Exposure Assessment Program

November 2017

At-A-Glance

The Exposure Assessment Program provides national and international leadership in the development and use of effective exposure assessment strategies and methods to prevent work-related illness and injury. This snapshot shows recent accomplishments and upcoming work.

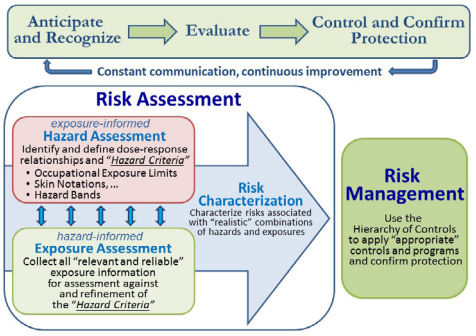
What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Exposure Assessment Program works with partners in industry, labor, trade associations, professional organizations, and academia. The program focuses on promoting the use of 21st century exposure assessment sensors, methods, and processes to protect worker safety, health, well-being, and productivity.

What do we do?

- Champion the development of information on how to conduct exposure assessments for all types of hazards in all types of occupational settings. *Hazard-informed exposure assessments* help identify who is exposed to what, how they are exposed (air, water, skin contact), and how much exposure occurs, how often, and for how long.
- Develop improved sensors to make it easier to identify and measure exposures to hazards and to enable *exposure-informed hazard assessments*.
- Advance the development of new or improved assessment methods to ensure that exposure measurements are accurate and able to detect and identify hazardous agents and stressors at lower concentrations.
- Promote publication of the NIOSH Manual of Analytical Methods (NMAM) as a continuously updated compilation of validated sampling and analytical methods that are used globally for occupational exposure assessment in the industrial hygiene field and related professions.

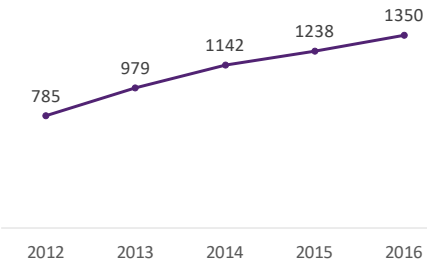
The exposure-informed hazard assessment and hazard-informed exposure assessment approach to risk assessment and management



What have we accomplished?

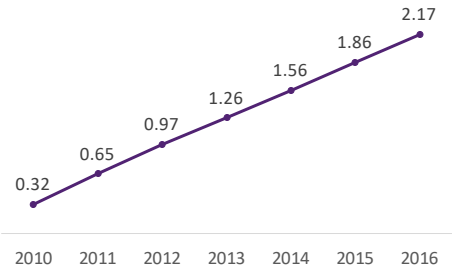
- Published a new NMAM 5th Edition Web Book that provides improved online accessibility. It includes new chapters on filter pore size and aerosol sampling and on bioaerosol sampling, as well as 19 new methods not found in the 4th edition.
- Published updated NMAM methods for respirable crystalline silica, including information for sampling at higher flowrates to improve limits of detection.
- Published a new NMAM chapter on counting carbon nanotubules and nanofibers to support epidemiological studies by NIOSH and others.
- Published a journal article on the use of the exposome in the practice of epidemiology. Exposomic data in epidemiologic and other studies can provide greater understanding of the relationships among a broad range of chemical and other risk factors and health conditions, and ultimately lead to more effective and efficient disease prevention and control.
- Published NIOSH information on the evaluation of direct-reading monitors for gases and vapors, including for hazard evaluation in first-responder environments.
- Published the journal article "New Approaches to Wipe Sampling Methods for Antineoplastic and Other Hazardous Drugs in Healthcare Settings" as a review of current methodology for determining the level of surface contamination with hazardous drugs in healthcare settings and to discuss recent advances in this area.

Cumulative web downloads of "Direct-Reading Monitors for Gases and Vapors" document



Source: NIOSH program records

Cumulative web downloads of NIOSH Manual of Analytical Methods (NMAM) (in millions)



Source: NIOSH program records

What's next?

- Evaluate methods for isocyanates at the request of the Occupational Safety and Health Administration and for inclusion in the NMAM. Current methods may underreport exposure levels. Isocyanates are potent irritants and sensitizers that are increasingly used in the automobile industry, for auto body repair, and in insulation for buildings.
- Publish a new NMAM chapter on biological monitoring for chemical exposures.
- Develop new methods and exposure assessment approaches for peracetic acid, which is a widely used antimicrobial.
- Publish an update of the NIOSH Occupational Exposure Sampling Strategy Manual.
- Conduct research on direct-reading and sensor technologies and information for their selection, validation, and use.

To learn more, visit https://www.cdc.gov/niosh/programs/exap/default.html

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