

State of AIHA Research Report

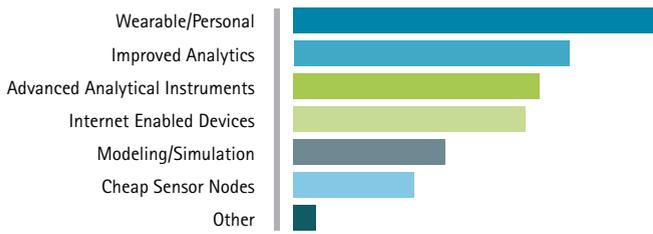
2018-2019



In 2012, the American Industrial Hygiene Association commissioned an environmental study scan, known as the “Envisioned Futures” report, conducted by the Foresight Alliance Group to determine what the industry’s emerging priorities are. The report honed in on many topics that could affect the way industrial hygienists and occupational health professionals need to do their work in the future; the considerations that they must bear in mind when envisioning the workforce landscape; and the overall influence that AIHA might have on these future trends, including how AIHA’s educational materials and resources need to be kept relevant and cutting-edge.

A volunteer working group, the CPMT/Content Portfolio Advisory Group (CPAG), was formed to implement the “Envisioned Futures” report, with the charge to regularly review and update the portfolio of AIHA educational materials and resources, as well as determine and educate AIHA membership, allied groups, big business and policymakers about these emerging priorities.

This report illustrates the progress to date of Envisioned Futures, as well as various other research and resources provided by AIHA’s Scientific and Technical Initiatives department.



Sensor Technology

Air monitoring sensor devices have been proliferating over the past several years, and many IH professionals rely on them to do their work. New applications of sensor technologies are producing greater amounts of diverse, structured and unstructured data. Real-time instruments can better capture current exposures and allow for a real-time response. They also hold promise for long-term and continuous monitoring and can be used to promote risk communication. AIHA continues to be a leader in this area, with a robust portfolio of sensor technology education and training materials, including a Body of Knowledge and Certificate concerning the use and application of direct read instruments for the detection of gases and vapors. AIHA has also taken the lead in developing a standardized IH equipment specification sheet for use by IH equipment manufacturers to ensure the consistent use and interpretation of equipment operating parameters. AIHA will continue to be a key influencer regarding the updating of air monitoring equipment guidelines and standards related to the application of new sensor technologies.

Total Worker Exposure

Exposure risk assessment and management is a decision-making process to systematically evaluate risk for potential exposures to chemical, physical and biological agents, and ergonomic stressors. The Occupational Safety and Health Administration (OSHA) requires this from a worker perspective, while the Environmental Protection Agency assesses exposure to environmental toxins in water, air and soil that could pose a health risk off the job. There are also ancillary exposures that individuals experience while working on projects around the house or as a hobby. But, what is the total exposure — and, ultimately, the health outcome — that results from the combination of workplace, environmental and other nonoccupational exposures? Are the exposure effects additive or synergistic? To fully protect workers, IHS need to understand how nonoccupational exposures

integrate with occupational exposures. AIHA members play a key role in understanding how nonoccupational exposure profiles (e.g. hobbies, consumer products, environmental) integrate and must expand and engage their skill sets to address this integration. The total exposure insights can then be provided to health care practitioners for further health care and medical surveillance assessment and guidance. In this regard, IH professionals are seen as valued partners in Total Worker Health™ promotion.

Changing Workforce

Increasingly, employees are engaging in nontraditional work arrangements such as gig work, contract work, telecommuting and working for multiple employers. In 2012, the AIHA Envisioned Futures environmental scan report found that the multijob, multicareer workforce will compose an estimated one-third of U.S. workers, or approximately 42 million people, and that by 2020 their ranks could swell to include 40 percent of all U.S. workers. In addition to the changing nature of work, workforce demographics are also changing. What impact will these workforce changes have relative to exposure and health?

“In the developing world, employment in the informal sector may reach 70 percent, with the contribution to the Gross Domestic Product (GDP) ranging from 10 to 60 percent.”

Source: Linda Rosenstock, Mark Cullen and Marilyn Fingerhut. Chapter 60, Occupational Health. In “Disease Control Priorities in Developing Countries,” 2nd Edition. <http://www.ncbi.nlm.nih.gov/books/NBK11750/>.

- The workforce is aging. Older adults in the workforce raise distinct issues about health, information processing and decision making.
- There is increased recognition of workplace mental and psychosocial hazards (e.g. stress) as a valid focus of industrial hygiene.
- Living with chronic disease

As a result, IH professionals must be aware of and understand the importance of nontraditional exposure profiles and the changing workforce, and how these factors impact the health of workers. IHS must also understand the circumstances that are shaping changes in the workforce, such as global economic shifts and migration. AIHA is therefore developing educational content to help the profession understand the nature of these issues.

AIHA Strategic and Technical Initiatives

In addition to the forward thinking of CPAG, AIHA continues to engage in other research, called Scientific and Technical Initiatives, that could positively affect the day-to-day quality of life of workers all over the world. The following are just a few ways AIHA research and resources can help IH/OH professionals stay current.

Bodies of Knowledge

A BOK is a team-developed resource that outlines the knowledge, skills and abilities that industrial hygienists must know and understand to develop, implement and manage a program within their organization. Think of it as a complete set of learning objectives on a topic, often accompanied by an interactive, annotated bibliography of resources mapped to the KSAs.

Below is a list of current and future BOKs by AIHA:

- Current BoKs – available on AIHA website
 - SDS & Label Authoring (revised)
 - Respiratory Protection Programs
 - Field Use of Direct Reading Instruments
 - Occupational Exposure Assessment
 - IH Value/Business Case Development
 - Occupational Health & Safety Management Systems Auditor
 - Exposure Risk Management
 - Enterprise Risk Management
 - Occupational Exposure Banding
 - IAQ/IEQ Practitioner (revised)
 - Emergency Response
- Proposed BoKs for 2019
 - Legionella
 - Global Standard of Care
 - Field Use of Direct Reading Instruments (to be revised to comprehend future standards activities regarding performance, selection, use, limitations and maintenance of toxic gas detectors)

Emergency Response Planning Guides

The ERPG Committee within the AIHA Guideline Foundation is responsible for establishing airborne levels of chemicals, known as Emergency Response Planning Guidelines, that assist Environmental Health & Safety professionals in the development of ER strategies for protecting workers and the public against the harmful effects of specific chemicals during transportation incidents and chemical releases.

ERPGs, along with EPA-sponsored Acute Exposure Guideline Levels, are used by municipal, state and federal agencies and private corporations in their planning and ER activities. The importance of ERPGs cannot be overstated:

- Currently, ERPGs are the **only** actively updated emergency exposure guidelines available in the United States. The EPA AEGL Committee is currently inactive.
- Currently, ERPGs are used to help inform the guidelines in the U.S. Department of Transportation’s “Emergency Response Guidebook,” a critical go-to manual for hazmat transportation accidents in the United States and Canada.
- Currently, ERPGs are used in commercially available exposure modeling software.

Standards

While AIHA is not a standards developing organization, many of its members serve on consensus standards developing and technical committees. The following are several that have been worked this past year: ISO 45001 on Occupational Health and Safety Management Systems; ISO 31000 on Risk Management; ANSI Z-10 on Occupational Health and Safety Management Systems; ANSI Z-16 on Occupational Health and Safety Metrics; ANSI Z-490 on Occupational Health and Safety Training; and ASTM D22 on Air Quality. To track AIHA’s engagement and to advise where AIHA resources should be positioned, AIHA maintains a Standards Advisory Panel.



To learn more about CPAG and AIHA’s state-of-the-art STIs, as well as to peruse AIHA education, visit www.aiha.org. AIHA members have free access to hundreds of white papers, guidance documents and checklists that have been developed by volunteer groups over the years. These resources can be found at www.aiha.org.