

ACS Committee on Chemical Safety, Safety Advisory Panel 2023 Meeting Report

Respectfully submitted by: Ellen Gordon, Chair (ems325@Cornell.edu)

The task force members for the revision of *Identifying and Evaluating Hazards in Research Laboratories (IEHRL)*:

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Steering Committee: Samuella Sigmann, Ellen Gordon, Ralph Stuart, Ken Kretchman, David Finster, Pete Reinhardt

In April the task force met in Washington, DC, at the ACS headquarters to begin the 2-year project of revising the resources and contents of this publication along with redesigning the website. The intent of the website is to leave open-ended sections in which additional resources can be added as chemical safety volunteers create them.

Table of Contents:

Introduction

- I. About
- II. Roles & Responsibilities
- III. How to Use this Guide
- IV. Implement Risk Assessment
- V. How Created
 - A. Purpose/aim of IEHRL guidance

B. Context in academic research labs

C. Target users (Roles & responsibilities (PIs, and others...))

VI. Legal liability - UCLA

VII. History of IEHRL document (pp 5-6 in original document)

VIII. Membership and timeline of current task group

IX. *Disclaimer?*

Quick Start

I. What is Risk

A. Hazard and Risk

II. Importance of Risk Assessment

III. Personalize your experience

IV. Recommended for you

V. Familiarity with risk assessment (list with avatars for each level))

A. Level 1 or

B. Level 2 or

C. Level 3 or

VI. Relevant roles in the organization

VII. Background material (for “Recommended for you” badges)

VIII. Context & application

RAMP

I. Introduction to RAMP

A. Using RAMP in IEHRL

II. Recognize Hazards

A. Types of hazards

B. Resources

C. Challenges

III. Assess Risk

A. Risk “equation”: risk = “severity of hazard” x “likelihood occurrence/exposure”

B. Risk matrix

C. Judgment calls

D. Challenges...

IV. Minimize Risk

A. NIOSH Hierarchy of Controls framework

B. SOPs

C. Training

D. Local norms and rules

E. Challenges...

V. Prepare for Emergencies

- A. Spills, fire, injuries
- B. Training
- C. “What if…” scenarios
- D. Challenges...

VI. RAMP as an Iterative Process

- A. “Acceptable risk?” after Minimization and Prepare for emergencies

VII. RAMP Steps as a Prelude to:

- A. Tools/Techniques
- B. Sharing Risk Assessment Findings

VIII. Coupling Safety with Green Chemistry and Sustainability

- A. Making this connection.
- B. A second RAMP characterization (?)

IX. Implementing RAMP

- A. Challenges
- B. RAMP templates

What-If

I. Before the hazard assessment begins – assess needs.

- A. What is the scope, scale, complexity?
- B. What knowledge is needed by you and your team to conduct an adequate review?
- C. Is there information available to aid you in your review?

II. Introduction to the What If Method

- A. When to Use It
- B. Limitations and Seeking Advice

III. Preparing for the Review

- A. Assembling the Team
- B. Assembling Key Information

IV. Setting Expectations (what is acceptable risk?)

V. Conducting the Review (single person or multiple persons) – written in terms of more than one person, but for simpler tasks / experiments could be one.

- Process or Experiment Description
- Compiling What If Questions
- Standard Operation Steps
- Deviation Questions
- o Show What if Table

- o Show Deviation Matrix
- o Show list of deviation questions (or link to)
- o Human Error
- o Equipment Related
- o Utilities
- o Personal Protective Equipment

Show each of these example questions in links.

Show What If Examples

Appendices

- Leggett assessment from original IEHRL

Sharing Assessment Tools

- I. Definition and Stakeholder Identification
- II. In Process Documentation
- III. Coordinating Lab Safety Between Labs
- IV. At publication
- V. After an Incident

Supplementary Matter/Supporting Information

- I. Glossary of Acronyms