

DLS ECHO Biosafety Session: January 31, 2023



Public Health Laboratory Professional Burnout and Effect on Safety

Anthony (Tony) Tran, DrPH, MPH, D(ABMM)

Deputy Director, Center for Laboratory Sciences

Director, State Public Health Laboratory

California Department of Public Health



Agenda

- **Introduction to the ECHO Biosafety Project**
 - Aufr C. Araujo, PhD
- **Didactic and Case Presentation**
 - Anthony (Tony) Tran, DrPH, MPH, D(ABMM)
- **Discussion**
 - All
- **Summary of Recommendations**
 - Sabrina DeBose, DHSc, MS, RBP



Division of Laboratory Systems

Introduction to the ECHO Biosafety Project

Aufra C. Araujo, PhD

ECHO Biosafety Project Lead

Safety Team, Quality and Safety Systems Branch (QSSB)

Division of Laboratory Systems (DLS)



Extension for Community Healthcare Outcomes

People need **access** to **specialty care** for their complex health conditions.

ECHO **trains primary care clinicians** to provide **specialty care** services.

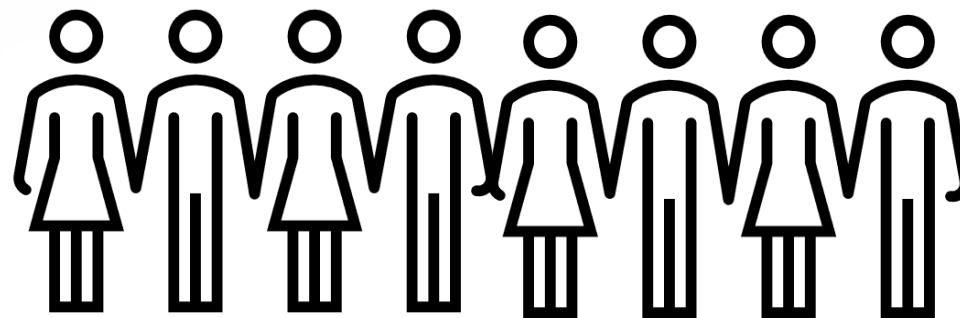


There aren't **enough specialists** to treat everyone who needs care, especially **in rural and underserved communities**.

Patients get the **right care**, in the **right place**, at the **right time**. This improves outcomes and reduces costs.

ECHO Biosafety

- Goals
 - Improve safety practices in clinical and public health laboratories
 - Build a biosafety community of practice



Advantages to ECHO Approach

- Learn from lecture and learn from advice, discussion based on real case studies presented during sessions
- Decrease professional isolation and gaps between current state and desired result
- Faster adherence to best practices

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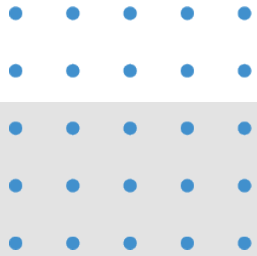
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Public Health Laboratory Professional Burnout and Effect on Safety

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Director, State Public Health Laboratory
Deputy Director, Center for Laboratory Sciences

January 31, 2023



Poll Question #1

- How long have you been in your position?
 - Less than 1 year
 - 1-5 years
 - 6-10 years
 - 11-15 years
 - 16-20 years
 - Over 20 years

ACKNOWLEDGEMENT & CITATION

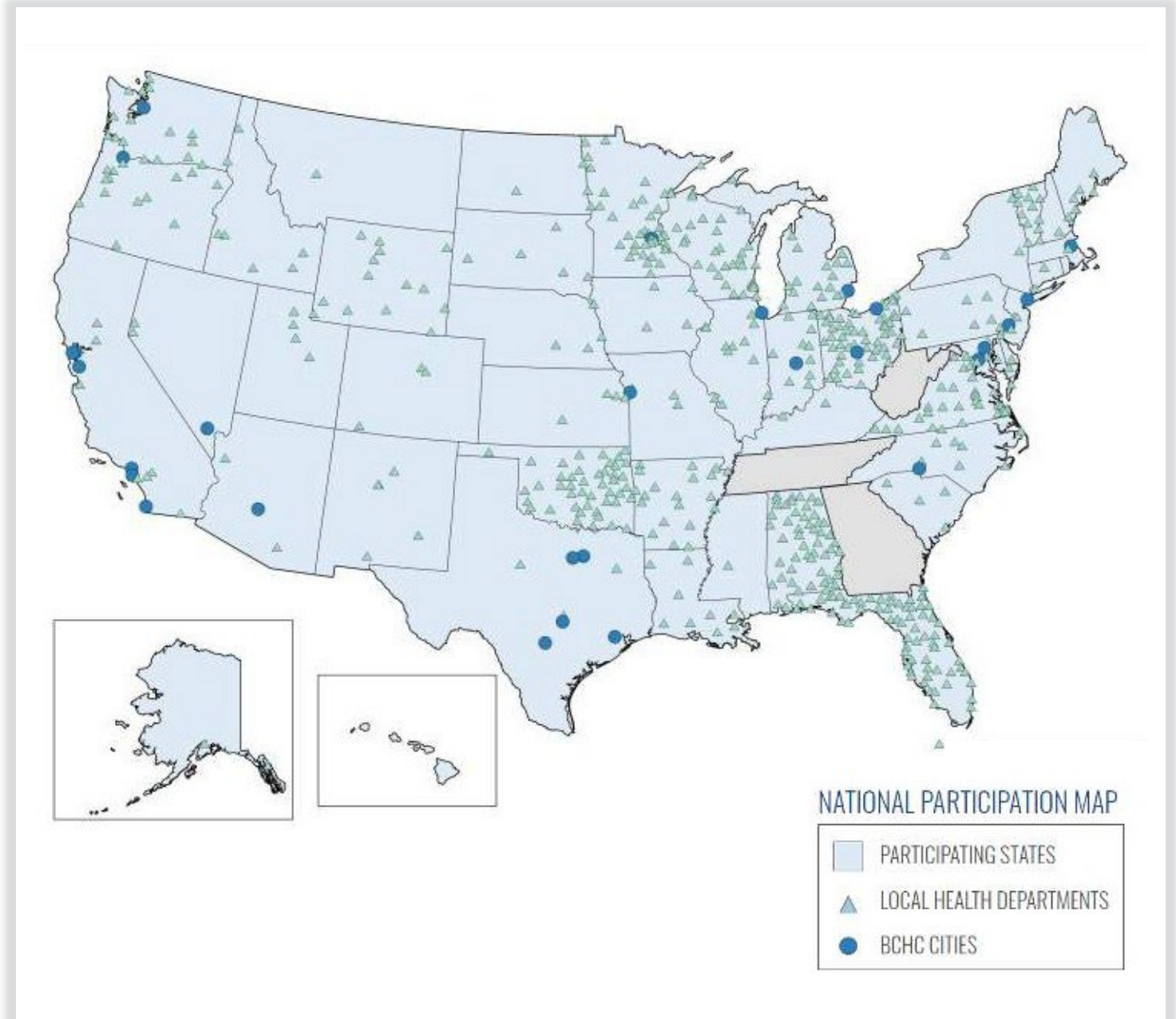
The Public Health Workforce Interests and Needs Survey (PH WINS) was developed by the de Beaumont Foundation and the Association of State and Territorial Health Officials to understand the interests and needs of the state and local governmental public health workforce in the United States, and was fielded in 2014, 2017, and 2021. For more information, visit www.phwins.org.

Citation: de Beaumont Foundation and Association of State and Territorial Health Officials, *Public Health Workforce Interests and Needs Survey: 2021 Dashboard*. August 3, 2022.

NATIONAL PARTICIPATION

- Nationally, the survey was completed by 44,732 individuals, for a **35% response rate**.
- Response rates varied by frame:
 - **SHA: 34%**
 - **Big Cities: 28%**
 - **Other locals: 52%**
 - **Locals in Regions V and X*: 56%**

*HHS Regions V and X participated in the PH WINS for All pilot programming, recruiting all locals in those regions, regardless of size, to participate in PHWINS.



THE IMPACT OF THE COVID-19 PANDEMIC

Rising Stress and Burnout in Public Health

Two years into the COVID-19 pandemic, a survey of nearly 45,000 employees in state and local government health departments reveals high levels of stress, burnout, and intent to leave.



POST-TRAUMATIC STRESS AND MENTAL HEALTH

More than half of public health workers report symptoms of post-traumatic stress disorder (PTSD), and many are struggling with their mental health.

Has the coronavirus or COVID-19 outbreak been so frightening, horrible, or upsetting that you...

- Had nightmares about it or thought about it when you did not want to?
- Tried hard not to think about it, or went out of your way to avoid situations that reminded you of it?
- Were constantly on guard, watchful, or easily startled?
- Felt numb or detached from others, activities, or your surroundings?



More than 1 in 5 employees (22%) reported that their mental health was either "fair" or "poor"



BULLYING, THREATS, AND HARASSMENT

Many public health workers, especially executives, report bullying, threats, and harassment.



"I have felt bullied, threatened, or harassed."



"I have felt my public health expertise was undermined or challenged."



INTENT TO LEAVE

Nearly 1 in 3 public health employees say they are considering leaving their organization within the next year.

REASONS FOR LEAVING



of employees who are considering leaving said the pandemic made them more likely to leave.



JOB SATISFACTION

Despite the challenges they have faced, a majority of public health workers remain committed to their jobs and organizations.

79%

Satisfied with job

68%

Satisfied with organization

94%

"The work I do is important."

93%

"I am determined to give my best effort at work every day."



Findings from the Public Health Workforce Interests and Needs Survey (PH WINS), conducted by the de Beaumont Foundation and the Association of State and Territorial Health Officials from September 2021 to January 2022.

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PHWINS
PUBLIC HEALTH WORKFORCE
INTERESTS AND NEEDS SURVEY



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reported at least one symptom of PTSD



reported 3 or more symptoms, indicating probable PTSD



BULLYING, THREATS, AND HARASSMENT

Many public health workers, especially executives, report bullying, threats, and harassment.



2 in 5 (41%)

public health executives

"I have felt bullied, threatened, or harassed."



3 in 5 (59%)

public health executives

"I have felt my public health expertise was undermined or challenged."

Poll Question #2

- During the pandemic (last 3 years), did you think about leaving your job?
 - Yes, thought about leaving within the next year
 - Yes, thought about leaving but in more than a year
 - No thoughts about leaving

Poll Question #3

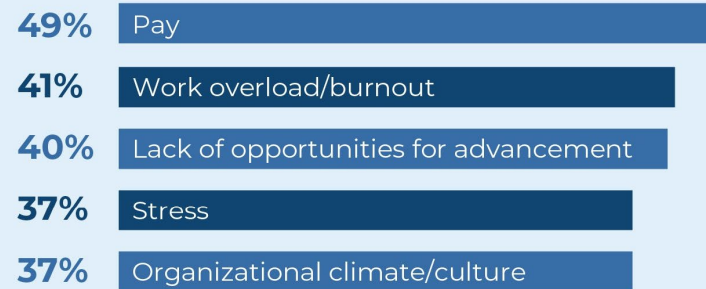
- For those who answered yes to the intent to leave during the past three (3) years, what was the reason (select all that apply)?
 - Pay
 - Workload/Burnout
 - Lack of opportunities for advancement
 - Stress
 - Organizational Climate/Culture



INTENT TO LEAVE

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de Beaumont
BOLD SOLUTIONS FOR HEALTHIER COMMUNITIES.

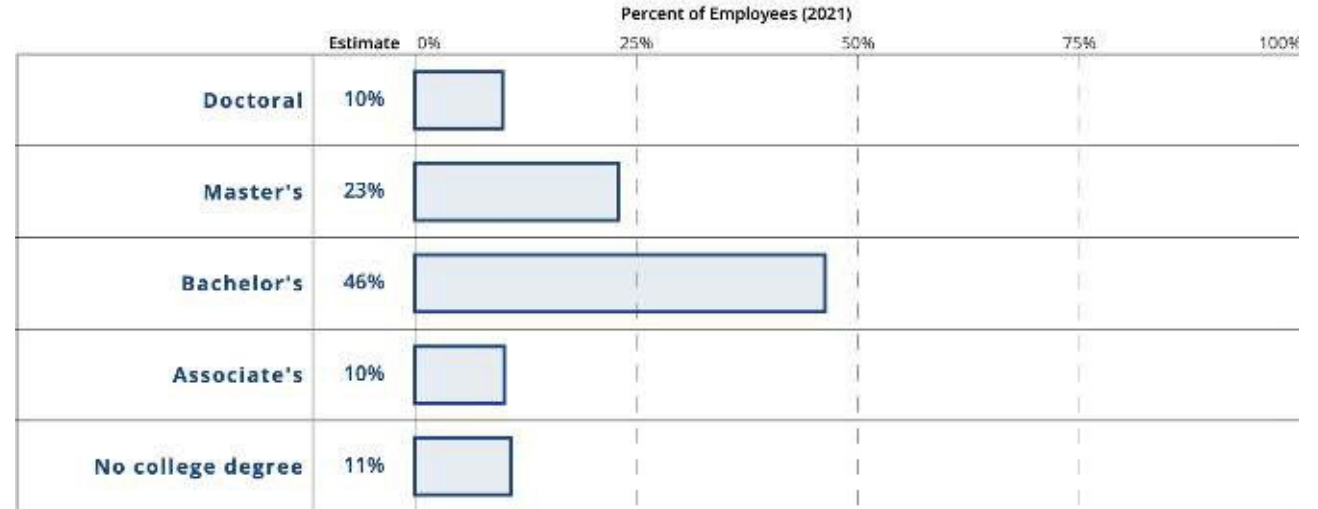
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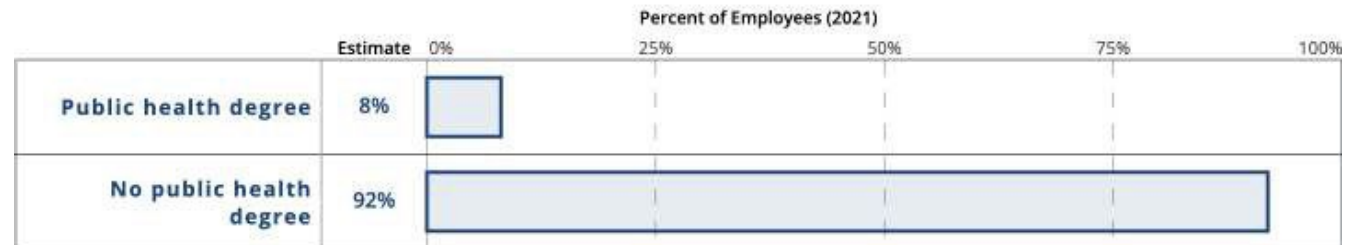
EDUCATIONAL ATTAINMENT

- **33%** of laboratory professionals **has an advanced degree.**
 - 23% has a Master's degree.
 - 10% has a Doctoral degree.
- **8%** has a specialized **degree in public health.**

EDUCATIONAL ATTAINMENT LAB PROFESSIONALS: ALL EMPLOYEES



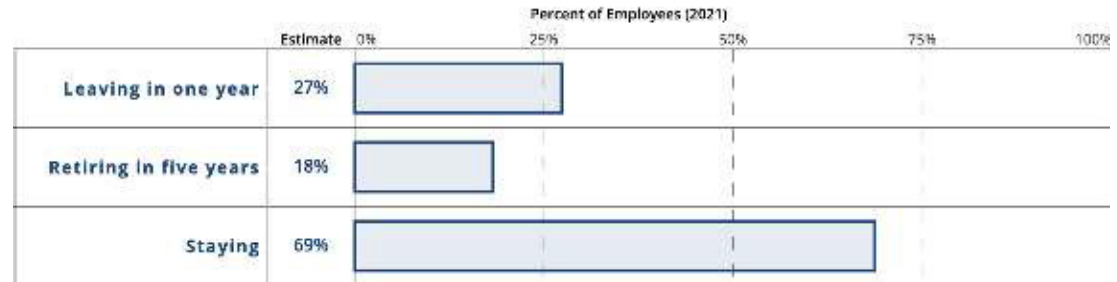
PUBLIC HEALTH TRAINING LAB PROFESSIONALS: ALL EMPLOYEES



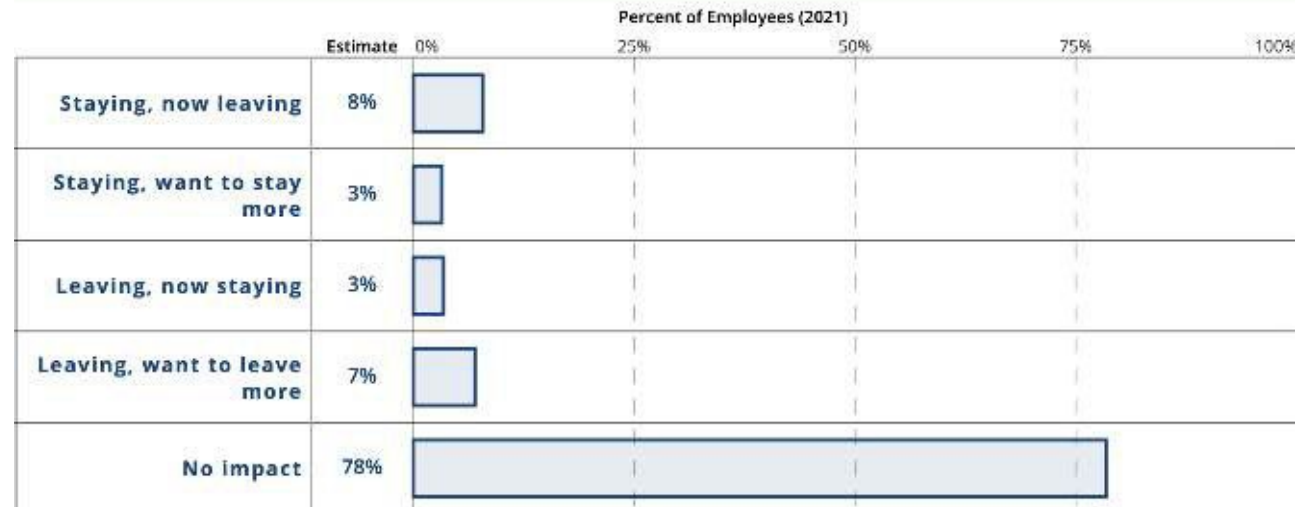
INTENT TO LEAVE/STAY

- **More than a quarter** of laboratory professionals **are considering leaving** their organization within the next year.
- 22% reported that the **COVID-19 pandemic impacted their decision** to stay or leave.
 - Among those who intend to leave, 38% said the pandemic impacted their decision (*data not shown*).

INTENT TO LEAVE LAB PROFESSIONALS: ALL EMPLOYEES



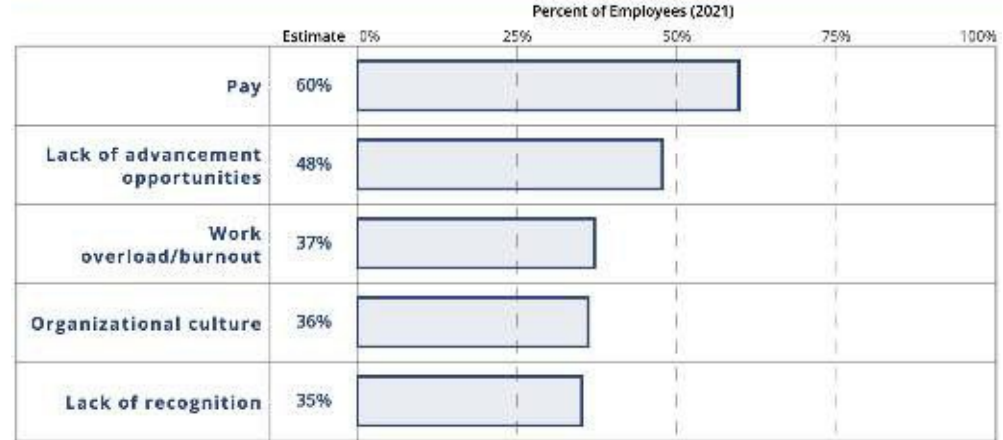
IMPACT OF COVID ON STAYING & LEAVING LAB PROFESSIONALS: ALL EMPLOYEES



REASONS FOR LEAVING/STAYING

- Understanding employees' reasons for leaving is critical for improving recruitment and retention.
- **Top reasons for leaving** among laboratory professionals who intend to leave include:
 - **Pay** (reported by 60%)
 - **Work overload/burnout** (reported by 37%)

REASONS FOR LEAVING LAB PROFESSIONALS: ALL EMPLOYEES



REASONS FOR STAYING LAB PROFESSIONALS: ALL EMPLOYEES



Case Study #1: The Unsuspected Specimen

- Hospital A sends three (3) specimens to their local PHL for identification of unknown bacterial isolates
- All paperwork and specimen labeling was acceptable
- Isolates were accessioned and provided to microbiology unit for testing
- Astute microbiologist noticed the words “*Bacillis r/o*” on the submitted blood agar plate
- Specimen was rerouted to the BSL-3 immediately for anthrax rule out

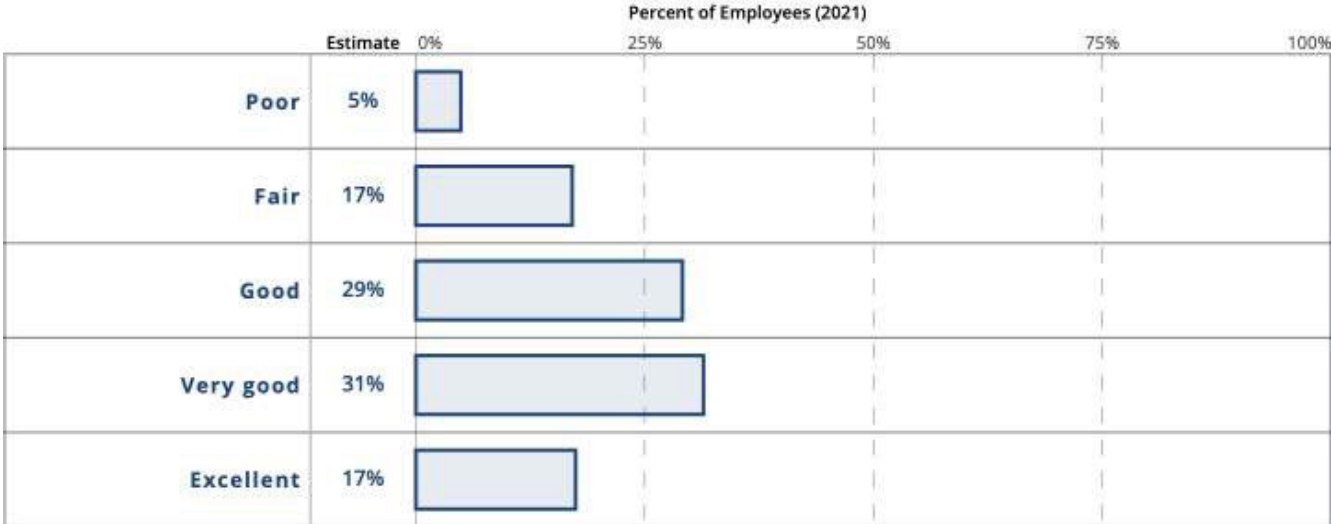
Poll Question #4

- How do you rate your mental health?
 - Poor
 - Fair
 - Good
 - Very Good
 - Excellent

WELL-BEING

- 22% of laboratory professionals rate their mental health as either “poor” or “fair.”

OVERALL MENTAL & EMOTIONAL WELL-BEING LAB PROFESSIONALS: ALL EMPLOYEES



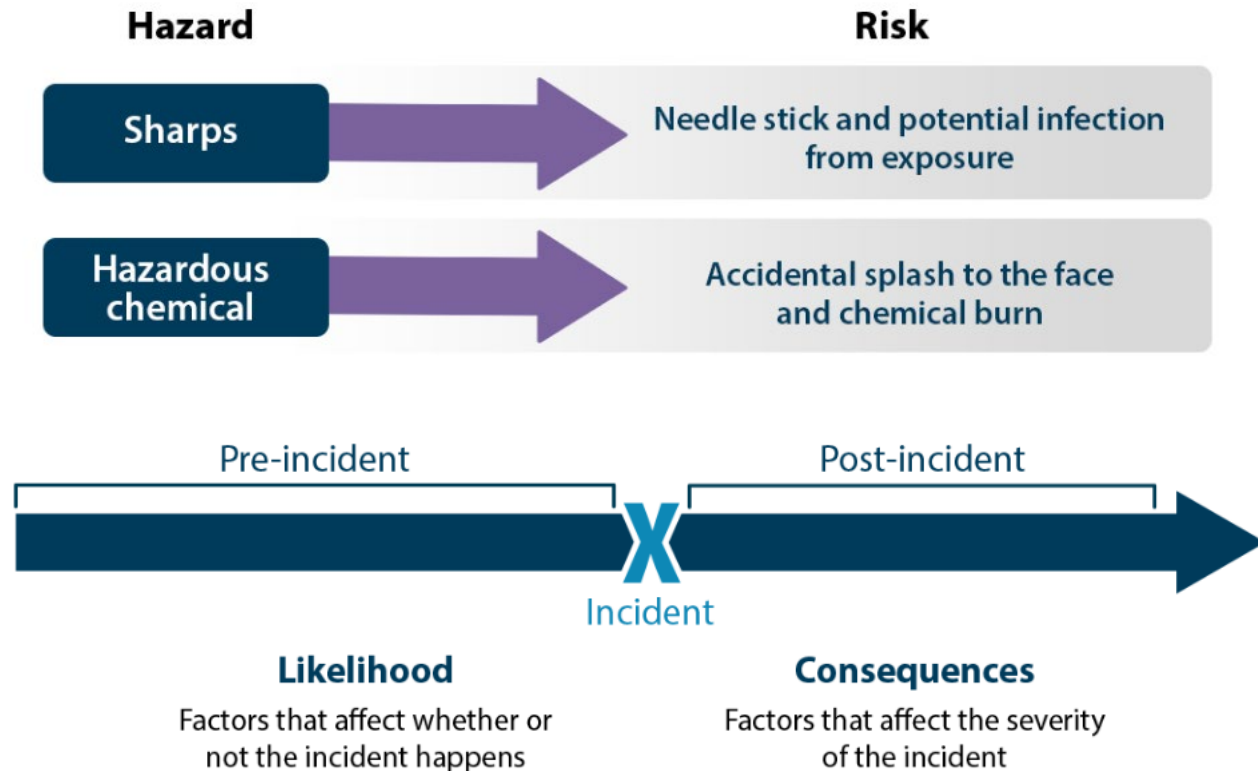
Poll Question #5

- I have risk assessments for:
 - All of the methods conducted in the laboratory
 - More than half of the methods conducted in the laboratory
 - About half of the methods conducted in the laboratory
 - Less than half of the methods conducted in the laboratory
 - What's a risk assessment?

General Considerations: Biological Risk Assessments



<https://www.cdc.gov/safelabs/resources-tools/bio-risk-assessment.html>



Source: Sandia National Laboratory Biosafety and Biosecurity Risk Assessment Technical Guidance Document, 2014.

Biological Risk Assessment Example



Safety Risk Assessment

	Printed Name	Signature	Date
Unit Manager			
Biosafety Officer			
Laboratory Director			

Laboratory Unit/Section	
Date of Assessment	
Name of Assessor	
Name of Organism/Agent/Methodology	

**Use Tables A through C below to assess the risk level associated with each hazard identified in the Pre Analytical, Analytical, and Post Analytical stages Use Table A to rate the likelihood of hazard occurring and use Table B to rate the consequence if the hazard were to occur.

Table A. Likelihood of hazard occurrence.

Hazard Likelihood	Description of Likelihood
1. Rare	Will only occur in exceptional circumstances
2. Unlikely	Not likely to occur within the foreseeable future
3. Possible	May occur within the foreseeable future, sporadic exposure is possible
4. Likely	Likely to occur within the foreseeable future, routine exposure is likely
5. Highly Likely	Almost certain to occur within the foreseeable future, consistent exposure is likely

Table B. Consequence of hazard occurrence.

Hazard Consequence	Description of Consequence
1. Insignificant	No treatment required
2. Minor	Minor injury requiring First Aid treatment (e.g. minor cuts, bruises, burns)
3. Moderate	Injury requiring medical treatment or lost time
4. Major	Serious injury (injuries) requiring specialist medical treatment or hospitalization
5. Critical	Loss of life, permanent disability or multiple serious injuries

Table C. Based on the likelihood and consequence determined above, identify the initial risk level of each hazard using the Risk Assessment Matrix below. For example; if your hazard likelihood is likely and the hazard consequence is moderate then the initial risk level is high per the risk assessment matrix.

Risk Assessment Matrix		Hazard Consequence				
		Insignificant	Minor	Moderate	Major	Critical
Hazard Likelihood	Highly likely	Medium	Medium	High	Extreme	Extreme
	Likely	Low	Medium	High	High	Extreme
	Possible	Low	Medium	High	High	High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Medium	Medium

**Residual Risk Rating is determined after mitigating the initial risk with control/protection procedures. It requires analysis of the initial risk rating and mitigating factors to determine if the residual risk rating is lower, higher, or the same.

Pre-Analytical: Specimen Transport

Procedure	Potential Hazard	Hazard Likelihood	Hazard Consequence	Initial Risk Rating	Control/Protection (Mitigation)	Residual Risk Rating	Who Performed?

Comments:

Summary

- Stress and overload of work can lead to burnout, which can in turn lead to bad decisions regarding biosafety
- Mitigation of these stressors are key to a safe work environment
- Risk assessments can help to set the stage for success
- Your role is to advise and consult – NOT conduct the risk assessment
- Never compromise safety, even with political pressure and stress

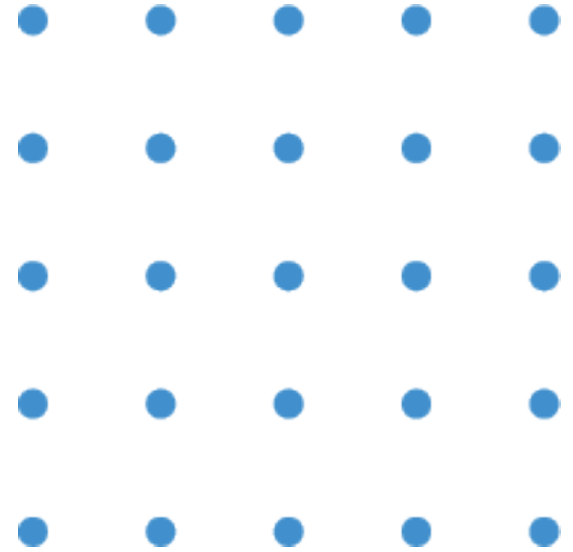
Discussion

- Has stress, overload of work, and/or burnout led to a compromise of biosafety in your laboratory?
- Share a real case study and solutions of your own.

Resources

- More information on the survey from de Beaumont
 - <https://debeaumont.org/phwins/what-is-phwins/>
- Risk Assessments
 - Centers for Disease Control and Prevention
 - <https://www.cdc.gov/safelabs/resources-tools/bio-risk-assessment.html>
 - Association of Public Health Laboratories
 - <https://www.aphl.org/programs/preparedness/documents/aphl-template.pdf>
 - District of Columbia Public Health Laboratory
 - <https://dfs.dc.gov/publication/phl-forms-and-documents>

THANK YOU!



Summary of Recommendations

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CDR, U.S. Public Health Service

Safety Team Lead, Quality and Safety Systems Branch (QSSB)

Division of Laboratory Systems (DLS)



DLS ECHO Biosafety Session: February 28, 2023



Risk Assessment in Clinical Laboratories

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Newborn Screening Short-term Follow-up Coordinator
and Biosafety Officer

Montana Laboratory Services Bureau

