Council of State and Territorial Epidemiologists
Occupational Health Subcommittee

Recommended Interim Guidance for Collecting Employment Information about COVID-19 cases

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This document provides basic guidance on collecting employment information about COVID-19 cases. Doing so can provide crucial information about the burden of disease across worker groups that can inform efforts to protect worker populations and reduce health inequities going forward. It also creates a roster of cases by occupation and industry allowing for more in-depth follow-back studies of workplace risk factors and control measures in targeted groups.

We recognize the challenge of collecting extensive data on COVID-19 cases mid crisis. This guidance is intended as a resource for those able to collect basic employment information now or for those who would like to do so in the future. In order to collect the most useful information, we recommend the following:

1. Continue to record whether case is a **health care worker**.

2. In assessment of potential sources of exposure, ask if the **case worked outside their own home in the 14 days prior to onset of illness?**

   During a stay-at-home order this is more useful than asking the more common question of whether the case was employed or not.

   An option to conserve limited resources during a stay-at-home order period is to restrict asking the employment questions below to those who report working outside their own home in the 14 days prior to onset of illness.

3. Collect information on **current occupation** AND **industry** of the case. This should be collected in narrative form in two separate text fields. **If the case has more than one job during the past 14 days, ideally collect all current occupations and industries. An alternative is to collect the main occupation and industry in the last 14 days.**

   Collected in this manner, the narratives can be **automatically coded** to standard industry and occupation codes using a free web-based coding tool called NIOICCS (NIOSH Industry and Occupation Computerized Coding System (https://wwwn.cdc.gov/nioccs3/). NIOCCS can code occupation narratives alone, but the coding completion rate is lower than if industry information is also available. Tips for interviewers about how to ask occupation and industry questions are in Appendix 1. Information about how to code occupation and industry is in the resources listed below.

   Drop-down lists of key occupations and industries are an option but are challenging to use when there are multiple categories and many different data collectors who may not be familiar with the list. It is generally easier for the data collector to simply record the narrative and allow NIOCCS to do the work. Drop-down lists may be useful for healthcare worker occupations (e.g., physician, nurse, nursing aide, etc.) and

industries (e.g., hospital, clinic, nursing home, etc.) and other high-risk groups such as law enforcement and firefighters. If a drop-down list is used, always include a write-in option, which can then be coded using NIOCCS. If you are using a drop-down list and it is performing well for COVID-19 surveillance, continue to use it. If you are interested in developing a drop-down list or have one to share, contact the CSTE Occupational Health subcommittee clingwall@cste.org.

4. Collect **employer name** and location. This information is important for contact tracing and cluster identification.

   Note that many employers' names cannot be readily coded to industry categories such as home care, grocery stores, restaurants, local delivery services, construction, and paper product manufacturing. The exceptions are licensed health facilities for which health departments have rosters, and larger companies. Coding employer name to an industry is highly labor intensive and more likely to fail to assign a code to smaller establishment. It is best to collect not only employer name but also industry.

5. Include options for "**patient contact",** and "**co-worker contact"** in addition to "household contact" and "community contact" when assessing possible exposures to COVID-19 positive individuals.

Resources for collecting and coding occupation and industry information.

NIOSH Industry and Occupation Computerized Coding System (NIOCCS)

- NIOCCS is a free web-based tool used to translate industry and occupation text into standardized codes. https://www.cdc.gov/niosh/topics/coding/overview.html and https://wwwn.cdc.gov/nioccs3/

Real-Time Coding of Industry and Occupation Data Using a NIOSH-Modified Version of CDC's Epi Info 7 Software

- NIOSH has produced a modified version of CDC's open-source Epi Info 7 software program that includes tools for the real-time coding of industry and occupation data during field data collection. If you are interested in using these tools for COVID-19-related case data collection, please email NIOSHIOCoding@cdc.gov or call the Health Informatics Branch at (513) 814-4205 to acquire the software and instructional materials or to arrange a direct consultation with NIOSH about implementation and use of the program.

  This disclaimer applies to the use of the NIOSH-modified version of Epi Info 7: This is a draft NIOSH enhancement; you are agreeing to use it as a beta tester. These tools are part of an ongoing project. NIOSH is making them available ahead of our planned schedule on an emergency basis due to the COVID-19 pandemic. The instructional materials are drafts and we ask that they not be distributed publicly or outside of state health department personnel who use them in the context of designing or operating COVID-19 data collection systems. If you have questions or comments about these tools, please direct them to NIOSHIOCoding@cdc.gov No warranty is made or implied for use of the software for any particular purpose.

APPENDIX 1

Interviewers: Tips for Obtaining Good Occupation and Industry Information

Understand the Difference between Occupation and Industry

- **Occupation:** The kind of work someone does (*e.g., registered nurse, janitor, cashier, auto mechanic, barber, civil engineer*). Occupation applies to the individual worker. Worksites can have one or many occupations.
- **Industry:** The kind of activity at someone's place of work (*e.g., hospital, law office, retail sales, foundry, dairy farm, library*).

How to ask about Occupation and Industry

Occupation

What kind of work do you do? For example, registered nurse, janitor, cashier, auto mechanic.

INTERVIEWER NOTE: If respondent is unclear, ask "What is your job title?"

[Record answer] _____ [If unknown or refused, write **Unknown**. Do not leave blank]

INTERVIEWER NOTE: **If respondent has more than one job and you can only record one, then ask, "What is your main job?" and record that answer. If possible, record all occupations (and industries) in separate text fields.**

Industry

What kind of business or industry do you work in? For example, hospital, elementary school, clothing manufacturing, restaurant.

INTERVIEWER NOTE: If respondent says "healthcare", ask "In what type of setting, for example, hospital, nursing home, doctor's office, clinic?"

[Record answer] _____ [If unknown or refused, write **Unknown**. Do not leave blank]

How Are Your Occupation and Industry Text Entries Coded?

Occupation and industry text collected by interviewers will be converted later to standard numbers or codes for analysis. To do this, the words you enter in the text field will be run through a computer program that assigns codes automatically. Responses that are too vague may not be coded and may not be analyzable or useful.

Tip: How to Improve Coding of Occupation and Industry Text Entries

- A text entry cannot be coded if it is too vague, such as "office worker." If the response is vague, ask probing questions to get more specific information, such as "what is your job title?" or "what type of office worker?"
- Industry and occupation can be obtained in just two to three words. Most of the time, more words do not improve coding.
- Do not enter company names in the industry field unless you cannot figure out what the correct industry is.
- It is very important to spell correctly. It is hard to code misspelled words. Misspelling contributes to "missing" industry and occupation data.
- If the respondent has more than one job and you can only collect data on one job ask "What is the main job?" The main job is the job worked the most hours per week.
- Everyone knows what their job is. If they do not respond to the questions, probe for their industry and occupation. If they still do not respond, enter Unknown. Do not leave the field blank.
- Do not use abbreviations or punctuation marks.

Tip: Probe for Responses that are Specific

The Census codes are specific, so try to enter specific information. Here are some examples.

Industry

Non-specific industry entry	Follow-up question	Examples of specific industry entries
wholesale [or retail]	What type of wholesale [retail] company?	wholesale grain, wholesale furniture, retail clothing, florist, shoe store
office	What type of company?	insurance, advertising, law firm
manufacturing	What does your company make?	automobile manufacturing, cosmetics manufacturing, paper manufacturing

Tip: Do Not Enter an Industry in the Occupation Field

A common problem is for a respondent to give an industry instead of an occupation. This might lead to coding errors.

Non-specific occupation entry	Follow-up question	Examples of specific occupation entries
technician	What is your job title?	laboratory technician, cable technician, computer repair technician
healthcare provider	What is your job title?	registered nurse, doctor, dental hygienist, physical therapist, pharmacist
engineer	What type of engineer?	mechanical engineer, civil engineer, aerospace engineer, engineering technician, drafter

Recognize when an industry is given for an occupation, and then probe for the actual occupation by asking "What is your job title?"

These are industries, not occupations	Examples of acceptable occupation entries
administration	office manager, administrative assistant, file clerk, shipping clerk
advertising	designer, salesperson, editor, public relations specialist, photographer
agriculture	ranch manager, agricultural worker, animal breeder, fisherman, logger
banking	bank teller, loan officer, database administrator, accountant
business	chief executive, market research specialist, purchasing agent
computers	computer programmer, web developer, computer scientist
construction	construction laborer, carpenter, roofer, sheet metal worker, electrician
education	elementary school teacher, school principal, secretary, counselor
finance	certified public accountant, bookkeeper, financial analyst, loan officer
government	human resources manager, budget analyst, biologist, civil engineer
insurance	insurance sales agent, claims adjuster, insurance underwriter
manufacturing	industrial production manager, budget analyst, shipping clerk
medical	medical assistant, dentist, lab technician, psychologist, phlebotomist

restaurant	cook, chef, waiter, host, bartender, dishwasher, supervisor
retail	salesperson, stocker, manager, cashier, product demonstrator
transportation	flight attendant, bus driver, taxi driver, pilot, ship engineer, sailor
warehouse	hand packer, forklift operator, hoist operator, laborer, supervisor

This document was prepared by the Occupational Health Subcommittee of the Council of State and Territorial Epidemiologists. It is adapted from a previous document prepared by the CDC National Institute for Occupational Safety and Health for interviewers conducting interviews for the Behavioral Risk Factor Survey.