

# Ergonomics and Industrial Hygiene Conference

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## Lessons Learned in Occupational Hygiene Assessments Conducted Globally



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**Ergonomics &  
Hygiene**

*Conference & Exhibition*

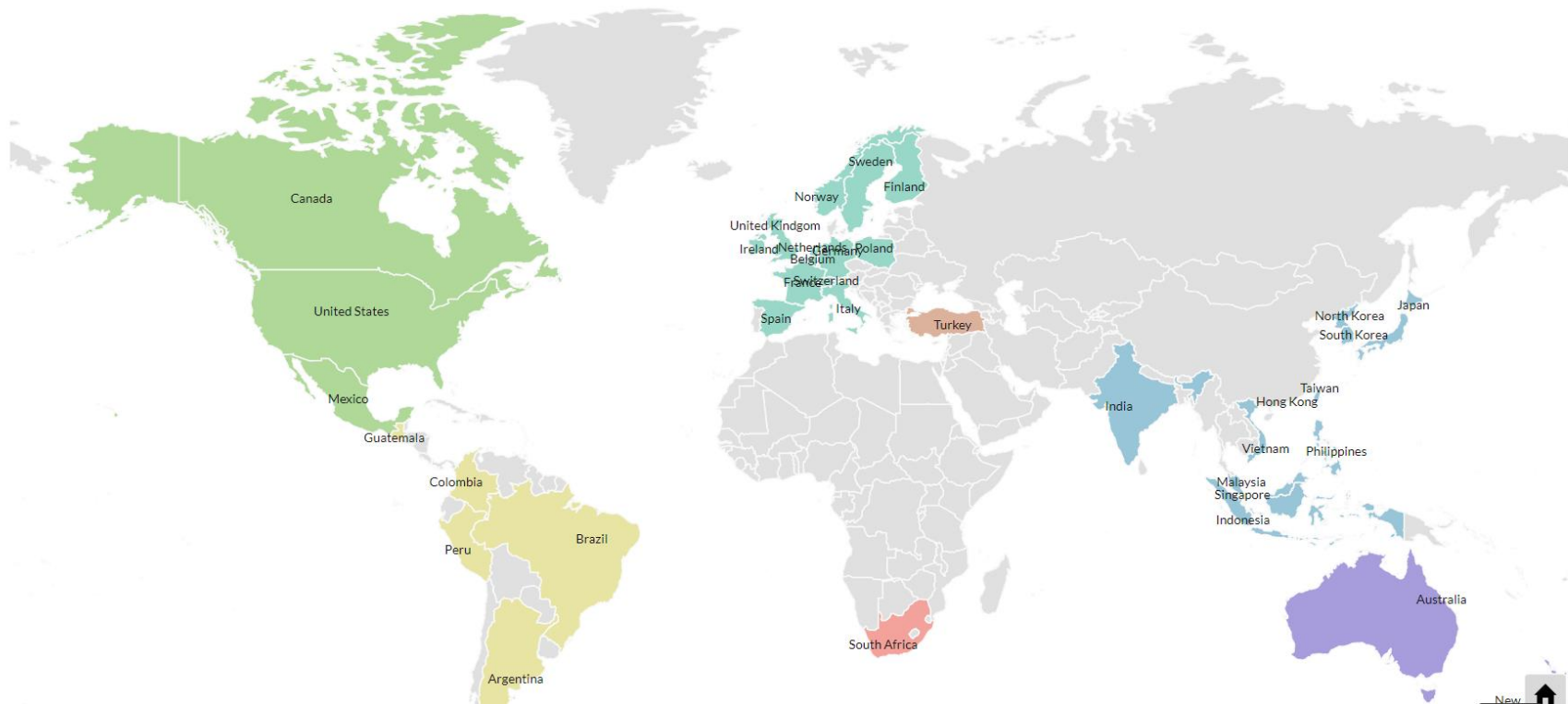


# Agenda

- About IOHA
- Lessons Learned Based on IH Assessments at 300+ sites in 30+ countries
  - Priorities
  - Resources
  - Quality Assurance
  - Business Ethics
- Resources

# Association of Occupational Hygiene Associations

- Created in 1987
- Currently 41 members (representing 35 countries)  
US, Japan, Argentina, and Colombia have two member organisations
- Represents 20,000 occupational hygienists globally
- NGO, recognised by:
  - International Labour Organisation (ILO)
  - World Health Organisation (WHO)





# IOHA

**Vision:**

a safe and healthy working environment for all workers

**Mission:**

to enhance the international network of industrial / occupational hygiene associations that promotes, develops, and improves the practice of industrial / occupational hygiene globally

# 2022-2023 Executive Committee



**President  
Maharshi Mehta  
India**



**President-Elect  
Samantha Connell, Switzerland**



**Treasurer  
Nathalie Argentin  
France**



**Past - President  
Norhazlina Mydin  
Malaysia**

# 2022-2023 IOHA Committee Chairs



**Chair, NAR  
Committee  
Kelly Fernandes, BGC  
US**



**Chair, Communications  
Norhazlina Mydin  
Malaysia  
Co-Chair-Maharshi Mehta**



**Chair, Education  
Thomas P. Fuller  
USA**



**Chair, Governance  
Peter Jakes  
South Africa**



**Chair, Stakeholder Relation  
Andre Winkes  
The Netherlands**

**Participate in the committees!**

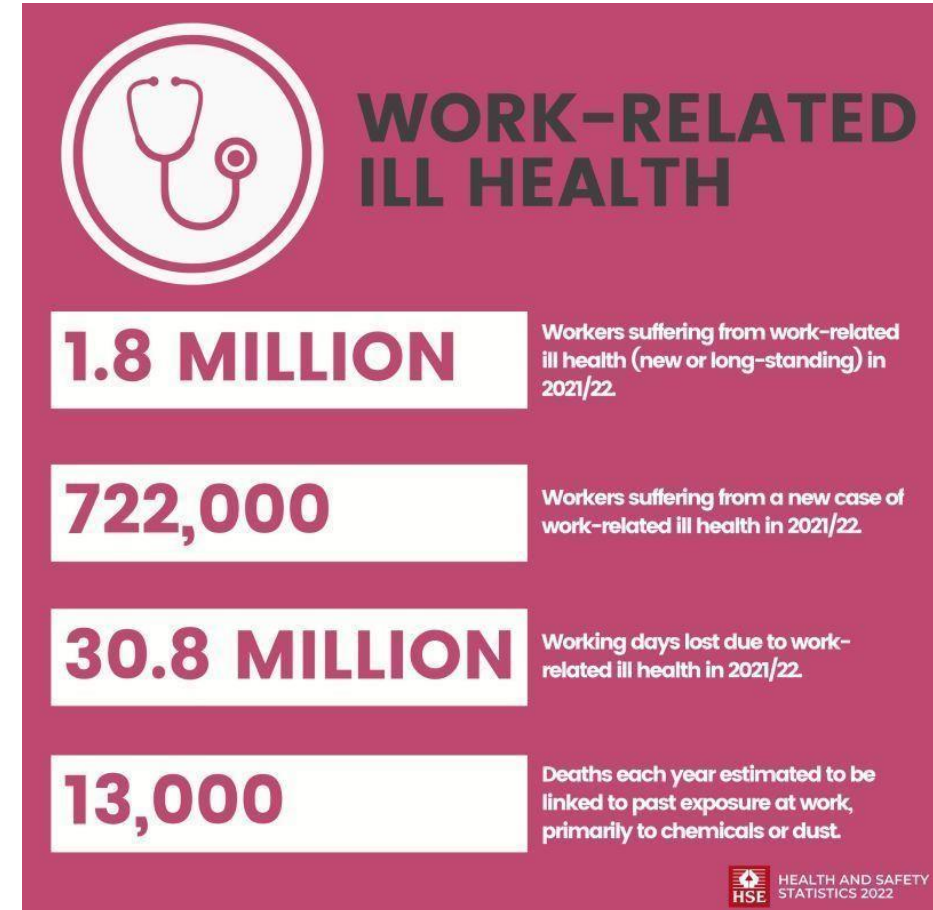


# IOHA Updates

- Webinars on applied OH
  - 14 offered in 2022 and 23
  - Metal and metalloids, noise control technologies, biosafety
  - Free to all IOHA member associations
- Updated websites
  - Resource
  - Bachelors and Masters degree programs globally including distance learning  
<https://www.ioha.net/training/>
- Active partnership with all member associations
- NAR process review
- Global Exposure Manager – Need help in publishing

# Global Challenge -

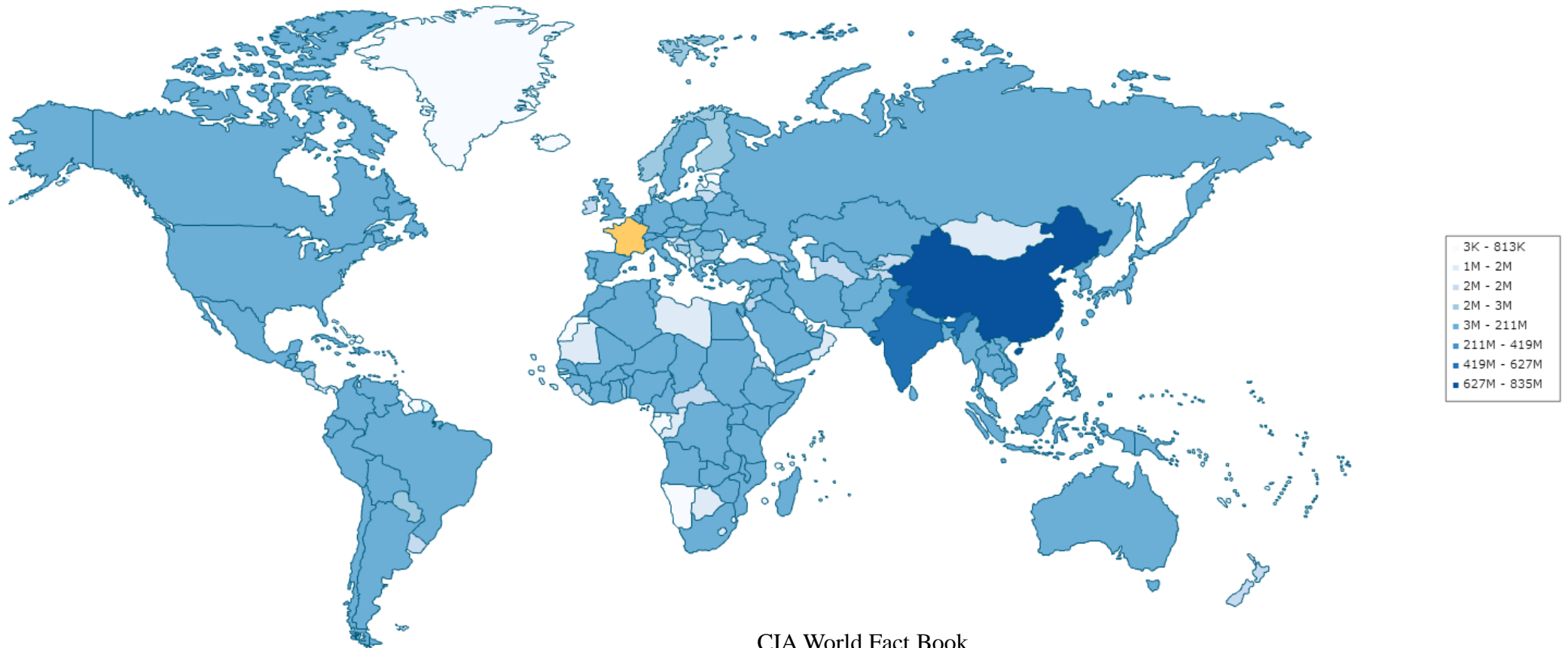
- ~2.3 millions lives are lost due to work related accidents and illness every year globally
- ~ 2 million lives are lost due to occupational illnesses every year
- *Globally, occupational diseases account for 86% of work-related deaths.*
- ~ 4 millions lives lost due to Covid 19
- 44,000 NAR Accredited occupational hygienists are needed
- How many we have and where?



[https://www.ilo.org/moscow/areas-of-work/occupational-safety-and-health/WCMS\\_249278/lang--en/index.htm](https://www.ilo.org/moscow/areas-of-work/occupational-safety-and-health/WCMS_249278/lang--en/index.htm),



# Paradigm shift-Labor Force- Hence EHS Priorities



CIA World Fact Book

<http://www.indexmundi.com/map/?t=0&v=72&r=xx&l=en>

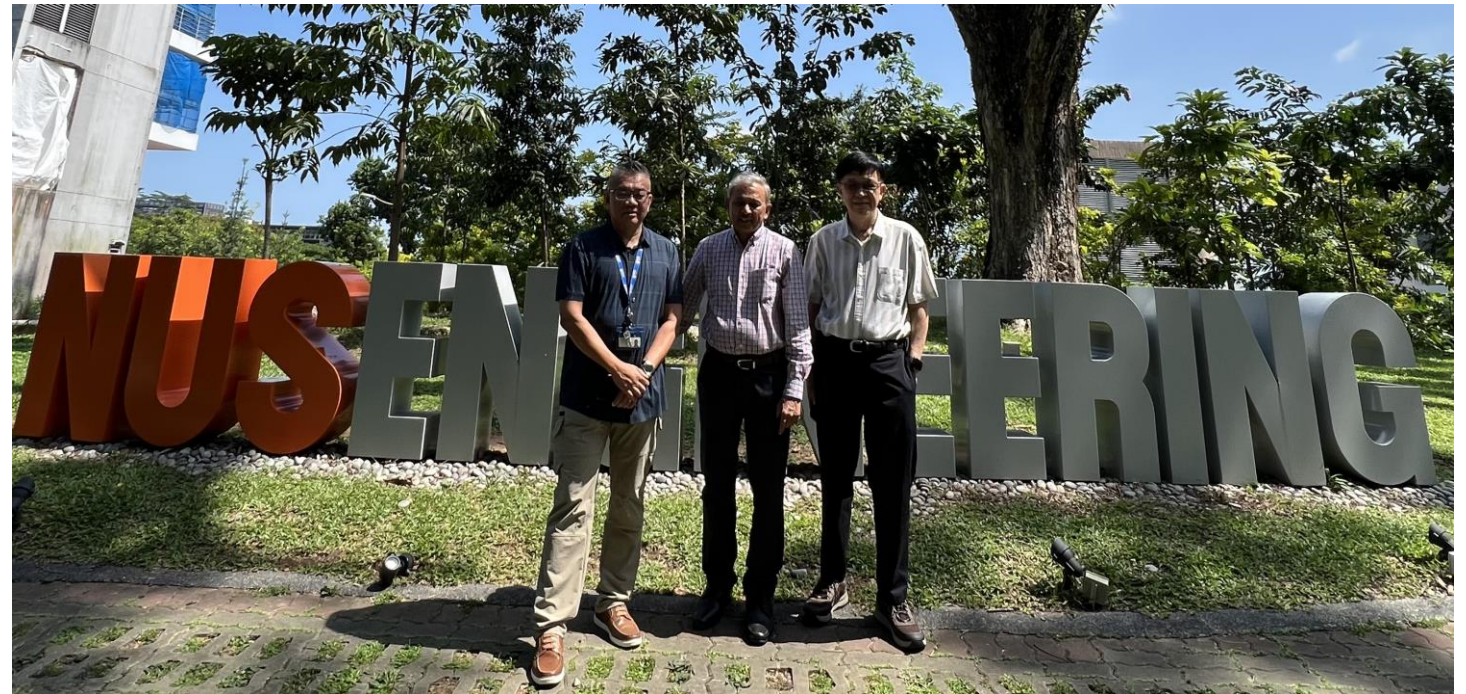


# Lessons Learned Priorities

- Emerging Economies- large labor force
- Resources
  - Availability of competent professionals
  - Infrastructure – accredited labs and cost
  - Service providers – Value addition, sustainability
- Quality Assurance in Exposure Assessment
- Data interpretation and analysis
  - Leverage exposure controls with limited IH monitoring

# Resources – Qualified Occupational Hygienists

- College/College Level Bachelors or Masters Programs  
<https://www.ioha.net/training/>
  - NUS –Singapore
  - India – 2 degree programs
  - Australia – Several
- Qualification Schemes
  - NAR
- Other certifications
  - BGC
  - OHTA



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<a href="#">W501 Medición de Sustancias Peligrosas Training Materials - Spanish</a>	Current Approved	Intermediate		Spanish
<a href="#">W503 Ruido - Medición Y Sus Efectos Training Materials - Spanish</a>	Current Approved	Intermediate		Spanish
<a href="#">W505 Control of Hazardous Substances Draft Spanish Training Materials</a>	Draft	Intermediate		Spanish
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[ohtatraining.org](https://ohtatraining.org)

OHTA c/o MCI, Building 1000, Lakeside, Western Road, Portsmouth, Hampshire, PO6 3EZ, UK

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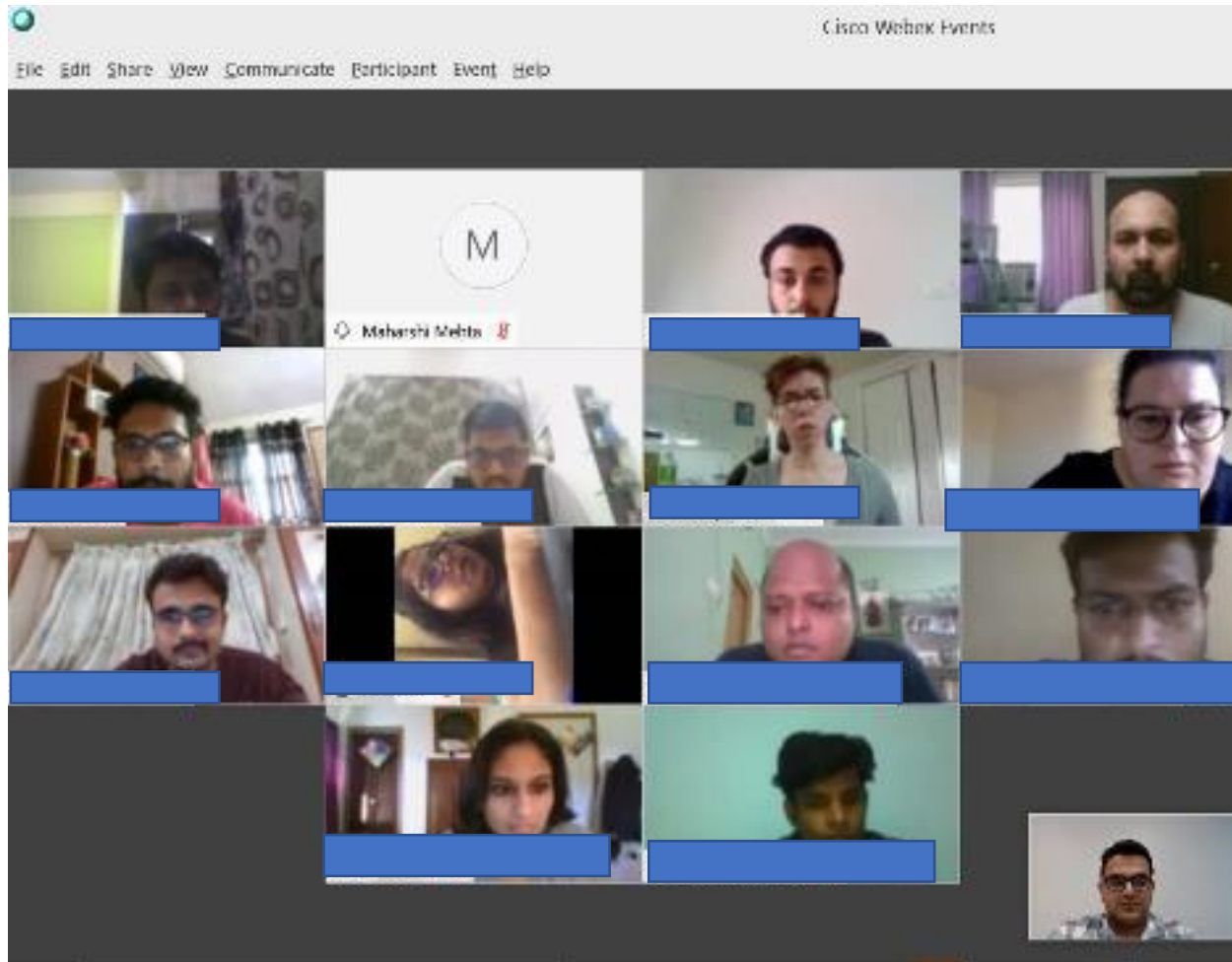


# Certifications

- ICertOH - OHTA Courses – BOHS Examination-Open to all  
<https://www.ohtatraining.org/training-resources/find-any-time-online-courses>
  - General for all
  - Industry Specific – Inhouse (Preferred)
- CIH - Open to all
  - <http://abih.org/> (Board for Global EHS Credentialling)
- NAR certifications



# OHTA Online Training- Examination



*Online exam as per strict  
rigor and guidelines from  
BOHS*



# Inhouse Competency – Best Approach

- For line managers and EHS Professionals
- Develop corporation specific applied industrial hygiene training modules
- Specific potential hazards and risk, exposure assessment and controls
- Translate in Mandarine, Spanish and Portuguese
- Conducted 3-4 day training in the region (India/China, Europe, North America and LAM)



Similar training prepared 800+ Level 1 IH for a corporation in last 8 years



# Partnering with IOHA Associations, industry associations and Individuals

- Free access to publications and books
  - AIHA Exposure Registry
  - BOHS Breathe Freely
- Visiting faculties from associations and industries
- Student mentoring – IOHA is working
- Internship opportunities
- Participating OHSI, BOHS and IOHA committees and activities
- Pharmaceutical Supply Chain Initiatives (PSCI)





## Exposure Decision Analysis (EDA) Registry

Exposure Decision Analysis  
Competency Assessment

List of Registered Specialists:  
Exposure Decision Analysis

Exposure Decision Analysis  
Resources

Is the EDA Registry for me? +

How to Apply for the EDA  
Registry Exam

The goal of this program is to improve the accuracy and efficiency of exposure assessment decisions that can be made when using statistical analysis tools.



**Registrants**

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**Competency  
Assessment**

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**Resources**

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**Program  
Information**

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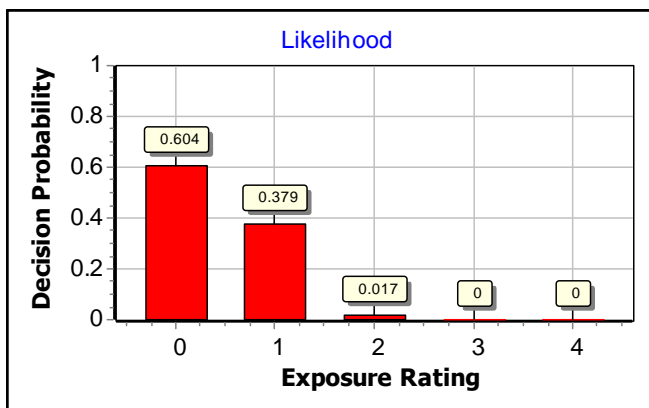


# Quality Assurance in Exposure Risk Assessment

- >50% of exposure results are questionable
- Health of people depends on exposure results/biological monitoring results we provide
- Of the all professions, QA/QC and business ethics have pronounced impact in IH/OH
- Key Elements
  - Reliability, reproducibility and representativeness of the results
  - Robust analytical methods for air sampling and biological monitoring, validated by globally recognized independent agency
  - Statistical analysis of data
  - Exposure profiling for decision making

# Value Addition- Industrial Hygiene services

- Risk assessment to **reduce monitoring costs** , prioritize monitoring for high risk activities.
- Exposure Monitoring
  - **Reproducible**- 3 to 6 repeat samples per exposure group.
  - **Representative** – full shift monitoring by being onsite 1 hour before shift start for calibration and preparation. Our IH is onsite at 5 am if shift starts at 6 am.
  - **Reliable**- quality controls (pre & post calibration with primary calibrator)



Statistical analysis of monitoring data



Detailed field notes documenting exposure contributory factors



# Exposure Profiling Process and lessons

- Based on analysis of > 5000 datasets
- Process: Conduct statistical analysis of unit operations' sampling results
  - Stainless steel welding – Hexchrome
  - Mn exposure during MS welding
  - Lead in soldering
- Lessons (Examples)
  - Lead airborne exposure is unlikely to exceed exposure limits during soldering
  - Electric arc welding on stainless steel for > 30 min with LEV – exposure is likely to be above the exposure limits
  - Weighing Dispensing of potent API is likely to be above limit
- Future
  - IOHA would like to work in developing globally acceptable standards (Similar to EN689) for detailed exposure assessment
  - Work with industry in developing exposure profiles, redact sensitive information and share with global community

# IOHA Code of Practices

- Ireland HSE experience
- Minimum requirements to ensure professional qualifications, exposure assessment practices protects health of working people
- Provide support to member association with their country regulatory authority or their own members

# Conclusions

- Leverage on promoting occupational hygiene from IOHA reach in 38 countries
- Need is enormous especially in emerging economies where need is enormous and resources are limited
- Quality assurance and ethics in IH data collection and interpretation are needed as a lot is riding on the exposure assessment findings
- Leverage on available OH exposure data
- Participate actively at IOHA and other organization in making an impact in one life we have
- Business Ethics