Seminar 52
Indoor Environmental Quality
A Global and Holistic Perspective, Part 2
What every IAQ practitioner needs to know: the IAQA/AIHA Body of Knowledge Project

Atlanta, Georgia
Learning Objectives

• An understanding of the process used to develop a Body of Knowledge

• How volunteer subject matter experts develop consensus on technical subjects

• An understanding of the critical domains within the IAQ assessment area of practice

• How practitioners can utilize a Body of Knowledge
Acknowledgments

Development Team

• IAQA
  – Ian Cull
  – Elliott Horner
  – Joe Hughes

• AIHA
  – Vickie Hawkins
  – Ben Kollmeyer
  – Jim Lewis

Steering Group

• IAQA
  – Kent J. Rawhouser
  – Don Weekes

• AIHA
  – Daniel Anna
  – Wane Baker
• What is a Body of Knowledge?
• The roles of subject matter experts and stakeholders
• IAQ assessment domains
• Next steps in this project
How can you use a Body of Knowledge?
What is a Body of Knowledge?

- The concepts, terms and activities that make up a professional domain

Think of it as a complete set of learning objectives

- Often accompanied by an annotated bibliography of resources mapped to the needed skill / knowledge areas
  - Listing of applicable standards and regulations
  - Rules for practicing
  - Professional development / continuing education available
  - Applicable university programs / courses

<table>
<thead>
<tr>
<th>DO</th>
<th>+ WHAT</th>
<th>+ WHY</th>
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<tbody>
<tr>
<td>Conduct</td>
<td>basic internet searches</td>
<td>to obtain relevant data.</td>
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<tr>
<td></td>
<td>data contained in SDSs</td>
<td>to select identify potential indoor contaminants.</td>
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Setting the Bar

- Steering team of IAQA and AIHA elected leaders, volunteer leaders and staff
- Development team of diverse subject matter experts
  - Sub-teams that focused on their areas of specialty
- Input from IAQA and AIHA members and other stakeholders
<table>
<thead>
<tr>
<th>Domain</th>
<th>Sub-domain</th>
<th>Task</th>
<th>Criticality</th>
<th>Importance</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Assessments</td>
<td>Corrective</td>
<td>Understand conditions that may require immediate emergency action</td>
<td>8.88</td>
<td>4.42</td>
<td>3.36</td>
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<td></td>
<td>Actions</td>
<td>relative to a building or individual occupants.</td>
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<tr>
<td>Assessments</td>
<td>Scoping</td>
<td>Understand how to determine the scope of an indoor air/environmental</td>
<td>9.14</td>
<td>3.91</td>
<td>3.54</td>
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<td></td>
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<td>quality problem in terms of physical areas, people, timeframes and</td>
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<td>budget, in order to appropriately focus investigative actions.</td>
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<tr>
<td>Assessments</td>
<td>History</td>
<td>Understand the importance of collecting a building and occupant</td>
<td>9.63</td>
<td>4.02</td>
<td>3.65</td>
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<tr>
<td></td>
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<td>history. Depending on the situation this may include, but not be</td>
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<td>limited to, location/setting, construction/renovation dates, previous</td>
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<td>land use, management structure, building and HVAC design/operation/</td>
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<td>maintenance records (blueprint/assembly review, etc.), occupant</td>
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<td>surveys/interviews, prior sampling and investigation data, etc.</td>
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</table>
Contaminants and Stressors

Sources
Psychosocial factors
Physical stressors
Particles
Bioaerosols
Gases
Pathways
Health Effects

- Role of medical professionals
- Common building-related illnesses
- Potential causes
- Health effects
- Symptom patterns
Buildings and Building Systems

HVAC

Design impacts
Basics
Equipment
Limits of expertise
Temp.
Humidity
Dew point

Equipment
Building Sciences

- Materials
- Permeation
- Enclosures
- Drainage
- Diffusion
- Exfiltration
- Infiltration
- Barriers
- Retardants
- Condensation
- Climate

Buildings and Building Systems
Assessments

Scientific method

Data gathering

Measurements and interviews

Scoping

Sampling

Why?

When?

What?

Walk-through

History

Corrective action

Immediate vs. long-term

See? Smell? Touch?

Risk and conflict

Communication

Limitations
Mitigation of Problems

- Mitigation plan
- Communication
- Containment
- Substances of concern
- PPE
- Controls
IAQ Practitioner Body of Knowledge

- General Knowledge
- Mitigation of Problems
- Health Effects
- Assessments
- Proactive Approaches
- Contaminants and Stressors

A free resource for IAQ practitioners from IAQA and AIHA

Available on the AIHA and IAQA web sites!
Questions?

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