Referral.
- IHE QRPH Technical Committee. IHE Quality, Research and Public Health Technical Framework Supplement: Healthy Weight (HW), Revision 2.3 – Trial Implementation 2020. [https://www.ihe.net/resources/technical\\_frameworks/#qrph](https://www.ihe.net/resources/technical_frameworks/#qrph).
- HL7 Public Health Emergency Response Work Group and Structured Documents Work Group, sponsors. HL7 CDA R2 Implementation Guide: Public Health Case Report – the Electronic Initial Case Report (eICR), Release 1, STU Release 2.0 – U.S. Realm. 2020 Feb. [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=436](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=436).
- HL7 Public Health Work Group, sponsor. HL7 FHIR® Release 4.0.1 Implementation Guide: Electronic Case Reporting (eCR) – U.S. Realm. Version 1.0.0 (Standard for Trial Use). 2020 Jan 29. <http://hl7.org/fhir/us/ecr/STU1/>.
- HL7 Public Health Work Group, sponsor. HL7 Version 2.6 Implementation Guide: Early Hearing Detection and Intervention (EHDI) Results, Release 1, Normative. 2020 Oct. [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=344](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=344).
- HL7 Public Health Work Group, sponsor. HL7 Version 2.6 Implementation Guide: Critical Congenital Heart Defects (CCHD) Pulse Oximetry Screening Results, Release 1, Normative. 2020 Aug. [http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=366](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=366).

## ODH Vocabulary

The ODH code system is available in the **Public Health Information Network Vocabulary Access and Distribution System (PHIN VADS)** [6]. Use the search term “ODH” to find it. Downloadable files are also available under the ODH Hot Topics section; these files contain additional metadata such as user-friendly 8th grade reading-level descriptions for ODH value set concepts other than industry and occupation as well as crosswalks from ODH industry and occupation value set concepts to CDC Census industry and occupation value set concepts. The ODH codes and concepts found in both the vocabulary access and Hot Topics downloads are the same.



Industry and occupation are the most difficult concepts to collect. The downloadable files from the PHIN VADS Hot Topics section are structured to support searching on words that are relatable to the general public and selection of detailed terms that support aggregation to national industry and occupation classification systems. This approach supports the needs of patients and their providers, while still satisfying the needs of public health.

There are terms within the ODH occupation and industry value sets that have very similar wording to one another. This was done to improve search-ability of the lists. It may help to let users know that sometimes they will see choices that seem like the same thing and it is acceptable to pick any one that they feel reflects the right selection for them.

## Industry

The ODH industry value set was derived from the North American Industry Classification System (NAICS). NAICS uses a hierarchical structure. The organization of NAICS is as follows:

- Sector: 2-digit code
  - Subsector: 3-digit code
    - Industry Group: 4-digit code
      - NAICS Industry: 5-digit code
        - National Industry: 6-digit code

NAICS also provides an index with a large number of search-friendly terms, each associated with a national industry classification. Each index term was assigned a 6-digit number that was added as an extension to the associated 6-digit NAICS code. The value set concepts are structured as: index term [national industry classification]. By adding the extension to the classification code, the detail provided by the index terms is maintained with the NAICS classification. For more information on the NAICS structure: <https://www.census.gov/naics/>.

An alternative to patient self-reporting of industry as detailed index terms is the pre-classification of known employers. While this would not provide the same level of detail, it would build on a current workflow. Some healthcare organizations maintain a list of local employers and their addresses based on information gathered from their patients. This list is used to facilitate the collection of employer information. If the employer is not found on the list, the patient can then provide the information. This list could also be leveraged to classify employers by NAICS National Industry. The industry classification of each employer could be identified and recorded by the organization for each local employer in advance or as a new employer is added, eliminating the need for each patient to search for and select this data element from the ODH industry vocabulary.

## Occupation

The ODH occupation value set was derived from the Occupational Information Network-Standard Occupational Classification (O\*NET-SOC) system. This system was created by O\*NET which is sponsored by the U.S. Department of Labor/Employment and Training Administration through a grant to the North Carolina Department of Commerce. O\*NET has extended the Standard Classification Code (SOC) system from 800+ classifications to 1100+ classifications. The O\*NET-SOC Classification System is a hierarchical structure. The organization of O\*NET-SOC is as follows:

- Major Groups
  - Minor Groups
    - Broad Occupations
      - Detailed Occupations
        - O\*NET-SOC Occupations

Each SOC Detailed Occupation classification has a 6-digit code; each O\*NET-SOC Occupation classification has an additional 2-digit extension. O\*NET also provides a large list of alternate or lay titles, each associated with an O\*NET-SOC Occupation classification. To create the ODH occupation value set codes, the search-friendly alternate titles were assigned a 6-digit number that was added as another extension to the associated O\*NET-SOC occupation code. The value set concepts are structured as: alternate title [O\*NET-SOC occupation classification]. By adding the extension to the classification code, the detail provided by the alternate titles is maintained with the O\*NET-SOC and SOC classifications. For more information on O\*NET-SOC: <https://www.onetcenter.org/>.

## Industry and Occupation Search

The ODH industry and occupation value sets are both large value sets that do not accommodate selection through a simple drop-down list.

The latest ODH collection prototype uses a simple key word searching algorithm that also leverages SQL database features to search the ODH industry and occupation value sets. For industry, it searches the index terms only. For occupation, it searches the alternate titles only. This overall approach was chosen to reduce the number of returned results. There are other approaches to searching text that could be used such as type-ahead or hierarchical searches. To date, different search methods have not been compared.

The latest ODH prototype uses the following steps to search for an occupation or industry. This description is provided as an example, not a recommendation.

1. The native browser spell checking is used as key words are entered. (Limiting the spell check to words found in the searched vocabulary was not tested.)
2. The key words entered by the user are parsed and the “common words” are excluded from the SQL search. (There are limitations to this approach; some acronyms can be mistakenly removed as common words, such as “IT” for “it.”)
3. Remaining key words are stemmed to improve matches.
4. If the number of words, N, are entered, the union of the results of one or more searches are returned to the user for selection.
  - a. If there are matches for N words, searching stops and the results are returned.
  - b. If there are no matches for all N words, then searches for N-1 combinations of words are attempted and a union of the results is returned.

- c. If no matches are found for N-1 combinations, then the user receives a message to refine key words for searching.
- d. If more than 20 results are found, the user receives a message suggesting they refine key words, with the option to view the results.

## Example of an Occupation Search

Words entered for the search are “**Manager of the Nursing Department**”

1. In this example, all words are spelled correctly.
2. “Of” and “the” are removed from search words.
3. “Nursing” is stemmed in search.
4. N=3; words searched are manager, nursing, and department.
5. The O\*NET-SOC alternate titles (Specific Occupations in the figure below) are searched.
6. The O\*NET-SOC alternate titles do not contain a term that includes all three words, therefore the results of searches for the N-1 combinations (manager & nursing, manager & department, and nursing & department) is returned.

The results returned to the user are driven by the search-friendly alternate titles (Specific Occupation in the figure below). The user is able to review all possible associated O\*NET-SOC classifications (General Occupation in the figure below) with their descriptions, that are related to the titles found by the search. By clicking on each General Occupation, the user is simultaneously presented the related Specific Occupations that were found.

In this example, the user might review the alternate titles (Specific Occupations) related to the classification (General Occupation) of Registered Nurses and select (Specific Occupation) *Nurse Manager*.

The screenshot displays a two-step search process. Step 1, titled "1. General Occupation (24 total)", prompts the user to "pick one that describes how you work". It shows a carousel of job categories with "Registered Nurses" selected. A description for "Registered Nurses" is provided below the carousel. Step 2, titled "2. Specific Occupation (3 total)", prompts the user to "pick the best match for your search". It shows a carousel of specific roles with "Nurse Manager" selected.

**1. General Occupation (24 total)**  
First, pick one that describes how you work

1 browsed  
[Open](#) Browsing History

Page 4 of 5

<

Lawyers

Medical and Health Services Managers

Merchandise Displayers and Window Trimmers

Nursing Instructors and Teachers, Postsecondary

Registered Nurses

>

**Registered Nurses:** Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required.

---

**2. Specific Occupation (3 total)**  
Then, pick the best match for your search

Page 1 of 1

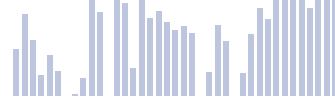
<

Emergency Department RN (Emergency Department Regist...

Nurse Case Manager

Nurse Manager

>



## Data Collection

This section provides recommendations and tips to assist in building health IT system functionality to collect and manage all of ODH. Healthcare organizations and health IT vendors collaboratively drive which data elements to consider and may choose not to implement the entire framework.

### General

- A recommended feature is to provide the ability for patients to review/update previously entered ODH information, particularly the most current data [2,3].
- Each ODH topic has one or more data elements that need to be associated as a single occurrence of the topic [12,13].
- Using the ODH value sets to record employment status, work schedule, work classification, supervisory level, and household member role type will facilitate interoperability [6,11,14].
- It is recommended that all numeric values be recorded to one decimal place [4].
- Any dates could be collected as MM/DD/YYYYY, MM/YYYY, or YYYY.
- When start/end dates are collected, start date shall be prior to end date.
- A person can have multiple job duties per job or voluntary work position. Collecting job duties is optional but recommended [15].
- A person can have multiple occupational hazards per job or voluntary work position. Collecting occupational hazards is optional but recommended [15].

### When Employment Status is Collected

- The data elements employment status and employment status start date are required to support interoperability for this topic.
- Either start/end dates or observation date can be collected.
  - If observation date is collected instead of start/end dates, then it can be saved as the start date.
  - If start/end dates are collected, then the employment status periods cannot overlap [19].

### When Retirement is Collected

- The data element retirement date is required to support interoperability for this topic.
- It is recommended to be able to collect at least two self-reported retirement dates [18].
- Entry of a retirement date is unrelated to a person's employment status and does not signal that the person is no longer employed or seeking employment.

### When Jobs are Collected (Past or Present Jobs)

- The data elements (job) industry, (job) occupation, supervisory level, and work classification are or will soon will be required to support interoperability for this topic.
- When a coded industry value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.



- When a coded occupation value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.
- Many people work multiple jobs; it is recommended to be able to collect data elements for at least two current jobs [2].
- It is recommended that it be possible to collect a history of current and past jobs [2,20].
- Voluntary work is different than unpaid work. The concept definitions available in PHIN VADS provide more clarification.
- For a given job, it is only necessary to retain the most recent entry for work schedule, average days worked per week, and average hours worked per day [5].
- A recommended feature is to provide the ability to promote/change jobs with an existing employer. A new job would be created with a shell of information already available from a previous job: employer name, address, and industry.

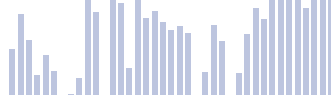
## When Longest Held (Usual) Work is Collected

- The data elements usual industry and usual occupation are required to support interoperability for this topic.
- When a coded industry value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.
- When a coded occupation value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.
- Usual occupation is the type of work done by a person for the longest amount of time during his or her life, not including voluntary work. This can span industries and employers. The concept definitions available in PHIN VADS provide more clarification.
- Usual industry is the kind of business in which a person has worked for the longest time while in their usual occupation. The concept definitions available in PHIN VADS provide more clarification.
- Therefore, if manual or auto selection functionality is provided, exclude voluntary work positions.
  - Usual work does not include voluntary work.
- A recommended feature is to auto-populate values based on the person's jobs, as determined by the length of time in a single type of occupation. The ability to add/update/attest must be available.
- Duration is the total quantity of time a person has spent in the occupation they held the longest over the course of their life, not including intermittent periods when they were not working in that occupation [7]. This can span industries and employers.
- Retaining a history of longest held work is not necessary [8].

## When Voluntary Work is Collected

- The data elements industry, occupation, and work classification are or will soon be required to support interoperability for this topic.
- When a coded industry value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.



- 
- When a coded occupation value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.
  - It is recommended to collect voluntary work as emergency/first responder regardless of the number of hours worked.
  - It is recommended to collect voluntary work other than emergency/first responders for work of 20 or more hours per week.
  - The two value set concepts used to describe voluntary work are the only valid entries (codes VW & VWDR) for the work classification of voluntary work.

## When Combat Zone Periods are Collected

- The data element combat zone period start date is required to support interoperability for this topic.
- The capability to collect combat zone periods is not to be limited to workers in military service; civilians could also work in combat zones [21].

## When Work of Household Members of Minors is Collected

- The data elements industry, occupation, and household member role are or will soon be required to support interoperability for this topic.
- When a coded industry value cannot be determined, it is recommended that a text value be collected. Either a coded value or a text value satisfies interoperability requirements.
- When a coded occupation value cannot be determined, a text value may be collected. Either a coded value or a text value satisfies interoperability requirements.
- It is recommended to collect work information for any working member of the household of a minor.
- Retaining a history of current job and longest held work of a household member is not necessary.
- For each household member's work information, collect only a nickname and the person's relationship to the minor, not identifying information.
- This work information is intended to be a part of the minor's medical record, not the worker.

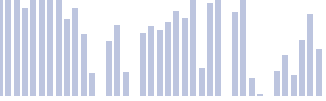
## Recommended User Interface Wording and Tips

The following wording has been used by established surveys or NIOSH ODH collection prototypes to support self-reporting of work information. It was found to be helpful and is recommended for use.

## Introduction for Collecting ODH

**Because work information can be collected in a healthcare setting for different reasons, it is important to provide context for the collection of ODH.**

Health and Work: Your work may affect your health. Your doctor or nurse can give you better care if he or she knows what kind of work you do. The information you provide becomes part of your medical or personal health record.



## Prompts and Examples for Industry and Occupation

These prompts and search examples supported the entry of productive search terms and selection of standardized industry and occupation entries. Industry and occupation can be difficult to collect and the use of these prompts and examples is recommended.

### Collecting Industry for a job:<sup>2</sup>

My employer mainly does/is a(n):

*Ex. Coffee Shop, Fast Food Restaurant*

Search

### Collecting Industry for a volunteer position:

My organization mainly does/is a(n):

*Ex. Food Bank*

Search

### Collecting Occupation for a job:

My job is a(n):

*Ex. Barista, Sandwich Maker, Waiter/Waitress*

Search

### Collecting Occupation for a volunteer position:

I volunteer as a(n):

*Ex. Fire Fighter*

Search

## Learn More (Tip Tools)

### Employment Status and Retirement Date

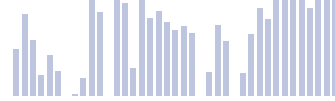
What is "Employment Status and Retirement Date"?

Employment status is your relationship to working for pay, family earnings or training.

Retirement date is the month and year you retired from a job. You could be both employed (Employment Status) and retired from a previous job.

(Continued)

<sup>2</sup>Industry is a difficult concept for some people and collecting that information soon after collecting their employer name and address helps.



	<p>Why are we asking you this?</p> <p>Helps your care provider understand your financial resources, benefits, and demands, which can impact your health.</p>
<b>Jobs</b>	<p>What is "Jobs"?</p> <p>Information about the type of work you do, your employer, and when you work, entered one job at a time. Your current or most recent job or jobs is the most valuable.</p>
	<p>Why are we asking you this?</p> <p>The work you do or have done might affect your health. Knowing this can help in your care.</p>
<b>Longest Held Work</b>	<p>What is "Longest Held Work"?</p> <p>Information about the work you have done for the longest amount of time throughout your working years across all of your jobs.</p>
	<p>Why are we asking you this?</p> <p>The work you have done the most is important because sometimes work can have long-term effects on your health.</p>
<b>Volunteer Work</b>	<p>What is "Volunteer Work"?</p> <p>Work that you choose to do for others without pay or other benefits.</p>
	<p>Why are we asking you this?</p> <p>Some types of volunteer work can harm your health. For example, volunteer firefighters may do tasks that can harm their health or safety.</p>
<b>Combat Zone Periods</b>	<p>What is "Combat Zone Periods"?</p> <p>Times when you were in a place where combat forces operated, or where military combat was in progress.</p>
	<p>Why are we asking you this?</p> <p>Both military and civilian workers can have their health affected when working in combat zones.</p>
<b>Work of Household Members of Minors</b>	<p>What is "Work of Household Members of Minors"?</p> <p>Information about the work of people who share a home with a patient who is a child.</p>
	<p>Why are we asking you this?</p> <p>Some work that adults do can harm the health of children they live with.</p>

## ODH Data Elements, by Topic

The following tables provide a quick reference for the recommended data elements for each ODH topic. Organizations may choose to collect a subset of the data elements to meet their needs.

### Employment Status

Data Element	Data Type	Description
Employment Status	Code	A person's self-reported relationship to working for pay, family earnings, or training (e.g. having one or more jobs, searching for work, etc.).
Employment Status Start Date	Date	Date employment status started or observation date.
Employment Status End Date	Date	Date employment status ended. NULL if current or observation date captured.

### Retirement Date

Data Element	Data Type	Description
Retirement Date	Date	Date a person self-defines as being retired, usually from a job or occupation.

### Combat Zone Period

Data Element	Data Type	Description
Combat Zone Period Start Date	Date	Date a person self-reports starting military service or employment in a combat zone.
Combat Zone Period End Date	Date	Date a person self-reports ending military service or employment in a combat zone.

### Jobs (Interoperability Standards: Past or Present Job)

Data Element	Data Type	Description
Job Start Date	Date	Date that this job started.
Job End Date	Date	Date that this job ended. NULL if current
Current Flag	Boolean	Identifies present job.
Occupation	Code	Self-reported type of work done in this work situation or position (i.e., job).

(Continued)

### Jobs (Interoperability Standards: Past or Present Job) Continued

Data Element	Data Type	Description
Occupation Description	Text	Self-reported brief description or title for this job's occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, conducted by the employing organization for this work situation or position (i.e., job). For voluntary work, this is the primary activity of the organization that engaged the person.
Industry Description	Text	Self-reported brief description or title for this job's industry; only captured if a value set term is not identified.
Employer Name	Text	Company, organization, or individual that provides compensation (either direct or indirect) for this job, as reported by the person. For military, this is the name of the home base. For voluntary work this is the organization that engaged the person.
Employer Location	Address	Legal mailing address of the employer for this job, as reported by the person. Duty station for military workers.
Work Classification	Code	A characterization of the arrangement between an employer and a person for a current work situation or volunteer position, such as 'paid work, self-employed' or 'voluntary work in disaster/emergency response', as reported by the person.
Supervisory Level	Code	An indicator of responsibilities of a person's job for directing work and personnel management, as reported by the person. Pay grade represents supervisory or personnel management responsibilities for U.S. military service, because it conveys similar meaning across branches of service.
Work Schedule	Code	The typical arrangement of working hours for a person's job, as reported by the person.
Daily Work Hours	Number	Average number of hours per day or shift worked at this job, as reported by the person.
Weekly Work Days	Number	Average number of days in a week worked at this job, as reported by the person.
Job Duty	Text	Brief description of a regular action performed at this job, as reported by the person; a person can list multiple job duties.
Occupational Hazard	Text	Brief description of a hazard specific to the work or work environment and with which the person might come in contact at this job, as reported by the person. A person can list multiple hazards. A hazard is a source of potential harm to a person's physical or mental health. Hazards can be biological, physical, psychological, chemical, or radiological in nature.

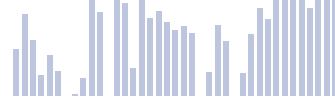
### Longest Held Work (Interoperability Standards: Usual Work)

Data Element	Data Type	Description
Occupation	Code	Self-reported type of work performed for the longest amount of time during a person's life, regardless of the job currently held and regardless of whether or not the person performed this type of work for a continuous time.
Occupation Description	Text	Self-reported brief description or title for usual occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, in which a person has worked the longest while in the usual occupation.
Industry Description	Text	Self-reported brief description or title for usual industry; only captured if a value set term is not identified.
Duration in Years	Number	Self-reported total of all periods of time a person has spent in their usual occupation as of the date recorded, not including any intermittent period(s) where the person was not working in that occupation.
Start Year	Date	Self-reported year that a person started working in their usual occupation.

### Voluntary Work for Emergency/First Responders (Interoperability Standards: Past or Present Job)

Data Element	Data Type	Description
Job Start Date	Date	Date that this job started.
Job End Date	Date	Date that this job ended. NULL if current
Current Flag	Boolean	Identifies present job.
Occupation	Code	Self-reported type of work done in this work situation or position (i.e., job).
Occupation Description	Text	Self-reported brief description or title for this job's occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, conducted by the employing organization for this work situation or position (i.e., job). For voluntary work, this is the primary activity of the organization that engaged the person.
Industry Description	Text	Self-reported brief description or title for this job's industry; only captured if a value set term is not identified.

(Continued)



**Voluntary Work for Emergency/First Responders  
(Interoperability Standards: Past or Present Job) Continued**

<b>Data Element</b>	<b>Data Type</b>	<b>Description</b>
Organization Name	Text	Company, organization, or individual that provides compensation (either direct or indirect) for this job, as reported by the person. For military, this is the name of the home base. For voluntary work this is the organization that engaged the person.
Organization Location	Address	Legal mailing address of the organization for this job, as reported by the person.
Work Classification	Code	Concept Code: VWDR  Concept Name: Voluntary Disaster Response/Emergency Services
Supervisory Level	Code	An indicator of responsibilities of a person's job for directing work and personnel management, as reported by the person. Pay grade is used to represent supervisory or personnel management responsibilities for U.S. military service, because it conveys similar meaning across branches of service.
Work Schedule	Code	The typical arrangement of working hours for a person's job, as reported by the person.
Daily Work Hours	Number	Average number of hours per day or shift worked at this job, as reported by the person.
Weekly Work Days	Number	Average number of days in a week worked at this job, as reported by the person.
Job Duty	Text	Brief description of a regular action performed at this job, as reported by the person; multiple job duties can be listed.
Occupational Hazard	Text	Brief description of a hazard specific to the work or work environment and with which the person might come in contact at this job, as reported by the person. Multiple hazards can be listed. A hazard is a source of potential harm to a person's physical or mental health. Hazards can be biological, physical, psychological, chemical, or radiological in nature.

**Voluntary Work (Excluding Emergency/First Responders) of 20 or more hours per week  
(Interoperability Standards: Past or Present Job)**

<b>Data Element</b>	<b>Data Type</b>	<b>Description</b>
Job Start Date	Date	Date that this job started.
Job End Date	Date	Date that this job ended. NULL if current

(Continued)

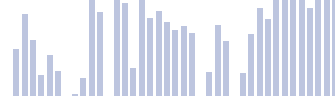
**Voluntary Work (Excluding Emergency/First Responders) of 20 or more hours per week  
(Interoperability Standards: Past or Present Job) Continued**

<b>Data Element</b>	<b>Data Type</b>	<b>Description</b>
Current Flag	Boolean	Identifies present job.
Occupation	Code	Self-reported type of work done in this work situation or position (i.e., job).
Occupation Description	Text	Self-reported brief description or title for this job's occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, conducted by the employing organization for this work situation or position (i.e., job). For voluntary work, this is the primary activity of the organization that engaged the person.
Industry Description	Text	Self-reported brief description or title for this job's industry; only captured if a value set term is not identified.
Work Classification	Code	Concept Code: VW  Concept Name: Voluntary work (20 or more hours/wk and excludes Disaster Response/Emergency Services)

**Work of Household Member of a Minor – Current Job  
(Interoperability Standards: Past or Present Job)**

<b>Data Element</b>	<b>Data Type</b>	<b>Description</b>
Household Member Role	Code	Designates the relationship between the patient and the person whose job or work is identified.
Household Member Nickname	Text	User defined nickname or description of a unique household member.
Occupation	Code	Self-reported type of work done in this work situation or position (i.e., job) by the household member.
Occupation Description	Text	Self-reported brief description or title for this job's occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, conducted by the employing organization for this work situation or position (i.e., job) of the household member. For voluntary work, this is the primary activity of the organization that engaged the household member.
Industry Description	Text	Self-reported brief description or title for this job's industry; only captured if a value set term is not identified.
Employer Name	Text	Company, organization, or individual that provides compensation (either direct or indirect) for this job of the household member, as reported by the person. For military, this is the name of the home base. For voluntary work this is the organization that engaged the household member.

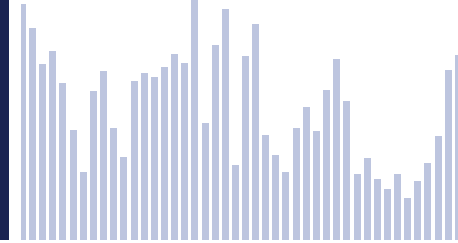




**Work of Household Member of a Minor – Longest Held Work  
(Interoperability Standards: Usual Work)**

<b>Data Element</b>	<b>Data Type</b>	<b>Description</b>
Household Member Role	Code	Designates the relationship between the patient and the person whose job or work is identified.
Household Member Nickname	Text	User defined nickname or description of a unique household member.
Occupation	Code	Self-reported type of work done in this work situation or position (i.e., job) by the household member.
Occupation Description	Text	Self-reported brief description or title for this job’s occupation; only captured if a value set term is not identified.
Industry	Code	Self-reported kind of business, i.e., primary business activity, conducted by the employing organization for this work situation or position (i.e., job) of the household member. For voluntary work, this is the primary activity of the organization that engaged the household member.
Industry Description	Text	Self-reported brief description or title for this job’s industry; only captured if a value set term is not identified.
Duration in Years	Number	Self-reported total of all periods of time a person has spent in their usual occupation as of the date recorded, not including any intermittent period(s) where the person was not working in that occupation.
Start Year	Date	Self-reported year that a person started working in their usual occupation.

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## Appendix A

# Select Conformance Criteria from the Work and Health Functional Profile

### Description

The following table lists criteria to conform to the recommendations and suggestions found in “A Guide to the Collection of Occupational Data for Health.” These and other conformance criteria for managing and using ODH (e.g., maintaining, rendering, exchanging, analyzing, etc.) are expressed in the HL7® EHRS-FM Release 2 Functional Profile: Work and Health, Release 1 – U.S. Realm, Informative Document 2019 Apr (WHFP), sponsored by the HL7 Electronic Health Records Work Group ([http://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=498](http://www.hl7.org/implement/standards/product_brief.cfm?product_id=498)).

### Key

The **Reference Number** below is used in the Guide to identify the supporting criterion. The **ID#** plus the **CC#** should be used to cross-reference the criterion in the WHFP. **Comments** have been added for clarification as needed.

Select Conformance Criteria from the Work and Health Functional Profile

Reference Number	ID#	CC#	Conformance Criterion	Comment
1	CP.1.10	21	IF the patient is a newborn or a minor, THEN the system SHALL provide the ability to manage the newborn's or minor's maternal and paternal current/most recent, and "usual" (accounting for the greatest number of working years) work information including, at a minimum: occupation, industry, current employer name(s). For example: Paternal work classification is "self-employed" industry is "taxi transportation" with occupation "taxi driver."	For clarification, all data elements for a job may be collected.
2	CP.1.10.1	1	The system SHALL provide the ability to manage the patient's (or decedent's) current/most recent and past work, including: current work classification, occupation, industry, name and address of business of employment, start/end dates, and supervisory level.	
3	CP.1.10.1	2	The system SHALL provide the ability to manage data for two or more current/most recent jobs, including volunteer jobs of 20 or more hours per week and/or emergency/disaster response volunteer jobs.	
4	CP.1.10.1	3	In the U.S., the system SHOULD provide the ability to manage numerical data elements (to one decimal place) for hours-worked-per-day and days-worked-per-week for each current/most recent job.	
5	CP.1.10.1	4	The system SHOULD provide the ability to manage only the most recently entered work schedule, hours worked per day, days worked per week for each job. For example, if a person changes schedules often, we wouldn't want to overburden the provider, the patient, and the system with several versions of the work schedule when the most recent is the most clinically relevant.	
6	CP.1.10.1	5	In the U.S., IF the system manages work classification and work schedule for current/past jobs, THEN the system SHALL provide the ability to use the U.S. Centers for Disease Control and Prevention Public Health Information Network Vocabulary Access and Distribution System (PHIN VADS) value sets.	

(Continued)

Select Conformance Criteria from the Work and Health Functional Profile (Continued)

Reference Number	ID#	CC#	Conformance Criterion	Comment
7	CP.1.10.1	6	The system SHALL provide the ability to manage the patient's usual occupation with related industry start year (month, if known, and year) and duration (in years, to one decimal) for a person's usual occupation. Duration is defined as the total of all periods of time spent in that type of work, not including intermittent period(s) where the person was not working in that occupation. Note: usual occupation may be a combination of multiple jobs.	
8	CP.1.10.1	7	The system SHOULD provide the ability to render only the most recently recorded usual occupation and only the most recently recorded usual industry.	
9	CP.1.10.1	8	The system SHALL provide the ability to capture a person's usual (longest-held) occupation and usual industry only for paid or otherwise compensated work (i.e., not for unpaid or voluntary work).	For clarification, usual occupation should include unpaid work and exclude voluntary work.
10	CP.1.10.1	9	The system SHOULD provide the ability to present a notification to the user that voluntary work is not to be considered in determining a usual occupation and a usual industry.	
11	CP.1.10.1	10	The system SHALL provide the ability to manage work information/ODH using standards-based coding schemes. For example: CDC_CensusIndustry for industry codes and CDC_CensusOccupation for occupation codes are good standards-based coding schemes in the U.S.	
12	CP.1.10.1	13	The system SHALL provide the ability to link all data pertaining to a single job (i.e., data about a job cannot be mixed up with other job data.)	
13	CP.1.10.1	14	The system SHALL provide the ability to render work information per job (i.e., a list of occupations and a separate list of industries is not useful; occupation and industry must be displayed together for each job).	
14	CP.1.10.1	22	The system SHOULD provide the ability to integrate tool(s) that capture structured industry and occupation data elements (e.g. using the CDC_Census coding system), as well as other Occupational Data for Health (ODH) elements (e.g., employment status, work schedule, hours worked per day, and days worked per week).	

(Continued)

Select Conformance Criteria from the Work and Health Functional Profile (Continued)

Reference Number	ID#	CC#	Conformance Criterion	Comment
15	CP.1.10.1	24	The system MAY provide the ability to manage free text comments for job duties and work exposures that are associated with a past or present job. Example: Job Duties = clean the popcorn flavoring tanks. Exposures = diacetyl.	
16	CP.1.10.1	28	The system SHOULD provide the ability to hide ODH for patients who are under the age of 5 years.	
17	CP.1.10.1	34	The system SHALL provide the ability to manage ODH in social history, regardless of where it is collected (e.g., even if collected at registration/admission)	
18	CP.1.10.1	39	The system SHALL provide the ability to capture, store, update, render, exchange, and manage-data-visibility for at least two start dates for a person's self-identified state of being "retired".	
19	CP.1.10.1	43	The system SHALL provide the ability to manage one and only one employment status for a given time period, including start/end dates. Example: A person may have multiple jobs but will only have one employment status (i.e. employed, unemployed, or not in labor force).	
20	CP.1.10.1	44	The system SHALL provide the ability to maintain a history of past and present jobs.	
21	CP.1.10.1	45	The system SHALL provide the ability to manage a list of date range(s) (i.e., start/end dates) for time spent working in a hostile area or combat zone, regardless of military service (e.g., defense contractors may be working in combat zones).	

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