Local Public Health Laboratory Core Functions:

2011 Descriptive Survey Summary

A Project of the Local Laboratory Council

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Participating Laboratories (continued)

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San Bernardino Public Health Laboratory, CA
San Diego County Public Health Laboratory, CA
San Francisco Public Health Laboratory, CA
San Joaquin Public Health Laboratory, CA
San Luis Obispo County Public Health Laboratory, CA
San Mateo County Public Health Laboratory, CA
Santa Clara County Public Health Laboratory, CA
City of Santa Cruz WWTF Laboratory, CA
Seattle-King County Public Health Laboratory, WA
Southern Nevada Public Health Laboratory, NV
Tarrant County Public Health Laboratory, TX
Tulare County Public Health Laboratory, CA
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Local Laboratory Core Descriptive Survey Summary 2011

Executive Summary

The Local Laboratory Council (LLC) of APHL launched the first survey ever fielded of local public health laboratory structure and practice on May 10, 2011. The survey was developed by the LLC to better understand the staffing, facility infrastructure, funding sources, and technical testing capacity of local public health laboratories (LPHLs). The survey was distributed to the 40 APHL member LPHLs. The response rate was 75% (n=30). The LLC and APHL thank the responding laboratories for participating in this ground-breaking survey. Here are a few of the key findings:

- The majority of staff in LPHLs possesses Bachelor's degrees.
- Most LPHLs are certified for both clinical and environmental testing, i.e., 80% have CLIA certification and 70% have state environmental certification.
- The major funding sources for LPHLs are "city, county, or local funds" (47% average) followed by "fee-for-service" (22.6% average).
- LPHLs offer significant architectural capacity. 60% have between 5,000 and 15,000 square feet. Another 17% have over 15,000 square feet. 70% have BSL-3 capacity. 83% have areas specifically designed for molecular/PCR testing.
- Major testing areas are: Immunology 87% (including HIV and Syphilis), Chlamydia 83%, Gonorrhea 87% (including both NAAT and cultures), Bacterial Cultures 87%, Mycobacteriology 63%, Parasitology 67%, Virology 83% (Influenza most frequently performed), Foodborne Outbreak Investigations 83%, Water Bacteriology 90%, and Animal Rabies testing 67%.
- All responding LPHLs (100%) are either sentinel or reference LRN labs.
- LPHLs are uniquely adapted to the testing needs of their individual regions and offer a variety of specialized tests such as recreational water monitoring, beach sanitation, marine water testing for seafood safety, irrigation water monitoring, and PFGE (Pulsed-Field Gel Electrophoresis) for foodborne outbreaks.

Please see the following discussion for a more in-depth analysis of individual survey questions. In addition to overall data averages, the aggregate numbers have been further sub-divided into three-size categories of local labs based on the number of FT technical staff: small lab defined as <10 technical FTE's, medium-sized lab as between 10-20 technical FTE's, and large lab as > 20 technical FTE's.*

***** By the criteria used on the State Core Survey, all but two of the responding LPHLs qualify as "Small Labs", i.e. < 75 FTE's.

Individual Survey Question Data and Comments

1. What is the total number of FTEs in your laboratory?

				Average		
	Average	Min	Max	Small (14)	Medium (11)	Large (5)
Technical FTEs	15	2	81	5.3	12	47.2
Supervisory FTEs	3.8	0	22	1.3	3.4	11.8
Clerical FTEs	2	0	23	0.9	2	7.8
Billing FTEs	0	0	4	0.4	0.2	0.8
Other FTEs	2	0	23	1.1	1.7	2.2

Comment: The LPHLs were divided into three different sizes (small, medium, and large) based on the number of technical staff, including both technical and supervisory FTEs. The small labs were defined as having less than 10 FTEs; medium-sized labs as having 10 – 20 FTEs, and large labs as having greater than 20 FTEs.

2. What is the education level of your employees?

				Average		
	Average	Min	Max	Small	Medium	Large
Number of High School graduates	5.0	0	35	3.1	2.7	15
Number of Associates degree personnel	1.3	0	11	0.2	1.2	4.8
Number of Bachelor's degree personnel	12.9	1	65	5.2	11.3	37.8
Number of Master Degree personnel	3.0	0	25	1.4	2.5	8.4
Number of PhD/MD level personnel	1.6	0	20	0.7	1.1	5.4

Comment: Most personnel in all sizes of LPHLs are at the Bachelor's level. As the size of the laboratory increases, the number of Master and PhD level employees also increases.

3. What agencies certify your laboratory? Please check all that apply.

	Frequency	Percent	Small	Medium	Large
State clinical	13	43%	6 (43%)	4 (36%)	3 (60%)
State environmental	21	70%	11 (79%)	7 (64%)	3 (60%)
Other state inspection	5	17%	1 (7%)	0	0
CAP	0	0%	0	0	0
CLIA	24	80%	12 (86%)	7 (64%)	4 (80%)
Other - please specify	12	40%	5 (36%)	7 (64%)	0

Comment: The majority of LPHLs perform both environmental and clinical testing.

- 80% of LPHLs are certified by CLIA.
- 70% of LPHLs are certified through state environmental inspections.
- 75% of the 12 LPHLs indicating "Other" inspecting agencies identified the Select Agent Program

4. What is the total budget for your laboratory?

				Average ($)		
	Average	Min	Max	Small (only 13 labs reported)	Medium	Large
Staffing	1,603,377.90	-	9,300,000.00	780,416.00	1,312,902.00	4,702,800.00
Operations	952,334.30	-	4,293,000.00	551,892.00	744,766.00	2,614,600.00
Capital	39,866.67	-	300,000.00	57,692.00	39,636.00	2,000.00
Other	159,760.60	-	1,500,000.00	22,545.00	173,482.00	407,600.00

Comment: Smaller labs appear to be spending more than 50% of their budget on staffing, while larger labs are spending a smaller percentage on staffing. Smaller labs appear more likely to budget for capital equipment purchases than the larger labs.

5. What percentage of your budget comes from the following?

				Average		
	Average	Min	Max	Small	Medium	Large
City, county or local funds	47.0	0	100	38%	55%	44%
State funds (excluding federal pass-through funding)	10.6	0	94	2.00%	7%	41%
State funds (federal pass-through funding only)	17.5	0	88	25%	15%	3%
Direct federal funds or grants	2.3	0	40	0.50%	1.50%	9%
Fee-for-service/User Fees	22.6	0	80	34%	17%	2%

Comment: Major funding source for all LPHLs (47%) is city, county, and local funds. Second major source of funding is fee-for-service (22.6%). The large local labs appear to have a higher percentage of state funds available, as compared to small local labs which have a much higher percentage of their budgets from fee-for-service.

6. What is your laboratory's total square footage?

	Frequency	Percent	Small	Medium	Large
<5,000	7	23%	5 (36%)	1 (9%)	1 (20%)
5000-10,000	12	40%	6 (43%)	5 (45%)	1 (20%)
10,001-15,000	6	20%	2 (14%)	4 (36%)	0
15,001-20,000	2	7%	1 (7%)	0	1 (20%)
>20,000	3	10%	0	1 (9%)	2 (40%)

Comment: The majority of LPHLs (60%) have between 5,000 and 15,000 square feet of space. For the most part, the larger the laboratory in terms of staff, the greater the square footage is of the facility.

7. How many BSL-2 and BSL-3 laboratory suites does your laboratory have? Please enter “0” if none.

	Average	Min	Max
BSL-2:	4.6	0	55
BSL-3:	1.3	0	9
	Small	Medium	Large
BSL-2 (average number per lab)	2	3.2	15
BSL-3 (average number per lab)	0.8	1.2	3.2

Comment: As lab size increases, there is a progressive increase in availability of both BSL 2 and 3 work spaces. 21 of the 30 responding laboratories (70%) had BSL-3 capacity, although nine of the LPHLs had no BSL-3 work space.

8. Do you have an area specifically designed to support molecular/PCR testing?

		Small	Medium	Large
Frequency	25	12	9	4
Percent	83%	86%	82%	80%

Comment: 83% of local PH labs have access to an area specifically designed for molecular testing

9. Is your laboratory responsible for separate satellite laboratories which fall under a different CLIA certificate?

		Small	Medium	Large
Frequency	11	3	6	2
Percent	37%	21%	55%	40%

Comment: About a third or 37% of local PH labs are also responsible for satellite laboratories that may fall under different CLIA certificates.

9a. How many CLIA Certificates are you responsible for?

				Total Certificates		
	Average	Min	Max	Small	Medium	Large
Certificates/Licenses	3.3	1	10	9	15	10

9b. Number of satellite labs you are responsible for:

				Total Satellites		
	Average	Min	Max	Small	Medium	Large
Satellites	4.8	1	13	27	16	10

10. Which tests does your lab perform? (General Clinical Chemistry)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Renal function (creatinine, BUN, etc.)	3	10%	0	2	1
Liver function (AST, ALT, etc.)	4	13%	0	2	1
Lipid profile (HDL, LDL, etc.)	6	20%	1	2	1
Electrolytes (sodium, potassium, etc.)	3	10%	0	2	1
Cardiac markers (CK-MB, myoglobin, etc.)	0	0%	0	0	1
Minerals (calcium, phosphate, etc.)	2	7%	0	1	1
Blood disorders (folic acid, iron, etc.)	1	3%	0	0	1
Miscellaneous (glucose, CRP, etc.)	6	20%	0	0	1
Therapeutic Drug Monitoring (TDM)	0	0%	0	0	1
Toxicology (blood lead, alcohol, etc.)	9	30%	3	2	2
Drugs of Abuse (DOA)	3	10%	1	1	1
Other - please specify	3	10%	2	1	0
None	15	50%	0	0	0

Comment: 50% of LPHLs perform some kind of clinical chemistry testing ranging from a few traditional PH tests such as blood lead testing to some labs who offer an almost full range of clinical chemistry tests.

10a. Hematology tests performed

	Frequency	Percent
CBC	1	3%
Automated Differential	1	3%
Manual Differential	2	7%
Platelet Count	1	3%
Retic Count	1	3%
Other—please specify	0	0%
None	28	93%

Comment: Less than 10% of the small, medium, or large LPHLs provide any type of hematology testing.

10b. Which of the following tests does your laboratory perform? Please check all that apply. (Urinalysis/Microscopy/Other)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Occult Blood	6	20%	1	3	2
Rapid Urease	0	0%	0	0	0
Microscopy	11	37%	2	6	2
Urine Dipstick Chemistry	8	27%	1	5	2
Urine HCG	9	30%	1	6	2
Other - please specify	2	7%	0	2	0
None	16	53%	10	3	3

Comment: 53% of local PH labs provide no urinalysis testing. The medium sized labs are most often the labs that perform this testing.

10c. Which microscopy tests do you perform? Please check all that apply. (N=11)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Fecal WBC	2	18%	0	1	1
Fern Test	2	18%	1	0	1
Nasal Smear	3	27%	1	1	1
Pinworm Prep	6	55%	0	2	2
Urine Sediment	8	73%	1	4	2
Vaginal KOH Prep	6	55%	0	5	1
Vaginal Wet Prep	7	64%	0	5	1
Dark Field	7	64%	1	5	1
Other – please specify	2	18%	1	1	0
None	0	0%	10	5	3

Comment: A little over a third of local PH labs practice clinical microscopy (37%). Of those that do, the most common microscopy test performed is Urine Sediment.

11. Which of the following Immunology tests does your laboratory perform?

	Frequency	Percent	Small	Medium	Large
Rapid HIV	6	20%	0	4	2
HIV conventional EIA screening	22	73%	7	11	4
HIV NAAT for diagnostic testing	2	7%	0	0	2
HIV viral load	10	33%	2	3	5
Lyme Disease	2	7%	1	0	1
Rubella	9	30%	2	4	3
Hepatitis	12	40%	2	7	3
Hepatitis viral load	4	13%	1	10	1
Syphilis Serology—traditional non-treponemal with reflex to treponemal	21	70%	6	11	4
Syphilis Serology—Reverse algorithm (with treponemal screen)	5	17%	1	3	1
None	4	13%	4	0	0

Comment: 87% of LPHLs perform some kind of immunology testing. HIV EIA and Syphilis testing are the most common tests performed by all labs. For small labs, the most common test performed is HIV EIA. For mid-sized labs, the most common tests are HIV EIA and Syphilis followed by Hepatitis viral loads. For large labs, the most common test is HIV viral loads.

12. Does your laboratory perform chlamydia testing?

		Small	Medium	Large
Frequency	25	10	10	5
Percent	83%	71%	91%	100%

Comment: 83% of LPHLs perform chlamydia testing. The percentage of laboratories performing this testing increases with the size of the laboratory.

13. Does your laboratory perform gonorrhea testing (includes both NAAT and culture)?

		Small	Medium	Large
Frequency	26	10	11	5
Percent	87%	71%	100%	100%

Comment: 87% of LPHLs perform some kind of gonorrhea testing. The percentage of labs performing this testing increases with the size of the laboratory.

14. Does your laboratory perform bacterial antigen testing?

		Small	Medium	Large
Frequency	16	7	5	3
Percent	53%	50%	45%	60%

Comment: 53% of LPHLs perform bacterial antigen testing. Large labs are more likely to perform this testing.

14a. What bacterial antigen tests do you perform? Check all that apply. (N=16)

			Frequency		
	Frequency	Percent	Small	Medium	Large
C. difficile Toxin or Antigen	4	25%	2	1	1
Legionella Antigen	4	25%	1		3
Group A Strep Antigen	9	56%	3	3	3
S. pneumoniae Antigen	4	25%	2	0	2
Shiga Toxin	12	75%	5	3	4
Salmonella Antigen	7	44%	3	1	3
Campylobacter Antigen	1	6%	1	0	0
Haemophilius	4	25%	1	0	3
Neisseria meningitidis	5	31%	1	1	3
Other—please specify	2	13%	2	0	0

Comment: The most common bacterial antigen test for all labs was Shiga toxin.

15. Does your laboratory perform clinical bacterial cultures and gram stain testing?

		Small	Medium	Large
Frequency	26	11	10	5
Percent	87%	79%	91%	100%

Comment: 87% of LPHLs perform clinical cultures and gram stains. The percentage of labs performing bacterial culture and gram stains increases with the size of the laboratory.

15a. What types of clinical bacterial cultures and gram stains do you perform? Check all that apply. (N=26)

			Frequency		
	Frequency	Percent	Small	Medium	Large
General Cultures	21	81%	6	10	5
Male GC Smear	13	50%	3	7	3
Gram Stain	18	69%	5	10	3
Enterics	22	85%	9	8	5
MRSA/VRE	6	23%	1	2	3
Throat Culture	10	38%	5	3	2
Urine Culture	9	35%	3	3	3
Blood Culture	5	19%	1	2	2
Wound Culture	7	27%	1	3	3
Antibiotic Sensitivity	13	50%	3	5	5
Prenatal Group B Strep Screen	4	15%	1	1	2
Other—please specify:	3	12%	1	1	1

Comment: The most common bacterial culture for all labs is for enterics.

16. Does your laboratory perform mycobacteriology testing?

		Small	Medium	Large
Frequency	19	8	6	5
Percent	63%	57%	55%	100%

Comment: 63% of LPHLs perform mycobacteriology testing.

16a. What mycobacteriology tests does your laboratory perform? (N=19)

	Frequency	Percent	Small	Medium	Large
Acid Fast Smears	19	100%	8 (57%)	6 (55%)	5 (100%)
Mycobacteriology Culture	19	100%	8 (57%	6 (55%)	5 (100%)
Interferon gamma releasing assay	13	68%	5 (36%)	5 (45%)	3 (60%)
Other—please specify	11	58%	4	4	3

Comment: Of those labs performing mycobacteriology testing, cultures and acid fast smears were performed in all.

17. Does your laboratory perform mycology testing?

		Small	Medium	Large
Frequency	15	8	4	3
Percent	50%	57%	36%	60%

Comment: 50% of LPHLs perform mycology testing.

17a. What mycology tests do you perform? Check all that apply. (N=15)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Candida Culture	13	87%	8	3	2
Dermatophyte culture	14	93%	8	3	3
India Ink	13	87%	8	3	2
Cryptococcal Antigen	3	20%	2	1	0
KOH Preparation for skin, nail or hair	11	73%	6	4	1
Mycology Culture	14	93%	5	8	1
Other—please specify:	5	33%	2	3	0

Comment: The most common type of mycology culture is for dermatophytes.

18. Does your laboratory perform parasitology testing?

		Small	Medium	Large
Frequency	20	8	9	3
Percent	67%	57%	82%	60%

Comment: 67% of LPHLs perform parasitology testing.

18a. What parasitology tests do you perform? Check all that apply. (N=20)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Giardia & Cryptosporidium Antigen	15	75%	7	6	2
Formalin Concentrates	18	90%	7	9	2
Malaria	14	70%	7	5	2
Other—please specify	11	55%	5	4	2

Comment: The most common parasitology test is Formalin concentrates.

19. Does your lab perform virology testing?

		Small	Medium	Large
Frequency	25	10	10	5
Percent	83%	71%	91%	100%

Comment: Only 5 of the survey respondents did not perform any type of virology testing. 83% of respondents perform virology. The larger the laboratory, the higher the percentage of labs performing this testing.

19a. What virology tests do you perform? Check all that apply. (N=25)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Adenovirus	18	72%	0	0	0
Influenza A, B	22	88%	8	8	3
Rotavirus Antigen	5	20%	0	3	1
Norovirus	19	76%	6	6	5
Herpes	18	72%	6	6	5
West Nile Virus in humans	11	44%	1	4	3
Other—please specify:	11	44%	6	4	1

Comment: The most common virology tests among LPHLs are Influenza A and B.

20. Does your laboratory support local food surveillance program?

		Small	Medium	Large
Frequency	14	6	6	2
Percent	47%	43%	55%	40%

Comment: 14 of the 30 responding labs perform food surveillance testing. However 25 of the 30 labs support foodborne outbreak investigations.

21. Does your laboratory support foodborne outbreak investigations?

		Small	Medium	Large
Frequency	25	10	10	5
Percent	83%	71%	91%	100%

Comment: 25 of the 30 responding labs support foodborne outbreak investigations, although only 14 labs perform food surveillance testing.

22. Does your laboratory test stool samples?

		Small	Medium	Large
Frequency	25	10	10	5
Percent	83%	71%	91%	100%

Comment: Overall, 83% of responding LPHLs perform stool cultures.

23. Is your laboratory a LRN sentinel or reference laboratory?

			Frequency		
	Frequency	Percent	Small	Medium	Large
Yes, sentinel laboratory	13	43%	6	5	2
Yes, reference laboratory	17	57%	7	7	3
No	0	0%	0	0	0

Comment: All the responding LPHLs were either a sentinel lab or a reference lab.

23a. Which platform(s) does your laboratory use?

			Frequency		
	Frequency	Percent	Small	Medium	Large
Light Cycler	8	62%	5	2	1
ABI 7500	0	0%	0	0	0
ABI 7500 Fast DX	9	69%	4	3	2
Smart Cycler	2	15%	1	1	0
TRF	2	15%	1	1	0
Luminex	2	15%	1	1	0
Automated nucleic acid extractor	5	38%	1	4	0
Other—please specify:	3	23%	2	1	0

Comment: The most common platform is the ABI 7500 Fast DX for testing.

24. How is your BT program funded?

	Frequency	Percent
Local	13	52%
State	7	28%
Federal pass through funding	17	68%
Federal direct funding	1	4%
Other—please specify	1	4%

	Frequency		
	Small	Medium	Large
Local	4	6	3
State	4	2	1
Federal pass through funding	8	8	1
Federal direct funding	0	0	1
Other—please specify:	0	1	0

Comment: The most common funding source for BT programs in LPHLs is Federal pass-through funding.

25. Does your laboratory perform chemical terrorism testing?

		Small	Medium	Large
Frequency	1	0	0	1
Percent	3%	0	0	20%

Comment: Only one LPHL performs chemical terrorism testing.

26. Does your laboratory perform water bacteriology testing?

		Small	Medium	Large
Frequency	27	13	10	4
Percent	90%	93%	91%	80%

Comment: 90% of responding LPHLs perform water bacteriology testing. The small and mid-sized labs have the highest percentages.

27. Does your lab perform chemical analysis?

			Frequency		
	Frequency	Percent	Small	Medium	Large
Yes, on organics	8	27%	2	3	3
Yes, on inorganics	12	40%	7	3	2
No	16	53%	7	7	2

Comment: Less than 50% of LPHLs perform environmental chemistry as compared to 90% that perform water bacteriology.

28. Does your lab perform non-human testing on the following?

			Frequency		
	Frequency	Percent	Small	Medium	Large
Vector borne diseases (WNV/Arbovirus, Lyme, etc.)	9	30%	5	2	2
Arthropod identification (e.g. ticks)	11	37%	8	1	2
Rabies in animals	20	67%	9	5	5
Other—please specify	2	7%	2	0	0
None of the above	9	30%	5	4	0

Comment: The most common non-human testing is animal rabies which is performed by 67% of responding LPHLs.

29. Does your lab perform milk and dairy testing?

		Small	Medium	Large
Frequency	8	1	5	2
Percent	27%	7%	45%	40%

Comment: 27% of responding LPHLs perform milk and dairy testing.

30. What other testing does your laboratory perform?

Category	Subcategory	Testing Performed	Number of LPHLs Performing
Environmental Testing	Water Testing	Beach Sanitation	1
		ELAP-certified Water Testing on Wastewater, Drinking Water, Surface/Source Water, and Dairy Water	1
		Irrigation Water	1
		Marine Water Testing (Seafood Safety)	1
		Nutrients in Water	1
		Ocean Water Testing	1
		qPCR for E. coli and Enterococci (Water)	1
		Recreational Water Monitoring	3
		Shellfish Growing Water Testing (Total/Fecal Coliforms, Standard and A1 Methods)	1
		Stormwater Monitoring	1
	Food Testing	(Enteric Serotyping and Toxin Testing tabulated under “Microbiology” category)	
		FERN Testing	2
		FoodNet Retail Meat Study (Salmonella and Campylobacter in retail meats)	1
		Ground Beef for Speciation and Fat Content	1
		Marine Biotoxin (Domoic Acid)	1
		PFGE (for PulseNet)	5
		Shellfish Meat Testing	1
	Other: Environmental Testing	Asbestos by Microscopy	1
		Radon in Air	1

Microbiology	General	Cultures for Medical Examiner	1
		GC Cultures for GISP (Gonococcal Isolate Surveillance Project)	1
		Genotyping (Bacterial and Viral)	1
		Legionella Testing	1
		Reference Bacterial Cultures	1
		Sequencing for Bacteria, Mycobacteria, and Fungus	2
		Serotyping for H. influenzae and N. meningitidis	1
		Serotyping for Salmonella, Shigella, and E. coli O157	2
		Shigella Toxin	1
	Pertussis Testing	Bordetella Cultures	1
		Bordetella ELISA (in development)	1
		Pertussis PCR	3
	TB	Quantiferon TB	1
		Molecular Beacon for TB Resistance Testing	1
	Virology	Herpes Antibody	1
		HIV and HCV Genotyping	1
		HIV Viral Resistance	1
		HIV WB	2
		Measles, Mumps, and VZV	1
		Pyrosequencing for Viral Resistance	2
Miscellaneous LPHL Testing		Allergen Testing (Mouse, Cockroach, Dust Mite)	1
		Drug of Abuse Testing	1
		MIDI Gas Chromatograph for Fingerprinting	1
		Sterilization Verification for Body Art Studios, Dental Clinics, and other Clinics	1
		TPPA	1

Comment: PHLs are uniquely adapted to the public health testing needs of their regional areas and offer a wide variety of specialized tests.

31. How do you identify areas to improve laboratory services? Check all that apply.

			Frequency		
	Frequency	Percent	Small	Medium	Large
Conduct cost benefit analyses of individual tests	21	70%	10	7	4
Client-satisfaction survey	13	43%	4	8	1
Quality-improvement program (i.e. Quality Management System)	23	77%	9	10	4
Measuring service indicators	17	57%	9	5	3
Other—please specify:	3	10%	1	2	0
None of the above	0	0%	0	0	0

Comment: The most common way that LPHLs identify areas for improvement is by their Quality Improvement Programs.

32. Does your laboratory provide testing services for area hospitals or physician offices?

		Small	Medium	Large
Frequency	22	11	7	4
Percent	73%	79%	64%	80%

Comment: Overall, 73% of LPHLs perform testing for local physician's offices and hospitals.

33. Does your laboratory have a courier system in place to ensure the timely delivery of specimens/samples?

		Small	Medium	Large
Frequency	24	10	10	4
Percent	80%	71%	91%	80%

Comment: The majority of LPHLs have a courier system in place.

33a. What type of courier service does your laboratory use? Check all that apply. (N=24)

			Frequency		
	Frequency	Percent	Small	Medium	Large
Internal (i.e. public health employee)	16	67%	5	8	3
Contracted service (e.g. Fedex, UPS, etc.)	17	71%	8	5	4
Law enforcement	6	25%	2	2	2
Other—please specify	3	13%	1	1	1

Comment: Most labs have a contract with a courier system for delivery of some samples.

34. Does your laboratory do testing on a fee-for-service basis?

		Small	Medium	Large
Frequency	27	13	10	4
Percent	90%	93%	91%	80%

Comment: 90% of LPHLs do testing on a fee-for-service basis. The small local labs have the highest percentage of fee-for-service testing.

35. What is the basis for your fee schedule?

	Frequency	Percent
Direct cost only	3	10%
Direct and indirect costs	21	70%
Other-please specify	6	20%

	Frequency		
	Small	Medium	Large
Direct cost only	2	0	1
Direct and indirect costs	12	7	2
Other-please specify	0	5	1

Comment: Most fee schedules are based on both direct and indirect costs.

36. Whom does your lab bill? Check all that apply.

			Frequency		
	Frequency	Percent	Small	Medium	Large
Medicare	9	36%	4	4	1
Medicaid	14	56%	6	7	1
Private insurance	11	44%	5	5	1
Physician's office or hospital	18	72%	8	9	1
Individuals	13	52%	7	6	0
Other government agencies	20	80%	4	14	2
Other—please specify	13	52%	6	5	2

Comment: The most common entities billed by LPHLs are other government agencies followed by physician's offices/hospitals.

37. What type of billing software does your laboratory use?

	Frequency	Percent
Commercial	12	40%
In house developed	8	27%
Other—please specify	10	33%

	Frequency		
	Small	Medium	Large
Commercial	8	3	1
In house developed	5	3	0
Other—please specify	0	9	1

Comment: The most common type of billing software is a commercial product.