# 44411.634 Risk Assessment SOP 2021

**Copy of version 1.0 (ready for lab director approval)**

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**Comments for version 1.0**

Initial version

**Version History**

This document has no approved or retired versions.

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| --- | --- | --- | --- |
| **WYOMING PUBLIC HEALTH LABORATORY** | **TITLE: Performing Risk Assessments** | |  |
| Date: | Version: | Author: Gale Stevens | Page: 1 of 6 |

# PURPOSE:

The general purpose of a risk assessment (RA) is to identify and mitigate the risks of working in the laboratory. By utilizing RA tools and applying the Hierarchy of Controls (Appendix A), hazards can be identified and mitigated with the goal to reduce risks to the least hazardous level, promoting the safest work environment possible for everyone involved.

Risk assessments are to be performed biennially, when a new instrument or procedure is adapted, or when an incident occurs.

# PROCEDURE:

**Use of a Risk Assessment**

Risk assessments can be used to write or assess a current standard operating procedures and should reflect the RA findings. Once a RA is completed, the results are shared with staff to ensure implementation of safe practices. Risk Assessments are reviewed with new hires, instructing them to use appropriate engineering controls and wearing personal protective equipment as they are performing their assigned duties.

# Risk Assessment Template

The RA template is located in Media Lab, Document Number 44411.635. Locate this template and print a copy to record the RA being performed. As the RA is being performed, envision the procedure and the method being analyzed and choose the appropriate responses in the columns provided. If the method does not apply to the procedure being analyzed, write N/A in that column.

An example of an RA is located in Appendix B.

*Definitions:*

Procedure – The operation being performed on a specific instrument or organism. Method – Specific actions performed to carry out a procedure.

Mitigation – The act of making a condition or consequence less severe.

# Template Description

Page 1

* Fill out the header completely and detail the purpose of the risk assessment being performed.
* Note the Matrix Table on Page 1. An example of how to use the table is in Appendix B.

Template body

* Column 1 - Method
  + Column 1 denotes the method being analyzed in the corresponding row.
* Column 2 – Task Frequency
  + Determine the frequency the method is being performed for the procedure.
* Column 3 – Route(s) of Exposure/Associated Risk
  + Define the possible routes of exposure while performing the specific method being analyzed.
* Column 4 – Specific Potential Hazards
  + List any hazards that potentially exist while performing the specific method being analyzed.
* Column 5 – Biosafety Level Recommended
  + Note the level of biosafety that the method is performed.
* Column 6 – Engineering Controls Required
  + Note the engineering controls required to perform the method being analyzed.
* Column 7 – Required PPE
  + Specify required PPE needed while performing the method being analyzed.
* Column 8 – Disposal Considerations
  + Identify how to dispose of any waste that is generated during the performance of the method being analyzed.
* Column 9 – Associated Risk: RA Summary
  + Based on all answers given for the specific method being analyzed, assign a laboratory risk of exposure with the possibility of injury/harm of either low to very high.
* Upon completion of the RA, the level of risk for the procedure will be determined based upon all answers circled in column 9.
  + If the risk assessment falls above medium, (High to Very High), mitigation must take place.
* Completed risk assessments will be submitted to the designated biosafety officer (BSO) and will be reviewed by the Internal Biosafety Committee.
* Once the RA is approved by the IBC, the RA will be kept in the BSO’s files and a copy will be kept in the section where the RA is performed.

# TROUBLESHOOTING OR LIMITATIONS:

Miscalculating the risk of a method or process could result in unfavorable incidents. Failure to review risk assessments with applicable staff can result in unsafe laboratory practices.

Lack of data can result in underestimating the level of risk.

# RECORDS/DOCUMENTATION:

Risk Assessments Standard Operating Procedure Risk Assessment Matrix

# REFERENCES:

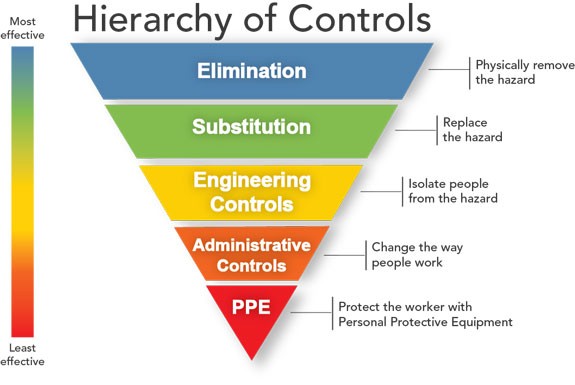
National Institute for Occupational Safety and Health (NIOSH) Association of Public Health Risk Assessment Best Practices

# Appendix A

**HIERARCHY OF CONTOLS**

The National Institute for Occupational Safety and Health (NIOSH) defines the five rungs of the Hierarchy of Controls (HoC) as:

Elimination, Substitution, Engineering Controls, Administrative Controls and Personal Protective Equipment.



Effectivity of controls are most effective from the top of the grid, and decrease in effectiveness as you move down the grid.

Safer working conditions can be created by performing risk assessments and implementing the HoC, with the goal being to create a safer workplace through design.

# Appendix B

Example of how to use the Matrix Table when performing a risk assessment: Page 1:

Procedure: Flu Extractions Section: Molecular

Date: 01/01/01

Purpose of Performing This Risk Assessment: Bi-annual

**Pre RA**, (Pg. 1 of template) determine the risk of pipetting with no safety recommendations:

*The likelihood of something dangerous happening while pipetting a flu sample is* ***Almost Certain.***

*The consequences if an exposure or accident from handling a flu sample could be*

***Moderate****.*

Track this out on the grid below, and the risk becomes “**Very High Risk**” and mitigation is required at this point.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Likelihood** | **Potential Consequences** | | | | | |
|  | Not Significant | Requires  Medical Treatment | Requiring  Hospital Admission | Permanent Injury/Chronic Illness | Fatality |
|  | Not Significant | Minor | Moderate | Major | Severe |
| Almost Certain | Medium | High | **Very High Risk** | Very High Risk | Very High Risk |
| Likely | Medium | High | High | Very High Risk | Very High Risk |
| Possible | Low | Low | High | High | Very High Risk |
| Unlikely | Low | Low | Medium | Medium | High |
| Rare | Low | Low | Low | Low | Med |

Pages 2 – 9: Method: Pipetting

Likelihood: Almost Certain

The following diagram is an example of one method of an RA.

Based on the safety measures assigned in Columns 5-8, Circle the Associated Risk designation in column 9.

**Method/ Task (task Route(s) of**

**Procedure frequency\*\*) exposure and**

**associated risk**

**Specific Potential Hazards**

**Biosafety**

**Level**

**Engineering Controls**

**Required PPE Disposal**

**Considerations**

**to be**

**assessed:\***

**Recommended Required**

***Circle One Circle all that***

***apply***

Inhalation-

***List***

***related Hazard(s)*** generates

aerosols: Potential Virus in

***Circle all that***

***apply***

***Circle all that Circle all that***

***apply apply***

***Circle all that***

***apply***

**Associated Risk:**

**Consider All Routes**

**of Exposure with PPE, Controls and Safety Practices**

***Circle One***

**Method:** Pipetting

Low (1)

BSC Gloves None

Daily

BSL-2

Medium (2)

Ingestion- Chemical Hood Lab Coat

Periodically

Transport

Biohazard

Bag

High (3)

Percutaneous Media

Sporadically -

adding to Lysis/ Binding Buffer

BSL-3

PCR Prep Hood Safety

Glasses

Autoclave

Very High (4)

Mucous

membrane-

Other:

(Specify)

Respiratory Other:

Device (Specify)

Other:

(Specify)

\*Considering the complete RA procedure, add all the totals for Column 9.

Example:

Column 9 was completed 5 times for this particular example. If you circled 3 lows (1) and 2 Mediums (2)

3 lows = 3

2 Mediums = 4 for a sum of 7 7/5 columns = 1.4

Round down to 1, which defines the risk for the RA to LOW. Record your findings on the first page of the RA.