Guide to the Self Laboratory Assessment Tool (S-LAT)

This guide has been developed to assist laboratory personnel with the assessment of biorisk functions in their facility and completion of the Self Laboratory Assessment Tool (S-LAT) and action plan.

Pictures of the completed tool have been included to provide examples of how to assess laboratory functions, record findings and responses, and develop an action plan for implementing corrective actions.

The objective of this guide is to ensure that users:

- Know the key biorisk management functions that should be assessed in the laboratory
- Understand how to use the S-LAT
- Understand how to complete the S-LAT
- Understand how develop an Action Plan based on self-assessment findings and corrective actions

Table of Contents

Introduction

The Self Lab Assessment Tool (S-LAT) is designed to be used for the self-assessment of biorisk management functions in a research or diagnostic laboratory for public and veterinary health. It has been specifically tailored to address common gaps and challenges observed in regional/sub-national laboratories. The tool is available in English, French and Arabic translations.

The tool draws from numerous international and regional guidance documents, assessment methodologies, and other resources, notably:

- World Health Organisation (WHO) Laboratory Assessment Tool (2012)
- WHO Laboratory Biosafety Manual, 3rd edition (2004)
- U.S. Centers for Disease Control and Prevention (CDC) Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5th Edition (2009)

While this tool focuses on key biorisk management systems and functions, the WHO Laboratory Assessment Tool provides a more in-depth methodology that provides a comprehensive assessment of all laboratory functions. As such, it may be a useful subsequent tool for laboratories to explore, for further improvement of performance. Additional information about each of the above resources, as well as others that may be useful in guiding the self-assessment process and implementing corrective actions, are available under the "Resources" tab.

This tool was developed with support from the U.S. Department of State's Biosecurity Engagement Program. Authors: Erin M. Sorrell, PhD MSc; Claire J. Standley, PhD MSc; Lauren Miller, MSc; Alexander Linder, MSc.
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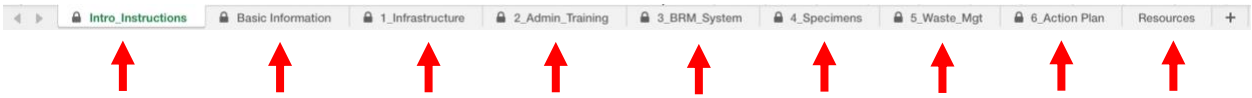
Instructions

Implementation of this laboratory assessment tool will require a review of existing laboratory documents (Standard Operating Procedures, policies and guidance documents), as well as physical observation and inspection of the facility. Laboratory managers should determine which components (sheets) and questions are appropriate for assessing their lab's capabilities. *Not all of the questions need to be answered in order to adequately assess the lab facility.* It is recommended that your team complete the assessment before moving on to the Action Plan component of the workbook.

There are nine components to the S-LAT:

- Introduction and Instructions
- Basic Information
- Infrastructure and Equipment
- Administration and Training
- Biorisk Management System
- Specimens
- Waste Management
- Action Plan
- Resources

Each component has a separate sheet within the S-LAT Excel workbook. To access and complete each section, select the corresponding sheet at the bottom spreadsheet.



The tool is formatted to provide space for assessors to select a response to each question, record comments, as well as identify corrective actions that should be taken as a result of any observed deficits. It may be more effective to complete the 'Response' column for each section first before generating corrective actions.

Response (select one)			*Comments*	*Corrective action to take (if applicable)*
YES	NO	N/A		

To complete the assessment:

1. Review and respond to the questions of the assessment.
2. After providing responses, review each sheet and questions with a response of 'no', which indicates a gap in capacity.
3. Discuss and identify the corrective actions that would help address the gap identified.
4. Enter responses into the corresponding cell in the 'Corrective Action' column.
5. The information that is entered into the 'Corrective Action to Take' column can then be used to generate the action plan found on sheet 'Action Plan'.

To complete the Action Plan:

1. After the assessor(s) has identified and input corrective actions for each section, move on to sheet 'Action Plan'.
2. The 'Action Plan' sheet is a template to facilitate implementing any identified gaps and will automatically-populate as the tool is completed. This automatic function requires assessors to input data electronically into the excel sheet.
3. The action plan can help assessor(s):
    1. Determine the level of priority of that action (low, medium or high),
    2. The date by which the action should be completed
    3. The person who is responsible for completing the action

How to Record Responses

This tool may be printed out and completed by hand or completed electronically. To complete the tool electronically, enter responses in the appropriate cells and save for the entirety of the assessment. *We ask that any assessment done by hand please also be done electronically in order to complete the Action Plan.*

WHEN COMPLETING THE FORM ELECTRONICALLY:

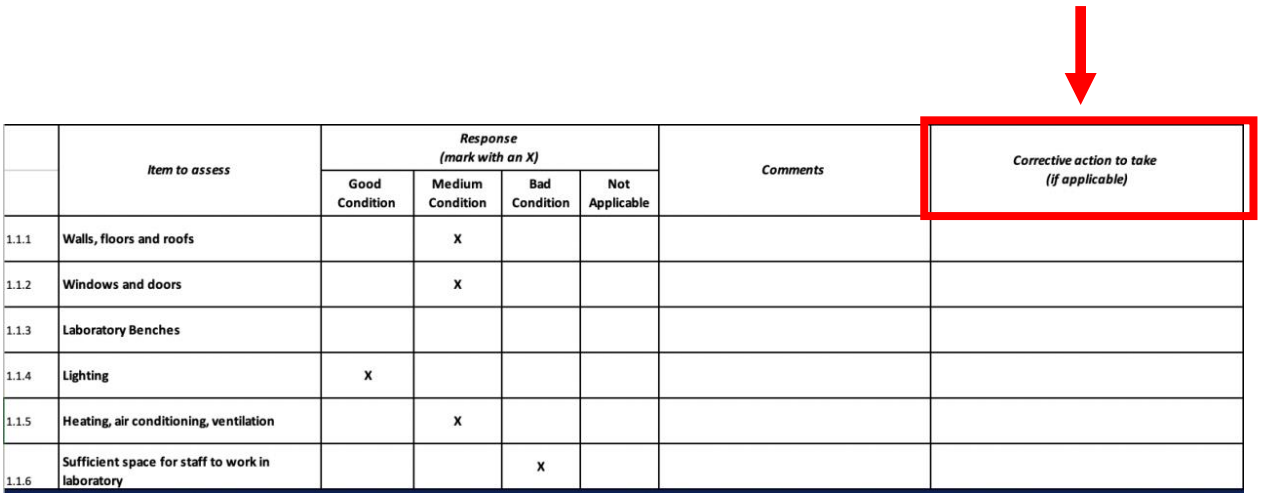
- Use 'X' to mark response

	Item to assess	*Response (mark with an X)*				*Comments*	*Corrective action to take (if applicable)*
		Good Condition	Medium Condition	Bad Condition	Not Applicable		
1.1.1	Walls, floors and roofs		X				
1.1.2	Windows and doors		X				
1.1.3	Laboratory Benches						
1.1.4	Lighting	X					
1.1.5	Heating, air conditioning, ventilation		X				
1.1.6	Sufficient space for staff to work in laboratory			X			

- Please indicate your answers in a different color, like red, so that your response is clear.

		Response (select one)		*Comments*			*Corrective action to take (if applicable)*
1.2.1	Is the laboratory equipped with telephone?	YES	NO				
1.2.2	Is the laboratory equipped with fax?	YES	NO				
1.2.3	Is the laboratory equipped with computer with internet access?	YES	NO				
1.2.4	If yes, do all laboratory staff have access to the computer?	YES	NO				
1.2.5	What software is available in the laboratory? Select all that apply	Database software	E-mail	Microsoft Word	Laboratory Information Management System (LIMS)		
1.2.6	If using LIMS, is data easily retrievable?	YES	NO				

- Any 'corrective actions to take' that are recorded in the tool will automatically populate in the Action Plan, the final sheet of the tool.

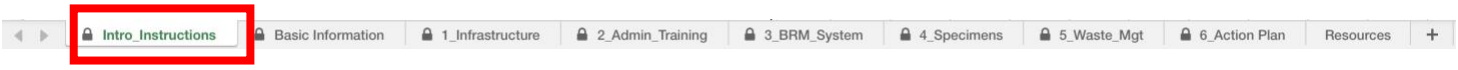


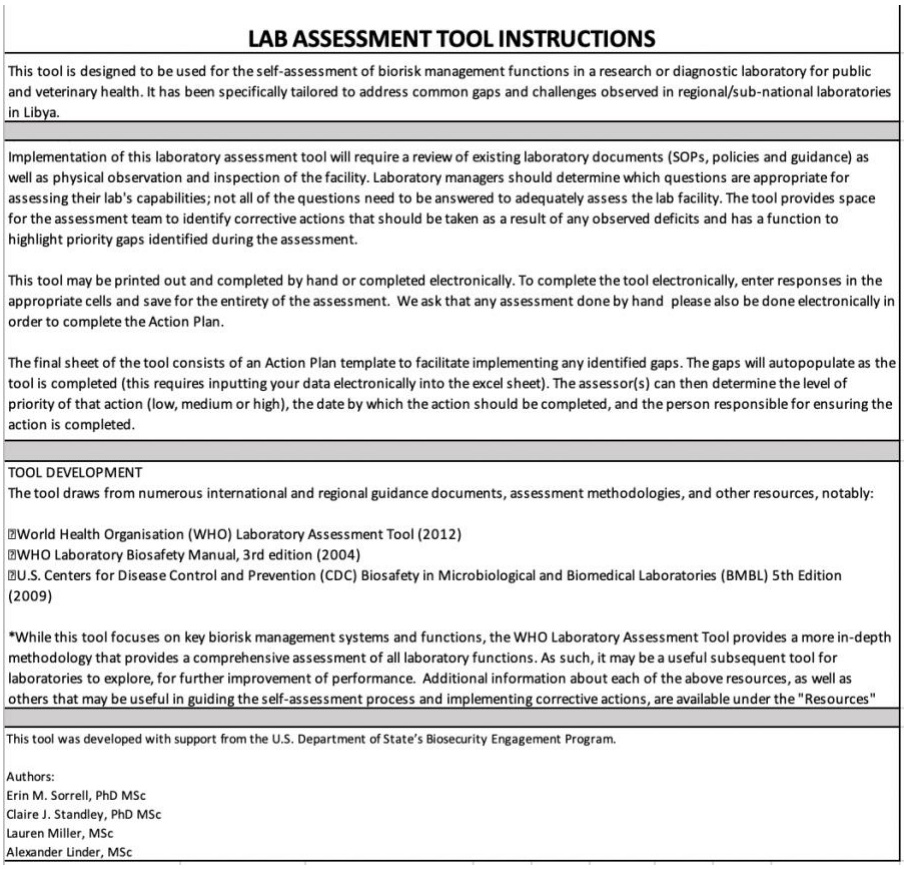
	Item to assess	Response (mark with an X)				Comments	Corrective action to take (if applicable)
		Good Condition	Medium Condition	Bad Condition	Not Applicable		
1.1.1	Walls, floors and roofs		X				
1.1.2	Windows and doors		X				
1.1.3	Laboratory Benches						
1.1.4	Lighting	X					
1.1.5	Heating, air conditioning, ventilation		X				
1.1.6	Sufficient space for staff to work in laboratory			X			

Components of the S-LAT

Introduction and Instructions

If you are completing the tool electronically, select the sheet titled 'Intro_Instructions'.





LAB ASSESSMENT TOOL INSTRUCTIONS

This tool is designed to be used for the self-assessment of biorisk management functions in a research or diagnostic laboratory for public and veterinary health. It has been specifically tailored to address common gaps and challenges observed in regional/sub-national laboratories in Libya.

Implementation of this laboratory assessment tool will require a review of existing laboratory documents (SOPs, policies and guidance) as well as physical observation and inspection of the facility. Laboratory managers should determine which questions are appropriate for assessing their lab's capabilities; not all of the questions need to be answered to adequately assess the lab facility. The tool provides space for the assessment team to identify corrective actions that should be taken as a result of any observed deficits and has a function to highlight priority gaps identified during the assessment.

This tool may be printed out and completed by hand or completed electronically. To complete the tool electronically, enter responses in the appropriate cells and save for the entirety of the assessment. We ask that any assessment done by hand please also be done electronically in order to complete the Action Plan.

The final sheet of the tool consists of an Action Plan template to facilitate implementing any identified gaps. The gaps will autopopulate as the tool is completed (this requires inputting your data electronically into the excel sheet). The assessor(s) can then determine the level of priority of that action (low, medium or high), the date by which the action should be completed, and the person responsible for ensuring the action is completed.

TOOL DEVELOPMENT
The tool draws from numerous international and regional guidance documents, assessment methodologies, and other resources, notably:

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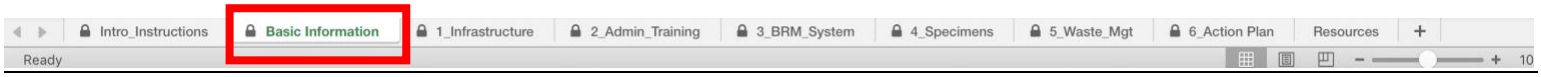
This tool was developed with support from the U.S. Department of State's Biosecurity Engagement Program.

Authors:
Erin M. Sorrell, PhD MSc
Claire J. Standley, PhD MSc
Lauren Miller, MSc
Alexander Linder, MSc

Basic Information

If you are completing the tool electronically, select the sheet titled 'Basic Information'.



Please provide information about your laboratory facility and assessment details such as date of assessment, name of assessor and contact information.

Basic Information

Laboratory Information	
Province/Region	
District/Prefecture	
Laboratory name	
Physical address	
Primary telephone	
Secondary telephone	
Fax	
Email	
Name of the Laboratory Director	

Assessment Details	
Date of the assessment (DD/MM/YYYY)	
Assessment Team Lead	
Title/Position of Assessment Team Lead	
Telephone number of Assessment Team Lead	
Email address of Assessment Team Lead	
Additional Assessment Team Members (if applicable)	
Name and contact information of person responsible for implementing corrective actions	
Name and contact information of person responsible for assessing corrective actions	

Infrastructure and Equipment

If you are completing the tool electronically, select the sheet titled 'Infrastructure'.

There are five components to assess:

1. General Condition of the Laboratory Building and Associated Infrastructure
2. Information and Communication Technology Available within the Laboratory
3. Utilities (i.e. water, power supply) Available within the Laboratory
4. Equipment Inventory
5. Equipment Usage, Maintenance, Monitoring and Calibration

1. **General Lab Condition**: Assess the general condition of the laboratory building and its associated infrastructure. Determine the condition of each item and record as: good, medium, bad, or not applicable. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

   Example: Observe the laboratory facility pictured below. The general conditions of the facility have been assessed and the S-LAT section completed based on assessment findings.

1.1 General Condition of the Laboratory Building and Associated Infrastructure							
	Item to assess	*Response (mark with an X)*				*Comments*	*Corrective action to take (if applicable)*
		Good Condition	Medium Condition	Bad Condition	Not Applicable		
1.1.1	Walls, floors and roofs	X					
1.1.2	Windows and doors	X					
1.1.3	Laboratory Benches	X				Laboratory benches recently replaced	
1.1.4	Lighting	X				Lighting regularly maintained	
1.1.5	Heating, air conditioning, ventilation	X					
1.1.6	Sufficient space for staff to work in laboratory	X					

2. **Information and Communication Technology:** Assess the information and communication technologies that are available within the laboratory. Answer 'Yes' or 'No' to each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

1.2 Information and Communication Technology Available within the Laboratory								
		Response (select one)		*Comments*				*Corrective action to take (if applicable)*
1.2.1	Is the laboratory equipped with telephone?	YES	NO	Main lab and offices have telephone access				
1.2.2	Is the laboratory equipped with fax?	YES	NO					
1.2.3	Is the laboratory equipped with computer with internet access?	YES	NO	Internet access is not reliable				
1.2.4	If yes, do all laboratory staff have access to the computer?	YES	NO					Ensure all laboratory staff have computer access
1.2.5	What software is available in the laboratory? Select all that apply	Database software	E-mail	Microsoft Word	Laboratory Information Management System (LIMS)			
1.2.6	If using LIMS, is data easily retrievable?	YES	NO					

3. **Utilities:** Assess the utilities available within the laboratory, such as the water and power supply. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

1.3 Utilities (i.e. water, power supply) available within the laboratory						
		Response (select one)			*Comments*	*Corrective action to take (if applicable)*
1.3.1	Does the laboratory face electricity disruptions?	YES	NO	N/A		
1.3.2	Is a backup power source available?	YES	NO	N/A		
1.3.3	Is sensitive material connected to an uninterrupted power supply (UPS)?	YES	NO	N/A		
1.3.4	Does the laboratory have access to clean and distilled water?	YES	NO	N/A		

4. **Equipment Inventory:** Assess the equipment available within the laboratory. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

1.4 Equipment Inventory						
		Response (select one)			*Comments*	*Corrective Action to Take*
1.4.1	**Does the laboratory or institution have an equipment inventory system?**	YES	NO	N/A		
1.4.2	**If yes (or partial), are equipment forms recorded on paper or electronically?**	Paper	Electronic			
1.4.3	**If yes (or partial), does this form include:**					
	Name of the equipment	YES	NO	N/A		
	Serial number	YES	NO	N/A		
	Name and contact details of manufacturer (or local supplier)	YES	NO	N/A		
	Service agreement and supplier	YES	NO	N/A		
	Date of receipt	YES	NO	N/A		
	Location in the laboratory	YES	NO	N/A		
	Date of calibration or service	YES	NO	N/A		
	Maintenance activities	YES	NO	N/A		
	Name of individual primarily responsible for this equipment?	YES	NO	N/A		Indicate who is responsible for maintaining equipment in equipment inventory record
1.4.4	**Is the record updated on an annual basis?**	YES	NO	N/A		Update the equipment record annually

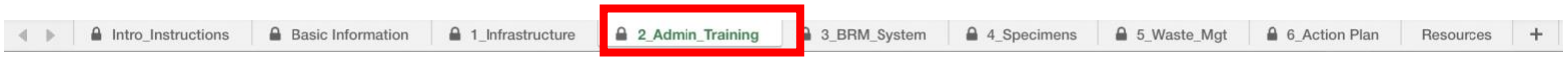
5. **Equipment Usage, Maintenance, Monitoring and Calibration:** Assess the equipment within the laboratory. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

1.5 Equipment Usage, Maintenance, Monitoring and Calibration						
		Response (select one)			Comments	Corrective Action to Take
	Usage					
1.5.1	Are user manuals available for most of the equipment? If yes, are they available in Arabic? Please note in comments section.	YES	NO	N/A		
1.5.2	Is laboratory staff trained and authorized before first using laboratory equipment?	YES	NO	N/A		
	Maintenance					
1.5.3	Is the equipment maintained in a safe working condition (including electrical safety)?	YES	NO	N/A		
1.5.4	Does the laboratory have a dedicated person in charge of the equipment (maintenance management, etc.)?	YES	NO	N/A		Designate person for equipment maintenance
1.5.5	Does the laboratory have contracts with external maintenance and repair services?	YES	NO	N/A		
1.5.6	Is there a specific budget for laboratory equipment maintenance and calibration?	YES	NO	N/A		
1.5.7	Are there sufficient spare parts for quick repairs (lamps, fuses, filters, etc.)?	YES	NO	N/A		Prioritize which machines require regular maintenance. Determine how to order and stock spare parts for quick repair.
1.5.8	Are procedures available for the disposal of equipment that can no longer function?	YES	NO	N/A		

1.5 Equipment Usage, Maintenance, Monitoring and Calibration						
		Response (select one)			Comments	Corrective Action to Take
	Monitoring					
1.5.9	Is there daily monitoring and recording of temperatures for temperature-dependent equipment (incubators, freezers, fridges)?	YES	NO	N/A		
	Calibration					
1.5.10	Is equipment calibrated when received in the laboratory?	YES	NO	N/A		
1.5.11	Is there a specific protocol and time period for pipette calibration?	YES	NO	N/A		
1.5.12	Is calibration of other equipment performed and checked regularly (pH meter, spectrophotometer, etc.)? If yes, please list which equipment in the comments section.	YES	NO	N/A	Centrifuges, pH meters, thermometers, spectrophotometers	

Administration and Training

If you are completing the tool electronically, select the sheet titled 'Admin_Training'.



There are two components to assess:

1. Administration and Management
2. Training

1. **Administration and Management:** Assess the laboratory's organizational materials, personnel qualifications, Quality Management Program and laboratory procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

2.1 Administration and Management						
		Response (select one)			***Comments***	***Corrective Action to Take***
2.1.1	**Does the laboratory have an organizational chart to outline roles and responsibilities for the laboratory?**	YES	NO	N/A		
2.1.2	**Are job descriptions and job qualifications available for each position in the laboratory?**	YES	NO	N/A		
2.1.3	**Is the laboratory staffed properly to conduct the required work?**	YES	NO	N/A		
2.1.4	**Are qualifications, trainings and experience of staff recorded?**	YES	NO	N/A		
2.1.5	**Is there a system in place to organize laboratory documents and records?**	YES	NO	N/A		
2.1.6	**If yes, how are documents organized?**	Electronically				

		Response (select one)			Comments	Corrective Action to Take
2.1.7	Does the laboratory have a quality management program?	YES	NO	N/A		
2.1.8	If yes, does it cover the folllowing areas:					
	Organization	YES	NO	N/A		
	Personnel	YES	NO	N/A		
	Equipment	YES	NO	N/A		
	Purchasing and Inventory	YES	NO	N/A		
	Process Control	YES	NO	N/A		
	Information Management	YES	NO	N/A		
	Documents and Records	YES	NO	N/A		
	Occurrence Management	YES	NO	N/A		
	Assessment	YES	NO	N/A		
	Process Improvement	YES	NO	N/A		
	Customer Service	YES	NO	N/A		
	Facilities and Safety	YES	NO	N/A		

		Response (select one)			Comments	Corrective Action to Take
2.1.9	Are laboratory procedures reviewed on a regular basis? Specify how often in the comments section.	YES	NO	N/A	Quarterly	
2.1.10	Are there procedures in place to file an incident report or complaint?	YES	NO	N/A		
2.1.11	If yes, how are corrective actions documented? (Provide answer in comments section)	A corrective action statement report is written and filed				

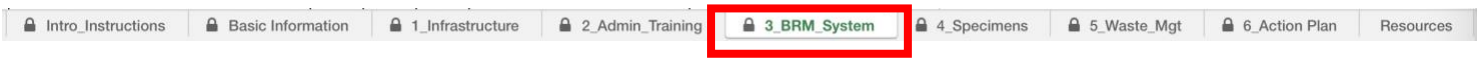
2. **Training:** Assess the frequency and subject matter of training available for laboratory personnel. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

2.2 Training						
		Response (select one)			***Comments***	***Corrective Action to Take***
2.2.1	**Is there a professional development program in place for all staff?**	YES	NO	N/A		
2.2.2	**Is continuing education provided to all staff? (Include training, workshops, conferences, online courses)**	YES	NO	N/A		
2.2.3	**Is the staffed trained on how to use laboratory equipment?**	YES	NO	N/A		
2.2.4	**If yes, how often (provide answer in comments section)**	Staff are trained at start of position. Competency trainings occur annually.				
2.2.5	**Is training available on inventory management?**	YES	NO	N/A		
2.2.6	**If yes, how often (provide answer in comments section)**	Annual				

		Response (select one)			Comments	Corrective Action to Take
2.2.6	**If yes, how often (provide answer in comments section)**	Annual				
2.2.7	**Is training available on biosafety?**	YES	NO	N/A		
2.2.8	**If yes, how often (provide answer in comments section)**	Annual				
2.2.9	**Is training available on biosecurity?**	YES	NO	N/A		
2.2.10	**If yes, how often (provide answer in comments section)**	Every 2 years				
2.2.11	**Is training available on waste management?**	YES	NO	N/A		
2.2.12	**If yes, how often (provide answer in comments section)**	Annual				
2.2.13	**Does your laboratory or institution provide regular training on biorisk management?**	YES	NO	N/A		
2.2.14	**If yes, how often (provide answer in comments section)**	Annual				

Biorisk Management System

If you are completing the tool electronically, select the sheet titled 'BRM_System'.



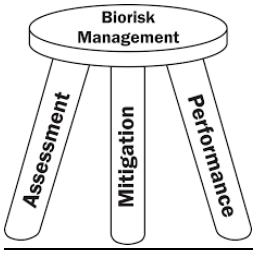
There are five components to assess:

1. Policies and Documents
2. Biorisk Assessment
3. Biorisk Mitigation
    1. Administrative Controls
    2. Practice and Procedures (Personnel)
4. Implementation and Operation
    1. Personnel Protection
    2. Security
    3. Emergency Procedures
5. Performance Review

1. **Policies and Documents:** Assess the laboratory's written policies and procedural documents. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

3.1 Policies and Documents						
		Response (select one)			*Comments*	*Corrective Action to Take*
3.1.1	Does the laboratory have a written policy concerning the management of laboratory biorisk (biosafety and biosecurity)?	YES	NO	N/A		
3.1.2	If yes, does the policy clearly state the biorisk management objectives?	YES	NO	N/A		
3.1.3	If yes, does is there a guideline for how to meet the biorisk objectives? Does it include SOPs?	YES	NO	N/A		
3.1.4	If yes, is the policy available to all laboratory staff for review?	YES	NO	N/A		Ensure policy is available for all staff
3.1.5	Are roles and responsibilities for laboratory biorisk management identified and assigned to specific laboratory personnel?	YES	NO	N/A		

2. **Biorisk Assessment:** Assess the laboratory's biorisk assessment procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).



3.2 Biorisk Assessment						
		Response (select one)			*Comments*	*Corrective Action to Take*
3.2.1	Is there an inventory of all biological hazards in the laboratory? If yes, please specify where the inventory log is managed (paper or electronic) in the comments section.	YES	NO	N/A		
3.2.2	Have the biorisks been assessed and categorized?	YES	NO	N/A		
3.2.3	Does the laboratory have scheduled, regular laboratory assessments? If yes, please specify the schedule in the comments section.	YES	NO	N/A	Quarterly	

3. **Biorisk Mitigation:** Assess the laboratory's administrative controls and personnel's practices and procedures for biorisk mitigation. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

3.3 Biorisk Mitigation						
		Response (select one)			*Comments*	*Corrective Action to Take*
	Administrative Controls					
3.3.1	**Does your laborotory have a biorisk mitigation plan?**	YES	NO	N/A		
3.3.2	**If yes, are control measures identified and described to reduce or eliminate biorisks in the laboratory? (please provide answer in comment section)**	YES	NO	N/A		
3.3.3	**Is there an emergency protocol in place in case of containment or accidental exposure to an agent or sample?**	YES	NO	N/A		
	Practices and Procedures (Personnel):					
3.3.4	**Is there a designated person or office to oversee the biorisk management system at your laboratory or facility?**	YES	NO	N/A		
3.3.5	**Has a biorisk management committee for your laboratory or institution been established?**	YES	NO	N/A		Prioritize the formation of a biorisk management committee. Identify participants.
3.3.6	**Does your laboratory or institution have a designated biorisk management advisor or biological safety officer?**	YES	NO	N/A		
3.3.7	**If yes, do they have the necessary authority and budget to implement biorisk management best practices?**	YES	NO	N/A		
3.3.8	**Does your laboratory or institution have a designated facilities manager to oversee equipment and the maitenance of the building?**	YES	NO	N/A		

4. **Implementation and Operation:** Assess the laboratory's personal protection, security, and emergency procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

3.4 Implementation and Operation

		Response (select one)			Comments	Corrective Action to Take
	Personnel Protection					
3.4.1	**Are PPE and clothing used appropriately?**	YES	NO	N/A		
3.4.2	**Can personnel access prophylactic or emergency treatment in case of exposure to contaminated materials?**	YES	NO	N/A		
3.4.3	**Is a vaccination policy defined and implemented? If yes, please note which vaccines are available in the comments section.**	YES	NO	N/A		
3.4.4	**If you have biosafety cabinets, are they certified? (Please indicate responsible party and schedule for certification in comments section)**	YES	NO	N/A	No set schedule for certification	Designate person responsible for certification. Schedule annual certifcation of biosafety cabinet.
3.4.5	**Are disinfection and decontamination procedures in the laboratory implemented effectively?**	YES	NO	N/A		
3.4.6	**Are waste management procedures implemented effectively?**	YES	NO	N/A	Need training on waste management	Review waste management policies and procedures
3.4.7	**Are the laboratory facilities designed to allow work in a safe and secure way?**	YES	NO	N/A		
		Response (select one)			**Comments**	**Corrective Action to Take**
	Security					
3.4.8	**Does the instution have building security or some form of access control to enter the laboratory space?**	YES	NO	N/A		
3.4.9	**Are appropriate security measures in place to minimize potential inappopriate removal or release of biological agents (e.g. theft, earthquake, flood)?**	YES	NO	N/A		
3.4.10	**Is access to sensitive information (e.g. inventory of agents and toxins) controlled by adequate policies and procedures? If yes, please explain in comments section.**	YES	NO	N/A	Sensitive information stored on the computer is password protected and only accesible to certain personnel.	
3.4.11	**Do laboratory staff wear identification tags or badges?**	YES	NO	N/A		
3.4.12	**Does the laboratory enforce access restrictions?**	YES	NO	N/A		
3.4.13	**Are freezers and refrigerators locked when not in use?**	YES	NO	N/A		
3.4.14	**Are procedures for a safe and secure transport of culture, specimens, samples and other contaminated materials established?**	YES	NO	N/A		
3.4.15	**Is yes, are there written protocols and regular training/certification?**	YES	NO	N/A		Protocols for transport need to be updated.
		Response (select one)			**Comments**	**Corrective Action to Take**
	Emergency Procedures					
3.4.16	**Are emergency plans available (e.g. in case of explosion, fire, flood, worker exposure, accident or illness, major spillage or power failure)? If yes list which plans are available in comments section.**	YES	NO	N/A	Accident illness spillage power failure	
3.4.17	**Are emergency simulation exercices including security drills conducted regularly?**	YES	NO	N/A	Emergency simulation last conducted 2 years ago	Simulations and drills need to be conducted annually, if possible

5. **Performance Review:** Assess the how the laboratory conducts biorisk management performance reviews. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

3.5 Performance Review						
		Response (select one)			*Comments*	*Corrective Action to Take*
3.5.1	**Are biorisk management plans reviewed annually?**	YES	NO	N/A		
3.5.2	**Are biorisk documents and records managed as part of the laboratory document management system?**	YES	NO	N/A		
3.5.3	**Are accident/incident and nonconformities related to biorisk correctly managed (i.e. reported, recorded, investigated, and leading to preventive or corrective actions)?**	YES	NO	N/A		
3.5.4	**Do planned inspection or audit(s) include assessment of the biorisk management system?**	YES	NO	N/A		Include biorisk management system in routine inspections

Specimens

If you are completing the tool electronically, select the sheet titled 'Specimens'.

There are three components to assess:

1. Specimen Inventory and Collection
    1. Inventory
    2. Collection
2. Specimen Handling
3. Specimen Referral and Transport

1. **Specimen Inventory:** Assess the laboratory's specimen inventory systems. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan.

4. Specimens						
4.1 Specimen Inventory and Collection						
		Response (select one)			*Comments*	*Corrective Action to Take*
	Inventory					
4.1.1	**Does your laboratory or institution have an inventory system for specimens? If yes, please note whether it is recorded in a book, worksheet, computer or other comparable system in the comments section.**	YES	NO	N/A	All specimens are recorded in a worksheet	
4.1.2	**If yes (or partial), is there:**					
	A unique identification number	YES	NO	N/A		
	Date of receipt	YES	NO	N/A		
	Time of receipt	YES	NO	N/A		
	Identification code to link alliquots to an original sample	YES	NO	N/A		
4.1.3	**Do you have an SOP for sample management and inventory for biological samples?**	YES	NO	N/A		
4.1.4	**If yes, is your system an electronic database?**	YES	NO	N/A		
4.1.5	**Are your biological agents in a secured space?**	YES	NO	N/A		

2. **Specimen Inventory:** Assess the laboratory's specimen collection procedures and usage of request forms. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan.

		Response (select one)			*Comments*	*Corrective Action to Take*
	Collection					
4.1.6	**Is your laboratory facilitiy involved in specimen collection?**	YES	NO	N/A		
4.1.7	**If yes:**					
	Are collection procedures documented and available to relevant personnel?	YES	NO	N/A		
	Do these include minimum patient identification details?	YES	NO	N/A		
4.1.8	**Is a standard specimen request form available for those requesting tests?**	YES	NO	N/A	There is no standard request form available for requesting tests	Create a standard specimen request form
4.1.9	**If yes (or partial), does it include:**					
	Name of the patient?	YES	NO	N/A		
	Gender?	YES	NO	N/A		
	Date of birth?	YES	NO	N/A		
	Patient identification number (if applicable)?	YES	NO	N/A		
	Identification of the prescriber?	YES	NO	N/A		
	Date/time of collection?	YES	NO	N/A		
	Type of specimen?	YES	NO	N/A		
	Specimen identification number (if applicable)?	YES	NO	N/A		
	Examinations requested?	YES	NO	N/A		
	Clinical information?	YES	NO	N/A		

3. **Specimen Handling:** Assess the laboratory's specimen receipt and collection processes. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan.

4.2 Specimen Handling

		Response (select one)			Comments	Corrective Action to Take
4.2.1	**Does the laboratory experience problems with specimens receipt due to any of the following issues:** **(If yes, please specify if this is a recurring issue for your laboratory or institution.)**					
	No request form	YES	NO	N/A		
	Incomplete request form	YES	NO	N/A	Recurring issue that happens frequently	
	Incorrect specimen identification	YES	NO	N/A		
	Incorrect patient identification	YES	NO	N/A	Does not occur frequently	
	Inadequate container	YES	NO	N/A		
	Inadequate volume	YES	NO	N/A		
	Inadequate transport media/anticoagulant	YES	NO	N/A		
	Inadequate package	YES	NO	N/A		
	Inadequate transportation temperature	YES	NO	N/A		
	Delay in receipt	YES	NO	N/A	Recurring issue that happens frequently	Prioritize addressing communication issues that impact receipt of samples
		Response (select one)			Comments	Corrective Action to Take
4.2.2	**Does the laboratory experience problems with specimens collected within your institution due to any of the following issues:** **(If yes, please specify if this is a recurring issue for your laboratory or institution.)**					
	Lack of proper collection materials	YES	NO	N/A		
	No request form	YES	NO	N/A		
	Incomplete request form	YES	NO	N/A	Recurring issue that happens frequently	
	Incorrect specimen identification	YES	NO	N/A	Does not occur frequently	
	Incorrect patient identification	YES	NO	N/A		
	Inadequate volume	YES	NO	N/A		
4.2.3	**Are there any criteria for acceptance or rejection of primary specimens (including potential caution if non-conforming specimens are accepted)?**	YES	NO	N/A		
4.2.4	**Are primary specimens adequately stored if not immediately examined or tested?**	YES	NO	N/A		
4.2.5	**If yes, for how long? (please specify in comments section)**	Dependent upon sample. Majority of specimens are examined as soon as possible.				

4. **Specimen Referral and Transport:** Assess the laboratory's specimen receipt and transport and policies and procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan.

4.3 Specimen referral and transport						
		Response (select one)			*Comments*	*Corrective Action to Take*
4.3.1	Does the laboratory receive specimens or isolates from other laboratories?	YES	NO	N/A		
	If yes, please list in comments section what type of samples your laboratory/institution receives and from which laboratories.					
4.3.2	Does the laboratory refer specimens or isolates to other laboratories?	YES	NO	N/A		
	If yes, please list in comments section what type of samples your laboratory/institution refers and to which laboratories you send samples to.					
4.3.3	Does the laboratory have appropriate packaging for referring specimens (triple package if air transport, or any package in conformity with local regulations or recommendations)?	YES	NO	N/A		
4.3.4	Is/are the person(s) in charge of shipments trained for the transport of infectious substances?	YES	NO	N/A		Regular training should be conducted for employees on transport of infectious substances
	If yes or partial:					
4.3.5	Does the training include local or national regulations or recommendations? (please specificy in comments section)	YES	NO	N/A		Update training materials to include local regulations for specimen transport
4.3.6	Does training include international regulations?	YES	NO	N/A		

Waste Management

If you are completing the tool electronically, select the sheet titled 'Waste_Mgt'.

There are three components to assess:

4. Biosafety
5. Waste Management Policies
6. Waste Management Procedures
    1. Disinfection
    2. Waste Segregation and Storage

5. **Biosafety:** Assess the laboratory's biosafety procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

5.1 Biosafety						
		Response (select one)			*Comments*	*Corrective Action to Take*
5.1.1	Are written biosafety procedures available and accessible to all laboratory staff?	YES	NO	N/A		
5.1.2	If yes, are there guidelines or SOPs on the following:					
	Personal protective equipment?	YES	NO	N/A		
	Disinfection and sterilization?	YES	NO	N/A		
	Waste disposal?	YES	NO	N/A		
	Access restrictions?	YES	NO	N/A		
	Biosafety equipments?	YES	NO	N/A		
	Emergency protocols (e.g. in case of contamination)?	YES	NO	N/A		
5.1.3	Are Material Safety Data Sheets available for review in each laboratory area?	YES	NO	N/A		

6. **Waste Management Policies:** Assess the laboratory's waste management policies and standard operating procedures. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

5.2 Waste Management Policies						
		Response (select one)			*Comments*	*Corrective Action to Take*
5.2.1	**Does the laboratory have a written policy for laboratory waste management?**	YES	NO	N/A		
5.2.2	**Are there SOPs in place for disinfection of laboratory equipment, laboratory benches and/or workspace??**	YES	NO	N/A	When were SOPs last reviewed and updated?	Make sure that SOPs are updated
5.2.3	**Are there SOPs in place for sharps disposal?**	YES	NO	N/A	When were SOPs last reviewed and updated?	Make sure that SOPs are updated
5.2.4	**Are there SOPs in place for waste disposal?**	YES	NO	N/A	When were SOPs last reviewed and updated?	Make sure that SOPs are updated
5.2.5	**If yes, are there specific SOPs in place for liquid waste disposal?**	YES	NO	N/A		
5.2.6	**Are there specific SOPs in place for solid waste disposal?**	YES	NO	N/A	When were SOPs last reviewed and updated?	Make sure that SOPs are updated
5.2.7	**Are staff trained in disinfection, sharps disposal and waste management?**	YES	NO	N/A		
5.2.8	**If yes, how often are laboratory staff trained?** **yearly; monthly; as needed; one time only**	Yearly				Increase the amount of trainings on disinfection and sharps disposal
		Response (select one)			*Comments*	*Corrective Action to Take*
5.2.9	**Does your laboratory incinerate waste?**	YES	NO	N/A		
5.2.10	**If yes, where is the waste incinerated?** **On-site at the laboratory;** **At another laboratory facility;** **Off-site by a private company;** **Off-site by a public/government agency**	At another laboratory facility				
5.2.11	**How often is waste incinerated?** **Select one: daily, weekly, monthly, other?**	Weekly				
5.2.12	**Does your laboratory have an autoclave?**	YES	NO	N/A		
5.2.13	**If yes, how often is it used?** **Daily; weekly; monthly; other**	Daily				
5.2.14	**If no, is infectious waste treated before disposal?**	YES	NO	N/A		

7. **Waste Management Procedures:** Assess the laboratory's waste management procedures for disinfectants, waste segregation and storage. Answer 'Yes', 'No', or 'N/A' (not applicable) for each question. Some questions may have follow-up questions with specific

answer choices, or ask for you to provide additional details in the comments section. Space is available to record any comments. Any corrective actions that are identified and recorded electronically will automatically generate in the Action Plan (final sheet).

5.3 Waste Management Procedures						
		Response (select one)			*Comments*	*Corrective Action to Take*
	Disinfection					
5.3.1	**Does the laboratory use chemical methods of decontamination?**	YES	NO	N/A		
5.3.2	**If yes, which types chemical disinfectants does the laboratory use? Mark all that apply**					
	Halogens (Chlorine compounds, Iodophor)	YES	NO	N/A		
	Aldehydes (Formaldehyde/Glutaraldehyde)	YES	NO	N/A		
	Phenolics	YES	NO	N/A		
	Alcohols (Isopropyl alcohol/ Ethyl alcohol)	YES	NO	N/A		
	Acids (Peracetic acid) and Alkalis (NaOH)	YES	NO	N/A		
	Oxidizing agents(hydrogen peroxide)	YES	NO	N/A		
	Quaternary	YES	NO	N/A		
	ammonium	YES	NO	N/A		
	compounds	YES	NO	N/A		
	Biguanidines (Chlorhexidine)	YES	NO	N/A		
		Response (select one)			*Comments*	*Corrective Action to Take*
5.3.3	**Does the laboratory have a protocol for maintaining resupply of chemical disinfectants?**	YES	NO	N/A		
5.3.4	**If yes, are replacement chemical disinfectants readily accessible (ease of purchase and procurement)?**	YES	NO	N/A		
5.3.5	**Is there an inventory of the chemical disinfectants used in the laboratory?**	YES	NO	N/A		
5.3.6	**Does the laboratory have an inventory management program to help with waste evaluation and minimization?**	YES	NO	N/A		Lab management to discuss the formation of an inventory management program
5.3.7	**If yes: Who is responsible? How is information shared?**	Should the laboratory manager be responsible for the inventory management program? What is the best way to this new share information?				

		Response (select one)			Comments	Corrective Action to Take
	Waste Segregation and Storage					
5.3.8	**Are hazardous and non-hazardous waste segregated?**	YES	NO	N/A		
5.3.9	**If yes, is a standardized color-coding scheme used for labeling waste?**	YES	NO	N/A		
5.3.10	**Is there a written SOP available for waste segregation?**	YES	NO	N/A		Develop an waste segregation SOP
5.3.11	**Is waste stored in a secure location accessible to authorized personnel only?**	YES	NO	N/A	Lab facility does not have a secure location for waste storage	Prioritize secure storage of waste
5.3.12	**If yes, please explain where and how waste is securely stored.**					
5.3.13	**If necessary, are appropriate containers available for highly infectious bioharzardous waste?**	YES	NO	N/A		
5.3.14	**Are waste bags, containers and storage areas appropriately labelled?**	YES	NO	N/A		
5.3.15	**Are sharps collection containers available? If yes, are they:**	YES	NO	N/A		
5.3.16	**Puncture-resistant and leak-proof?**	YES	NO	N/A		
5.3.17	**Tightly sealed with a lid?**	YES	NO	N/A		
		Response (select one)			Comments	Corrective Action to Take
5.3.18	**Is waste storage in a designated area and protected from the environment?**	YES	NO	N/A		
5.3.19	**How often is waste collected from your laboratory or facility? Select one: Daily, weekly, monthly, other**	Weekly				
5.3.20	**Who is the responsible party/company that collects the waste?**	Waste is collected by private compant for disposal				
5.3.21	**Are hazardous and non-hazardous waste segregated during transport?**	YES	NO	N/A		
5.3.22	**Are specific vehicles used to only transport laboratory waste?**	YES	NO	N/A		
5.3.23	**Are records kept for final disposal of waste?**	YES	NO	N/A		
5.3.24	**Is there a log for accidental exposure and incident monitoring during waste disposal and pickup?**	YES	NO	N/A		

Action Plan

If you are completing the tool electronically, select the sheet titled 'Action Plan'.

The Action Plan helps identify gaps and tasks that need to be accomplished from the self-assessment. Fields will automatically generate in the Action Plan with your responses from 'Corrective Action to Take'. This requires inputting your data electronically into the Excel sheet.

This section can be used to help determine:

- Level of priority (low, medium or high)
- Date to be completed
- Person responsible

1. Infrastructure					
1.1 General condition of the laboratory building and associated infrastructure					
	Item to assess	Corrective Action to Take	Priority Level (high / medium / low)	Timeline for implementation	Person Responsible
1.1.1	Walls, floors and roofs	0			
1.1.2	Windows and doors	Fix lock on main lab door	High	1 week	Lauren
1.1.3	Laboratory Benches	0			
1.1.4	Lighting	0			
1.1.5	Heating, air conditioning, ventilation	0			
1.1.6	Sufficient space for staff to work in laboratory	Determine a better allocation of space	Medium	1 month	Lauren

Submitting the S-LAT

Please submit your completed Lab Assessment Tool for your laboratory facility. Email the file to healthsecurityprojects@georgetown.edu.