



BILLING CODE 4163-19-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[Docket Number CDC-2016-0002; NIOSH-214]

Request for Information on NIOSH Center for Direct Reading and Sensor Technologies: Sensors for Emergency Response Activities

AGENCY: National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

ACTION: Request for information (RFI) and comment.

SUMMARY: The National Institute for Occupational Safety and Health (NIOSH), part of the Centers for Disease Control and Prevention (CDC), requests information to enhance the value of the NIOSH Center for Direct Reading and Sensor Technologies and is seeking input regarding specific issues on the availability, capability, suitability, barriers, limitations, and opportunities for current or future direct reading devices and sensor technologies that can be

utilized for emergency response. This RFI is intended to inform the planning of a document to evaluate current and future sensor technologies used in emergency response.

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DATES: Electronic or written comments should be received on or before [**INSERT DATE 60 DAYS FROM DATE OF PUBLICATION**].

ADDRESSES: You may submit comments identified by CDC-2016-0002 and Docket Number NIOSH-214 by any of the following methods:

- *Federal eRulemaking Portal: <http://www.regulations.gov>.*
Follow the instructions for submitting comments.
- *Mail:* National Institute for Occupational Safety and Health, NIOSH Docket Office, 1090 Tusculum Avenue, MS C-34, Cincinnati, OH 45226-1998.

Instructions: All information received in response to this notice must include the agency name and docket number (CDC-2016-0002; NIOSH-214). All relevant comments received will be posted without change to www.regulations.gov, including any personal information provided. For access to the docket to read background documents or comments received, go to www.regulations.gov. All information received in response to this notice will also be available for public examination and copying at the NIOSH Docket Office, 1150 Tusculum Avenue, Room 155, Cincinnati, OH 45226.

FOR FURTHER INFORMATION CONTACT: D. Gayle DeBord, NIOSH, Division of Applied Research and Technologies, Robert A. Taft Laboratories, 1090 Tusculum Avenue, MS-R2, Cincinnati, Ohio 45226, Phone: (513) 841-4256 [not a toll-free number], Email: GDeBord@cdc.gov.

Background: The NIOSH Center for Direct Reading and Sensor Technologies

(<http://www.cdc.gov/niosh/topics/drst/default.html>) was created in May 2014 to coordinate the development of recommendations on the use of these 21st century technologies in occupational safety and health. The

mission of the Center is to develop a national research agenda, provide guidance on the selection of sensors and direct-reading monitors and guidance for validation, quality control and training. Within the overall scope of its activities, the Center plans to develop a document to evaluate current and future sensor technologies used in emergency response.

Information Needs: Specifically, emergency responders are increasingly relying on direct-reading instruments and other sensor technologies to rapidly evaluate potentially life-threatening hazards and exposures. Recommendations to support the proper selection, use, validation, calibration and interpretation of these technologies are lacking. The use of new generations of sensors has increased exponentially in the past few years. While other Federal agencies and organizations have developed some recommendations on this topic, newer sensor technologies have not been thoroughly evaluated and guidance has not focused on interpretation of data or appropriate for the intended purpose. Other factors that need to be considered are that multiple strategies of environmental sampling will be necessary in any response effort; and that an understanding of the advantages and limitations of newer

direct-reading and sensor technologies is needed to select the appropriate strategies. Additionally, training for these new sensor technologies and environmental sampling strategies may be lacking.

The National Institute for Occupational Safety and Health seeks public comments in response to the following questions. Please feel free to comment on any or all of the questions below:

A. Utilization of Sensors in Emergency Response

A1. What sensors have the most immediate impact on emergency response?

A2. What applications/situations such as determination of the need for evacuation, use of personal protective equipment, or end-of-service-life of protective equipment are particularly in need of sensors?

A3. What are some advantages of newer generation sensors or direct reading devices for emergency response?

A4. Could wearable or embedded sensors have a major contribution? How?

A5. What are the primary stumbling blocks that impede sensor development and commercialization (e.g., reliability, potential market size, investment capital, etc.)?

B. Standards and Guidance

B1. What existing standards or guidance are available with respect to sensor performance characteristics and validation of sensors?

B2. What standards need to be developed (for performance or manufacturing) to meet industry and emergency responder expectations for emerging sensor technologies?

B3. What guidance is needed with respect to sensors used in emergency response?

C. Training

C1. What training is available on when and how to use sensors in emergency response? Who is developing this training and how is it accessed (print, via web, etc.)?

C2. What additional training on sensors would be useful for emergency response?

C3. What standards or guidance are available on how training should be developed and conducted?

D. Sensors

D1. What capabilities would be highest priority for emergency response efforts? What are the current primary gaps in sensor functionality?

D2. What are the largest technical challenges in manufacturing facing sensor development (e.g., integration, reliability)?

D3. What are the new tools for integration/engineering (e.g., Wi-Fi, programmable logic, signal processing software, GPS/location services, development of multi-sensor networks, etc.) that will have the greatest impact on sensors used in emergency response?

D4. What, if any, unique emergency response issues might be expected for sensor manufacturing?

D5. What sample types have you used to demonstrate sensor performance (e.g., real clinical samples, environmental samples/sites)?

D6. What procedures for standardized testing have you used to develop sensors?

D7. What would aid the sensor development community?

E. Additional Considerations

E1. What additional questions and considerations should be considered relevant to planning the development of a document to evaluate current and future sensor technologies used in emergency response?

E2. What elements of the sensor lifecycle are either missing, in need of clarification, or of greatest importance?

Responses to this notice are not offers and cannot be accepted by the Government to form a binding contract or to

issue a grant. Information obtained as a result of this RFI may be used by the government for program planning on a non-attribution basis. Please do not include any information that might be considered proprietary, confidential, or personally identifying (such as home address or social security number).

Dated: January 12, 2016

John Howard,

Director, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

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