2017 APHL BIOSAFETY AND BIOSECURITY SURVEY

SUMMARY DATA REPORT

April 2018

APHL ASSOCIATION OF PUBLIC HEALTH LABORATORIES®

Introduction

The 2017 APHL Biosafety and Biosecurity Survey was launched on September 7, 2017 to 63[1] public health labs funded by the US Centers for Disease Control and Prevention (CDC) Domestic Ebola Supplement to Epidemiology and Laboratory Capacity for Infectious Diseases (ELC)-Building and Strengthening Epidemiology, Laboratory and Health Information Systems Capacity in State and Local Health Departments (CK14-1401PPHFSUPP15).

The survey was conducted to identify current biosafety and biosecurity practices and gaps in ELC-Ebola Biosafety funded public health laboratories and to showcase the progress these laboratories have made with the Cooperative Agreement.

APHL collected data for the 2017 Biosafety and Biosecurity Survey in fall 2017, requesting information on PHL biosafety and biosecurity activities prior to September 2017. The survey was distributed via email with a unique survey link and a copy of the survey. Data collection concluded in December 2017 where APHL received an 87.3% (55 of 63) response rate from CDC ELC-funded PHLs, which included 48 state, four territorial and three local PHLs. Data was collected using Qualtrics®, a web-based survey tool and data repository.

Table 1 provides a survey completion analysis for PHLs which received funds via the CDC ELC Ebola Supplemental Project B-Enhanced Laboratory Biosafety and Biosecurity Capacity (ELC Biosafety).

Table 1: Survey completion rate

Total # of labs surveyed	# of completed surveys	Survey completion rate
63	55	87.3%

Table 2: Completed Surveys by PHL Type

	Total # of labs
State PHLs	48
Territorial PHLs	4
Local PHLs	3

For questions pertaining to this survey and summary data report, please contact APHL Public Health Preparedness and Response Staff at biosafety@aphl.org.

[1] 64 awardees received Ebola Biosafety funds from the CDC ELC Program. The City of Chicago combined its responses with the state of Illinois, thus for purposes of this report, the total number of ELC-funded laboratories is 63

Funding

1. Did your laboratory receive funding via the US Centers for Disease Control and Prevention (CDC) Epidemiology and Laboratory Capacity (ELC) for Infectious Diseases Ebola Supplemental in 2015? If yes, please specify how the funds were spent. All 55 respondents indicated that they received funding for a total of $15.6 million over a three year period.

	n	Total	Average	Minimum	Median	Maximum
Spent	47	$9,565,502	$203,521	$9,951	$191,756	$520,272
Obligated	31	$2,870,495	$92,597	$234	$82,827	$242,492
Unobligated	36	$3,201,627	$88,934	$4,949	$73,924	$277,671
Total	48	$15,637,624	$325,784	$11,000	$333,351	$644,952

1a. How were the funds allocated?

	n	Total	Average	Minimum	Median	Maximum
Training and travel	47	$1,279,181	$27,217	$2,450	$14,147	$257,580
Salaries and fringe	43	$8,697,750	$202,273	$30,700	$216,158	$410,350
Supplies	38	$409,534	$10,777	$260	$3,711	$145,044
Other	29	$1,155,284	$39,837	$910	$21,879	$429,929
Unobligated/unspent	28	$2,488,220	$88,865	$9,529	$73,924	$254,713
General overhead	25	$825,391	$33,016	$500	$21,376	$143,241
Equipment purchase	15	$480,089	$32,006	$467	$12,000	$97,485
Equipment maintenance	8	$60,626	$7,578	$100	$3,652	$20,180
Distributed to other laboratories	3	$117,458	$39,153	$8,643	$33,990	$59,336
Renovations	3	$124,092	$41,364	$23,368	$41,000	$59,724

Other responses included funds being utilized for sentinel clinical laboratories, biological safety equipment purchases and Pacific Island Health Officers Association (PIHOA)-member laboratories. Individual responses are on file with APHL.

2. What is the primary funding source for your laboratory's biosafety and biosecurity activities?

Answer	%	Count
Federal - ELC funding	83.6%	46
Federal - PHEP funding	10.9%	6
State funding	1.8%	1
Local funding	1.8%	1
Other - please specify	1.8%	1
Total	100%	55

Individual responses are on file with APHL.

2a. The CDC is currently providing funds to support strengthening biosafety and biosecurity in US public health laboratories. This funding will likely end in 2018. If it does end will you be able to maintain and enhance biosafety activities?

Answer	%	Count
Yes, maintain internal biosafety activities	38.9%	28
No - Please describe what will be lost if Biosafety funding is no longer available	29.2%	21
Yes, maintain external outreach activities (e.g. training for clinical labs, site visits, guidance on risk assessments)	20.8%	15
Yes, enhance internal biosafety activities	8.3%	6
Yes, enhance external outreach activities (e.g. training for clinical labs, site visits, guidance on risk assessments)	2.8%	2

Losses described by laboratories that reported "No" included biosafety and biosecurity activities across the laboratory, outreach towards clinical laboratories and the Biosafety Officer position. Individual responses are on file with APHL.

3. How does your laboratory allocate the ELC supplemental grant money? Please check all that apply.

Answer	%	Count
BSO salary	89.1%	49
BSO professional development	87.3%	48
Outreach site visit travel	81.8%	45
Outreach training/materials	80.0%	44
Internal safety training/materials	67.3%	37
Internal safety equipment	56.4%	31
Other - please specify	5.2%	14

Other specified responses were recruitment costs to hire a full-time Biosafety Outreach Officer, hiring Biosafety consultants and providing funds to other relevant biosafety personnel including outreach and training for the Bioterrorism Coordinators in the laboratory. Individual responses are on file with APHL.

Workforce

4. Does your lab have a full time designated Biosafety Official (BSO)?

Answer	%	Count
Yes	92.7%	51
No	7.3%	4
Total	100%	55

4a. How long has the individual been in this role at your laboratory?

Answer	%	Count
1 to 2 years	43.1%	22
< 1 year	21.6%	11
2 to 3 years	15.7%	8
3 to 5 years	11.8%	6
> 5 years	7.8%	4
Total	100%	51

4b. Please provide your laboratory's BSO contact information.

Individual responses are on file with APHL

4c. How many people have held the BSO position in your laboratory since March 2015?

Answer	%	Count
1	70.6%	36
2	25.5%	13
3	2.0%	1
4	2.0%	1
5+	0.0%	0
Total	100%	51

4d. Please indicate the percentage of time breakdown for the BSO duties and include what other assignments they take.

	0%		1%-24%		25%-49%		50%-74%		75%-100%	
	n	%	n	%	n	%	n	%	n	%
Internal biosafety/ biosecurity	0	0.0%	5	9.8%	19	37.3%	19	37.3%	8	15.7%
External clinical lab outreach	3	5.9%	18	35.3%	23	45.1%	7	13.7%	0	0.0%
Other duties	13	25.5%	13	25.5%	15	29.4%	9	17.6%	1	2.0%

Other responses included internal health and safety duties including chemical and general safety, quality management, biothreat coordinator training and testing and Select Agent Program Responsible Officer. Individual responses are on file with APHL.

4e. What resources do you utilize for guidance and assistance with biosafety/biosecurity? Please check all that apply.

Answer	%	Count
APHL Listserv®	94.1%	48
Literature search	94.1%	48
APHL staff or other APHL subject matter expert	76.5%	39
Internal staff	66.7%	34
Neighboring states	66.7%	34
Other - please specify	54.9%	28
Total	100%	51

Other specified responses were American Biological Safety Association (ABSA) trainings and online resources, Biosafety in Microbiological and Biomedical Laboratories (BMBL), CDC trainings and online resources, BioSafe 360 program and regional BSO groups. Individual responses are on file with APHL.

4f. Please indicate the reasons for not having a BSO? Please check all that apply.

Answer	%	Count
Other - Please specify	50.0%	4
Lack of long term funding for staff	37.5%	3
Delays due to challenges in finding qualified personnel	12.5%	1
Delays in obtaining CDC ELC funds through state or other jurisdictions	0.0%	0
Delays due to jurisdiction's personnel recruitment process	0.0%	0
Offers rejected due to non-competitive salaries	0.0%	0

Other specified responses included state budgetary constraints, roles/duties of BSO were designated to personnel currently serving in another position and challenges in finding qualified personnel. Individual responses are on file with APHL.

5. What is the experience level of your BSO? Please check all that apply.

Answer	%	Count
Intermediate Biosafety Professional (1 to 5 years working as a BSO in a laboratory setting)	66.7%	34
Experience working in a public health laboratory performing analytical work	54.9%	28
Experience working in a clinical laboratory	47.1%	24
Experience working in a research or academic laboratory	41.2%	21
Other - Please specify	27.5%	14
Experienced Biosafety Professional (i.e. more than 5 years working as a BSO in a laboratory setting)	19.6%	10
Currently a Registered Biosafety Professional (RBP)	3.9%	2
Biosafety specific education only (no previous experience working in a laboratory)	0.0%	0
Currently a Certified Biosafety Professional (CBSP)	0.0%	0
Total	100%	51

Other specified responses included many years of expertise in BSL-2 and BSL-3 laboratories, work as infection control in hospitals and past experiences as an instructor in a laboratory setting. Individual responses are on file with APHL.

6. Please check any trainings offered to your BSO? Please check all that apply.

Answer	%	Count
APHL Courses - please specify	90.2%	46
Conferences - please specify	88.2%	45
External courses (e.g. American Biological Safety Association ABSA training course on biosafety) - please specify	74.5%	38
Institution specific - please specify	51.0%	26
Other - please specify	45.1%	23
Total	100%	51

Specified responses for "Conferences": In order of weighted response: ABSA Annual Meeting, National Laboratory Training Conference, APHL Annual Meeting, APHL Biosafety and Biosecurity Workshops and CDC International Biosafety Symposium, Individual responses are on file with APHL.

Specified responses for "Institution specific": The vast majority of responses included OSHA Blood- Borne Pathogen training. Other popular responses included chemical hygiene, general biosafety, Select Agent, Division 6.2 Infectious Substance Packaging and Shipping and BLS3 safety. Numerous other biosafety related trainings were also listed. Individual responses are on file with APHL.

Specified responses for "APHL Courses": The vast majority of responses included Regional Biosafety and Biosecurity Workshops, Biosafe 360 program, biosafety and biosecurity webinars provided by APHL in the past year, APHL Annual Meeting and in addition, the APHL-sponsored Division 6.2 Infectious Substance Packaging and Shipping training was also mentioned. Individual responses are on file with APHL.

Specified responses for "External Courses": ABSA was the most cited provider, including their Principle and Practices of Biosafety Course and on-line training modules. Other external providers included Eagleson Institute, Behavioral Based Improvement Solutions, National Laboratory Training Network and National Ebola Training and Education Center. Individual responses are on file with APHL.

Specified responses for "Other": Responses varied greatly with very little consensus, but providers included webinars by APHL and ABSA, Infectious Disease training by National Ebola Training and Education Center and Packing and Shipping DOT on 6.2 Category A and B Infectious Materials. Individual responses are on file with APHL.

7. Have you developed safety-specific competencies for laboratory staff?

Answer	%	Count
Yes	47.3%	26
No - Please explain the reasons why you did not develop safety competencies	52.7%	29
Total	100%	55

The majority of responses for the reasons why laboratories did not develop safety competencies were time constraints followed by laboratories currently in the process of incorporating safety competencies. Individual responses are on file with APHL.

8. Please indicate whether you are aware of the following Competency Guidelines:

Answer	%	Count
CDC. Competency Guidelines for Public Health Laboratory Professionals. MMWR 2015; 60 (Suppl):1-95	96.4%	53
CDC. Guidelines for Biosafety Laboratory Competency. MMWR 2011;60(Suppl):1-28	96.4%	53
Not aware of the guidelines	1.8%	1
Total	100%	55

9. From March 2016 to September 2017, please provide information on the types of training courses your laboratorians and BSO completed.

	0%		1%-24%		25%-49%		50%-74%		75%-100%		NA	
	n	%	n	%	n	%	n	%	n	%	n	%
BSL-2 safe practices	1	1.8%	1	1.8%	1	1.8%	0	0.0%	46	83.6%	6	10.9%
Biological Risk Assessment	4	7.3%	4	7.3%	3	5.5%	3	5.5%	35	63.6%	7	12.7%
Personal Protective Equipment (PPE)	0	0.0%	0	0.0%	1	1.8%	1	1.8%	51	92.7%	2	3.6%
Biosafety Cabinets and other Engineering Controls	3	5.5%	0	0.0%	1	1.8%	1	1.8%	48	87.3%	2	3.6%
Bloodborne Pathogens	1	1.8%	0	0.0%	0	0.0%	1	1.8%	48	87.3%	5	9.1%
Spill Prevention, Control, and Countermeasure	1	1.8%	1	1.8%	2	3.6%	1	1.8%	45	81.8%	5	9.1%
Sharps Hazard	0	0.0%	0	0.0%	1	1.8%	1	1.8%	47	85.5%	6	10.9%
Safe Handling and Use of Cryogenic Liquids	2	3.6%	0	0.0%	0	0.0%	1	1.8%	16	29.1%	36	65.5%
Chemical Hazards	2	3.6%	0	0.0%	1	1.8%	1	1.8%	45	81.8%	6	10.9%
Decontamination	2	3.6%	0	0.0%	1	1.8%	1	1.8%	48	87.3%	3	5.5%
Regulated Waste Management	2	3.6%	0	0.0%	1	1.8%	1	1.8%	44	80.0%	7	12.7%
Emergency Management and Response	1	1.8%	2	3.6%	0	0.0%	0	0.0%	46	83.6%	6	10.9%
Certification in packaging/shipping of IATA Division 6.2 infectious substances (Category A)	0	0.0%	0	0.0%	1	1.8%	2	3.6%	50	90.9%	2	3.6%
Biosecurity Plan	1	1.8%	0	0.0%	1	1.8%	1	1.8%	50	90.9%	2	3.6%
Select Agent Regulations	0	0.0%	0	0.0%	0	0.0%	0	0.0%	50	90.9%	5	9.1%
BSL-3 safety practices	0	0.0%	2	3.6%	1	1.8%	1	1.8%	47	85.5%	4	7.3%

Did the BSO complete the training course?

	Yes		No		NA	
	n	%	n	%	n	%
BSL-2 safe practices	47	85.5%	4	7.3%	4	7.3%
Biological Risk Assessment	50	90.9%	2	3.6%	3	5.5%
Personal Protective Equipment (PPE)	52	94.5%	2	3.6%	1	1.8%
Biosafety Cabinets and other Engineering Controls	50	90.9%	3	5.5%	2	3.6%
Bloodborne Pathogens	53	96.4%	1	1.8%	1	1.8%
Spill Prevention, Control, and Countermeasure	49	89.1%	4	7.3%	2	3.6%
Sharps Hazard	50	90.9%	2	3.6%	3	5.5%
Safe Handling and Use of Cryogenic Liquids	11	20.0%	13	23.6%	31	56.4%
Chemical Hazards	50	90.9%	3	5.5%	2	3.6%
Decontamination	50	90.9%	3	5.5%	2	3.6%
Regulated Waste Management	47	85.5%	4	7.3%	4	7.3%
Emergency Management and Response	46	83.6%	6	10.9%	3	5.5%
Certification in packaging/shipping of IATA Division 6.2 infectious substances (Category A)	46	83.6%	8	14.5%	1	1.8%
Biosecurity Plan	47	85.5%	4	7.3%	4	7.3%
Select Agent Regulations	41	74.5%	7	12.7%	7	12.7%
BSL-3 safety practices	47	85.5%	3	5.5%	5	9.1%

Risk Assessment

10. From March 2016 to September 2017, has your PHL performed any risk assessments?

Answer	%	Count
Yes	94.5%	52
No	5.5%	3
Total	100%	55

10a. Did you identify any gaps?

Answer	%	Count
Yes - Please specify	65.4%	34
No	34.6%	18
Total	100%	52

The majority of risk assessment gaps described by those laboratories that reported "Yes" were proper PPE and BSC utilization, facilities and equipment upgrades and waste management. Individual responses are on file with APHL.

10b. Have you taken steps to mitigate the gaps identified from the risk assessment?

Answer	%	Count
Yes - Please describe the steps	100.0%	34
No	0.0%	0
Total	100%	34

The majority of responses from those laboratories that reported "Yes" were proper PPE training, updating their SOPs and updating their engineering controls. Individual responses are on file with APHL.

11. Please indicate the frequency and reasons for completing risk assessments on the following lab sections. Please check all that apply.

	Annually		Quarterly		Biannually		New agent		Change in procedure		Change in equipment		Incident		New staff		None	
Bacteriology/Microbiology	50.9%	28	0.0%	0	1.8%	1	58.2 %	32	63.6 %	35	43.6 %	24	45.5 %	25	20.0 %	11	3.6%	2
Laboratory Response Network for Biological Threats Preparedness (LRN-B)	50.9%	28	0.0%	0	1.8%	1	63.6 %	35	54.5 %	30	40.0 %	22	34.5 %	19	18.2 %	10	14.5 %	8
Molecular Testing	47.3%	26	0.0%	0	1.8%	1	58.2 %	32	60.0 %	33	40.0 %	22	36.4 %	20	18.2 %	10	12.7 %	7
Virology	43.6%	24	0.0%	0	3.6%	2	58.2 %	32	52.7 %	29	36.4 %	20	38.2 %	21	21.8 %	12	12.7 %	7
Chemistry	40.0%	22	0.0%	0	1.8%	1	36.4 %	20	40.0 %	22	30.9 %	17	30.9 %	17	14.5 %	8	38.2 %	21
Parasitology	38.2%	21	0.0%	0	1.8%	1	36.4 %	20	38.2 %	21	27.3 %	15	29.1 %	16	14.5 %	8	40.0 %	22
Laboratory Response Network for Chemical Threats Preparedness (LRN-C)	34.5%	19	0.0%	0	1.8%	1	32.7 %	18	36.4 %	20	29.1 %	16	30.9 %	17	14.5 %	8	47.3 %	26

11a. If you completed risk assessments for other lab sections, please provide the reasons for the assessment. Click here if you have no comments to provide.

The specified responses included providing risk assessments for each section of the lab that performs testing on specimens (newborn screening, serology and environmental microbiology) and the addition of new equipment or procedures. Individual responses are on file with APHL.

12. Do you have a mechanism to share documentation for risk assessments and risk mitigation with laboratory personnel?

Answer	%	Count
Yes	96.4%	53
No	3.6%	2
Total	100%	55

Outreach to Clinical Laboratories

13. How many sentinel clinical laboratories do you have within your jurisdiction?

	Total # of Labs
Sentinel clinical labs which meet the APHL-CDC-ASM Definition	3,254
Additional clinical labs (as described in the ELC Performance Measures Guidance)	1,995

	Sentinel clinical labs which meet the APHL-CDC-ASM Definition		Additional clinical labs (as described in the ELC Performance Measures Guidance)	
	n	%	n	%
0 labs	1	1.8%	19	34.5%
1-49 labs	31	56.4%	23	41.8%
50-99 labs	16	29.1%	9	16.4%
100-199 labs	4	7.3%	2	3.6%
200+ labs	3	5.5%	2	3.6%

14. What forms of communication do you use with the clinical laboratories? Please check all that apply.

Answer	%	Count
Email	98.2%	54
Phone	98.2%	54
Site Visits	92.7%	51
Meetings hosted by my laboratory	60.0%	33
Newsletter	40.0%	22

Other - Please specify	29.1%	16
Listserv®	18.2%	10
Total	100%	55

Other forms of communication included faxing, hosting workshops and other trainings. Individual responses are on file with APHL.

15. From May 2015 to February 2016, have you conducted any of the following with your clinical laboratories? Please check all that apply. From the 47 PHLs that responded have performed site visits visited a total of 730 clinical laboratories.

Answer	%	Count
Provided risk assessment templates	90.9%	50
Performed site visits - Please list the number of clinical labs you visited	85.5%	47
Performed risk assessments	41.8%	23
None of the above	3.6%	2
Total	100%	55

16. From May 2016 to September 2017, please indicate if your laboratory provided the following trainings to the clinical laboratories.

Question	Offered		Do not offer	
Packaging/Shipping of IATA Division 6.2 infectious substances (Category A)	87.3%	48	12.7%	7
Biological Risk Assessment	85.5%	47	14.5%	8
Personal Protective Equipment	70.9%	39	29.1%	16
Biosafety Cabinets and other Engineering Controls	70.9%	39	29.1%	16
BSL-2 Safe Practices (fundamentals of biological materials safety practices, excluding bloodborne pathogen training)	61.8%	34	38.2%	21
Decontamination	45.5%	25	54.5%	30
Sharps Hazard	40.0%	22	60.0%	33
Spill Prevention, Control, and Countermeasure	36.4%	20	63.6%	35
Emergency Management and Response	36.4%	20	63.6%	35
Biosecurity Plan	34.5%	19	65.5%	36
Regulated Waste Management	30.9%	17	69.1%	38
BSL-3 Safety Practices	30.9%	17	69.1%	38
Bloodborne Pathogens	23.6%	13	76.4%	42

Chemical Hazard	18.2%	10	81.8%	45
Safe Handling and Use of Cryogenic Liquids	5.5%	3	94.5%	52

16a. Please list any other training topics provided to clinical laboratories.

PHLs provided training on other topics such as rule out/refer testing of select agents, sentinel laboratory training for clinical laboratories and occupational health plan components. Individual responses are on file with APHL.

17. Have you conducted any biosafety and biosecurity drills or exercises with your sentinel clinical labs from May 2015 to February 2016?

Answer	%	Count
Yes - Please briefly describe the drills or exercises	45.5%	25
No - Please specify any barriers	54.5%	30
Total	100%	55

The majority of responses for the drills or exercises conducted included APHL, CDC and College of American Pathologists (CAP) Laboratory Preparedness Exercises, followed by communication drills and call down drills with sentinel clinical laboratories. Individual responses are on file with APHL.

Barriers to not conducting any drills or exercise included lack of time, staff and funding followed by difficulty in gaining buy in from clinical laboratories and geographic separation of laboratories.
Individual responses are on file with APHL.

18. Please list the top three challenges encountered with engaging your clinical labs and provide suggestions for solutions.

The majority of responses included lack of time, personnel, buy in from clinical laboratories, geographic separation of laboratories and clinical laboratory staff turnover. Solutions to these challenges include providing on-site trainings, engaging clinical laboratory leadership, providing remote trainings such as conference calls and webinars and maintaining contact with clinical laboratory staff. Individual responses are on file with APHL.

19. If you have a successful model for outreach to your sentinel clinical laboratories, please share a brief summary below. A successful model includes routine communications between the clinical and public health lab, participating in training and exercises, a newsletter or other resource such as a Listserv®, and other examples demonstrating that the clinical lab is actively connected to the public health lab. An APHL staff member will contact you to follow up on the model described below. Click here if you have no comment to provide.

Individual responses are on file with APHL.

Training and Related Resource Needs

20. What types of biosafety and biosecurity training would you like APHL or other partners to develop?

The majority of responses included development of risk assessments and templates, hazardous waste, all hazards training and BSL-3 specific training. The targeted audience for these developed trainings would include sentinel clinical laboratory staff along with PHL staff. Individual responses are on file with APHL.

21. Beside trainings, what specific biosafety and/or biosecurity guidance documents/tools or other resources do you need? Click here if you have no comment to provide.

Responses included risk assessment tools and templates, best practices checklist for biosafety and clinical laboratory outreach guidance document for BSOs. Individual responses are on file with APHL.

APHL Resources

22. Have you used any of APHL's Biosafety and Biosecurity Program tools, templates or resources? (ex. Ebola or Zika Risk Assessment Template, Risk Assessment Best Practice, Clinical Laboratory Checklist, webinars, training presentations, etc. found at www.aphl.org/biosafety)

Answer	%	Count
Yes	98.2%	54
No	1.8%	1
Total	100%	55

22a. Are you satisfied with the "quality" of these tools, templates and resources?

Answer	%	Count
Yes	100.0%	54
No - please specify anything the program can improve on	0.0%	0
Total	100%	54

23. Have you or any representative of your laboratory attended an APHL sponsored biosafety training (i.e. webinar, regional workshop, course, etc.)?

Answer	%	Count
Yes	96.4%	53
No - please specify	3.6%	2
Total	100%	55

Responses from laboratories that reported "No" were not enough funding to support travel costs. Individual responses are on file with APHL.

24. Are you satisfied with the technical assistance received by the APHL Biosafety and Biosecurity program?

Answer	%	Count
Yes	90.9%	50
No - please specify anything the program can improve on	3.6%	2
No assistance received	5.5%	3
Total	100%	55

Responses from laboratories that reported "No" were concerns over the uniformity of templates and procedures and having more trainings developed through APHL. Individual responses are on file with APHL.

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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