



*CDC-RFA-OE20-20010101SUPP20: Enhancing Public Health Laboratory
Capabilities and Increasing Capacity*

Supplemental Project Proposal

Appendix D: Informatics





Appendix E: Informatics

Focus Area Name: Informatics

Focus Area Contact Information: Laura Conn, lbk1@cdc.gov

1. General Information

Project Name: Electronic Case Reporting Enhancement: COVID-19 and Work

Project Activity Contact Information:

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Approximate Amount of Supplemental Funding Available: \$50,000

2. Project Description

I. Purpose

Inclusion of work information in COVID-19 electronic case reports would enable assessment of work-related risk factors and responsive public health actions. COVID-19 case reporting currently does not include adequate and readily useful data about a person's job(s), such as standardized and coded industry and occupation. Essential workers are key populations with a high risk of SARS-CoV-2 exposure. In addition, as policymakers reopen workplaces, more workers who are returning to a workplace will have increased potential contact with others and therefore likely an increased risk of contracting SARS-CoV-2.

Collection of these data as text in a paper case report for coding by public health agencies or collection and coding during follow-back efforts increases the burden on already overburdened public health staff. Collecting work information as coded data by a healthcare organization and transmitting it to the public health agency through electronic case reporting will simplify follow back efforts and speed access to critical population data. Public health workers will be able to more quickly perform data analyses, identify clusters, and guide intervention and prevention efforts for workers.

II. Justification

A major challenge for the COVID-19 response efforts is collecting work information with case reports to improve understanding of COVID-19 in the context of work. Building this capacity requires support for standardized data collection, enhanced electronic case reporting, and receipt by a public health agency.

Occupational Data for Health (ODH) is a set of standardized, coded, and related data elements about a person's work history, including current job, expressed in informatics products. ODH



was designed by NIOSH investigators and partners for collection and use in combination with clinical data to support clinical care of workers, healthcare population health assessments, and public health surveillance. The ODH informatics products support implementation in health information technology (IT) systems, including integration into electronic case reporting, and are ready for use. They include an information model with standardized vocabulary, instructions for health IT system features to collect and use ODH, and plug-and-play templates for sharing ODH in contexts such as electronic case reporting.

ODH encompasses:

1. An information model organized into groupings of data elements for current work, usual work, and other related topics; these groupings are components that can be implemented and used separately or together. This project will focus on the current work component and include the others if possible and practical. In the model, several data elements, including industry and occupation, use standardized, coded vocabulary, which makes it easier to identify and analyze populations. Industry and occupation are core elements of current work and usual work in ODH and the project has moved to recommend their collection using coded terms from the North American Industry Classification System (NAICS) index and O*NET modification of the Standard Occupational Classification (SOC) system detailed titles. These titles are beneficial for two reasons. First, they are terms that can be easily recognized by workers, so can be used for self-selection by a patient who is a worker (e.g., during pre-registration in a patient portal). Second, they are coded such that they can easily be used to classify cases into populations based on the commonly used NAICS and SOC categories and groupings, or cross-walked to CDC_Census coded categories (sometimes used by public health agencies), for data analyses. The information model and vocabulary will be made publicly available in a pre-publication manuscript by the Journal of the American Medical Informatics Association (JAMIA) in May or June 2020.
2. Instructions for EHR developers about how to manage ODH in an EHR system so it's useful; some of these instructions were prepared, published, and made available through the consensus standards-development organization Health-Level Seven, International. (HL7). NIOSH is also completing a supplemental document that will provide additional information for health IT system developers about how to set-up collection of self-selected, standardized industry and occupation. The supplemental information was learned through user testing of a prototype tool. The prototype tool also makes it easy to demonstrate functionality needed to collect ODH to vendors and healthcare organizations.
3. Data-sharing (interoperability) templates for ODH that can be used in data-sharing actions, such as electronic case reporting. ODH templates are available in all three HL7 "product lines", i.e., formats for data shared electronically: V2, CDA (clinical document architecture), and FHIR (fast healthcare interoperability resources). They are also available in the Integrating the Healthcare Enterprise (IHE) CDA format, which is aligned with the HL7 CDA template and has supported testing that confirmed that the template works well. Electronic case reporting currently uses a CDA format and the ODH CDA template can be incorporated as part of this structure.



III. Identification of need

A major challenge for the COVID-19 response effort is collecting work information with case reports to improve understanding of transmission in the context of work. Workers with frequent close contact with people with known or suspected infection or the general public are at risk for exposure to COVID-19. In 2019, over 37 million workers were employed in essential industries that may place them at risk for exposure, including healthcare and social assistance (21,701,000), animal slaughtering and processing (585,000), grocery stores (2,670,000), food services and drinking places (9,711,000), specialty food stores (225,000), air transportation (656,000), rail transportation (225,000), bus service and urban transit (492,000), taxi and limousine service (703,000). Another industry that has been directly affected by COVID-10 is the meat packing industry; with over 130,000 workers at these facilities there have been over 4,913 cases and 20 deaths. This project provides an opportunity for public health agency(s) to more efficiently identify these workers, as well as unrecognized groups of workers that may be at higher risk as the economy reopens.

IV. New or expanded project

This is a new project through the Enhancing Public Health Laboratory Capabilities and Increasing Capacity Cooperative Agreement (CDC-RFA-OE20-2001). APHL will improve the informatics infrastructure for COVID-19 case reporting by supporting collection and incorporation of ODH elements in electronic initial case reports sent from at least one clinical care organization and received by at least one public health agency.

NIOSH anticipates collaborating with APHL, the healthcare organization, and the public health agency(s) to accomplish these activities.

- Activity 1: Engage at least one healthcare organization and respective public health agency(s) that has/have advanced electronic case reporting capabilities and an occupational health surveillance program to partner for this project
- Activity 2: Establish collection of standardized patient work information electronically by the healthcare organization, based on ODH informatics products provided by NIOSH
- Activity 3: Establish the inclusion of the patient work information in the electronic COVID-19 case report sent by the healthcare organization to the jurisdictional public health agency(s)
- Activity 4: Establish receipt and analysis of the case reports by the public health agency(s), including patient work information, via electronic case reporting

3. Outcomes

Activities in this project should achieve or contribute to the following proximal outcomes:

PO-8: Improved understanding of data-related challenges and data-informatics solutions among laboratory professionals and stakeholders

Activities in this project should achieve or contribute to the following intermediate outcomes:



IO-5. Improved data exchange and interoperability among public health laboratories and their partners

Activities in this project should contribute to the following long-term outcome:

Improved public health response based on COVID-19 case data

4. Strategies and Activities

List specific strategies, activities, and process measures

Strategy/Activity	Process Measure
1. S4.1 Develop and implement informatics-related solutions and standards to improve data exchange and interoperability.	• % persons seeking care due to COVID-19-like symptoms with ODH—particularly current job information—recorded in a healthcare organization's health IT system(s) (e.g., EHR) • % COVID-19 case reports sent electronically by the healthcare organization and successfully received by the jurisdictional public health agency(s) that include ODH
2.	
3.	

5. Budget

CELS/DLS project officers will provide budget spreadsheet for APHL to complete for requested funds by object class category

By submitting this project plan, I certify that my CIO currently does not maintain a comparable NOFO for similar activities and the proposed use of funds is consistent with the appropriation.

 Revoked certificate

X Genevieve Luensman

Technical Monitor Signature
Signed by: Genevieve B. Luensman -A

