

2014 APHL All-Hazards Laboratory Preparedness Survey

Summary Data Report



MAY 2015

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Office of Surveillance, Epidemiology and Laboratory Services (OSELS)
National Center for HIV, Viral Hepatitis, STDs and TB Prevention (PS)
National Center for Zoonotic, Vector-borne, and Enteric Diseases (CK)
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Introduction

APHL fielded the Eighth Annual All-Hazards Laboratory Preparedness Survey to assess public health laboratories' capability and capacity to respond to biological, chemical, radiological and other threats, such as pandemic influenza. Administered between September and November 2014, the survey covered a 12 month period from July 1, 2013 to June 30, 2014 representing the CDC PHEP Cooperative Agreement Fiscal Year 2013, also known as Budget Period 2. APHL received a 100% response rate from public health laboratories in 50 states, Puerto Rico, the District of Columbia, Los Angeles and New York City.

This summary data report provides aggregate responses for all questions, including those shared with the Trust for America's Health (TFAH). Additionally, APHL will summarize key points in issue briefs that will be distributed at various meetings and conferences. Both the summary data report and issue briefs serve as educational tools that can assist in educating policy makers, public health partners and the public on the important role laboratories play in public health preparedness and response.

For questions on the data or APHL survey methodologies, please contact Deborah Kim, director of institutional research at 240.485.2742 or deborah.kim@aphl.org.

For questions pertaining to APHL's preparedness and response activities, please contact Chris Mangal, director of preparedness and response at 240.485.2769 or chris.mangal@aphl.org.

Demographics

Laboratory contact information can be found in the data file, which is housed at APHL. For more information, please contact APHL staff identified above.

Funding and Workforce

1. From July 1, 2013 to June 30, 2014, did your PHL experience any funding cuts?

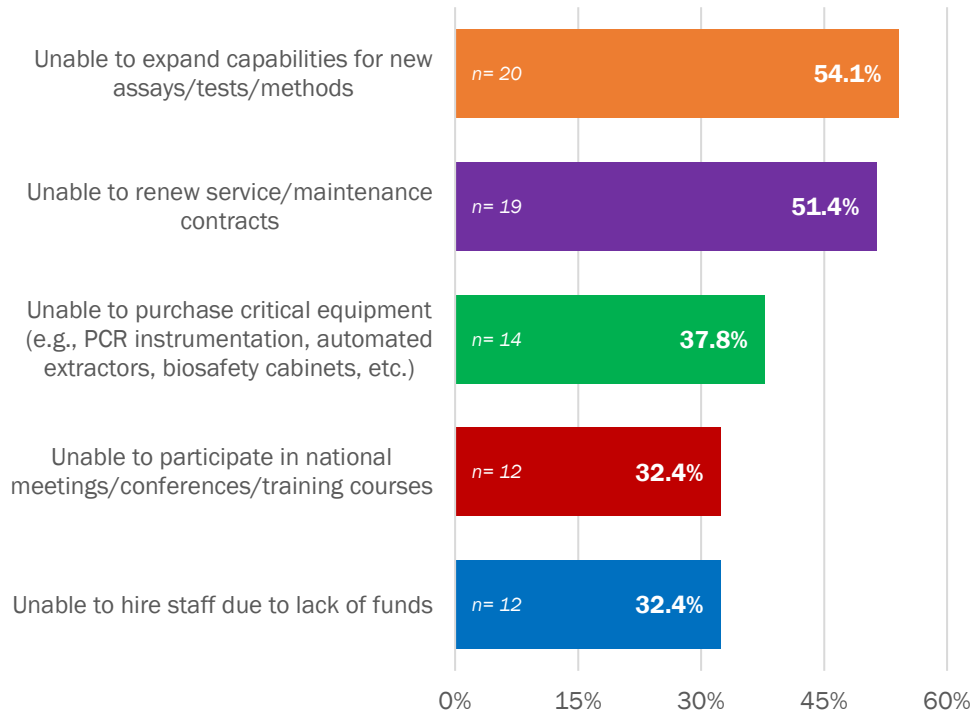
Answer	Response	%
Yes (Please go to Question 1a)	37	68.5
No (Please go to Question 2)	17	31.5
Total	54	100

1a. Please choose the top *five* impacts of any preparedness funding cuts your PHL experienced from July 1, 2013 to June 30, 2014.

Answer	Response	%
Unable to expand capabilities for new assays/tests/methods	20	54.1
Unable to renew service/maintenance contracts	19	51.4
Unable to purchase critical equipment (e.g., PCR instrumentation, automated extractors, biosafety cabinets, etc.)	14	37.8
Unable to hire staff due to lack of funds	12	32.4
Unable to participate in national meetings/conferences/training courses	12	32.4
Lost full-time position(s)	10	27
Increased staff turnover	10	27
Unable to purchase and/or upgrade Laboratory Information Management System (LIMS)	9	24.3
Unable to provide or reduced the number of training courses and outreach activities	9	24.3
Combined staff positions	8	21.6
Unable to purchase reagents and supplies or materials	8	21.6
Lost part-time position(s)	4	10.8
Unable to respond to an event	2	5.4
Reduced state courier services	1	2.7
Experienced no change in laboratory operations	1	2.7
Reduced 24/7 capability	1	2.7
Increased sample/specimen turnaround time	1	2.7
Unable to participate in exercises	1	2.7
Other	4	10.8

Other specified responses available in the individual laboratory data file.

Top 5 Impacts of Preparedness Funding Cuts (n=37)



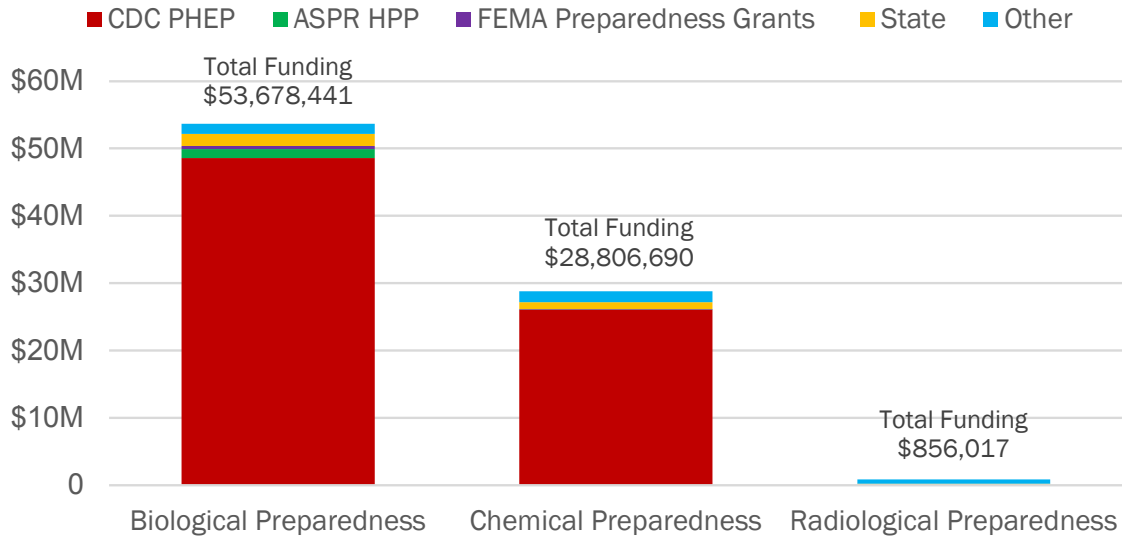
2. From July 1, 2013 to June 30, 2014, how much preparedness funding did your PHL receive? Please enter "0" if none.

	Biological Preparedness	Chemical Preparedness	Radiological Preparedness
	Amount	Amount	Amount
CDC PHEP Cooperative Agreement	\$48,606,171 (54/54)*	\$26,021,066 (51/54)	\$1,134 (1/54)
ASPR HPP Cooperative Agreement	\$1,331,627 (12/54)	\$18,199 (3/54)	\$0 (0/54)
FEMA Preparedness Grants (e.g., UASI, State Homeland Security Grant)	\$421, 115 (2/54)	\$83,290 (1/54)	\$0 (0/54)
State	\$1,834,491 (10/54)	\$1,063,554 (10/54)	\$252,838 (1/54)
Other	\$1,485,036 (11/54)	\$1,621,714 (6/54)	\$602,045 (4/54)
Total	\$53,678,441 (54/54)	\$28,806,690 (51/54)	\$856,017 (5/54)

*The numerator is the number of labs that provided a dollar amount other than zero dollars and the denominator is the number of total labs that answered this question.

Other sources of funding include FERN and ERLN.

Preparedness Funding by Preparedness Activity and Funding Sources



3. From July 1, 2013 to June 30, 2014, how much of your PHL's CDC PHEP Cooperative Agreement funding did you receive to maintain and enhance chemical threat activities? Please enter "0" if none.

	Number of PHLs	Amount
Level 1 Activities	9	\$9,337,327
Level 2 Activities	37	\$13,102,299
Level 3 Activities	16	\$1,129,464

4. From July 1, 2013 to June 30, 2014, how much from each funding source was allocated to the following activities?

Do not include funds received for carryover from previous years. Please enter "0" if none.

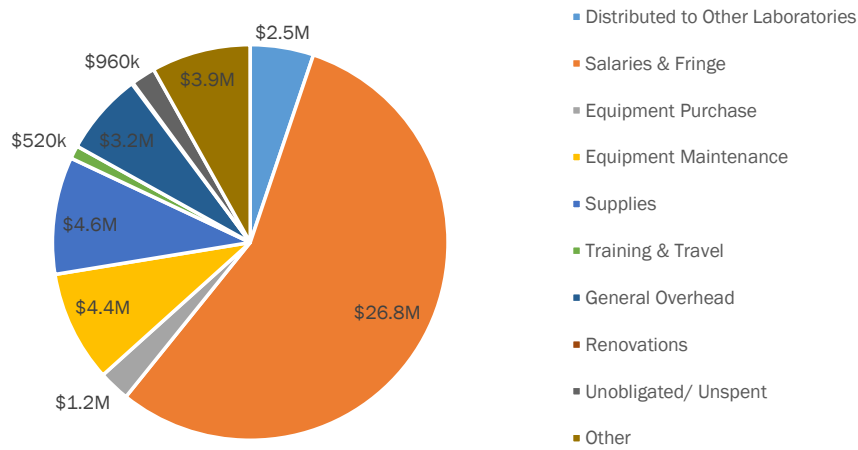
	PHEP Funds for Bio		HPP Funds for Bio		State Funds for Bio	
	n	\$	n	\$	n	\$
Distributed to Other Laboratories	7	\$2,489,904	2	\$271,120	1	\$24,000
Salaries & Fringe	52	\$26,812,218	7	\$529,514	6	\$918,315
Equipment Purchase	18	\$1,225,755	0	\$0	0	\$0
Equipment Maintenance	46	\$4,378,019	2	\$65,390	4	\$121,166
Supplies	52	\$4,621,240	7	\$96,630	5	\$355,172
Training & Travel	46	\$519,845	11	\$197,825	1	\$246

General Overhead	31	\$3,234,916	1	\$896	2	\$100,320
Renovations	3	\$57,716	0	\$0	0	\$0
Unobligated/ Unspent	8	\$959,918	2	\$25,492	1	\$20,985
Other	35	\$3,903,286	3	\$87,480	2	\$5,845

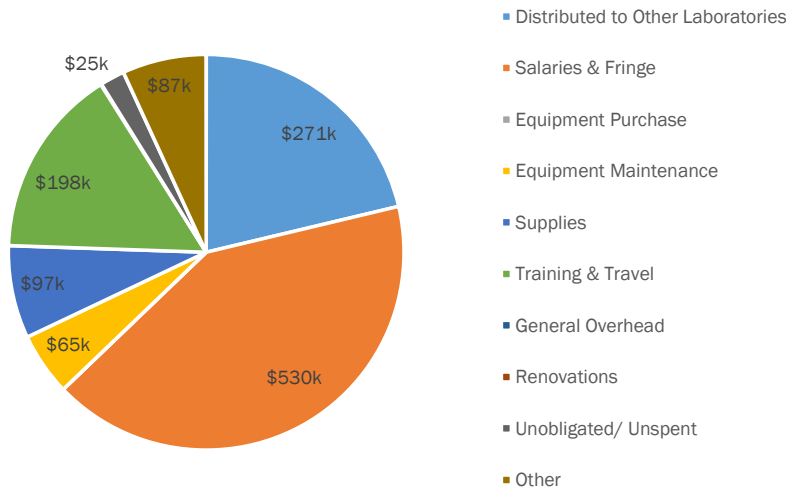
	PHEP Funds for Chem		HPP Funds for Chem		State Funds for Chem	
	n	\$	n	\$	n	\$
Distributed to Other Laboratories	1	\$25,000	0	\$0	0	\$0
Salaries & Fringe	47	\$12,744,673	1	\$8,029	5	\$666,945
Equipment Purchase	16	\$1,239,681	0	\$0	2	\$6,321
Equipment Maintenance	40	\$4,230,667	0	\$0	2	\$12,390
Supplies	47	\$3,028,724	0	\$0	4	\$33,518
Training & Travel	42	\$289,632	1	\$10,000	3	\$3,724
General Overhead	27	\$2,081,543	0	\$0	2	\$100,320
Renovations	1	\$5,000	0	\$0	0	\$0
Unobligated/ Unspent	10	\$478,368	0	\$0	1	\$9,407
Other	24	\$1,372,473	0	\$0	1	\$2,112

	Funds for Rad	
	n	\$
Distributed to Other Laboratories	0	\$0
Salaries & Fringe	3	\$291,956
Equipment Purchase	2	\$15,784
Equipment Maintenance	3	\$46,702
Supplies	4	\$75,345
Training & Travel	2	\$15,315
General Overhead	3	\$105,742
Renovations	0	\$0
Unobligated/ Unspent	0	\$0
Other	2	\$7,333

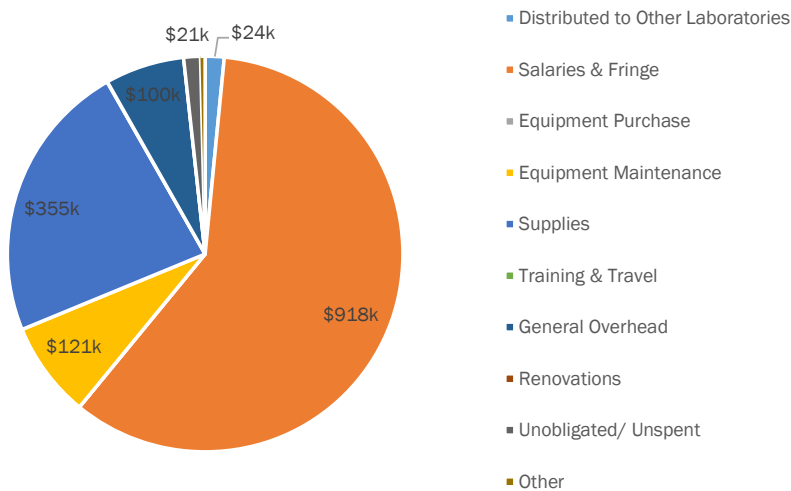
Allocation of PHEP Funds for Biological Threat Laboratory Preparedness



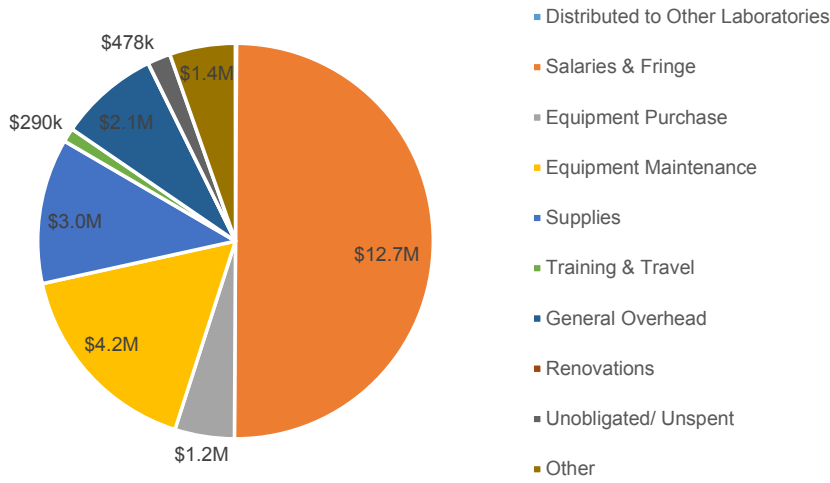
Allocation of HPP Funds for Biological Threat Laboratory Preparedness



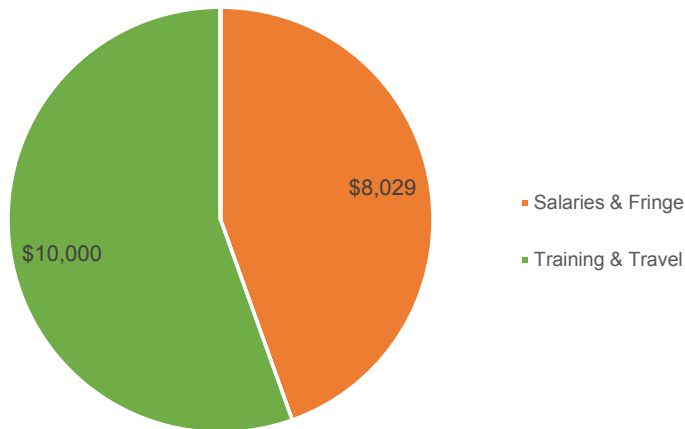
Allocation of State Funds for Biological Threat Laboratory Preparedness



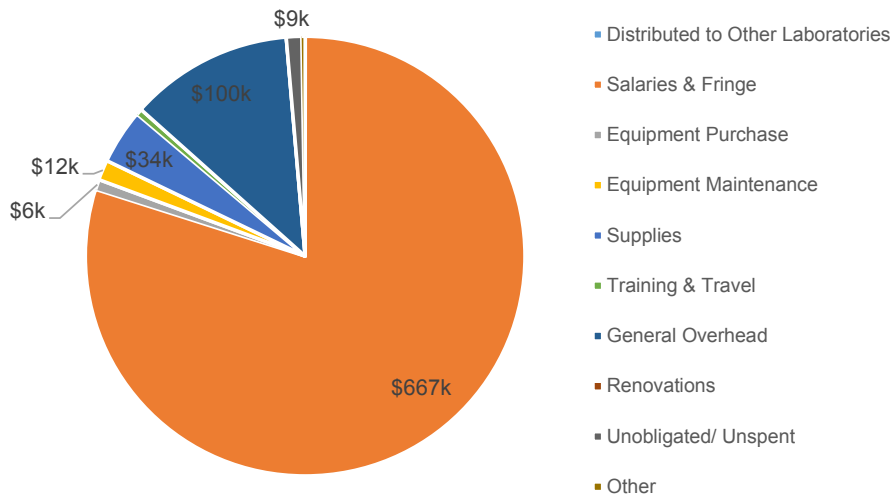
Allocation of PHEP Funds for Chemical Threat Laboratory Preparedness



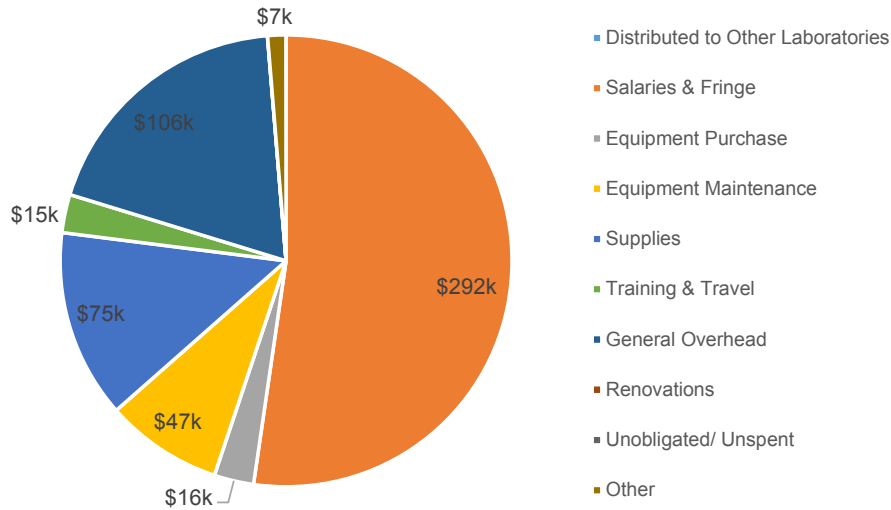
Allocation of HPP Funds for Chemical Threat Laboratory Preparedness



Allocation of State Funds for Chemical Threat Laboratory Preparedness



Allocation of Funds for Radiological Threat Laboratory Preparedness



4a. Please specify the other funding activities: Recipients indicated that funds supported a courier service, contracting and consulting services and other administrative costs.

5. From July 1, 2013 to June 30, 2014, how much from each funding source did you provide to the following types of laboratory?

Please enter "0" if you did not provide funds to these laboratories.

Funds awarded during this period for biological and chemical preparedness activities are as follows:

- 9 PHLs awarded \$5.8 million to branch state public health laboratories
- 7 PHLs awarded \$2.5 million to local public health laboratories
- 4 PHLs awarded \$57,450 to sentinel clinical laboratories
- 2 PHLs awarded \$66,000 to agricultural laboratories
- 1 PHL awarded \$35,650 to food laboratories

	PHEP Funds for Bio		HPP Funds for Bio		State Funds for Bio	
	n	\$	n	\$	n	\$
Branch State Public Health	5	\$4,583,921	1	\$11,013	1	\$200,000
Local Public Health	6	\$2,220,549	1	\$258,120	0	\$0
Sentinel Clinical (e.g., hospital)	2	\$31,950	1	\$13,000	0	\$0
Veterinary	2	\$103,564	0	\$0	0	\$0
Agriculture	0	\$0	0	\$0	0	\$0
Food	1	\$35,650	0	\$0	0	\$0
Other	0	\$0	0	\$0	0	\$0

	PHEP Funds for Chem		HPP Funds for Chem		State Funds for Chem	
	n	\$	n	\$	n	\$
Branch State Public Health	2	\$999,572	0	\$0	0	\$0
Local Public Health	0	\$0	0	\$0	0	\$0
Sentinel Clinical (e.g., hospital)	1	\$12,500	0	\$0	0	\$0
Veterinary	0	\$0	0	\$0	0	\$0
Agriculture	2	\$66,000	0	\$0	0	\$0
Food	0	\$0	0	\$0	0	\$0
Other	0	\$0	0	\$0	0	\$0

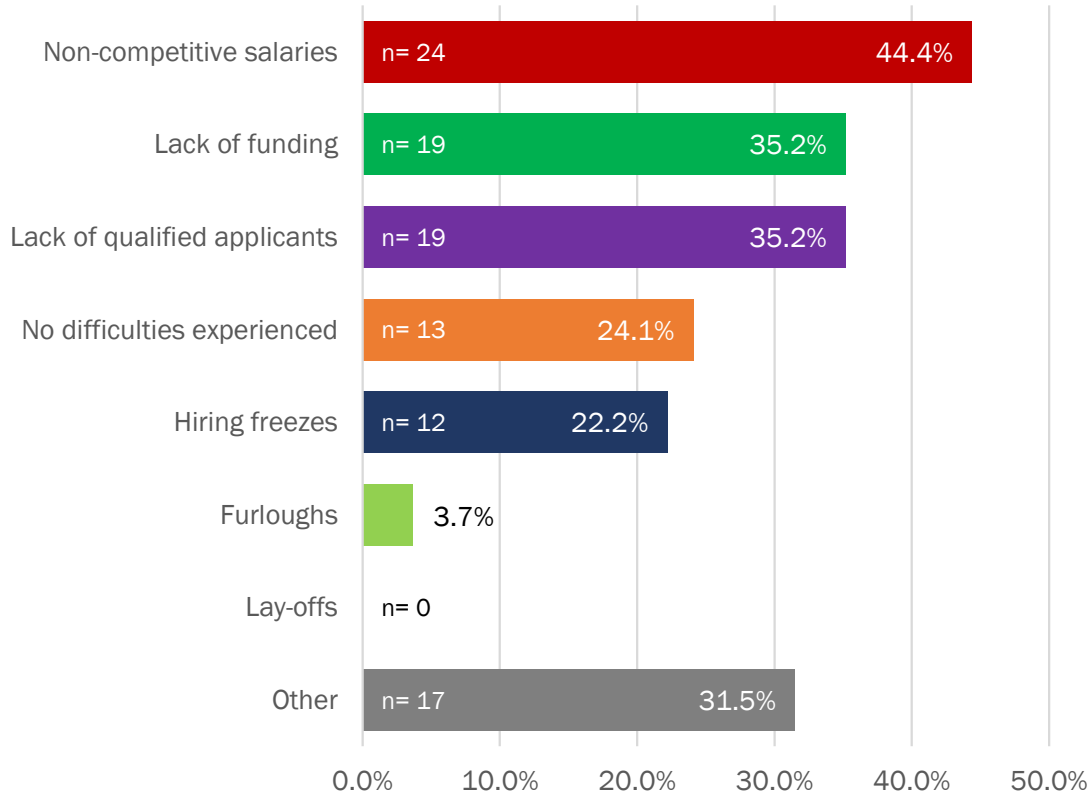
	Funds for Rad	
	n	\$
Branch State Public Health	0	\$0
Local Public Health	0	\$0
Sentinel Clinical (e.g., hospital)	0	\$0
Veterinary	0	\$0
Agriculture	0	\$0
Food	0	\$0
Other	0	\$0

6. What factors affected your PHL's ability to carry out preparedness activities from July 1, 2013 to June 30, 2014? *Please check all that apply.*

Answer	Response	%
Non-competitive salaries	24	44.4
Lack of qualified applicants	19	35.2
Lack of funding	19	35.2
No difficulties experienced	13	24.1
Hiring freezes	12	22.2
Furloughs	2	3.7
Lay-offs	0	0
Other	17	31

Other specified responses available in the individual laboratory data file.

Factors affecting PHLs' Ability to Carry Out Preparedness Activities (n=54)



Planning and Response

7. Does your PHL have a cross-border contact with Canada or Mexico?

Answer	Response	%
Yes (Please go to Question 7a)	15	27.8
No (Please go to Question 8)	39	72.2
Total	54	100

7a. Please provide the following information regarding your cross-border contact?

Individual laboratory cross border contact information can be found in the data file.

8. Which of the following laboratory networks is your PHL a member? Please check all that apply.
Please note that this is a new question for the 2014 survey.

Answer	Response	%
LRN-B	54	100
LRN-C	54	100
Level 1	10	18.5
Level 2	35	61.1
Level 3	9	16.7
FERN	45	83.3
WLA	22	40.7
ERLN	22	40.7
ERLN for Chemical Warfare Agents (CWAs)	4	7.4
NAHLN	4	7.4
Vet-LIRN	1	1.9
NPDN	0	0
Other	2	3.7
Other Specified Responses		
NARMS, PulseNet, DPDx		
CaliciNET, PulseNET, Respiratory laboratory network, WHO Influenza surveillance		

9. Which of the agencies does your PHL collaborate with on sample/specimen submission and testing? *Please note that this is a new question for the 2014 survey.*

Answer	Response	%
Federal Bureau of Investigation (FBI)	54	100
Sentinel Clinical Laboratories	52	96.3
Civil Support Teams (CSTs)	52	96.3
US Postal Inspection Service	48	88.9
Local Hazardous Materials (HAZMAT) Teams	45	83.3
Local Police	41	75.9
State Police	39	72.2
Fire Department	39	72.2
Veterinary Laboratory	35	64.8
State HAZMAT Teams	30	55.6
Department of Homeland Security (DHS)/BioWatch	26	48.1
Food Laboratory	26	48.1
Local/Branch Public Health Laboratory	26	48.1
Poison Control Centers	25	46.3
Agriculture Laboratory	23	42.6
University Research Laboratory	14	25.9
Paramedics/Emergency Medical Technicians (EMTs)	13	24.1
Other	13	24.1
None of the above	0	0

Other specified responses available in the individual laboratory data file

10. (TFAH) Does your PHL have a plan to handle a significant surge in testing over a six to eight week period in response to an outbreak or other public health event?

Answer	Response	%
Yes	49	90.7
No	5	9.3
Decline to respond	0	0
Total	54	100

11. (TFAH) Does your PHL have a Continuity of Operations Plan (COOP) consistent with [National Incident Management System \(NIMS\)](#) guidelines?

Answer	Response	%
Yes, a laboratory specific COOP (Please go to Question 11a/b)	25	46.3
Yes, a state agency or department-wide COOP that includes the laboratory (Please go to Question 11a/b)	28	51.9
No, but the laboratory or state is developing a COOP (Please go to Question 11a/b)	1	1.9
No, the state does not have a COOP which includes laboratory (Please go to Question 12)	0	0
Decline to respond (Please go to Question 12)	0	0
Total	54	100

11a. If your PHL shuts down and only a portion of staff were available to work, in terms of COOP, which test(s) are critical for your laboratory? *Please check all that apply.*

Answer	Response	%
LRN testing (e.g., biological and chemical threat agents)	53	98.1
Infectious diseases (e.g., reference and specialized testing) Please specify the critical tests:	47	87
Newborn screening	34	63
Environmental health (e.g., water testing)	32	59.3
Food safety	25	46.3
Other	14	25.9

11b. (TFAH) From July 1, 2013 to June 30, 2014, did your PHL evaluate the functionality of your COOP via a real event or an exercise?

Answer	Response	%
Yes	36	66.7
No	17	31.5
Decline to respond	1	1.9
Total	54	100

11c. If you activated a COOP during a real event, please provide any additional information on the steps and outcomes.

Specified responses available in the individual laboratory data file.

12. Please indicate the number of preparedness exercises your PHL conducted or participated in from July 1, 2013 to June 30, 2014. Do not include your responses to real events and proficiency tests. *Please enter "0" if none.*

	Tabletop Exercises	Drills	Functional Exercises	Full-Scale Exercises	Total
Biological Threats	49	75	62	47	233
Chemical Threats	13	28	42	12	95
Radiological Threats	4	8	9	5	26
Multi-Hazards (e.g., any combo of bio, chem, and rad threats)	11	3	6	12	32
Pandemic Influenza	4	1	0	1	6
COOP	13	13	8	5	39
Other – please specify	5	36	9	2	52

Other specified responses: available in the individual laboratory data file.

13. From July 1, 2013 to June 30, 2014, please enter the total number of **LRN** samples and specimens you accepted and tested. Do not include proficiency tests or exercises.

Please enter "0" if none.

Please note that the language for this question has changed for the 2014 survey to limit sample/specimen type.

Sample/Specimen Type	Total Number Accepted	BT Agents Tested	CT Agents Tested	RT Agents Tested	Other Analyses
Clinical	2,724	2,227	324	1	555
Environmental (e.g., powder, food, water, etc.)	1,372	1,870	258	854	23
BioWatch *New category added for 2014	158,251	301,988	0	0	0
Total	162,347	306,085	582	855	578

13a. Please specify any other analyses:

Clinical	Environmental (e.g., powder, food, water, etc.)	BioWatch
Avian flu (126), Swine flu (109), Classical swine fever (5), Foot & mouth disease (1), E. coli/Listeria (18)	envelopes for powder triaged	
animal brain or serum for specific testing	Confirmation of sodium hydroxide (used to make ricin)	
47 sera for Brucella transferred to CDC for analysis.	Public water security breach, coliform testing	
MERS-CoV		
41 Drug endangered children; 2 paralytic shellfish toxin; 121 toxic alcohols		

13b. How many of your PHL's environmental samples were from the following categories? Do not include clinical or BioWatch specimens/samples.

Sample Type	Number of Samples
Letter/package with unknown powder	526
Food/beverage	154
USPS sample (e.g., clean-up, BDS, etc.)	0
Other – Please specify:	531
Total	1,208

Other specified responses available in the individual laboratory data file.

14. (TFAH) Does your PHL assure the timely transportation (pick-up and delivery) of specimens/samples 24/7/365 days to the appropriate public health LRN Reference Laboratory? (This system can encompass a state operated courier, FedEx, contract courier service, etc.)

Answer	Response	%
Yes	53	98.1
No	0	0.0
Decline to respond	1	1.9
Total	54	100

Biological Threats

15. Does your PHL maintain a database of active sentinel clinical laboratories with the required elements (e.g., CLIA number, address, primary contact, 24/7 emergency contact) listed in the revised [Sentinel Clinical Laboratories Definition](#)?

Answer	Response	%
Yes, for the entire state (Please go to Question 15a)	49	90.7
Yes, for my jurisdiction only (Please go to Question 15a)	5	9.3
No (Please go to Question 16)	0	0
Total	54	100

15a. How many active sentinel clinical laboratories are in your database?

Total Number of Laboratories			
4,439			
Min	Max	Median	Mean
7	422	58	82

16. How do you identify sentinel clinical laboratories? *Please check all that apply.*

Answer	Response	%
Use APHL, CDC LRN, and ASM definition	51	92.6
Use other definition	5	11.1
We do not identify sentinel clinical laboratories	0	0

Other Specified Definition
hospital and independent clinical laboratories performing bacterial cultures, and hospital laboratories that don't perform bacterial cultures but may see emergent patients
Laboratories that hold a state permit in the categories Bacterial or Virology Comprehensive and Virology Restricted.
Any laboratory that would refer and/or send the LRN public health reference lab a specimen to be ruled out or confirmed
We use our own definition in addition to the above definition
Capable of performing blood and CSF cultures

16a. Please provide any additional information on the criteria your laboratory used to identify a sentinel clinical laboratory.

Laboratories were assessed with the definition requirements.
One of the criteria we use to identify sentinel labs is their ability to do our yearly Challenge set. To us, this means that they do some level of microbiology testing.
No other criteria
includes veterinary lab & CST
CLIA Certificates

17. Has your PHL awarded a certificate of recognition to sentinel clinical laboratories in your state?
Please check all that apply.

Answer	Response	%
Yes, awarded the LRN Joint Leadership Committee (JLC) approved certificate (Please go to Question 17a)	18	33.3
Yes, awarded a state developed certificate (Please go to Question 17a)	8	14.8
No	28	51.9

17a. How many sentinel clinical laboratories received a certificate? Please enter "0" if none.

	LRN JLC Certificate	State Certificate
Number of Sentinel Clinical Laboratories Receiving Certificate	905	509

18. Which of the following do you use to assess the competency of sentinel clinical laboratories to rule-out and refer BT agents? Please check all that apply.

Answer	Response	%
College of American Pathologists (CAP) Laboratory Preparedness Exercise (LPX) (Please go to Question 18a/b)	51	94.4
State developed (Please go to Question 18a)	12	22.2
Wisconsin State Laboratory of Hygiene Proficiency Testing (WSLHPT)/ Challenge Set for Sentinel Laboratories (Please go to Question 18a)	2	3.7
Other (Please go to Question 18a)	8	14.8
None of the above (Please go to Question 19)	1	1.9

18a. Do these competency assessments impact the renewal status of sentinel clinical laboratories?

Answer	Response	%
Yes	6	11.3
No	47	88.7
Total	53	100

18b. How do you utilize the CAP LPX in your state? *Please check all that apply.*

Answer	Response	%
Track which sentinel clinical laboratories contact the LRN Reference PHL	48	94.1%
Provide training and outreach to the sentinel clinical laboratories that do not provide the intended responses for the LPX organisms	41	80.4%
Test competency of LRN-B staff at your state PHL (e.g., your PHL actively participates in the testing of the LPX organisms)	40	78.4%
Test the ability of sentinel clinical laboratories to package and ship specimens to the LRN Reference PHL	29	56.9%
Other	3	5.9%

Other Specified Responses
Assess our lab's call/notification system
We inquire about their abilities and capabilities to ship a Category A sample
NA

19. For which of the following have you utilized a rapid method (HAN, blast email, or fax) for your sentinel clinical laboratories and other partners? *Please check all that apply.*

Answer	Response	%
Routine updates	46	85.2
Training events, such as providing a training calendar	45	83.3
Outbreaks (Please go to 19a)	42	77.8
Other	28	51.9
Have not used it	1	1.9

19a. Please provide any additional information on the type of outbreak and the steps and outcomes.

Provided information concerning specimen collection, handling, and shipping during the following national outbreak: Hepatitis A outbreak, Vibrio, Listeria, Pseudomonas aeruginosa, VIM and MERS-CoV.
Emergency courier, 24/7 on call BlackBerry
HAN alert sent for measles outbreak
Chikungunya and Dengue Fever (08/2014)
Multi-state Cyclospora cayetanensis outbreak, August 2013 messages sent by e-mail, took 2 months for 100% alert acknowledgement response
A HAN from the Bureau of Epidemiology included information on laboratory testing for a large outbreak of measles.
Notification of contaminated blood plates(Listeria)
24/7 lab contact information provided to sentinel labs
We use an in-house developed and maintained directory. All data (phone, fax, emails) is actively updated twice/year. This information is also provided to the LINCIS coordinator for update of the HAN database.
n/a
Lab acquired brucellosis was impetus to provide additional training.
Outbreak notifications are provided by the Department of Public Health (DPH) Communicable Diseases Section: Multi-state Cyclospora Increase notification provided signs and symptoms, a communication protocol, DPH reference laboratory contact information and the use of the standardized outbreak questionnaire used by the local health departments.

20. Does your PHL have a plan to receive samples from a sentinel laboratory during non-business hours?

Answer	Response	%
Yes	45	83.3%
No	9	16.7%
Total	54	100.0%

21. TFAH) From July 1, 2013 to June 30, 2014, did your PHL conduct an exercise or utilize a real event to evaluate the time for sentinel clinical laboratories to acknowledge receipt of an urgent message from your laboratory? (You may factor requests to sentinel clinical laboratories to contact you during the CAP LPX in your response.)

Answer	Response	%
Yes	50	92.6
No	3	5.6
Decline to respond	1	1.9
Total	54	100

22. From July 1, 2013 to June 30, 2014, did your PHL sponsor any sentinel clinical laboratory trainings?

Answer	Response	%
Yes (Please go to Question 22a)	44	81.5
No (Please go to Question 23)	10	18.5
Total	54	100

22a. Please indicate how many classes were provided and how many facilities were trained.
Please enter "0" if none.

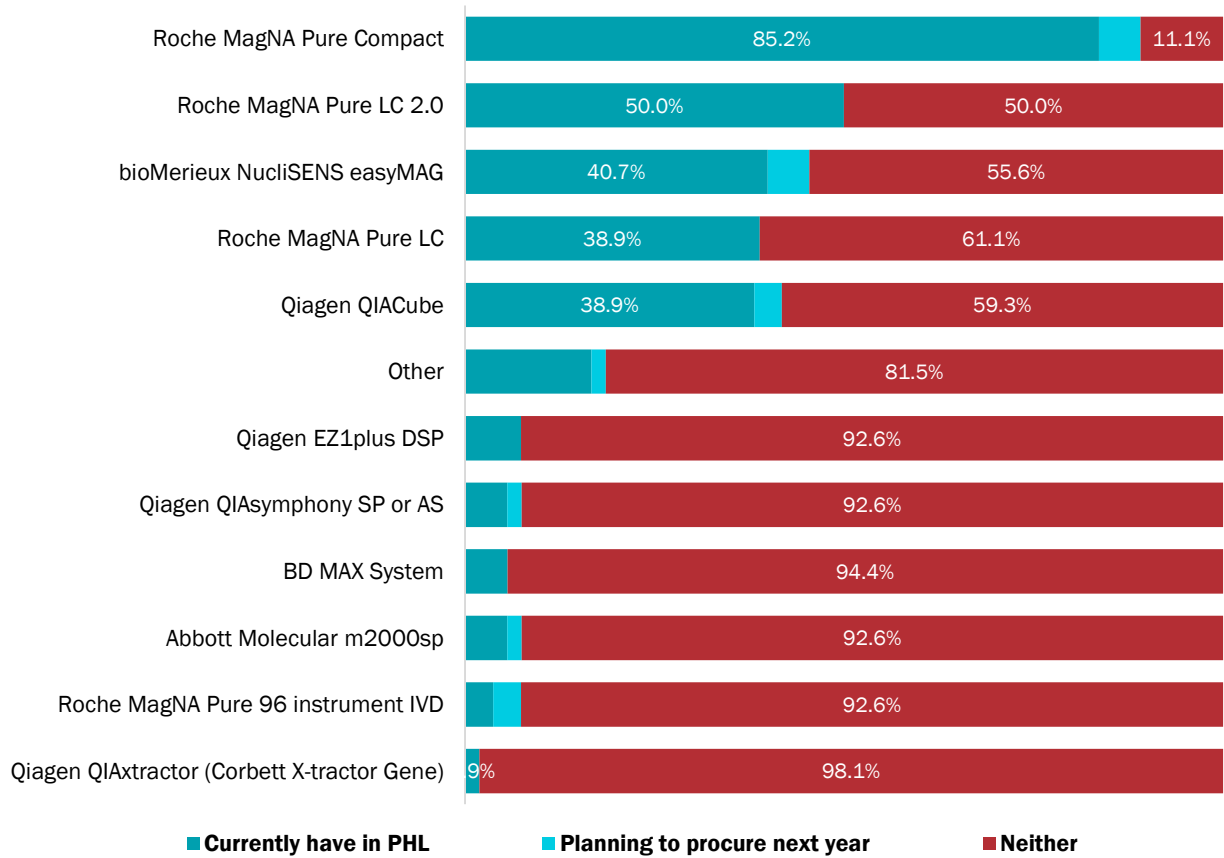
	Rule-Out Testing Only	Packaging and Shipping (P&S) Only	Biosafety Only	Any Combo of Categories (Rule-Out, P&S, Biosafety)	Other	Total
Number of classes	52	172	30	89	174	517
Number of facilities that received training	245	1,030	100	522	894	2,791
Number of laboratorians that received training	746	2,444	250	1,001	1,589	6,030

22b. Please specify other category:

Respondents indicated that they provided chain of custody, packaging and shipping, clinical laboratory/technical topics such as Gram staining, select agent program, bioterrorism and chemical terrorism response training courses.

23. Which automated nucleic acid extraction instruments does your PHL currently have and which do you plan to procure in the next year? Please check all that apply. *Please note that this is a new question for the 2014 survey.*

Instrument	Currently have in PHL		Planning to procure next year		Neither	
	n	%	n	%	n	%
Roche MagNA Pure Compact	46	85.2%	3	5.6%	6	11.1%
Roche MagNA Pure LC 2.0	27	50.0%	0	0.0%	27	50.0%
bioMerieux NucliSENS easyMAG	22	40.7%	3	5.6%	30	55.6%
Roche MagNA Pure LC	21	38.9%	0	0.0%	33	61.1%
Qiagen QIAcube	21	38.9%	2	3.7%	32	59.3%
Other	9	16.7%	1	1.9%	44	81.5%
Qiagen EZ1plus DSP	4	7.4%	0	0.0%	50	92.6%
Qiagen QIA Symphony SP or AS	3	5.6%	1	1.9%	50	92.6%
BD MAX System	3	5.6%	0	0.0%	51	94.4%
Abbott Molecular m2000sp	3	5.6%	1	1.9%	50	92.6%
Roche MagNA Pure 96 instrument IVD	2	3.7%	2	3.7%	50	92.6%
Qiagen QIAxtractor (Corbett X-tractor Gene)	1	1.9%	0	0.0%	53	98.1%



Please list which laboratory programs utilize the automatic nucleic extraction instrument.

Abbott Molecular m2000sp
Virology
HIV Viral Load
STD
molecular
BD MAX System
Parasitology
TB
Micro
bioMerieux NucliSENS easyMAG
Bacteriology and Virology
Virology
Flu/MERS
Influenza
LRN-B
MOLECULAR - BATON ROUGE
LRN-B
BT/Emergency Preparedness
Molecular
Virology
Molecular Diagnostics
PHEP
Influenza/Arbovirus testing
Influenza RVP
Molecular
Molecular, influenza and BT
Outbreak Response
LRN-B
Environmental Microbiology
Virology
LRN B
Clinical Micro Arboviral surveillance
MERS-COV
Qiagen EZ1plus DSP
Virology

LRN-B
Virology and General Microbiology
Qiagen QIAcube
LRN-B
Virology and Molecular Biology
ELC, LRN
select agent
LRN-B
Bacteriology, Parasitology, Virology
Virology
MOLECULAR - BATON ROUGE
Molecular Testing - Routine
BT/Emergency Preparedness
Molecular Diagnostics
Molecular
Molecular Diagnostics Molecular Epidemiology
PHEP
Influenza, Arbovirus?
Molecular
Flu/Molecular
LRN-B
Microbiology
LRN B
PHEP
Qiagen QIASymphony SP or AS
Virology
BT
Flu/Molecular
Virology
Qiagen QIAxtractor (Corbett X-tractor Gene)
Molecular
Roche MagNA Pure Compact
FERN, PHEP, ELC
LRN-B
BT
ELC LRN

BT
LRN-B
Biodefense
BT, Virology, Bacteriology
Preparedness and ELC
Micro/BT
Bioterrorism
LRN-B
MOLECULAR - BATON ROUGE, METAIRIE, SHREVEPORT
LRN-B
BT/Emergency Preparedness
LRN-B
Molecular Diagnostics
BT, Influenza Surveillance, MERS
Molecular lab
Bioterrorism
BTEP
LRN, TB
BT MDx
BT, Virus
Bioterrorism/LNR
PHEP
BT
Bioterrorism
Public Health Emergency Response / Virology
Flu, Norovirus, Arbovirus, BT
molecular
Flu/Molecular
Special Pathogens
Outbreak Response
LRN-B
Microbiology
BT
LRN B
LRN-B
BTRL
LRN, Molecular Biology Team
PHEP
biological preparedness, virology, enterics, TB, and bacteriology

LRN
Bioterrorism, molecular biology, influenza surge
Roche MagNA Pure LC
PHEP, Flu, ELC
BT
Select Agent
BT
BT, Virology
LRN-B
BTEP
BT
Bioterrorism/Food outbreaks
Flu, Norovirus, Arbovirus, BT
Molecular
Flu/Molecular
LRN-B
Microbiology
BT
LRN B
Virology Team, Molecular Team
Biological preparedness
LRN/IDPH
Division-wide
Roche MagNA Pure LC 2.0
FERN
Select Agent
LRN-B
BT
BT, Virology
LRN-B
MOLECULAR - METAIRIE
LRN-B
LRN-B
Molecular lab
Bacteriology & Virology
LRN
1- Food, 1-BT MDx

PHEP
Public Health Emergency Response / Virology
Flu, Norovirus, Arbovirus, BT
molecular
Molecular, influenza and BT
Information not provided
Molecular Epidemiology and Special Pathogens
Microbiology
BTRL
Virology Team, Molecular Team
PHEP
LRN/IDPH
Division-wide
Roche MagNA Pure 96 instrument IVD
1-BT MDx
Bioterrorism/LRN
Flu/Molecular
Division-wide
Other
NVSL/NAHLN
Thermo King Fisher - Molecular Biology
LRN-B
Qiagen BioRobot
Molecular Diagnostics Qiagen BioRobot
Influenza/Arbovirus
bacteriology has dynal IMS
King Fisher
KingFisher 24

24. Please share any major successes and challenges your laboratory encountered regarding biological threats preparedness (e.g., response to an event, development of new tests, etc.) during the time period of July 1, 2013 to June 30, 2014. In addition to your stories, we encourage you to share best practices. Please note an APHL staff member will contact you to follow-up on these stories and also to solicit photos of your laboratorians in action responding to public health threats. Stories with pictures will be more likely featured in next year's All-Hazards Laboratory Preparedness issue briefs or other publications, such as *Lab Matters*, eUpdate or APHL's blog.

Specified responses available in the individual laboratory data file.

Chemical Threats

25. (TFAH) From July 1, 2013 to June 30, 2014, was your LRN-C capability increased, decreased or maintained?

Answer	Response	%
Increased (Please go to Question 25a)	12	22.2
Decreased (Please go to Question 25b)	5	9.3
Maintained (Please go to Question 26)	37	68.5
Decline to respond (Please go to Question 26)	0	0
Total	54	100

25a. How did your capability increase? *Please check all that apply.*

Answer	Response	%
Added CT equipment	9	75
Added one LRN-C method	4	33.3
Added CT personnel	2	16.7
Added more than two LRN-C methods	1	8.3
Added two LRN-C methods	1	8.3
Other	2	16.7

25b. How did your capability decrease? *Please check all that apply.*

Answer	Response	%
Lost CT personnel	3	60
Unable to maintain service agreement(s) on current equipment	3	60
Reduced support from the broader system	1	20
None of the above	1	20
Other	0	0
Dropped a CT level	0	0
Lack of connection to those responding (i.e., first responders, communities, epidemiologists, etc.) - Please specify the barrier:	0	0

Unable to purchase new equipment required to add methods	0	0
Dropped two LRN-C methods	0	0
Dropped more than two LRN-C methods	0	0
Lost CT equipment	0	0
Dropped one LRN-C method	0	0

26. From July 1, 2013 to June 30, 2014, did your PHL utilize your CT capabilities to respond to any of the following? *Please check all that apply.*

Answer	Response	%
No	21	38.9
Community concern (e.g., exposure to potentially toxic chemical)	17	31.5
Chemical spill or other emergency incident	10	18.5
Biomonitoring inquiries	9	16.7
Chemical terrorism event	2	3.7
Other	18	33.3

Biomonitoring inquiries - Please elaborate on how you utilized your CT capabilities:

We received samples from the Medical examiner that were related to poisoning and were able to characterize the poison as arsenic

Approached about several opportunities in grants submitted by our College of Public Health personnel

Analyzed 385 samples for arsenic in urine

State was awarded a Biomonitoring grant from CDC as part of a Biomonitoring Consortium. Having arsenic speciation capability was important

Blood lead screening

Researched methods for preparation and submission of biomonitoring grant application.

Other Specified Response

Clinical testing involving a ricinine incident

White powder threat letters

Unknown white powder, testing of explosives residue

Package with white powder

We use our CT capabilities to analyze powder letters and environmental unknowns.

Suspicious substances

Screening before BT testing

Food Safety investigations

Characterize threat samples

Environmental specimens and Seafood testing for PAHs

Ricin/castor bean ingestion

Food testing
Powder threat letters submitted by the FBI
CDC exercise
Tampering cases, white powders
24/7/365 response for toxic alcohols
Death investigation

27. As of June 30, 2014, your CT laboratory qualified for which proficiency tests administered by the CDC NCEH? Please check no more than 2 answer options.

9 Core Methods	4 Additional Methods
Cyanide in blood by GC-MS	Sulfur mustard metabolite in urine by LC-MS/MS
Nerve agent metabolites in urine by LC-MS/MS	Lewisite metabolite in urine by LC-ICP-MS
VOCs in blood by GC-MS	Nitrogen mustard metabolite in urine by LC-MS/MS
Trace metals panel in urine by ICP-MS	Tetranitromethane biomarker in urine by LC-MS/MS
As/Se in urine by ICP-MS	
Cd/Hg/Pb in blood by ICP-MS	
Tetramine in urine by GC-MS	
Ricinine/Abrine in urine by LC-MS/MS	
Metabolic toxins by LC-MS/MS	

28. Please provide your CT laboratory's certification/accreditation status with the following. Please check all that apply.

	Currently certified/ accredited		Planning for certification/ accreditation next year		Neither	
	n	%	n	%	n	%
CLIA	37	68.5%	5	9.3%	13	24.1%
CAP	7	13.0%	1	1.9%	46	85.2%
ISO	1	1.9%	4	7.4%	49	90.7%
Other	2	3.7%	1	1.9%	51	94.4%



29. Does your PHL plan to replace the following LRN-C instruments? *Please note that this is a new question for the 2014 survey.*

Answer	Response	%
ICP/MS (used for metals)	18	33.3
LC/MS(used for Organo Phosphate Nerve Agents (OPNA), Abrin/Ricinine, MTP3, other organic chemicals)	9	16.7
GC/MS with Multi-Purpose Sampler (MPS) (to test for VOCs, cyanide, other organic chemicals)	5	9.3
GC/MS (used for tetramine and other organic chemicals)	5	9.3
Other (used for solid phase extraction)	6	11.1
None of the above	26	48.1

Other Specified Responses
ours is obsolete
Nitrogen generator
96 Well-plate solid phase extractor
GILSON SAMPLE PREP INSTRUMENT
96 well plate extraction system
solid phase extraction

If you checked any of the above instruments, please answer questions 29a and 29b.

29a. When do you plan to replace the instrument(s)? *Please note that this is a new question for the 2014 survey.*

Instrument	Within 1 year		1 to 3 years		3 years or more		I don't know	
	n	%	n	%	n	%	n	%
ICP/MS (used for metals)	4	22.2%	8	44.4%	3	16.7%	3	16.7%
GC/MS (used for tetramine and other organic chemicals)	1	11.1%	0	11.1%	1	11.1%	3	66.7%
GC/MS with Multi-Purpose Sampler (MPS) (to test for VOCs, cyanide, other organic chemicals)	2	33.3%	1	16.7%	0	16.7%	2	33.3%
LC/MS(used for Organo Phosphate Nerve Agents (OPNA), Abrin/Ricinine, MTP3, other organic chemicals)	1	20.0%	1	0.0%	1	20.0%	6	60.0%
Other (used for solid phase extraction)	2	40.0%	1	20.0%	1	0.0%	2	40.0%

29b. How much would it cost to replace the instrument(s)? *Please note that this is a new question for the 2014 survey.*

Instrument	n	Min	Max	Mean
ICP/MS (used for metals)	18	\$175,000	\$750,000	\$323,278
LC/MS(used for Organo Phosphate Nerve Agents (OPNA), abrin/ricinine, MTP3, other organic chemicals)	9	\$278,000	\$900,000	\$485,333
Other (used for solid phase extraction)	6	\$10,000	\$95,000	\$58,232
GC/MS (used for tetramine and other organic chemicals)	5	\$90,000	\$250,000	\$188,333
GC/MS with Multi-Purpose Sampler (MPS) (to test for VOCs, cyanide, other organic chemicals)	5	\$160,000	\$300,000	\$219,250

29c. Is the instrument(s) used for programs other than CT? *Please note that this is a new question for the 2014 survey.*

Instrument	Yes		No	
	n	%	n	%
ICP/MS (used for metals)	9	50.0%	9	50.0%
GC/MS (used for tetramine and other organic chemicals)	3	60.0%	2	40.0%
GC/MS with Multi-Purpose Sampler (MPS) (to test for VOCs, cyanide, other organic chemicals)	1	20.0%	4	80.0%
LC/MS(used for Organo Phosphate Nerve Agents (OPNA), Abrin/Ricinine, MTP3, other organic chemicals)	6	66.7%	3	33.3%
Other (used for solid phase extraction)	3	50.0%	3	50.0%

Please list the programs

ICP/MS (used for metals)
Biomonitoring
Biomonitoring studies
Arsenic monitoring
Fern, blood lead, drinking water, special projects for other agencies
Biomonitoring project
Environmental food
Drinking Water Program, Environmental Mgt Programs
LRN C
Biomonitoring
Toxicology, biomedical & environmental research
GC/MS (used for tetramine and other organic chemicals)
Biomonitoring
Pesticides and Herbicides
GC/MS with Multi-Purpose Sampler (MPS) (to test for VOCs, cyanide, other organic chemicals)
Biomonitoring

LC/MS(used for Organophosphate Nerve Agents (OPNA), abrin/ricinine, MTP3, other organic chemicals)
Biomonitoring
FDA/FERN
Drinking water
Biomonitoring project
Drinking Water Program and Environmental Mgt Programs
Public health analytical toxicology
Other (used for solid phase extraction)
FERN, blood lead, drinking water, special projects for other state agencies
LRN C
Biomonitoring
Public health analytical toxicology

30. Are any non-CT funded instruments used for CT work? Please note that this is a new question for the 2014 survey.

Answer	Response	%
Yes	15	27.8
No	39	72.2
Total	54	100

Listed instruments
Rapid trace SPE
Nexion 3000 ICP-MS
Agilent 7500 ICP-MS
LC/MS share funding with CT and FDA/FERN
Varispan 4-tip Janus used as backup
Agilent (GC/MS/MS),AB Sciex 4000 Qtrap(LC/MS/MS),
GC/MS (MPS), LC/MS/MS, solid phase extraction
ICP Mass Spec 9000 2 Agilent GC/MS Konalab
GC/MS
ICP MS
1 GC-MS, 1 HPLC-MS/MS, 1 DSC, 1 FTIR
ICP-MS
ICP-MS instrument with HPLC
FTIR, LC/MS ion trap, GC/MS (FERN environmental/food)
LC/MS & GC/MS

31. Does your PHL plan to purchase a service contract for the following LRN-C instruments? Please note that this is a new question for the 2014 survey.

Answer	Response	%
ICP/MS	40	74.1
LC/MS	39	72.2
GC/MS (MPS)	31	57.4
GC/MS	31	57.4
Other	17	31.5
None of the above	12	22.2

Other Specified Responses
Zephyr automated sample prep system
sample prep unit, FTIR
LC/MS/MS
rad detector, Advion nanomate, Zephyr SPE system, Mercury vapor detector, Steris VHP unit
Zephyr SPE workstation
Zephyr, Gilson
SPE
Solid Phase Extractor and LC for ICP/MS
Janus
Zephyr, GC/MS/MS
(1) Raman, (1) FTIR, (2) Nitrogen Generators and (2) Zephyr Sample Prep Station
Gilson Autosampler and Prepstation
Q-Trap
Automated liquid handling system
Yes we are planning to purchase service contracts for these instruments using resources/funds other than Emergency Preparedness
Automated solid phase extraction instrument

If you checked any of the above instruments, please answer questions 31a and 31b.

31a. How much would the service contract cost? *Please note that this is a new question for the 2014 survey.*

Instrument	n	Min	Max	Median	Average
ICP/MS	40	\$8,300	\$282,000	\$25,000	\$39,034
LC/MS	39	\$2,500	\$282,000	\$35,000	\$50,846
GC/MS (MPS)	31	\$3,713	\$282,000	\$14,364	\$33,918
GC/MS	31	\$1,948	\$282,000	\$12,000	\$32,190
Other	17	\$2,880	\$49,098	\$10,000	\$14,107

31b. How many years will the service contract cover? *Please note that this is a new question for the 2014 survey.*

Instrument	< 1 year		1 year		2 years		3 years		NA	
	n	%	n	%	n	%	n	%	n	%
ICP/MS	1	2.5%	35	87.5%	1	2.5%	2	5.0%	1	2.5%
LC/MS	0	0.0%	35	89.7%	1	2.6%	1	2.6%	2	5.1%
GC/MS (MPS)	1	3.2%	27	87.1%	1	3.2%	1	3.2%	1	3.2%
GC/MS	1	3.2%	28	90.3%	1	3.2%	1	3.2%	0	0.0%
Other	0	0.0%	17	100.0%	0	0.0%	0	0.0%	0	0.0%

32. Are you purchasing a service contract for any non-CT funded instruments used for CT work?
Please note that this is a new question for the 2014 survey.

Answer	Response	%
Yes - please list the instruments	11	20.4
No	43	79.6
Total	54	100

Listed Instruments
Rapid trace SPE
Nexion 3000 ICP-MS
Agilent 7500 ICP-MS
LC/MS share funding with CT and FDA/FERN

Varispan 4-tip Janus used as backup
Agilent (GC/MS/MS),AB Sciex 4000 Qtrap(LC/MS/MS),
GC/MS (MPS), LC/MS/MS, solid phase extraction
ICP Mass Spec 9000 2 Agilent GC/MS Konalab
GC/MS
ICP MS
1 GC-MS, 1 HPLC-MS/MS, 1 DSC, 1 FTIR
ICP-MS
ICP-MS instrument with HPLC
FTIR, LC/MS ion trap, GC/MS (FERN environmental/food)
LC/MS & GC/MS

33. What's the status of LIMS integration (LIMSi) in your chemical threat laboratory? Please note that this is a new question for the 2014 survey.

Answer	Response	%
Have a LIMS, funded through CDC/APHL	18	33.3%
Have a LIMS, funded through other mechanisms - Please specify:	18	33.3%
Do not have a LIMS, not planning on incorporating LIMSi in the next year	12	22.2%
Do not have a LIMS, plan on incorporating LIMSi in the next year	6	11.1%
Total	54	100

34. Please share any major successes and challenges your laboratory encountered regarding chemical threats preparedness (e.g., response to an event, development of new tests, etc.) during the time period of July 1, 2013 to June 30, 2014. In addition to your stories, we encourage you to share evidence-based practices. Please note an APHL staff member will contact you to follow-up on these stories and also to solicit photos of your laboratorians in action responding to public health threats. Stories with pictures will be more likely featured in next year's All-Hazards Laboratory Preparedness issue briefs or other publications, such as Lab Matters, E-Update, or APHL's blog.

Specified responses available in the individual laboratory data file.

Radiological Threats

35. Is your PHL responsible for radiological testing? Please check all that apply.

Answer	Response	%
No (End of survey)	30	55.6
Yes, routine testing for environmental samples	21	38.9
Yes, emergency testing for environmental samples	19	35.2
Yes, emergency testing for food samples	16	29.6
Yes, routine testing for food samples	8	14.8
Yes, emergency testing for clinical samples	1	1.9
Yes, routine testing for clinical samples	1	1.9
All Yes responses on this question move on to Question 35a		
No - Please specify what laboratory in (state) is responsible: Specified Responses Available in the Individual Laboratory Data File		

35a. Please provide your radiological laboratory's certification/accreditation status with the following.

	Currently certified/ accredited		Planning for certification/ accreditation next year		Neither	
	n	%	n	%	n	%
EPA	13	54.2%	6	25.0%	6	25.0%
Other	5	20.8%	0	0.0%	19	79.2%
CAP	1	4.2%	1	4.2%	22	91.7%
CLIA	0	0.0%	2	8.3%	22	91.7%

36. Please share any major successes and challenges your laboratory encountered regarding radiological threats preparedness (e.g., response to an event, development of new tests, etc.) during the time period of July 1, 2013 to June 30, 2014. In addition to your stories, we encourage you to share evidence-based practices. Please note an APHL staff member will contact you to follow-up on these stories and also to solicit photos of your laboratorians in action responding to public health threats. Stories with pictures will be more likely featured in next year's All-Hazards Laboratory Preparedness issue briefs or other publications, such as Lab Matters, E-Update, or APHL's blog.

Specified in the Individual laboratory data file. APHL will also publicize these stories via other publications.

Glossary

Branch state public health laboratory: A laboratory that is part of a group of laboratories reporting to a central state laboratory. An example of a branch system is Florida.

Drill: A coordinated, supervised activity usually employed to test a single specific operation or function within a single entity (e.g., a fire department conducts a decontamination drill).

Full-Scale Exercises (FSE): A multi-agency, multi-jurisdictional, multi-discipline exercise involving functional (e.g., joint field office, emergency operation centers, etc.) and “boots on the ground” response (e.g., firefighters decontaminating mock victims).

Functional Exercise (FE): Examines and/or validates the coordination, command, and control between various multi-agency coordination centers (e.g., emergency operation center, joint field office, etc.). A functional exercise does not involve any “boots on the ground” (i.e., first responders or emergency officials responding to an incident in real time).

Tabletop Exercise (TTX): Exercise involving key personnel discussing simulated scenarios in an informal setting. TTXs can be used to assess plans, policies, and procedures.

List of Acronyms

APHL	Association of Public Health Laboratories
ASM	American Society for Microbiology
ASPR	Assistant Secretary for Preparedness and Response
BDS	Biohazard Detection System
BT	Bioterrorism or Biological Threat
CAP	College of American Pathologists
CDC	Centers for Disease Control and Prevention
CLIA	Clinical Laboratory Improvement Amendments
COOP	Continuity of Operations Plan
CST	Civil Support Team
CT	Chemical Terrorism or Chemical Threat
CWA	Chemical Warfare Agent
DHS	US Department of Homeland Security
DoD	US Department of Defense
EMT	Emergency Medical Technician
EPA	US Environmental Protection Agency
ERLN	Environmental Response Laboratory Network
FBI	Federal Bureau of Investigation

FEMA	Federal Emergency Management Agency
FERN	Food Emergency Response Network
FTIR	Fourier-Transform Infrared Spectroscopy
GC-MS	Gas Chromatography-Mass Spectrometry
HAN	Health Alert Network
HAZMAT	Hazardous Materials
HHS	US Department of Health and Human Services
HPP	Hospital Preparedness Program
HSEEP	Homeland Security Exercise and Evaluation Program
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ISO	International Organization for Standardization
JLC	Joint Leadership Committee
LC-MS/MS	Liquid Chromatography-Tandem Mass Spectrometry
LIMS	Laboratory Information Management System
LPX	Laboratory Preparedness Exercise
LPHL	Local Public Health Laboratory
LRN	Laboratory Response Network
LRN-B	Laboratory Response Network for Biological Threats Preparedness
LRN-C	Laboratory Response Network for Chemical Threats Preparedness

NAHLN	National Animal Health Laboratory Network
NIMS	National Incident Management System
NPDN	National Plant Diagnostic Network
NRC	Nuclear Regulatory Commission
PCR	Polymerase Chain Reaction
PHEP	Public Health Emergency Preparedness
PHL	Public Health Laboratory
P&S	Packaging and Shipping
RT	Radiological Terrorism or Radiological Threat
SCPaS	Sample Collection, Packing, and Shipping
SPHL	State Public Health Laboratory
TFAH	Trust for America's Health
UASI	Urban Areas Security Initiative
USPS	US Postal Service
Vet-LIRN	Veterinary Laboratory Investigation and Response Network
WLA	Water Laboratory Alliance
WSLHPT	Wisconsin State Laboratory of Hygiene Proficiency Testing

Association of Public Health Laboratories

The Association of Public Health Laboratories (APHL) is a national nonprofit dedicated to working with members to strengthen laboratories with a public health mandate. By promoting effective programs and public policy, APHL strives to provide public health laboratories with the resources and infrastructure needed to protect the health of US residents and to prevent and control disease globally.



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