

2022 Medical Laboratory Science Programs: Understanding Academic Partnerships with Public Health Laboratories



MAY 2022

INTRODUCTION

Public health laboratories (PHL) continue to be burdened with workforce shortages that compromise their ability to effectively meet their public health mission. Recently, the Biden administration through the American Rescue Plan has authorized significant funding support to build public health workforce capacity in state health departments. Building relationships with academic partners is an important step towards building a pipeline to exciting and varied careers in public health laboratory science and practice.

To that end, the [Association of Public Health Laboratories](#) (APHL) conducted a survey to Medical Laboratory Science (MLS)/Medical Technologist (MT)/Clinical Laboratory Science (CLS), Medical Laboratory Technician (MLT), and Clinical Laboratory Assistant (CLA) programs. The purpose was to gather feedback on their needs, and how those needs can be met working together to strengthen relationships with the local and/or the state [public health laboratory](#) (PHL). This important feedback will guide the development of resources to promote mutually beneficial partnerships between these academic programs and PHL.

EXECUTIVE SUMMARY

The APHL Workforce Committee Academic Partnerships workgroup was formed in 2020 and identified clinical laboratory science training programs as a source of potential qualified Public Health Laboratory (PHL) personnel. The workgroup designed a survey to assess what types of relationships exist between these entities. The survey collected data to learn about the partnerships that exist, to identify the needs of the PHLs and academic programs, and to determine how those needs may be met. Data from this project will be presented at the APHL 2022 Annual Conference.

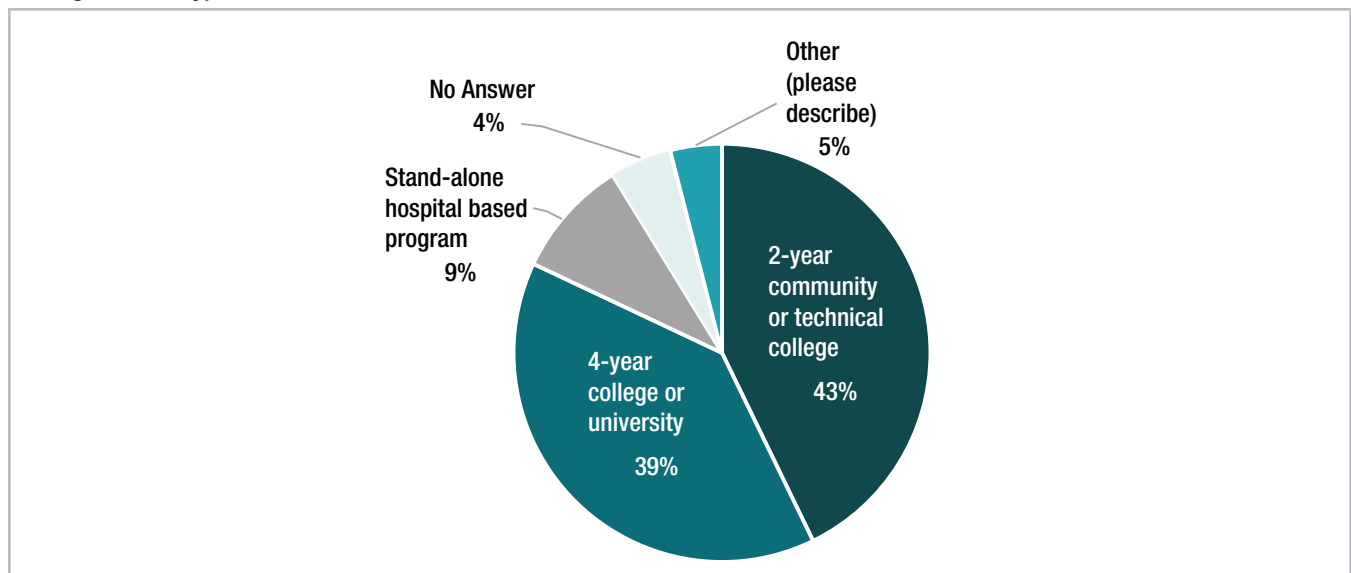
Program directors of medical laboratory technician (MLT) and medical laboratory scientist (MLS) programs were identified through a list provided by the National Accreditation Agency for Clinical Laboratory Sciences (NAACLS). From this list, the survey was distributed via email on June 10, 2021, to 484 clinical laboratory training programs in the US. A total of 250 responses were received for a 52% return rate. There was an approximate equal distribution of community college (43%) and university (39%) based programs that responded to the survey. Hospital-based training programs made up 9% of the responses.

NAACLS was the academic accreditation agency for most programs. Over half of the programs stated they promote some aspect of public health lab science as a career option for graduates. Eighty percent of the programs reported that up to one quarter of their graduates pursue PHL careers. Most of the programs (80%) have not had any type of partnership within the last 10 years, but 60% of those who responded said they would like to have one.

KEY SURVEY FINDINGS

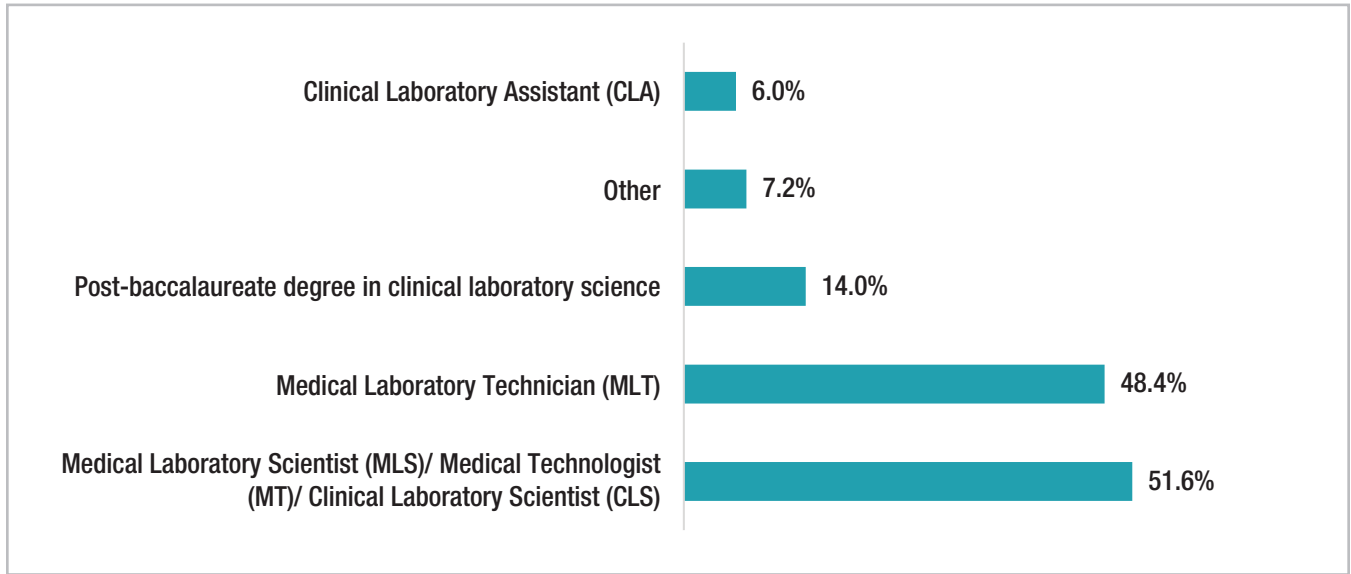
1. Which of the following best describes your organization?		
2-year community or technical college	107	42.8%
4-year college or university	98	39.2%
Stand-alone hospital based program	23	9.2%
Other (please describe)	12	4.8%
No Answer	10	4.0%
	250	100.0%

Q1. Organization Type



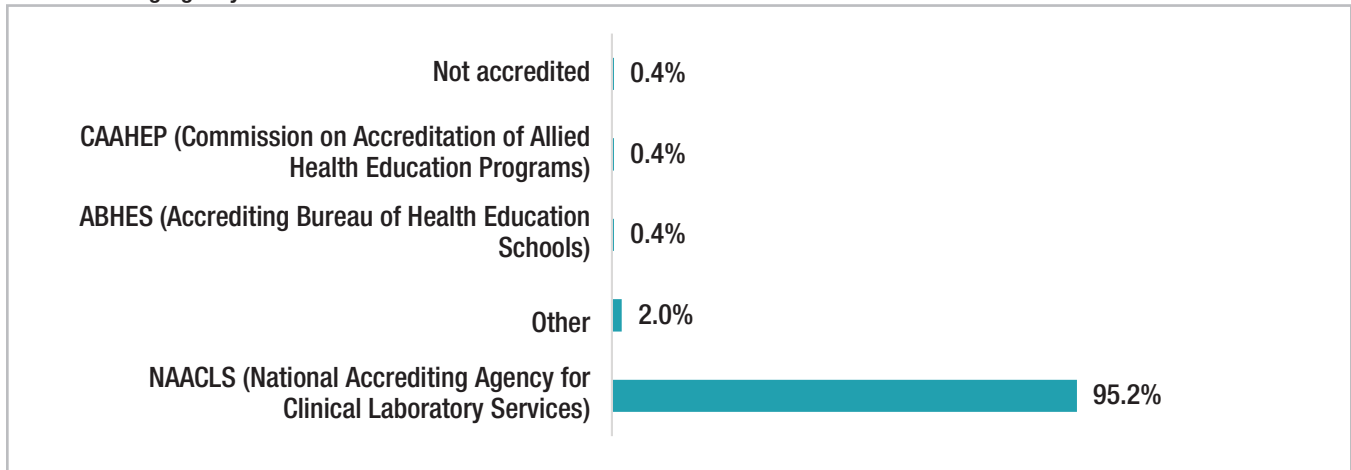
2. Which of the following programs do you offer? Select all that apply.		
Medical Laboratory Scientist (MLS)/ Medical Technologist (MT)/ Clinical Laboratory Scientist (CLS)	129	51.6%
Medical Laboratory Technician (MLT)	121	48.4%
Post-baccalaureate degree in clinical laboratory science	35	14.0%
Other	18	7.2%
Clinical Laboratory Assistant (CLA)	15	6.0%

Q2. Program Offerings



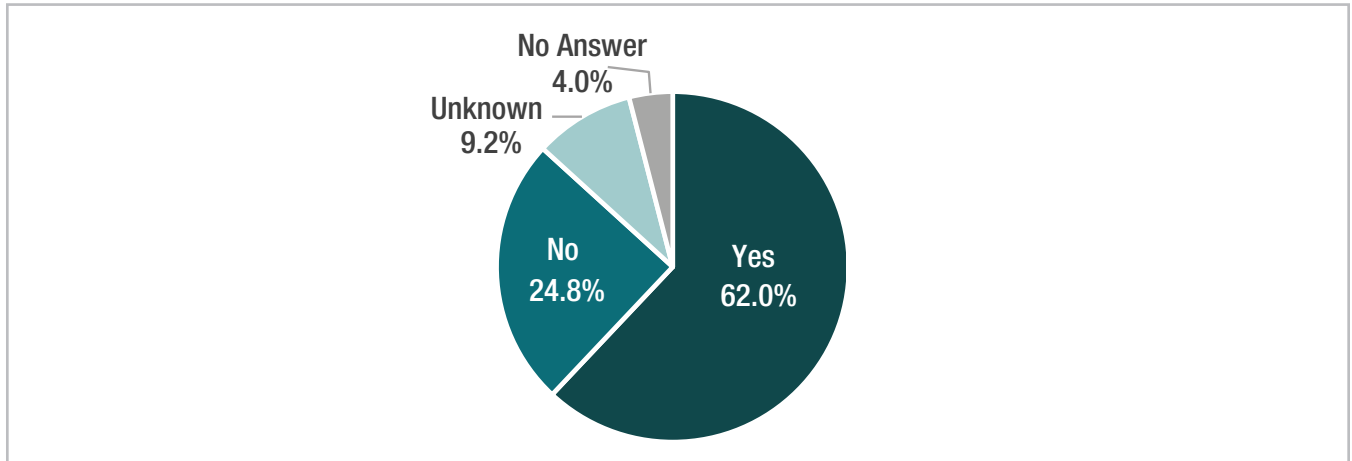
3. By which agency is your program accredited? Select all that apply.		
NAACLS (National Accrediting Agency for Clinical Laboratory Services)	238	95.2%
Other	5	2.0%
ABHES (Accrediting Bureau of Health Education Schools)	1	0.4%
CAAHEP (Commission on Accreditation of Allied Health Education Programs)	1	0.4%
Not accredited	1	0.4%

Q3. Accrediting Agency



4. Does your program promote public health laboratory (PHL) science as a potential career path for graduates?		
Yes	155	62.0%
No	62	24.8%
Unknown	23	9.2%
No Answer	10	4.0%
	250	100.0%

Q4. Promotion of Public Health Laboratory Science

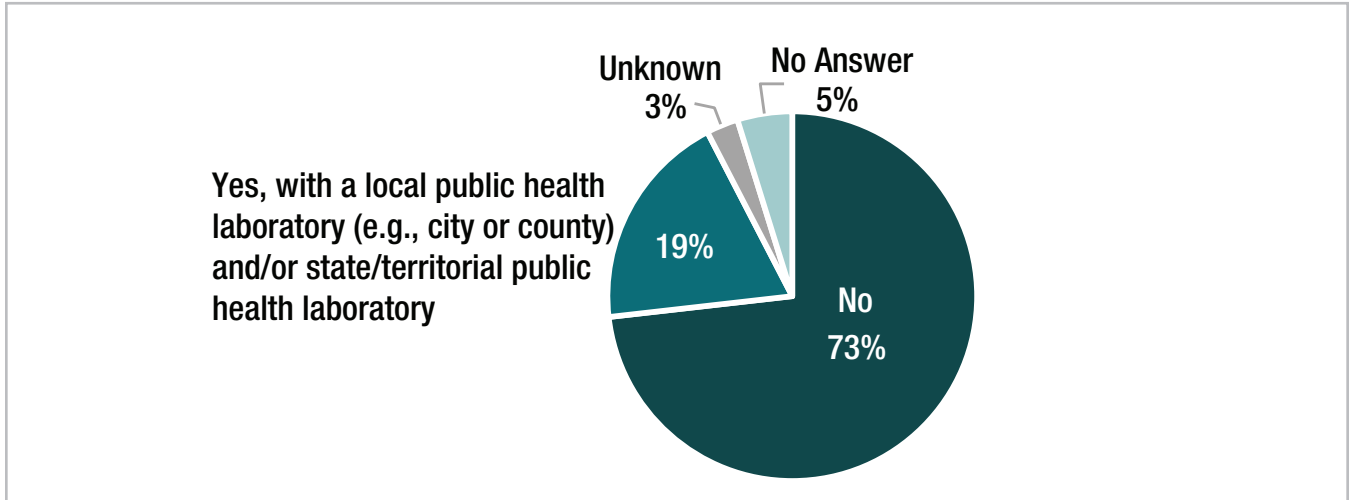


4a. Approximately what percentage of an average graduating class pursues a career in public health laboratory science? (Based only on “yes” responses from Q4)		
0 – 25%	126	81.3%
Unknown	23	14.8%
26 – 50%	2	1.3%
76 – 100%	3	1.9%
51 – 75%	1	0.6%
	155	100.0%

- 4b. Please explain why public health laboratory science is not included as a career path option for graduates? (Based only on “no” responses from Q4)**
- Job Related (salary, education, # of jobs)
 - PHL visibility
 - PHL location

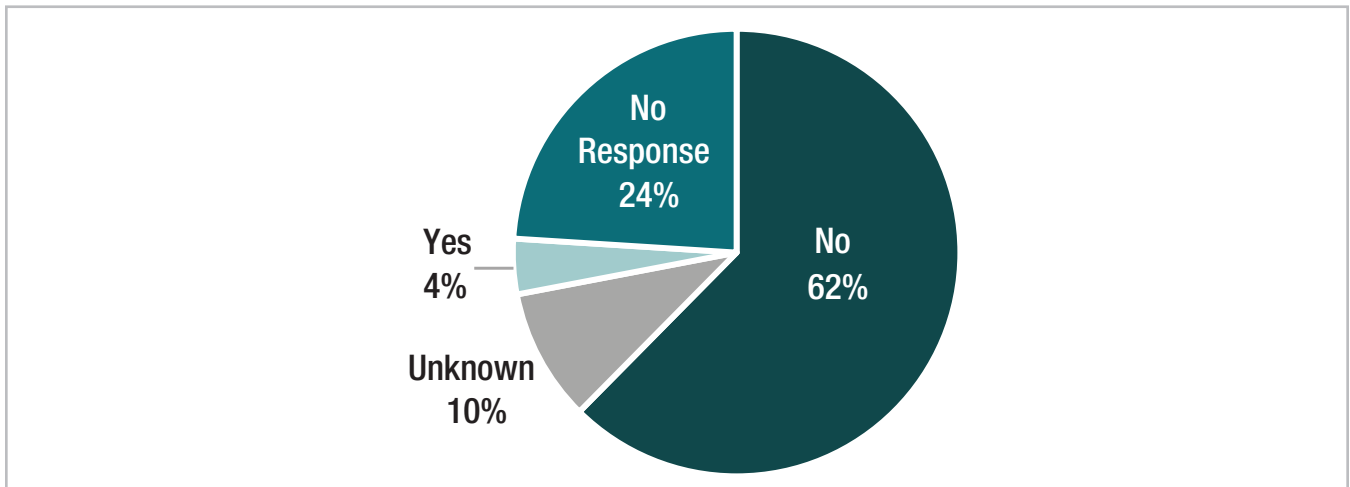
5. Does/do your program(s) have a current partnership with a public health laboratory?		
No	183	73.2%
Yes, with a local public health laboratory (e.g., city or county) and/or state/territorial public health laboratory	48	19.2%
Unknown	7	2.8%
No Answer	12	4.8%
	250	100.0%

Q5. Current Partnership with a PHL



6. Has/have your program(s) ever had a partnership with a public health laboratory in the past 10 years? (Based only on "no" or "unknown" responses from Q5)		
No	156	82.1%
Unknown	24	12.6%
Yes, with a local public health laboratory (e.g., city or county) and/or state/territorial public health laboratory	10	5.3%
	190	100.0%

Q6. Previous Partnership with PHL

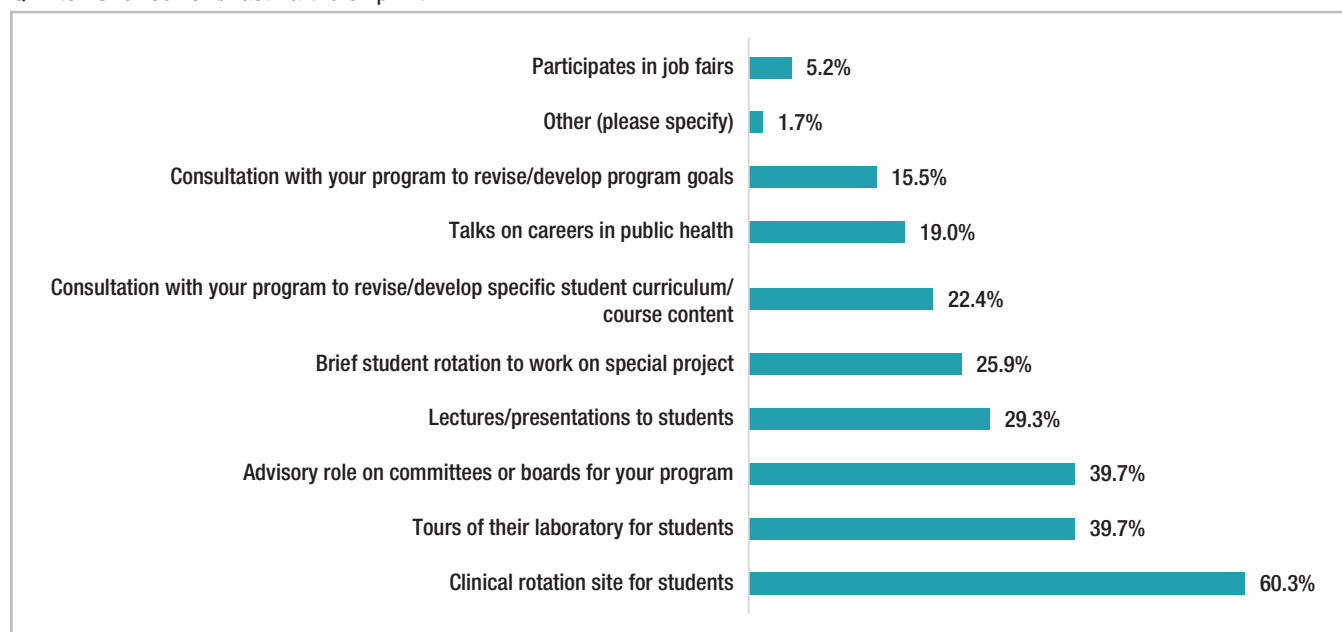


6a. Would your program be interested in establishing a partnership with a public health laboratory? (Based only on “no” or “unknown” responses from Q6)		
Yes	107	59.4%
Maybe	70	38.9%
No	3	1.7%
	180	100.0%

6b. Which of the following items would your program be interested in partnering with a public health laboratory? Select all that apply. (Based only on “yes” or “maybe” responses from Q6a)		
Clinical rotation site for students	135	76.3%
Tours of their laboratory for students	134	75.7%
Talks on careers in public health	131	74.0%
Advisory role on committees or boards for your program	109	61.6%
Lectures/presentations to students (please describe) <ul style="list-style-type: none"> • Careers in Public Health • Microbiology • Newborn Screening • Technology/Hot Topics 	103	58.2%
Brief student rotation to work on special project	71	40.1%
Participates in job fairs	64	36.2%
Consultation with your program to revise/develop specific student curriculum/course content	36	20.3%
Consultation with your program to revise/develop program goals	21	11.9%
Other	1	0.6%

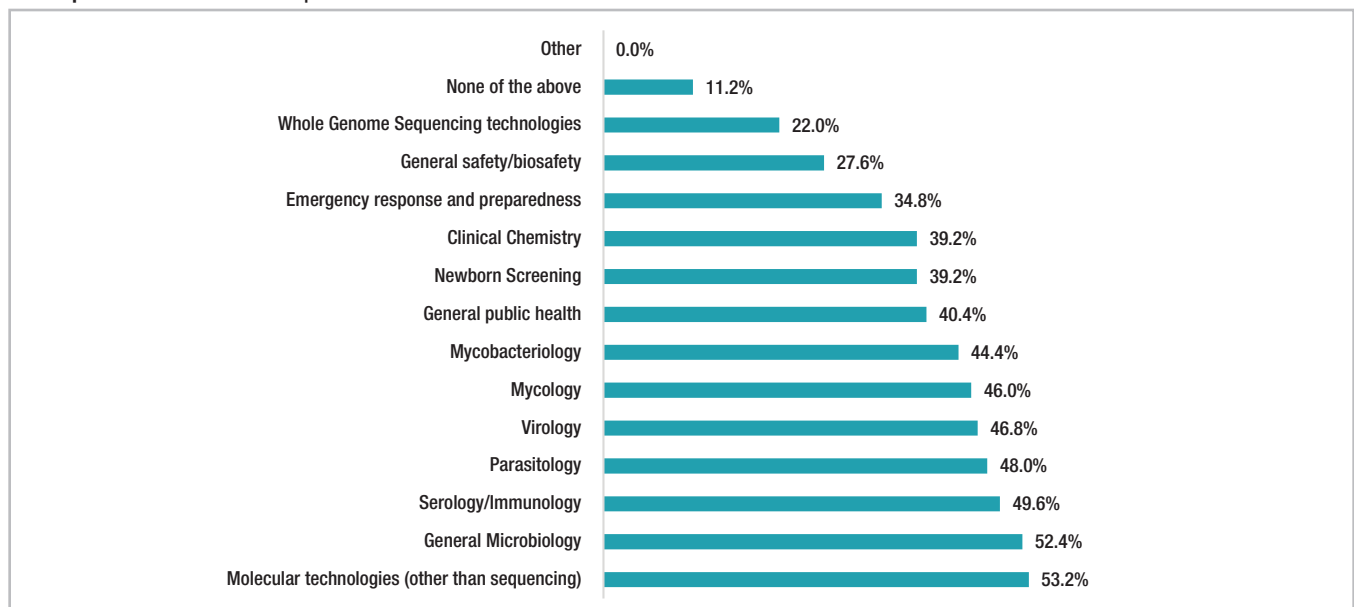
7. For current or past partnership with the public health laboratory, which of the following items does/did the public health laboratory provide? Select all that apply. (Based only on “yes” responses to Q5 and “yes” responses to Q6)		
Clinical rotation site for students	35	60.3%
Tours of their laboratory for students	23	39.7%
Advisory role on committees or boards for your program	23	39.7%
Lectures/presentations to students	17	29.3%
Brief student rotation to work on special project (please describe) <ul style="list-style-type: none"> • PHL Role (e.g. Outbreaks/surveillance) • Technology/New instrumentation • Infectious disease (micro/virology) • PPE/biosafety • Newborn Screening (NBS) • Packaging/shipping 	15	25.9%
Consultation with your program to revise/develop specific student curriculum/course content	13	22.4%
Talks on careers in public health	11	19.0%
Consultation with your program to revise/develop program goals	9	15.5%
Other	1	1.7%
Participates in job fairs	3	5.2%

Q7. Items for Current/Past Partnership with PHL



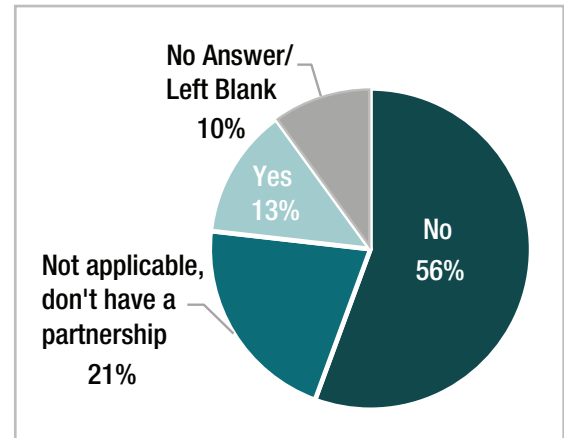
8. In which topic areas does your public health lab provide content/resources to your program? (Or for new partnerships, which topic areas would you like to see your public health laboratories provide?) Select all that apply.		
Molecular technologies (other than sequencing)	133	53.2%
General Microbiology	131	52.4%
Serology/Immunology	124	49.6%
Parasitology	120	48.0%
Virology	117	46.8%
Mycology	115	46.0%
Mycobacteriology	111	44.4%
General public health <ul style="list-style-type: none"> Continuing Education Units (CEU/CE) Clinical Laboratory Testing PHL Role 	101	40.4%
Newborn Screening	98	39.2%
Clinical Chemistry	98	39.2%
Emergency response and preparedness	87	34.8%
General safety/biosafety	69	27.6%
Whole Genome Sequencing technologies	55	22.0%
None of the above	28	11.2%
Other	0	0.0%

Q8. Topic Areas for Partnership



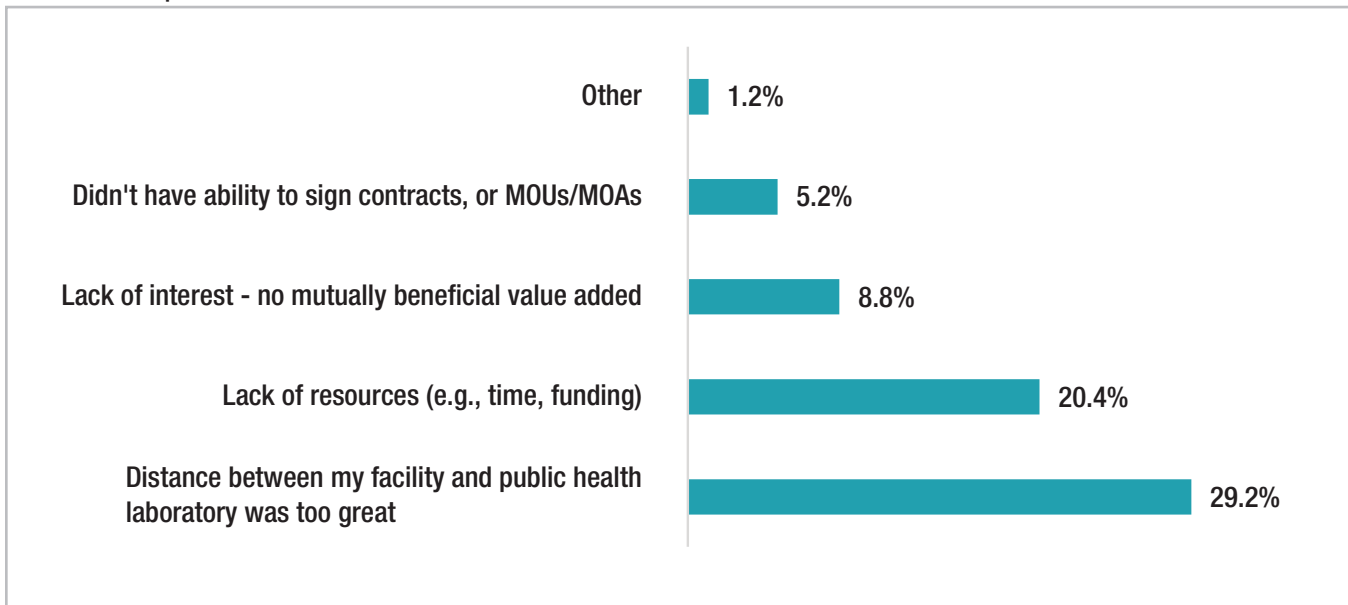
9. Do you have any written agreements in place with your public health laboratory (e.g., for sharing any services, for any student rotations or projects, or for trainings, etc.)?		
No	139	55.6%
Not applicable, don't have a partnership	53	21.2%
Yes	33	13.2%
No Answer/Left Blank	25	10.0%
	250	100.0%

Q9. Written Agreements



10. What obstacles make/made partnering with a public health laboratory challenging? Select all that apply.		
Distance between my facility and public health laboratory was too great	73	29.2%
Lack of resources (e.g., time, funding)	51	20.4%
Lack of interest - no mutually beneficial value added	22	8.8%
Didn't have ability to sign contracts, or Memorandum of Understanding/Memorandum of Agreement	13	5.2%
Other	3	1.2%

Q10. Partnership Obstacles

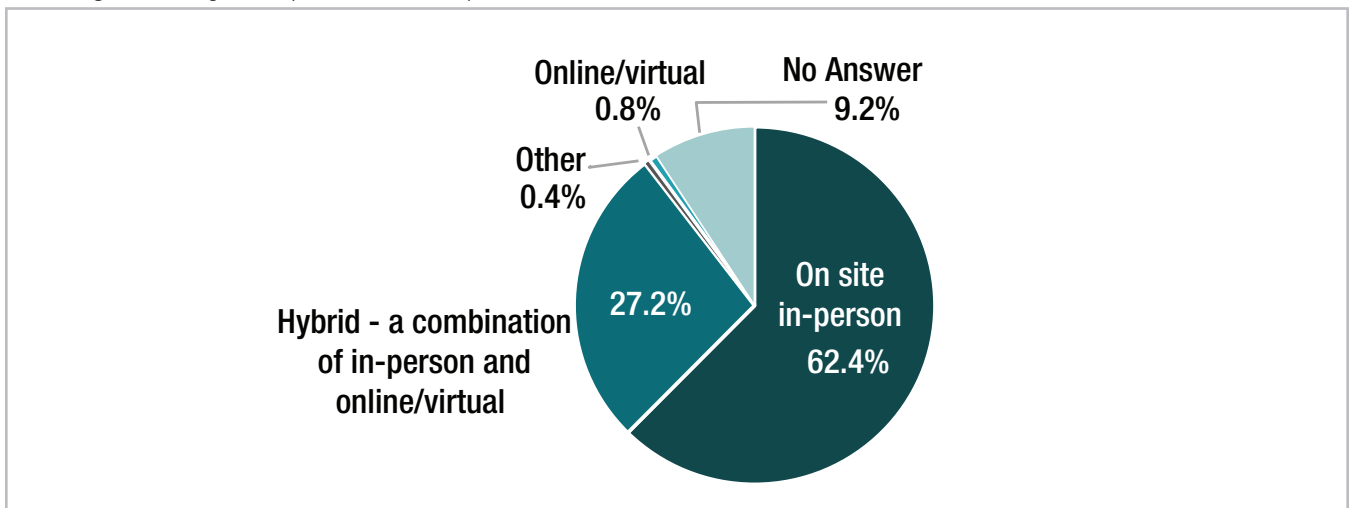


10a. Which side of the partnership lacked the resources based on lack of resources responses from Q10?		
Academic program	20	39.2%
Both parties	18	35.3%
Public health laboratory (PHL)	8	15.7%
No Answer/Left Blank	5	9.8%
	51	100.0%

10b. Which side of the partnership lacked interest based on lack of interest responses from Q10?		
Public health laboratory (PHL)	9	40.9%
Both parties	7	31.8%
Academic program	4	18.2%
No Answer/Left Blank	2	9.1%
	22	100.0%

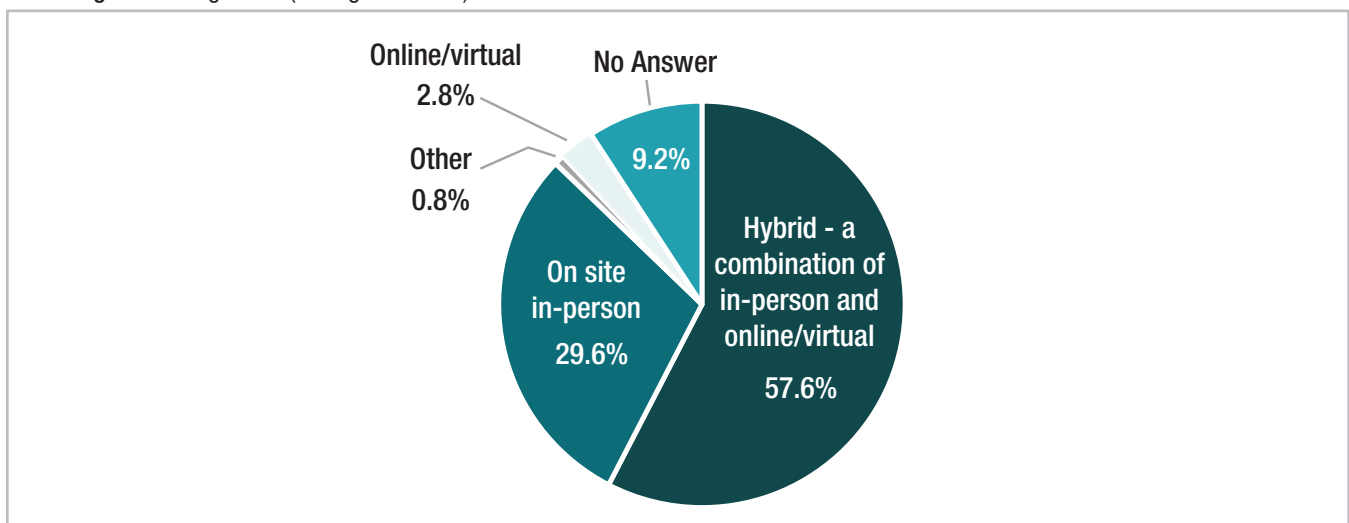
11. Prior to the COVID-19 pandemic, how did you manage your program? (updated)		
On site in-person	156	62.4%
Hybrid - a combination of in-person and online/virtual	68	27.2%
Other	1	0.4%
Online/virtual	2	0.8%
No Answer	23	9.2%
	250	100.0%

Q11. Program Management (Prior to COVID-19)



12. How do you currently manage your program during the COVID-19 pandemic?		
Hybrid - a combination of in-person and online/virtual	144	57.6%
On site in-person	74	29.6%
Other (please describe)	2	0.8%
Online/virtual	7	2.8%
No Answer	23	9.2%
	250	100.0%

Q12. Program Management (During COVID-19)



RECOMMENDATIONS AND NEXT STEPS

The top three requested items for future partnerships included clinical rotation sites for MLT/MLS students, tours of the PHLs and talks on PHL careers. PHLs could play a role in the partnership to serve on academic clinical laboratory program advisory committees and provide lectures to students. Barriers described by respondents included geographic distance between partners, lack of awareness and lack of resources. Collaborating with academic partners can introduce students in clinical lab training programs to PHL science careers. Graduates of these programs are skilled in handling human specimens, performing complex laboratory techniques, and understand biosafety concepts and laboratory regulations.

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Association of Public Health Laboratories

The Association of Public Health Laboratories (APHL) works to strengthen laboratory systems serving the public's health in the US and globally. APHL's member laboratories protect the public's health by monitoring and detecting infectious and foodborne diseases, environmental contaminants, terrorist agents, genetic disorders in newborns and other diverse health threats.

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