

Generic Clearance for CDC/ATSDR  
Formative Research and Tool Development

Supporting Statement B

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CDC Contact:

Cara Halldin  
CDC/NIOSH/RHD/SB

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## **B. Collections of Information Employing Statistical Methods**

### **1. Respondent Universe and Sampling Methods**

The respondent universe includes physicians interested in becoming NIOSH-certified B Readers. To become a B Reader you must take and pass an examination offered by NIOSH and exams are most often offered at the NIOSH facility in Morgantown, West Virginia. Physicians who contact NIOSH and sign up to take the existing examination (Analog-based B Reader Exam) for certification purposes will be invited to also take a draft of the new examination (2019 Digital B Reader Exam). Typically, physicians who pursue the process of B Reader Certification are radiologists, pulmonologists, occupational medicine physicians, however NIOSH does not prohibit other specialties from seeking certification and only requires that physicians hold a medical license.

This project will utilize a convenience sample of physicians who contact NIOSH to schedule to take the B Reader examination over the first 9 months of the project. All individuals scheduling to take the exam will be invited to participate, and volunteers will be enrolled until we reach 50 participants. NIOSH maintains information on the B Reader Exam and how to sign up to take the Exam on the CDC/NIOSH website. NIOSH is most interested in assessing the performance of physicians who are seeking to become B Readers. Physicians typically study extensively using the NIOSH B Reader Training Syllabus and other training tools to practice the skill of ILO classifications using chest radiography. This is a very specific skill that requires a great deal of practice and effort. Therefore, NIOSH is only interested in the performance of physicians seeking this skill and therefore will not widely publicize this project in order to appropriate limit and target the respondent universe.

### **2. Procedures for the Collection of Information**

This project will collect information from physician participants who volunteer to take the 2019 Digital B Reader Exam following sitting for the existing Analog-based B Reader Exam. Data collection associated with existing Analog-based B Reader Exam is covered under the Coal Workers' Health Surveillance Program OMB Approval #0920-0020 – Expiration date 09/30/2021 and physicians are seeking to take the existing Analog-based B Reader Exam in order to obtain the NIOSH B Reader Certification.

For this project, physicians who agree to participate in the 2019 Digital B Reader Exam will complete International Labour Office (ILO) Classifications (similar to information in **Attachment 2**—CDC/NIOSH (M) 2.8 Chest Radiograph Classification Form) for no more than 80 chest x-ray and 25 multiple choice questions (Exact questions not included in this packet in order to preserve exam integrity; see **Attachment 4**—Example Multiple Choice Questions). Currently the Analog-based B Reader Exam can be taken in an electronic format on CDC/NIOSH computer systems using a software program that was developed and is maintained by NIOSH called BViewer©. BViewer© collects examinee responses for the classification of the chest x-rays. Prior to the development of BViewer©, classifications were collected using **Attachment 2** (CDC/NIOSH (M) 2.8 Chest Radiograph Classification Form), therefore BViewer© replaces this paper method, collecting the same information necessary for an ILO classification in an electronic manner while allowing the physician to view test and standard images on medical grade monitors. The 2019 Digital B Reader Exam will be administered in the same manner, using BViewer© (See **Attachment 1**—BViewer© screen shots).

At the beginning of the Analog-based B Reader Exam testing participants enter their full name and initials into BViewer©. BViewer© creates an identifier using these data so that all responses during the testing session are linked to the participant at that specific testing station. This data is collected as part of OMB# 0920-0020 and no additional PII will be collected as part of this genIC. Volunteers who

participate in the 2019 Digital B Reader Exam will begin the exam one hour after completing the Analog-based B Reader Exam using the same testing stations. This allows for the data from both exams to be linked under the participants identifier. To ensure exam integrity is maintained, during the examination testing stations are not connected to internet network and the computer ports are not physically accessible to the examinee.

Upon completion of the exam the NIOSH proctor transfers exam responses to the NIOSH encrypted network for processing and grading. The Analog-based B Reader Exam responses will be graded, and the physician will be confidentially informed via trackable mail of their results as per the normal procedures for the B Reader Examination program. Once this project has completed, NIOSH will confidentially inform each volunteer of their performance on each section of the 2019 Digital B Reader Exam via trackable mail.

We are proposing two different options to administer the examination: (1) administration at the NIOSH-Morgantown facility where typically, the Analog-based B Reader Exam is offered at the NIOSH-Morgantown facility in the morning and those who volunteer to stay and take the 2019 Digital B Reader Exam will take this exam in the afternoon of the same day; (2) traveling a NIOSH staff member with CDC/NIOSH computer system testing station to an academic or medical institution closest to the volunteer, assemble the testing station in an appropriate location on the academic/medical campus, and administer both exams (Analog-based B Reader Exam in the morning and 2019 Digital B Reader Exam in the afternoon of the same day). Reasons for option 2 will be discussed in Section 3. Methods to Maximize Response Rates and Deal with No Response.

### **3. Methods to Maximize Response Rates and Deal with No Response**

The following procedures will be used to maximize cooperation and to achieve the desired high response rate:

We propose incentives for volunteers who travel to NIOSH-Morgantown. Those volunteers where NIOSH staff will travel with a CDC/NIOSH computer system to a location closer to the volunteer and administer the exam at that location will not receive an incentive as we think that having NIOSH “come to them” is in itself an incentive. NIOSH traveling to and administering the exam near the physician volunteer will save them time and expense in traveling to and from the Morgantown facility.

Incentive for volunteers who travel to NIOSH-Morgantown:

Typically, the Analog-based B Reader Exam is offered at the NIOSH-Morgantown facility in the morning. Those who volunteer to stay and take the 2019 Digital B Reader Exam will need to take this exam in the afternoon and thus would likely incur an additional night in a hotel and an additional half to full day of lost productivity. Given this population of physicians can have an hourly salary above \$200, we are proposing to provide this population of volunteers with a \$500 token of appreciation which will at least cover their additional travel expenses.

### **4. Test of Procedures or Methods to Be Undertaken**

The data collection instrument (BViewer©) is already an established instrument for collecting ILO classifications in a testing scenario and therefore will not need to be evaluated prior to beginning this project.

Methods of scoring the 2019 Digital B Reader Exam will be evaluated using the data collected from this project to examine the overall comparability of the two exams and the performance of exam images and questions and will be used to identify an appropriate weighting/correction factor that will apply to exam sections, if necessary.

## **5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data**

NIOSH staff will be collecting and analyzing data from this project: Travis Markle, Jennifer Orrahood, Janet Hale, Cara Halldin.