The American Society for Clinical Pathology's 2017 Wage Survey of Medical Laboratories in the United States

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ABSTRACT

Objectives: *To inform the pathology and laboratory field of the most recent national wage data. Historically, the results of this biennial survey have served as a basis for additional research on laboratory recruitment, retention, education, marketing, certification, and advocacy.*

Methods: *The 2017 Wage Survey was conducted through collaboration between the American Society for Clinical Pathology's (ASCP's) Institute of Science, Technology, and Policy in Washington, DC, and the ASCP Board of Certification in Chicago, IL.*

Results: *Compared with 2015, results show an overall increase in salaries for most of the laboratory occupations surveyed except histotechnologists and pathologists' assistants. Geographically, laboratory professionals from urban areas earn more than their rural counterparts.*

Conclusions: *Survey results encourage laboratory professionals to be actively engaged in advocating for the profession in the workforce and educational training programs. Awareness of the career opportunities and value of the profession is needed to strengthen the future of the field.*

Since 1988, the American Society for Clinical Pathology (ASCP) has conducted its Wage Survey to inform the pathology and laboratory field of the most recent national wage data. This confidential survey has been administered every 2 years and has served as the primary source of information for academic, government, and industry labor analysts. Results from past surveys show that laboratory medicine is a rapidly evolving field. Although the ASCP recognizes the importance of continuity, each administration of the Wage Survey represents an opportunity to improve its methodology to collect the most current relevant data while maximizing survey participation. The ASCP continues to gather questions, comments, and suggestions from our members regarding the profession with the goal of addressing them through this important survey. The results of this survey will also serve as a starting point for further studies of the laboratory workforce by using the current data collected to conduct in-depth surveys for the purpose of recruitment, retention, education, marketing, certification, and advocacy.

Materials and Methods

The 2017 Wage Survey was conducted through collaboration between the ASCP's Institute of Science, Technology, and Policy in Washington, DC, and its Board of Certification in Chicago, IL. The Wage Survey Working Group, whose members work in the field of pathology and laboratory medicine, reviewed the survey questions and critiqued the report. Partner organizations were also invited to participate in completing the survey to get a larger scope of the current issues faced by the laboratory workforce.

Electronic survey invitations were sent on April 3, 2017, via Key Survey (an online survey tool). The survey was closed on May 3, 2017. To maximize survey response, this survey used snowball sampling, in which respondents were asked to forward the invitation e-mail to other individuals who are currently practicing in the field. The ASCP also collected information on those who were disqualified from this year's wage survey (ie, clinical laboratory educator, retired, unemployed, working in laboratory-related industry, working in a non-laboratory-related industry, working in a research laboratory) for future research studies.

The following partnering entities also participated in the survey deployment:

- AABB (formerly the American Association of Blood Banks)
- American Association for Clinical Chemistry
- American Medical Technologists
- American Society for Clinical Laboratory Science
- American Society of Cytopathology
- Association of Public Health Laboratories
- Children's Hospital of Philadelphia
- Clinical Laboratory Management Association
- National Society for Histotechnology
- Philippine Association of Medical Technologists–USA
- University of Minnesota

The 2017 Wage Survey sought to collect staff-, lead-, supervisor-, manager-, and laboratory director–level data on the following clinical laboratory occupations:

- Clinical laboratory assistant (CLA)/medical laboratory assistant (MLA)
- Cytogenetic technologist (CG)
- Cytotechnologist (CT)
- Histotechnician (HT)
- Histotechnologist (HTL)
- Laboratory information system (LIS) personnel
- Medical laboratory technician/clinical laboratory technician (MLT/CLT)
- Medical laboratory scientist/medical technologist/clinical laboratory scientist (MLS/MT/CLS)
- Molecular biology technologist (MB)
- Pathologists' assistant (PA)
- Performance improvement or quality assurance (PI/QA) personnel
- Phlebotomist (PBT)
- **Point-of-care testing personnel (POCT)**
- Specialist in blood banking (SBB)

Clinical laboratory occupation that was newly surveyed this year is shown in bold.

This year's wage survey collected data on wages by clinical laboratory occupation included in the survey, facility, department, certification, state, total years of experience, and age. New questions added involved asking the respondents the geographic areas in which their facilities are located, whether it is from an urban area (defined as 50,000 or more people), urban cluster (defined as areas with at least 2,500 and fewer than 50,000 people), or rural (defined as areas with 2,500 or fewer people).[1] Although this survey excluded clinical educators and those not actively working in a clinical laboratory, consideration was given to whether a separate survey would be needed for that group.

Key Findings

A total of 14,628 responses were received in this year's wage survey. Demographic data collected indicate that 80.50% of the respondents are female and 19.40% are male. Table 1 and Table 2 show the percentage distribution of all survey respondents by ethnicity and level of education, respectively. The average age of laboratory personnel who responded to the survey is 42.89 years compared with 43.95 years in 2015. Distribution of respondents by age group shows that most of the respondents are in the 25- to 34-year-old range at 28.20% Table 3.

Table 4 details the total number and percentage of respondents by occupational title. By occupational level, the percent distribution of respondents is staff (63.62%),

Table 1
Percent Distribution of All Survey Respondents by Ethnicity

Ethnicity	No. (%)
White	9,948 (74.10)
Asian	1,185 (8.83)
Black or African American	1,145 (8.53)
Hispanic or Latino	825 (6.14)
Mixed race	118 (0.88)
American Indian or Alaska Native	110 (0.82)
Native Hawaiian or other Pacific Islander	44 (0.33)
Other	51 (0.38)

Table 2
Percent Distribution of All Survey Respondents by Level of Education

Education Level	No. (%)
Bachelor's degree	7,976 (59.06)
Associate's degree	2,382 (17.64)
Master's degree	1,689 (12.51)
College credit not equivalent to a degree	846 (6.26)
High school	221 (1.64)
MD, MD/PhD, or DO	148 (1.10)
PhD or other advanced degree	146 (1.08)
Other	98 (0.73)

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Table 3
Percent Distribution of All Survey Respondents by Age Range

Age Group, y	No. (%)
18-24	543 (4.05)
25-34	3,783 (28.20)
35-44	3,042 (22.68)
45-54	2,876 (21.44)
55-64	2,937 (21.90)
65-74	226 (1.68)
75+	6 (0.04)

Table 4
Total Number of Responses by Occupational Title[a]

Occupational Title	No. (%)
MLS/MT/CLS	6,760 (50.05)
MLT/CLT	2,167 (16.04)
PBT	1,006 (7.45)
HT	661 (4.89)
CT	382 (2.83)
CG	347 (2.57)
HTL	326 (2.41)
PA	286 (2.12)
CLA/MLA	191 (1.41)
MB	165 (1.22)
SBB	157 (1.16)
PI/QA personnel	140 (1.04)
POCT personnel	126 (0.93)
LIS personnel	123 (0.91)
Pathologist	58 (0.43)
Other	611 (4.52)

CG, cytogenetic technologist; CLA/MLA, clinical laboratory assistant/medical laboratory assistant; CT, cytotechnologist; HT, histotechnician; HTL, histotechnologist; LIS, laboratory information systems personnel; MB, molecular biologist; MLS/MT/CLS/MLS, medical laboratory scientist/medical technologist/clinical laboratory scientist; MLT/CLT, medical laboratory technician/clinical laboratory technician; PA, pathologists' assistant; PBT, phlebotomist; PI or QA, performance improvement or quality assurance; POCT, point-of-care testing; SBB, specialist in blood banking.
[a]Percentage distribution of all survey respondents.

lead (11.99%), supervisor (12.01%), manager (6.03%), director (3.35%), and other (3.05%). The following top 10 states provided most of the survey responses: Texas (7.80%), California (5.90%), New York (4.80%), Illinois (4.40%), Ohio (4.20%), Wisconsin (3.90%), Pennsylvania (3.80%), Florida (3.80%), Minnesota (3.70%), Michigan (3.40%), and North Carolina (3.30%). By region, the respondents are from South Central Atlantic (23.87%), Far West (18.87%), Central North East (19.12%), Northeast (15.71%), Central South West (11.25%), and Central North West (11.18%). Survey respondents are mostly from urban areas 66.62%, followed by respondents from urban clusters at 26.86% and rural areas at 6.52%.[1]

Results indicated that most of laboratory personnel currently have one employer (89.09%), 9.02% of personnel have two employers, and 1.90% have three or more employers within the medical laboratory field. Most laboratory professionals who responded to the survey have full-time permanent positions (89.23%), followed by part-time (7.31%); PRN (pro re nata), on call, as needed (1.45%); per diem (1.03%); and full-time temporary/contract (0.98%). Those who reported working as full-time temporary/contract personnel were traveling professionals (58.65%), subcontractors (27.82%), or independent contractors/consultants (13.53%). On average, those who reported that they supervise staff at their jobs supervise 22.13 staffers.

Most of the participants (49.47%) indicated that they had received their clinical training from a National Accrediting Agency for Clinical Laboratory Sciences accredited or approved training program (which accredits MLA, MLT, MLS, PBT, CG, MB, PA, HT, and HTL), whereas 24.17% selected "on-the-job training," 4.68% selected programs approved by the Commission on Accreditation of Allied Health Education Programs (which accredits CT, specialist in cytotechnology, and SBB), 3.75% selected Accrediting Bureau of Health Education Schools (which accredits MLT only), 2.55% selected military, and 15.37% selected "don't know/other." The survey sought information on the type of facility in which participants are primarily employed **Figure 1**, as well as the department that best fits their employment **Figure 2**. The majority of the respondents are employed in academic and nonacademic hospital facilities; most respondents also reported that they work in the hematology/coagulation department. The majority of survey respondents (91.64%) indicated they were certified, while 8.36% indicated they were not certified. Not surprisingly, the preponderance of respondents (86.10%) indicated they were certified by ASCP Board of Registry/Certification or National Certification Agency, while 3.96% indicated they were certified by the American Medical Technologists, 1.16% by the American Association of Bioanalysts, 0.42% by a foreign certification agency, 0.4% by the American Board for Histocompatibility and Immunogenetics, 0.38% by the American Society for Quality, and 0.21% by the American Board of Medical Microbiology. Of all the respondents, 29.45% are licensed by the state in which they currently work as a laboratory professional. Licensed respondents are mostly from California and the least are from Washington, DC. The survey gathered data on laboratory professionals in states and territories that require licensure: California; Florida; Georgia; Hawaii; Louisiana; Montana; Nevada; New York; North Dakota; Tennessee; Washington, DC; West Virginia; and Puerto Rico **Figure 3**.

Overall, 7.5% of respondents reported being represented by a union at their place of employment. Most of the respondents are represented by SEIU 1199 (28.50%), followed by the American Federation of Government Employees

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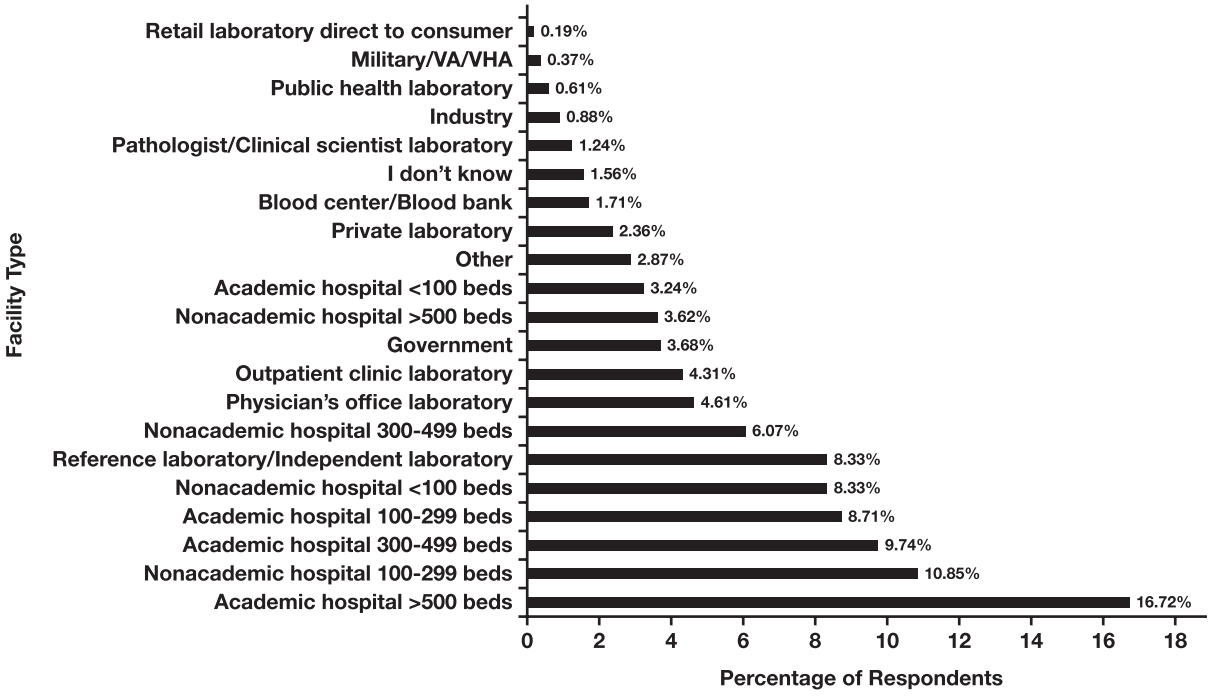

Figure 1 Percentage of respondents by facility. VA, Veterans Affairs; VHA, Veterans Health Administration.

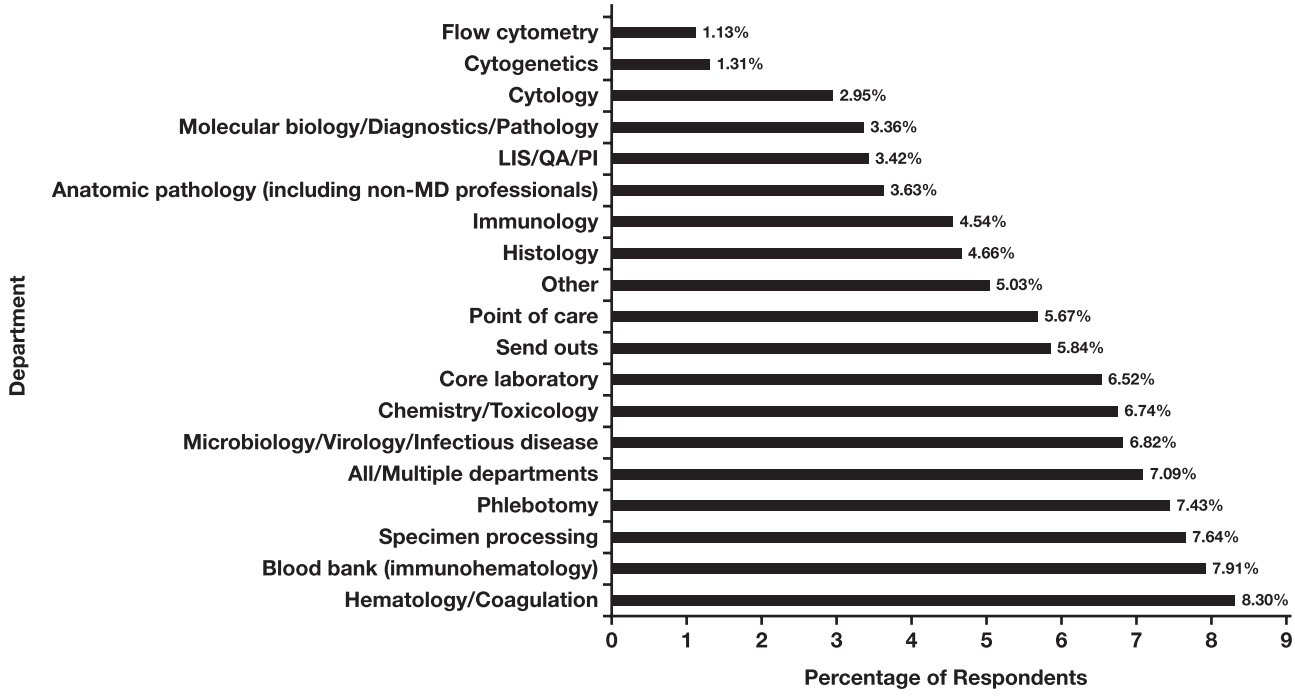

Figure 2 Percentage of respondents by department. For definitions of abbreviations, see Table 4.

(21.50%), United Food and Commercial Workers (6.70%), University Professional and Technical Employees (4.90%), and United University Professions (4.00%).

Those who were excluded from the survey (n = 1,120) include individuals who are unemployed (17.68%), working in a laboratory-related industry (14.29%), retired (11.70%), a clinical laboratory educator (8.30%), working in a research laboratory (eg, biotech industries) (4.11%), and other (32.4%). This year, comparison between certified and noncertified laboratory personnel was not

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performed because the low sample size of noncertified compared with certified individuals provided an inaccurate comparison.

Clinical Laboratory Assistant/Medical Laboratory Assistant

On average, laboratory assistant (CLA/MLA) staff members make $18.16 per hour (SD, $5.24) Figure 4. The average annual wage of CLA/MLA staff is listed in Table 5. Results of the wage difference between the other laboratory facilities for staff laboratory assistants do not allow for statistically significant comparisons. Results indicate that staff have an average age of 40.40 years.

Overall, all CLA/MLA respondents are paid the highest in academic hospitals with more than 500 beds at $18.34. The average age for all CLA/MLA respondents is

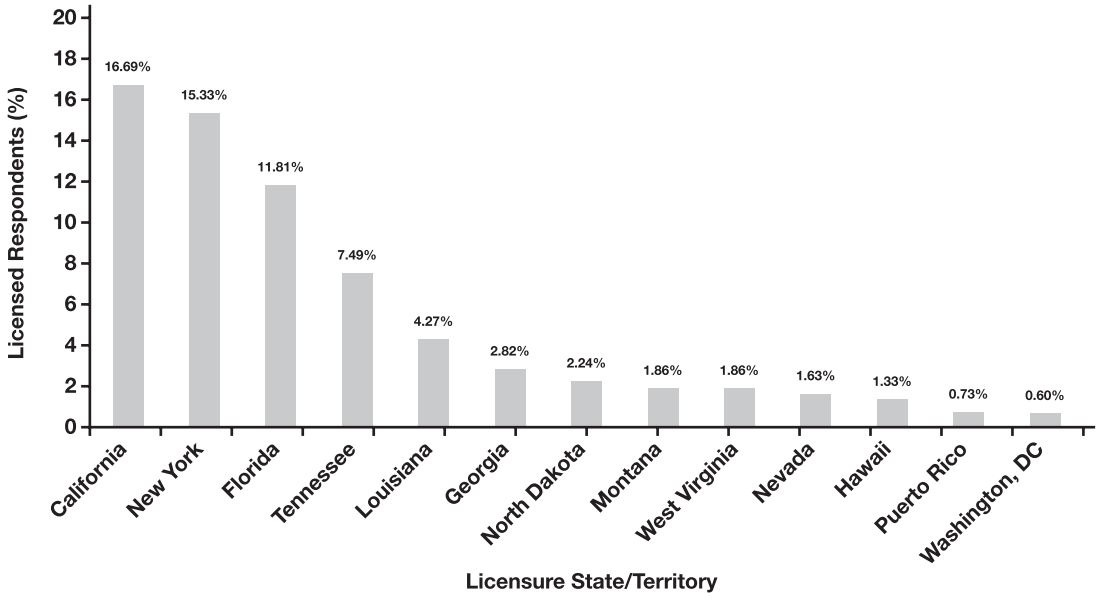

Figure 3 Licensed respondents currently working as a laboratory professional, by state (n = 3,978).

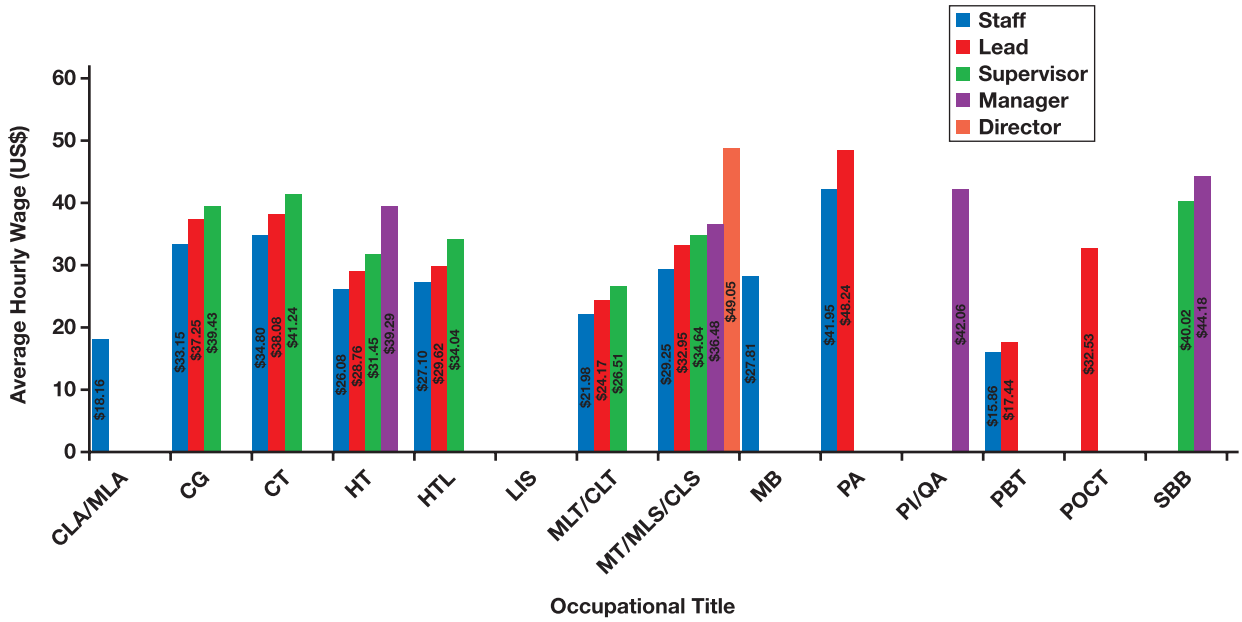

Figure 4 Average hourly wage for laboratory staff, lead, supervisor/manager, and director positions, per occupational title. Sample sizes for some occupational levels were less than 30 (n < 30) and did not allow for statistically significant comparisons. For definitions of abbreviations, see Table 4.

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Table 5
Average Annual Wages by Occupational Title and Level[a]

Occupational Title	Average Annual Wages				
	Staff	Lead/Coordinator	Supervisor/Technical Supervisor	Manager	Director
CLA/MLA	$37,772.51	—	—	—	—
CG	$68,953.55	$77,474.12	$82,004.73	—	—
CT	$72,376.85	$79,205.39	$86,109.61	—	—
HT	$54,237.82	$59,813.44	$75,914.36	$81,731.67	—
HTL	$56,369.69	$61,608.41	$70,809.66	—	—
LIS personnel	—	—	—	—	—
MLT/CLT	$45,715.29	$50,271.66	$63,541.75	—	—
MT/MLS/CLS	$61,112.31	$68,722.65	$78,267.07	$88,320.51	$102,019.20
MB	$57,836.62	—	—	—	—
PA	$96,788.49	$100,339.84	—	—	—
PI/QA personnel	—	—	—	$87,488.94	—
PBT	$32,985.43	$36,279.28	—	—	—
POCT	—	$67,661.89	—	—	—
SBB	—	—	$83,244.93	$91,897.71	—

[a]Some annual wages listed were made equivalent to a full-time salary. Sample size constraints prevented further analysis of wage rate for some occupational levels. For definitions of abbreviations, see Table 4.

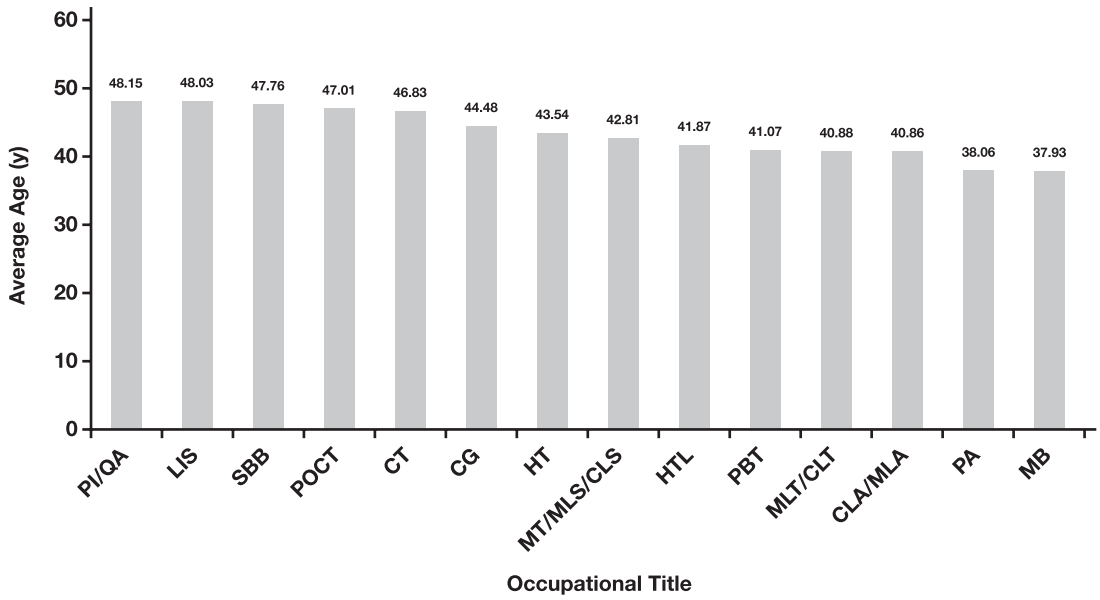

Figure 5 Average age of all respondents by occupational title. For definitions of abbreviations, see Table 4.

40.86 years, which is younger than the national average[2] **Figure 5**.

CLA/MLAs from urban areas make up 1.30% of the overall urban respondents and earn an average of $18.97 per hour. CLA/MLAs in the urban clusters group make up 1.30% of overall urban clusters respondents and earn an average hourly wage of $17.43 **Table 6**. Results show that a CLA/MLA has an average of 13.36 years of total experience working in the field and has worked in his or her current position for an average of 7.30 years **Figure 6** and **Figure 7**.

Results of the wage difference between laboratory facilities and states for CLA/MLA leads, managers, supervisors, and directors do not allow for statistically significant comparisons. For the same reason, analyses of the average age by state and wages by facilities and departments for CLA/MLAs, regardless of occupational level, were not performed.

Cytogenetic Technologists

The national average hourly wage for staff-level CGs is $33.15 (SD, $7.32; Figure 4). Hourly wage for staff CG is highest at reference/independent laboratories, which pay $33.18, followed by academic hospitals with more

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Table 6
Average Hourly Wage by Occupational Title and Geographical Areas[a]

Occupational Title	Average Hourly Wage			
	Overall	Urban Area (50,000 or More People)	Urban Cluster (at Least 2,500 and <50,000 People)	Rural (2,500 or Fewer People)
CLA/MLA	$18.49	$18.97	$17.43	NA
CG	$34.21	$34.35	$33.66	NA
CT	$36.10	$36.33	$36.00	NA
HT	$26.96	$27.43	$25.94	NA
HTL	$29.12	$29.78	$27.65	NA
LIS personnel	$33.77	$35.94	NA	NA
MLT/CLT	$22.38	$22.93	$21.84	$21.75
MT/MLS/CLS	$30.49	$31.09	$29.35	$28.77
MB	$28.66	$28.94	NA	NA
PA	$43.57	$42.82	$45.52	NA
PI/QA personnel	$36.80	$39.20	NA	NA
PBT	$16.17	$16.73	$15.70	$14.98
POCT personnel	$31.11	$32.15	NA	NA
SBB	$34.89	$35.55	NA	NA

NA, not applicable.
[a]Sample size constraints prevented further analysis of wage rate for some occupational levels. For definitions of abbreviations, see Table 4.

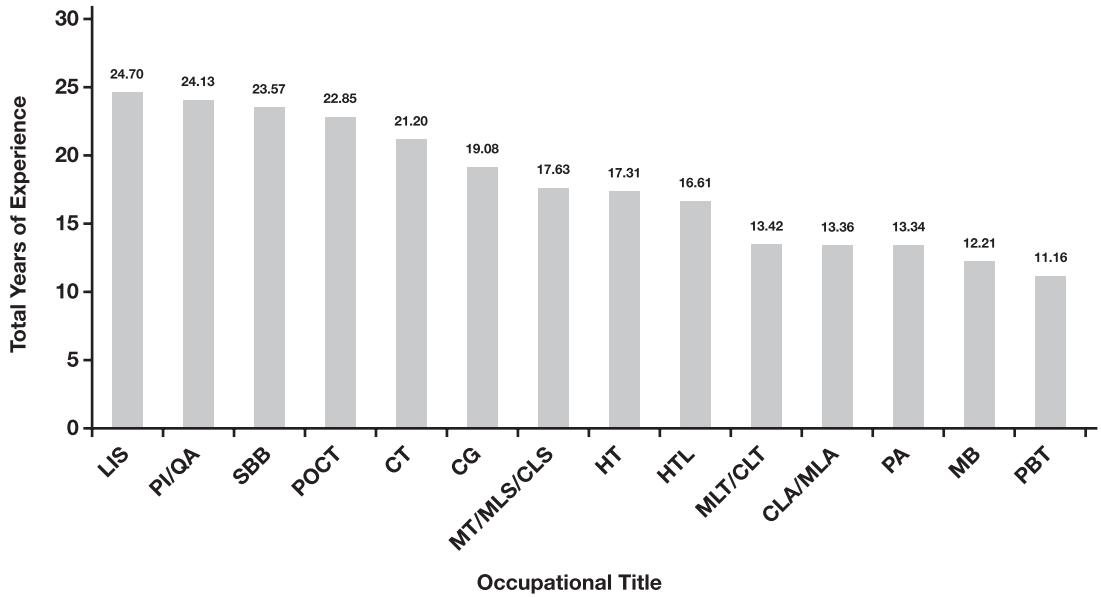

Figure 6 Average years of total experience in the laboratory field by occupational title. For definitions of abbreviations, see Table 4.

than 500 beds at $31.20. Staff CGs are aged 42.63 years on average.

CG leads earn an average hourly rate of $37.25 (SD, $7.28; Figure 4). On average, leads are aged 46.16 years. CG supervisors are paid an average hourly wage of $39.43 (SD, $6.47; Figure 4). The average annual wages of CGs by job level are listed in Table 5. On average, supervisor-level CGs are aged 47.26 years.

The highest paying type of facility for all CGs (regardless of occupational level) is reference/independent laboratories, which pay an average hourly wage of $34.13, followed by academic hospitals with more than 500 beds at $33.65. The average age for all CG respondents is 44.48 years, which is older than the national average[2] (Figure 5).

This survey also looked at average hourly wage by department. Most CG respondents work in the cytogenetics department and earn $37.88 per hour. The highest average hourly wage by state is California at $44.59 for all CG levels. CGs make up 3.39% of the respondents from the urban areas and make an average hourly wage of $34.35 per hour. Among those who were in the urban

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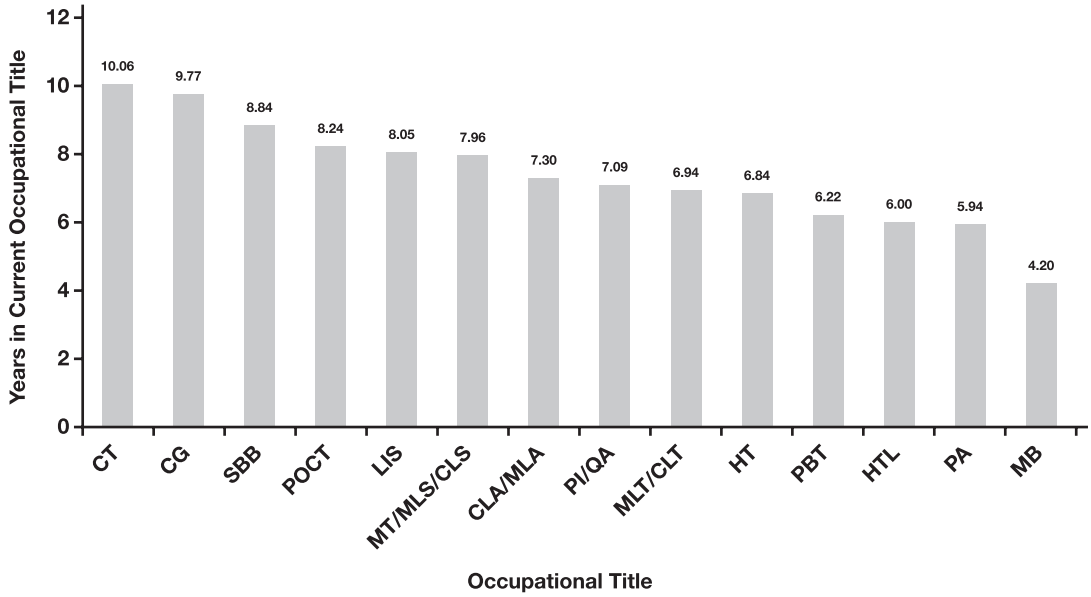

Figure 7 Average years of working in current occupational title. For definitions of abbreviations, see Table 4.

clusters group, 1.00% were CGs, and they receive an average hourly wage of $33.66 (Table 6). On average, a CG has 19.08 total years of experience working in the laboratory field and 9.77 average years of working in his or her current occupational title (Figures 6 and 7).

The sample size (n < 30) for some occupational levels was too small for meaningful statistical analysis of pay rates by all facilities, departments, and states surveyed. For the same reason, analysis of the average age by state for CGs was not performed.

Cytotechnologists

Staff-level CTs are paid an average hourly wage of $34.80 (SD, $7.23; Figure 4). Academic hospitals with more than 500 beds pay $33.50. The overall sample size (n < 30) for this occupational level was too small for meaningful statistical analysis of pay rates by all facilities surveyed. Therefore, we report data for only certain facilities. According to survey results, staff-level CTs have an average age of 44.51 years.

Lead CTs earn an average hourly wage of $38.08 (SD, $6.89; Figure 4). Their average age is 50.14 years. The average hourly wage for CT supervisors is $41.24 (SD, $10.30; Figure 4). They are, on average, aged 50.38 years. The average annual wages of CT by job level are shown in Table 5. Analysis of average hourly wages paid by facilities for leads, supervisors, managers, and directors was not performed due to the small sample size (n < 30) of each level.

Of the facilities that were analyzed, nonacademic hospitals with 100 to 299 beds show the highest hourly pay rate at $36.54 for all CT respondents regardless of level. All CTs earn an average hourly rate of $35.73 at reference/independent laboratories and $34.80 at academic hospitals with more than 500 beds. The average age for all CT respondents is 46.83 years, which is older than the national average[1] (Figure 5).

Most CT respondents work in cytology departments. The hourly compensation offered by these departments is, on average, $39.01. Respondents from the urban areas were 3.28% CTs with an average hourly wage of $36.33. In urban clusters, 2.18% were CTs who average $36.00 an hour (Table 6). Results indicate that on average, CTs have 21.20 total years of experience in the field and have been in their current position for 10.60 years, the highest number of years working in their current title among all the occupational groups surveyed (Figures 6 and 7).

Analysis of pay rates by all 50 states and the average age by state for CTs was not performed due to the small sample size.

Histotechnicians

The national average hourly wage for staff-level HTs is $26.08 (SD, $5.75; Figure 4). Pay rates among the laboratory facilities are highest in academic hospitals with 300 to 499 beds, which provide staff HTs with the highest average hourly wage of $27.36. Academic hospitals with more than 500 beds pay $27.05 on average. Academic hospitals with 100 to 299 beds pay an average hourly wage of $26.56. On average, reference/independent laboratories pay $26.39 an hour, and nonacademic hospitals with 100

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to 299 beds pay the least at $24.08 per hour, on average. The average age of a staff HT is 41.09 years.

Lead-level HTs are paid an average hourly rate of $28.76 (SD, $6.05), not a significant raise from 2015. The average age of lead HTs is 47.08 years. HT supervisors earn an average hourly rate of $31.45 (SD, $8.45), and HT managers are paid $39.29 (SD, $10.00), a salary decrease compared with 2015 (Figure 4). The average annual wages of HTs by job level are listed in Table 5. Supervisors and managers are aged 47.49 years and 48.46 years on average, respectively.

Overall, all HT respondents are paid the highest in private laboratories at $29.92 per hour and the least in nonacademic hospitals with 100 to 299 beds at $24.79 **Figure 8**. The average age for all HT respondents is 43.54 years, higher than the national average[2] (Figure 5).

By department, anatomic pathology pays HTs an average hourly wage of $32.43, while histology departments pay $30.06. Geographically, HTs, regardless of position level, are paid a significantly higher wage in California at $34.99, followed by Pennsylvania at $27.33, Ohio at $25.55, and Texas at $25.52. HT respondents from urban areas comprise 5.08% and get paid an average hourly wage of $27.43. HTs from urban clusters (5.03%) receive an average hourly wage of $25.94 (Table 6). According to the survey results, HTs have an average of 17.31 years of total experience in the laboratory field and have been in their current position for 6.84 years (Figures 6 and 7).

The overall sample sizes (n < 30) for occupational levels were too small for meaningful statistical analysis of average age by all states and of pay rates by all facilities, departments, and states surveyed. Therefore, we report data from only certain facilities.

Histotechnologists

The average hourly wage for staff HTLs is $27.10 (SD, $6.17; Figure 4). Academic hospitals with over 500 beds pay $27.45, on average, similar to the hourly rate reported in the 2015 ASCP wage survey report. Staff HTLs have an average age of 39.41 years.

Lead-level HTLs are paid an average hourly rate of $29.62 (SD, $4.99). The average age of a lead HT is 42.05 years. Supervisor HTLs are paid an average hourly wage of $34.04 (SD, $8.27; Figure 4). The average age for supervisors is 44.67 years. The average annual wages of HTLs by job level are listed in Table 5. Survey results indicate that the average age for managers is 49.0 years.

Analysis of average hourly wages paid by facilities for leads, supervisors, managers, and directors was not performed due to the small sample size (n < 30) for each level. Regardless of level, academic hospitals with over 500 beds show the highest hourly pay rate at $30.50. The average age for all HTL respondents is 41.87 years, which is younger than the national average[2] (Figure 5).

By department, most HTL respondents are found in histology. They are paid an average hourly wage of

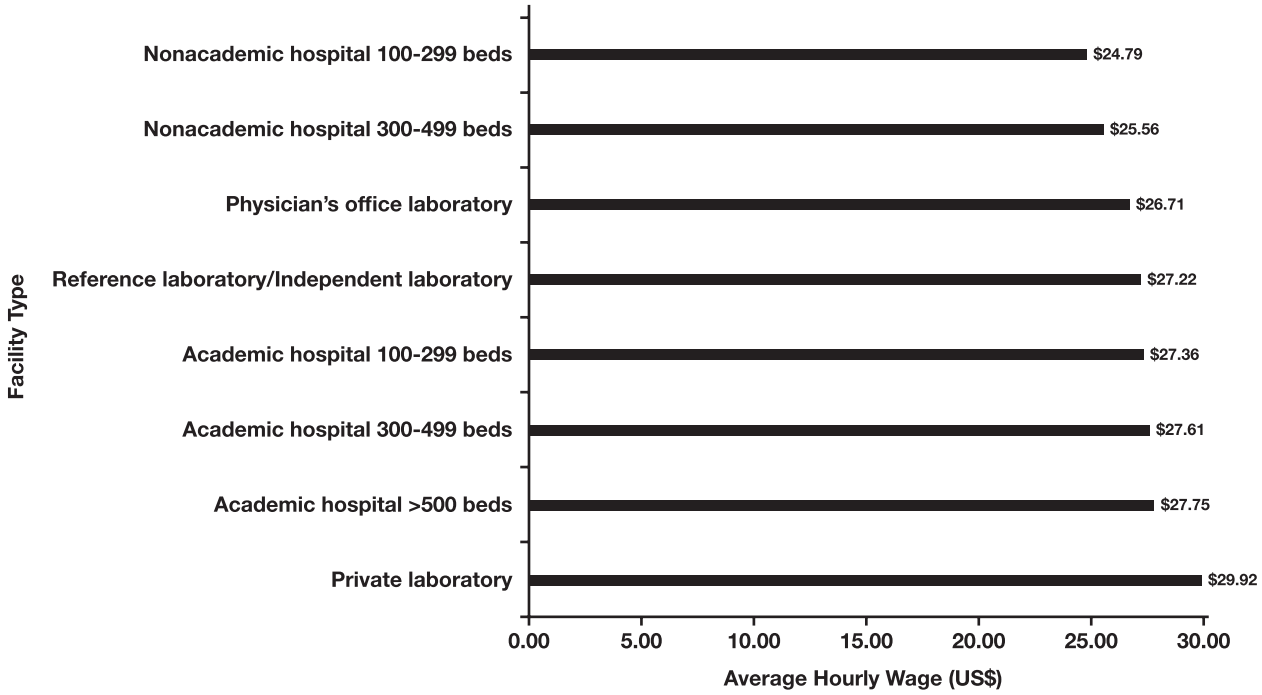

Figure 8 Average hourly wage of all histotechnician respondents by facility.

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$33.79. Respondents from urban areas were 2.67% HTLs with an average hourly wage of $29.78. In urban clusters, there were 2.13% HTLs who get paid $27.65 an hour (Table 5). Overall, HTLs have an average of 16.61 years of total experience in the laboratory field and have been working in their current occupational title for an average of 6.00 years (Figures 6 and 7).

The overall sample sizes (n < 30) for the occupational levels were too small for meaningful statistical analysis of pay rates by all facilities and states surveyed. For the same reason, analysis of the average age by state for HTLs was not performed.

Medical Laboratory Technicians/Clinical Laboratory Technicians

The national average hourly wage for staff-level MLTs/CLTs is $21.98 (SD, $4.67; Figure 4). Pay rates for staff tend to be highest in reference/independent laboratories at $22.75 per hour on average and lowest at physician's office laboratories (POLs) at $20.82 per hour **Figure 9**. The average age of staff MLTs/CLTs is 39.96 years. By state, Minnesota has the oldest staff at 42.39 years and the youngest in Georgia at 36.39 years **Figure 10**.

Lead MLTs/CLTs are paid an average hourly wage of $24.17 (SD, $5.46; Figure 4). Results indicate they have an average age of 44.58 years. The average hourly wage for MLT/CLT supervisors is $26.51 (SD, $7.53; Figure 4). The average age for this group is 44.46 years. The average annual wages of MLTs/CLTs by job level are listed in Table 5. The age of managers averages 50.33 years.

Reference laboratories/independent laboratories show the highest average hourly pay rate at $22.99, while the lowest is found at government laboratories at $21.65 for all MLTs/CLTs **Figure 11**. The average age for all MLT/CLT respondents is 40.88 years, younger than the national average[2] (Figure 5).

According to survey results, blood bank departments paid MLTs/CLTs the most at an average of $26.24 per hour, while the send-out department had the lowest at $24.29 per hour **Figure 12**. Geographically, MLTs/CLTs, regardless of position level, are paid significantly higher wages in California and lowest in Mississippi **Table 7**. New Jersey had the highest average age for all MLTs/CLTs regardless of occupational level while Georgia had the lowest average age **Table 8**. MLTs/CLTs comprise 12.29% of all respondents from urban areas and get paid an average hourly wage of $22.93. MLTs/CLTs from urban clusters (comprising 20.98% of all respondents in the urban clusters group) receive an average hourly wage of $21.84, and MLTs/CLTs in rural areas comprise 31.97% respondents in that group and are paid an average hourly wage of $21.75 (Table 6). Overall, MLTs/CLTs have an average of 13.42 years of total experience in the laboratory field and have been working in their current title for 6.94 years (Figures 6 and 7).

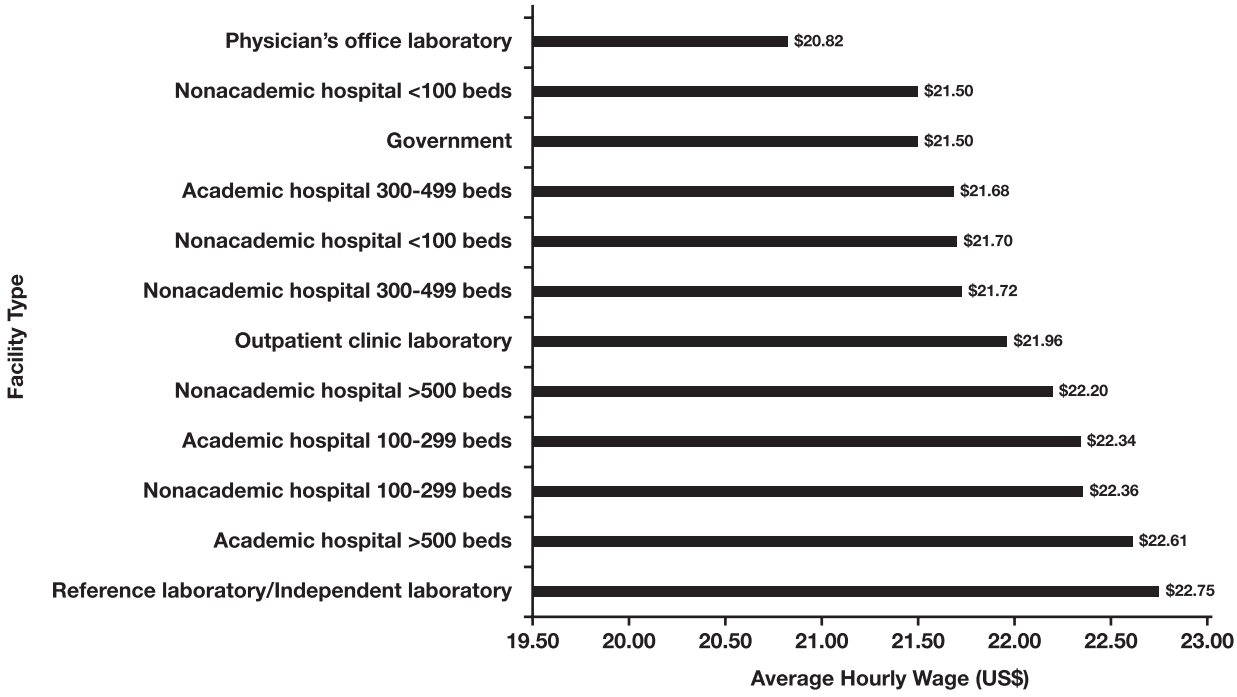

Figure 9 Average hourly wage of staff medical laboratory technician/clinical laboratory technician by facility.

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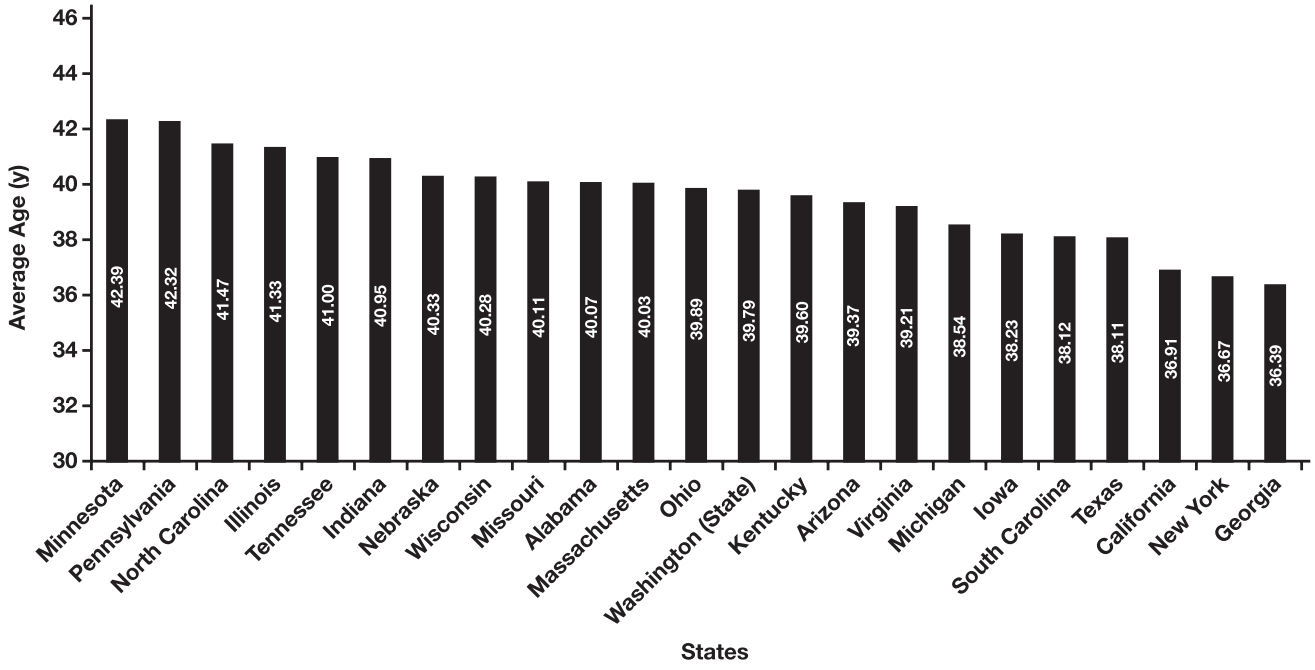

Figure 10 Average ages for staff medical laboratory technician/clinical laboratory technician by state. Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

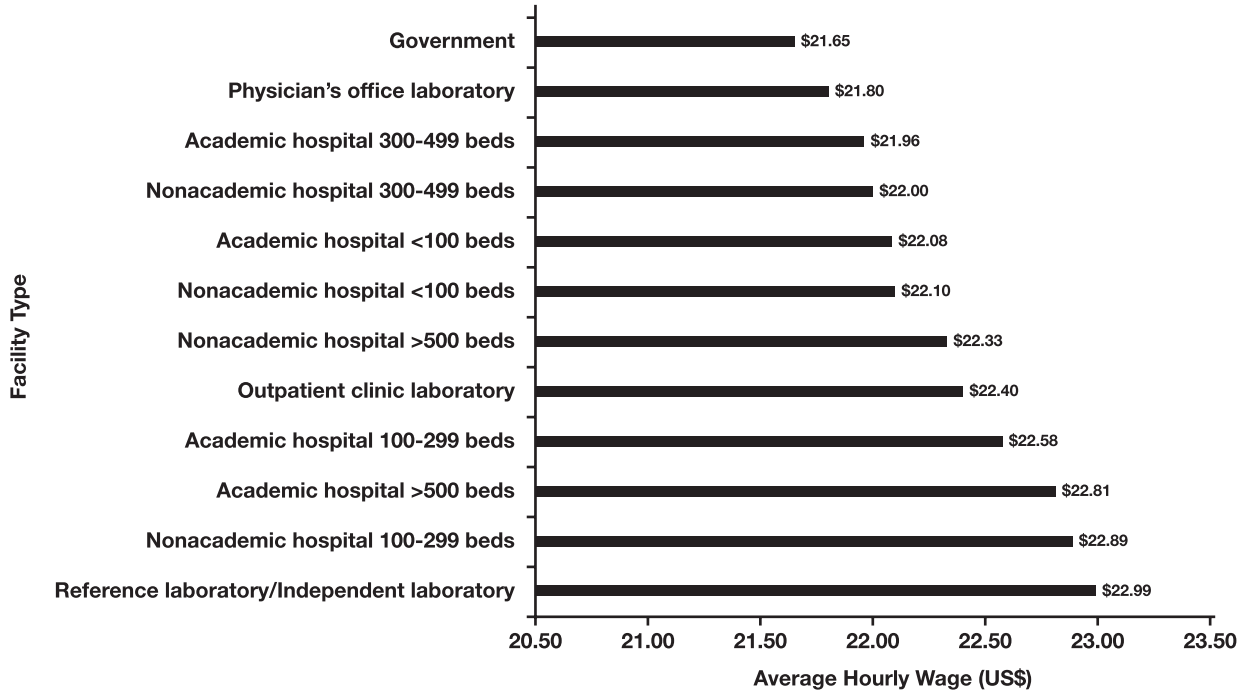

Figure 11 Average hourly wage of all medical laboratory technician/clinical laboratory technician respondents by facility.

Analyses of average hourly wages paid by facilities, department, and states for leads, supervisors, managers, and directors were not performed due to the small sample size (n < 30) of each level.

Medical Laboratory Scientists/Medical Technologists/ Clinical Laboratory Scientists

Staff-level MLSs/MTs/CLSs are paid an average hourly rate of $29.25 (SD, $7.37; Figure 4). Average pay rates for

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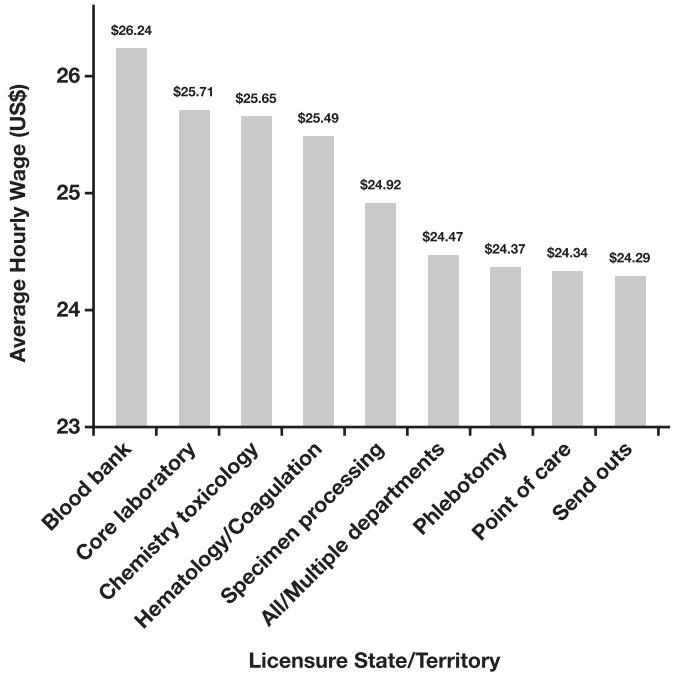

Figure 12 Average hourly wage of all (staff, lead, manager, supervisor, director) medical laboratory technician/clinical laboratory technician respondents by department.

Table 7
Average Hourly Wage for Medical Laboratory Technician/Clinical Laboratory Technician by State, From Highest to Lowest Paying[a]

State	Hourly Wage
California	$30.85
Massachusetts	$26.17
New York	$25.96
Washington	$24.72
Minnesota	$23.53
Pennsylvania	$23.09
Illinois	$23.08
Arizona	$22.89
Indiana	$22.73
Wisconsin	$22.50
Oklahoma	$22.34
Ohio	$22.31
Virginia	$22.17
Kentucky	$22.09
Michigan	$21.85
Nebraska	$21.65
Iowa	$21.61
Texas	$21.50
Missouri	$21.43
Tennessee	$20.95
Georgia	$20.47
North Carolina	$20.02
North Dakota	$19.77
South Carolina	$18.90
Alabama	$18.78
Mississippi	$17.58

[a]Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

Table 8
Average Ages for Medical Laboratory Technician/Clinical Laboratory Technician by State, From Highest to Lowest[a]

State	Mean Age, y
New Jersey	43.58
Minnesota	43.10
Illinois	42.86
North Carolina	42.82
Pennsylvania	42.81
Indiana	42.14
Missouri	41.67
Tennessee	41.57
Nebraska	41.47
Arizona	41.43
Washington (state)	41.26
Wisconsin	41.05
Alabama	40.91
Massachusetts	40.42
Virginia	40.32
Kentucky	40.02
Ohio	39.99
Michigan	39.77
Oklahoma	39.28
Mississippi	39.23
Iowa	39.16
Maryland	39.13
Texas	39.05
South Carolina	38.69
New York	38.53
North Dakota	38.53
California	37.47
Georgia	36.84

[a]Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

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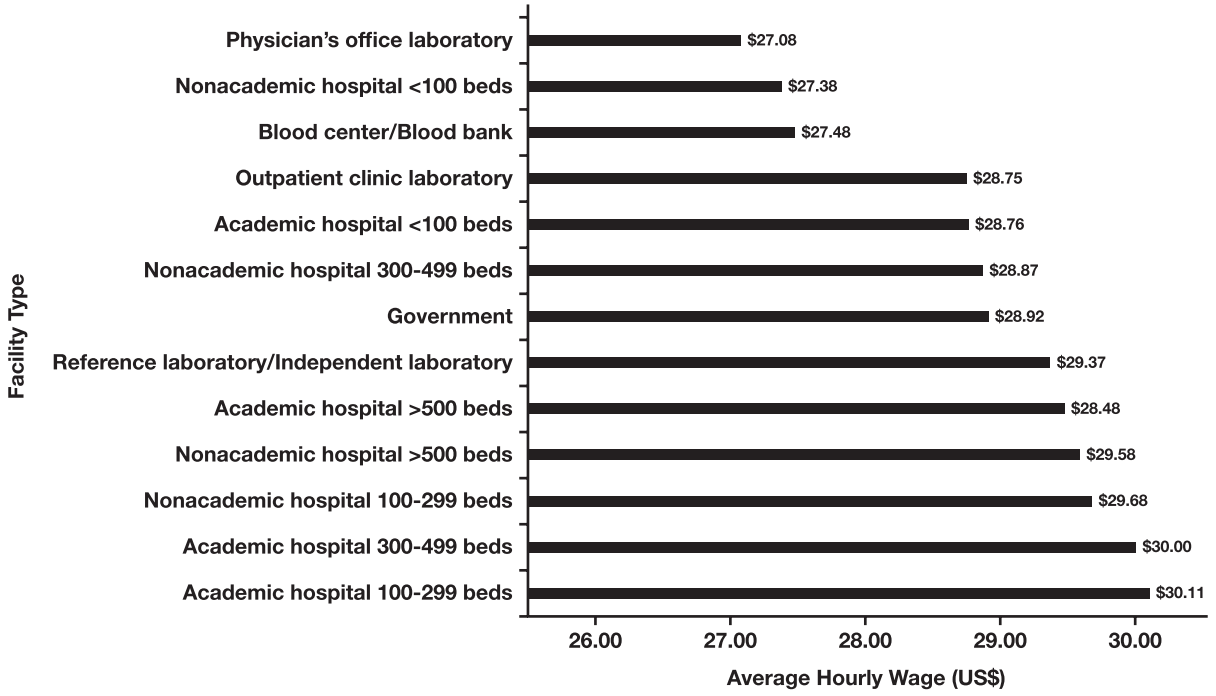
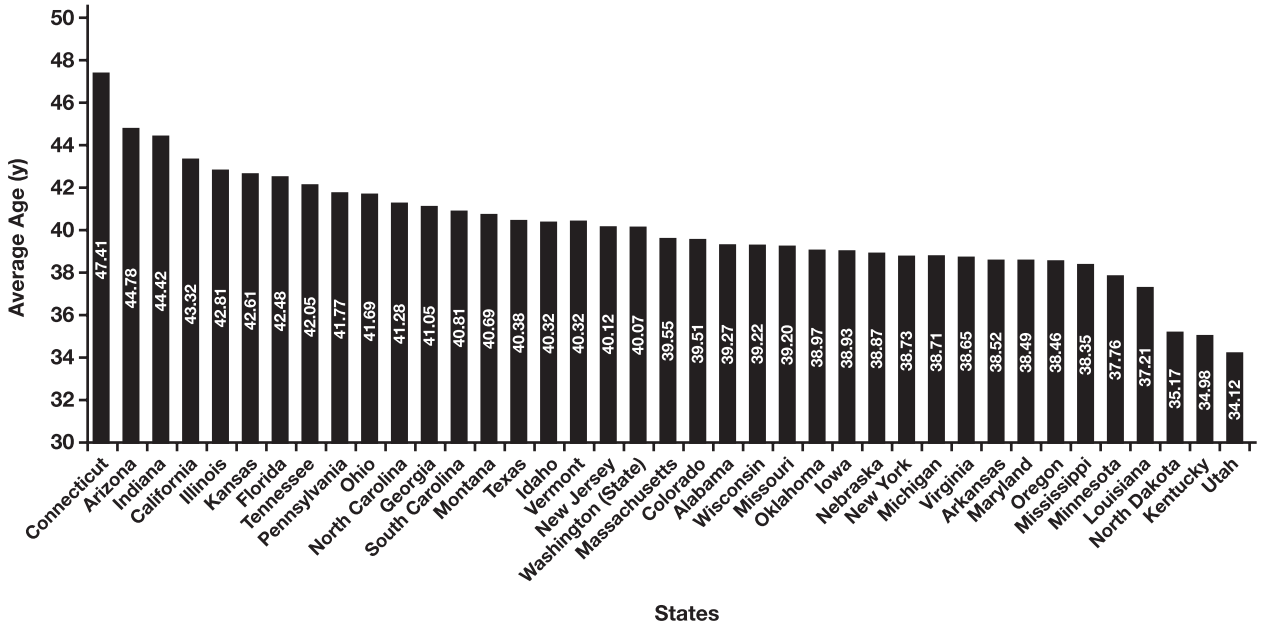
staff are highest at academic hospitals with 100 to 299 beds at $30.11 per hour and lowest at POLs at $27.08 per hour [Figure 13]. The mean age for staff MLSs/MTs/CLSs is 40.33 years. Geographically, MLS/MT/CLS staff are the oldest in Connecticut and the youngest in Utah [Figure 14].

On average, MLS/MT/CLS leads make $32.95 per hour (SD, $7.74; Figure 4). Reference/independent laboratories pay a significantly high hourly rate for lead MLSs/MTs/CLSs compared with all facilities surveyed, at $34.94. The facilities providing the lowest pay are academic hospitals with 100 to 299 beds, at $30.95 per hour [Figure 15]. They have an average age of 44.61 years. California has the oldest MLS/MT/CLS leads at 48.29 years and Texas the youngest at 41.95 years.



[Figure 13] Average hourly wage of staff medical laboratory scientists/medical technologists/clinical laboratory scientists by facility.



[Figure 14] Average ages for staff medical laboratory scientists/medical technologists/clinical laboratory scientists by state. Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

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MLS/MT/CLS supervisors earn an average hourly rate of $34.64 (SD, $10.18; Figure 4). Results indicate that academic hospitals with more than 500 beds pay the highest hourly wage, at $39.11, whereas POLs pay the lowest wages at $27.25 per hour, on average **Figure 16**. This group has an average age of 46.85 years. Geographically, MLS/MT/CLS

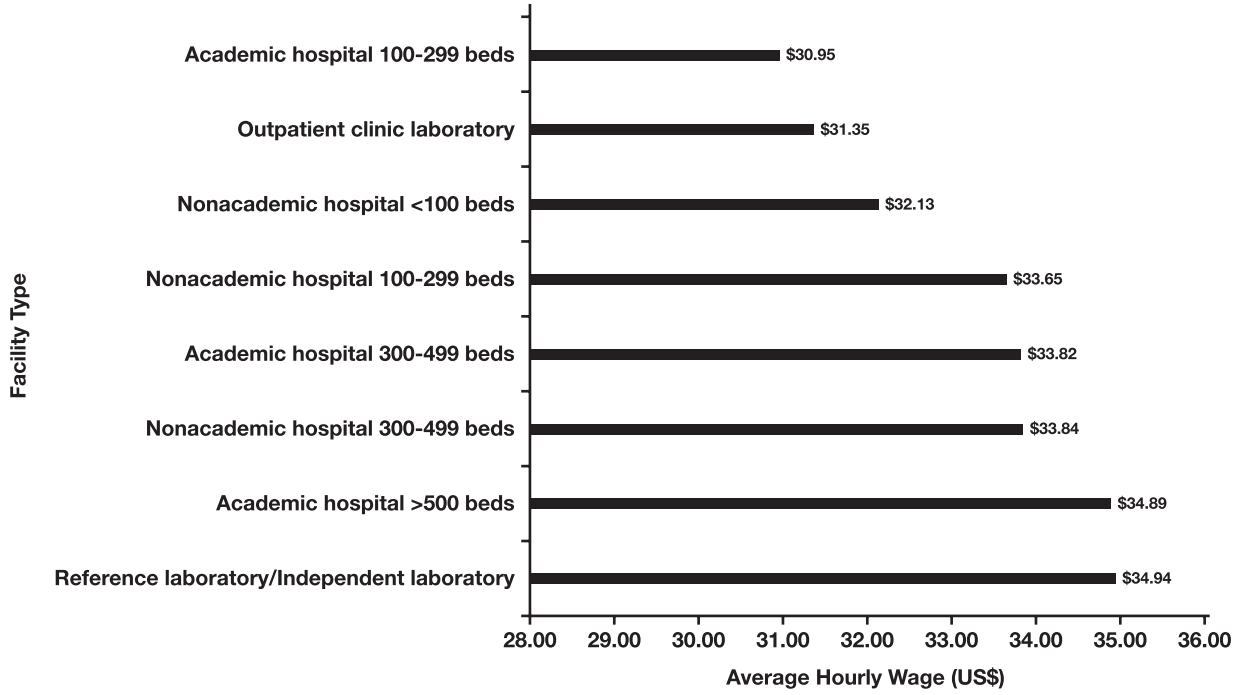

Figure 15 Average hourly wage of lead medical laboratory scientists/medical technologists/clinical laboratory scientists by facility.

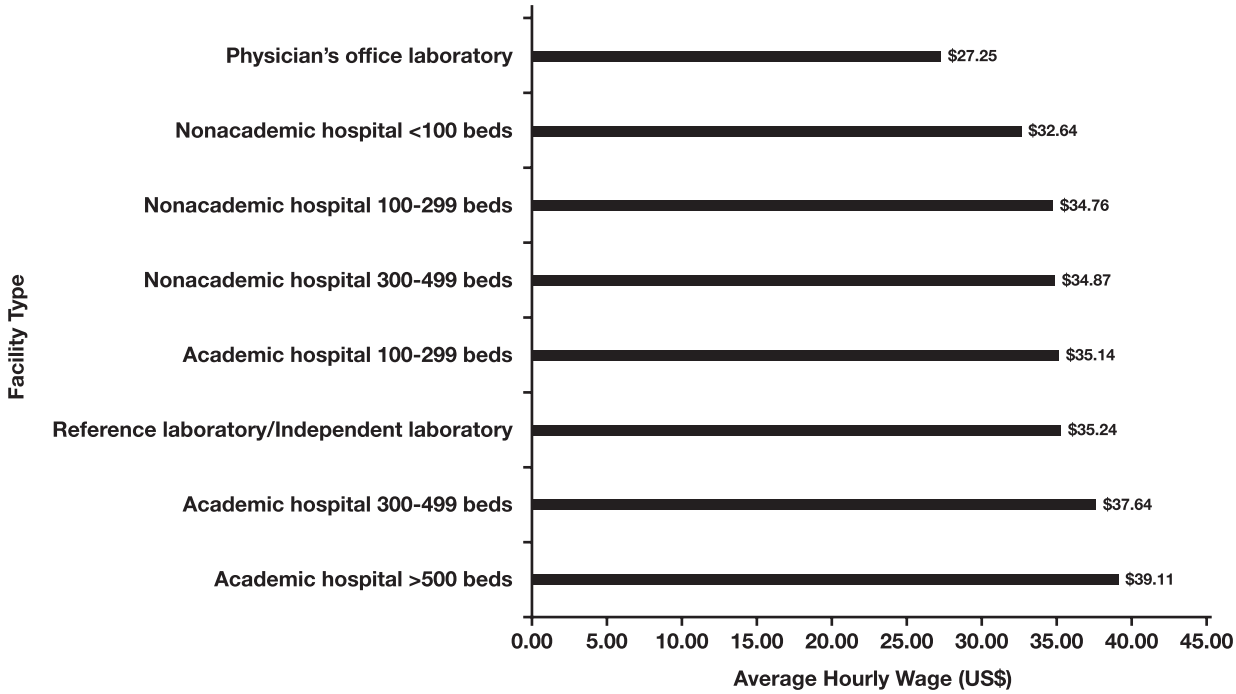

Figure 16 Average hourly wage of supervisor medical laboratory scientists/medical technologists/clinical laboratory scientists by facility.

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supervisors are the oldest in Pennsylvania at 50.06 years and the youngest in North Carolina at 42.0 years.

The average hourly wage for MLS/MT/CLS managers is $36.48 (SD, $11.48; Figure 4). Pay rates for managers are highest at academic hospitals with more than 500 beds, at $45.06 per hour, followed by nonacademic hospitals with 100 to 299 beds at $42.97 and nonacademic hospitals with fewer than 100 beds at $38.17. Results indicate that managers have an average age of 49.38 years.

MLS/MT/CLS directors earn an average hourly wage of $49.05 (SD, $13.86; Figure 4). They average $51.36 per hour at nonacademic hospitals with 100 to 299 beds. The average annual wages of MLSs/MTs/CLSs by job level are listed in Table 5. Directors have an average age of 51.94 years.

MLS/MT/CLS respondents, regardless of level, are paid the lowest in POLs at $27.86 per hour and highest in private laboratories at $33.20 per hour **Figure 17**. The average age for all MT/MLS/CLS respondents is 42.81 years, which is similar to the national average[2] (Figure 5).

Survey results indicate that the molecular biology/diagnostics/pathology department pays the highest at $36.12 and phlebotomy department the lowest at $32.44 per hour, on average **Figure 18**. The top 10 highest paying states for all MLS/MT/CLS levels are California, Connecticut, New York, Oregon, Massachusetts, Washington, Minnesota, Arizona, New Jersey, and Vermont **Table 9**. MLSs/MTs/CLSs comprise 51.14% of all respondents from urban areas and get paid an average hourly wage of $31.09. MLSs/MTs/CLSs from urban clusters comprise 48.71% of all respondents and receive an average hourly wage of $29.35. MLSs/MTs/CLSs in rural areas comprise 43.69% of these respondents and make an average wage of $28.77 per hour (Table 6). According to survey results, a typical MLS/MT/CLS has an average of 17.63 years of total experience in the laboratory field and has been working in his or her current occupational title for 7.96 years (Figures 6 and 7). By state, the average age for all levels is highest in Connecticut at 47.35 years and lowest in South Dakota at 33.66 years **Table 10**.

The overall sample size ($n < 30$) for all occupational levels was too small for meaningful statistical analysis of pay rates by all facilities and departments surveyed.

Molecular Biology Technologists

The average hourly wage for staff-level MBs is $27.81 (SD, $7.51; Figure 4). The average annual wage of MB staff is listed in Table 5. According to survey results, staff MBs have an average age of 36.68 years.

Most of the MB respondents are found in the molecular biology/diagnostics/pathology department and are paid an average hourly wage of $41.15. The average age for all MB respondents is 37.93 years, which is younger than the national average and that of the entire occupational titles surveyed[2] (Figure 5). MB respondents from urban areas comprise 1.52% of that group and get paid an average hourly wage of $28.94 (Table 6). According to survey results, MBs have 12.21 total years of experience working in the laboratory field and an average of 4.20 years working in their current occupational title, the least number of years of experience among all the groups surveyed (Figures 6 and 7).

Results regarding the wage differences between laboratory facilities, geographic areas, and states for MBs do not allow for statistically significant comparisons because respondents in the survey had a small sample size. For the same reason, average ages by state of each level were not analyzed.

Pathologists' Assistants

The national average hourly wage for staff-level PAs is $41.95 (SD, $9.14; Figure 4). They are paid $45.28 per hour in academic hospitals with more than 500 beds. The mean age for staff PAs is 35.97 years.

Lead PAs are paid an average hourly wage of $48.24 (SD, $10.31; Figure 4). The average annual wages of PAs by job level are listed in Table 5.

Overall PAs are paid $50.70 in nonacademic hospitals with 300 to 499 beds, $49.79 in academic hospitals with more than 500 beds, $48.68 in academic hospitals with 300 to 499 beds, and $45.44 in nonacademic hospital with 100 to 299 beds. PA respondents (including non-MD professionals) were mostly found in the anatomic pathology departments, which pay them an average salary of $54.14 per hour. Respondents from urban areas comprising 2.69% PAs earn an average hourly wage of $42.82. In urban clusters, PAs comprise 1.08% of the total respondents and get paid an average of $45.52 per hour (Table 6). According to survey results, PAs have an average age of 38.06 years, which is younger than the national average[2] (Figure 5). Overall, PAs have an average of 13.34 total years of experience in the laboratory field and 5.94 years in their current title (Figures 6 and 7).

We did not perform analyses of wage data by facility and state for PAs because the results would provide statistically insignificant values due to the small sample size. For the same reason, average ages by state of each level were not analyzed.

Performance Improvement or Quality Assurance Personnel

Manager-level PI or QA personnel are paid an average hourly rate of $42.06 (SD, $9.13; Figure 4). The

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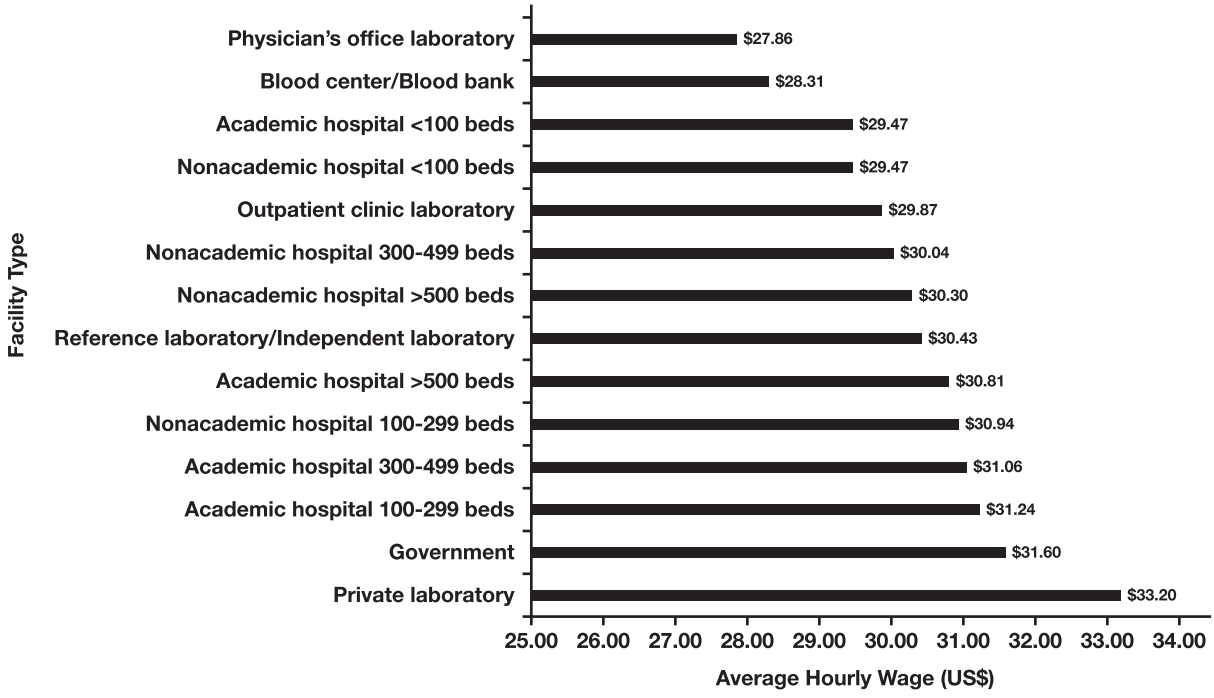

Figure 17 Average hourly wage of all medical laboratory scientists/medical technologists/clinical laboratory scientists respondents by facility.

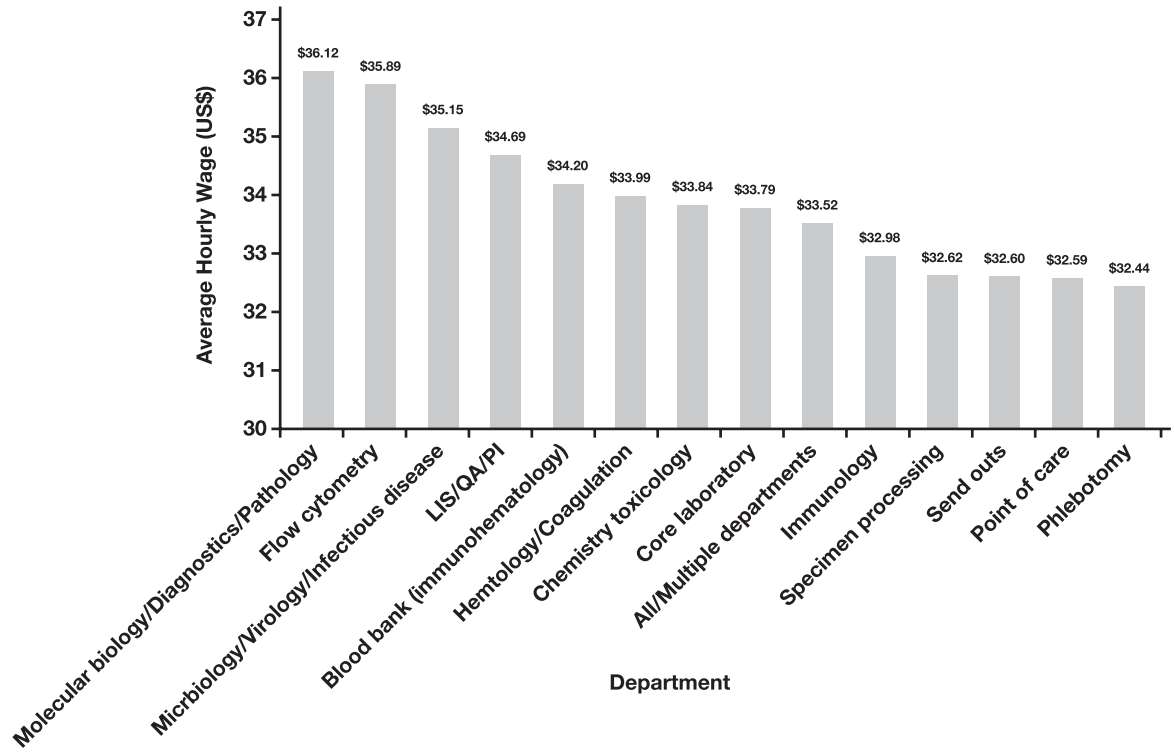

Figure 18 Average hourly wage of all (staff, lead, manager, supervisor, director) MLS/MT/CLS respondents by department. For definitions of abbreviations, see Table 4.

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Table 9
Average Hourly Wage for Medical Laboratory Scientist/Medical Technologist/Clinical Laboratory Scientists by State, From Highest to Lowest Paying[a]

State	Hourly Wage
California	$48.70
Connecticut	$34.69
New York	$33.83
Oregon	$33.77
Massachusetts	$33.22
Washington	$32.82
Minnesota	$32.27
Arizona	$31.48
New Jersey	$31.43
Vermont	$31.25
Colorado	$31.17
Maryland	$29.97
Georgia	$29.54
Ohio	$29.45
Montana	$29.44
Nebraska	$28.75
Wisconsin	$28.45
Illinois	$28.38
Indiana	$28.34
Kansas	$28.31
Idaho	$28.28
Tennessee	$28.28
South Carolina	$28.17
Texas	$28.02
Pennsylvania	$27.96
Missouri	$27.93
Florida	$27.88
Michigan	$27.49
Virginia	$27.44
Iowa	$27.21
Mississippi	$27.08
West Virginia	$26.93
Utah	$26.88
Oklahoma	$26.83
North Carolina	$26.51
Louisiana	$26.47
Alabama	$26.40
North Dakota	$26.37
Kentucky	$26.34
South Dakota	$23.98
Arkansas	$23.65

[a]Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

Table 10
Average Ages for Medical Laboratory Technician/Clinical Laboratory Technician by State, From Highest to Lowest[a]

State	Mean Age, y
Connecticut	47.35
Arizona	46.73
Indiana	45.55
California	45.54
Nevada	45.27
Tennessee	45.13
Georgia	44.99
Pennsylvania	44.80
Florida	44.55
Kansas	44.47
Illinois	44.10
Iowa	43.89
South Carolina	43.84
New Jersey	43.55
New Mexico	43.20
North Carolina	43.09
Massachusetts	43.09
Ohio	43.07
West Virginia	42.77
Mississippi	42.73
Idaho	42.68
Missouri	42.61
Texas	42.53
Montana	42.46
New York	42.36
Nebraska	42.29
Washington (state)	42.15
Vermont	41.79
Virginia	41.47
Wisconsin	41.44
Louisiana	41.28
Alabama	41.10
Kentucky	41.04
Oregon	40.97
Michigan	40.90
Colorado	40.87
Maryland	40.64
Minnesota	40.52
Oklahoma	40.23
Arkansas	40.13
Rhode Island	39.76
Utah	37.31
North Dakota	37.14
South Dakota	33.66

[a]Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

average annual wages of PI or QA managers are listed in Table 5. The mean age for managers is 49.78 years.

The average age for all PI or QA respondents is 48.15 years, which is older than the national average[2] and oldest among all the occupational titles surveyed (Figure 5). PI or QA personnel make up 0.93% of the respondents from the urban areas and make an average hourly wage of $39.20 per hour (Table 6). According to survey results, PI or QA personnel have an average of 24.13 years of total experience in the laboratory field and 7.09 years working in their current occupational title (Figures 6 and 7).

Analyses of overall mean hourly wage for staff, leads, supervisors, and directors; average hourly wages paid by facilities, department, geographic areas, and states; and average ages by state for PI or QA personnel were not performed due to the small sample size (n < 30) of each level.

Phlebotomists

Staff PBTs are paid an average hourly wage of $15.86 (SD, $3.82; Figure 4). Results indicate that academic hospitals with over 500 beds pay the highest hourly wage, at $16.64, and that academic hospitals with fewer than 100 beds pay the lowest hourly wage, at $14.67 **Figure 19**. The overall sample size (n < 30) for this occupational level was

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too small for meaningful statistical analysis of pay rates by all institutions surveyed. The data indicate that the average age for staff PBTs is 40.27 years. By state, staff PBTs are oldest in Pennsylvania at 42.78 years and youngest in Virginia at 37.67 years.

Lead PBTs are paid an average hourly wage of $17.44 (SD, $3.80; Figure 4), with a mean age of 43.17 years and supervisors with a mean age of 44.93 years. The average annual wages of PBTs by job level are listed in Table 5. This group has an average age of 41.07 years.

Analyses of average hourly wages paid by facilities for leads, supervisors, managers, and directors were not performed due to the small sample size (n < 30) of each level. But overall, academic hospitals with over 500 beds pay the highest average hourly wage at $16.98 and academic hospitals with fewer than 100 beds the lowest wage at $14.69 for PBTs **Figure 20**. Geographically, PBTs, regardless of position level, are paid a significantly higher wage in Massachusetts and lowest in North Carolina **Table 11**. PBT respondents from urban areas comprise 6.00% of that group and get paid an average hourly wage of $16.73. PBTs from urban clusters comprise 9.70% of the total respondents in that group and receive an average hourly wage of $15.70, and PBTs in rural areas comprise 12.06% of respondents in that group and make $14.98 per hour, on average (Table 6).

Most PBT respondents are found in the phlebotomy and specimen-processing departments and are paid an average hourly wage of $17.78 and $16.56, respectively. The average age for all PBT respondents is 41.07 years, which is younger than the national average[2] (Figure 5). Regardless of occupational level, PBTs are oldest in Pennsylvania at 44.24 years and youngest in Virginia at 38.82 years. Overall, PBTs have an average of 11.16 years of total experience in the laboratory field, the least out of all the groups surveyed, and 6.22 years working in their current title (Figures 6 and 7).

Analysis of the average age for PBT managers and directors was not performed due to the small sample size, and for the same reason, analysis of average age and wage by all states was not performed.

Specialists in Blood Banking

SBB supervisors earn an average hourly rate of $40.02 (SD, $10.56; Figure 4), with a mean age of 44.87 years. The average hourly wage for SBB managers is $44.18 (SD, $8.45; Figure 4) with an average age of 50.57 years. The average annual wages of SBBs by job level are listed in Table 5.

Most SBB respondents are found in the blood bank department, which pays them an average hourly wage of $36.43. The average age for all SBB respondents is 47.76 years, which is older than the national average[2] (Figure 5). SBBs make up 1.52% of the respondents from the urban areas and make an average hourly wage of

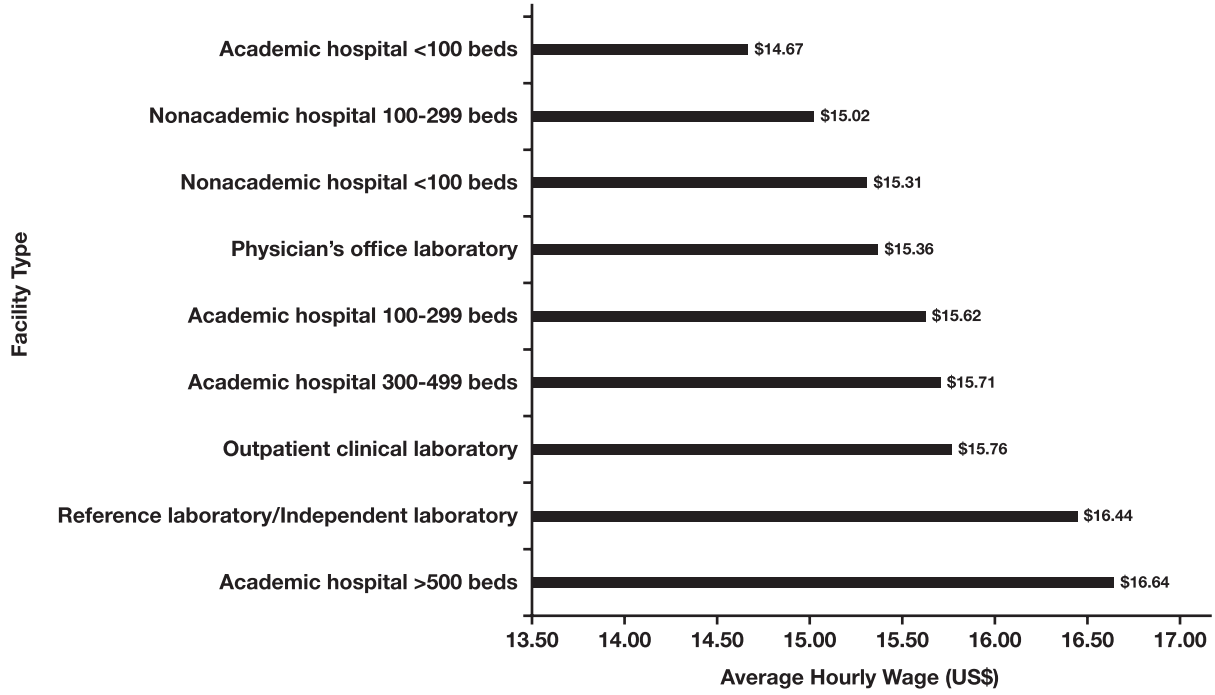

Figure 19 Average hourly wage of staff phlebotomist by facility.

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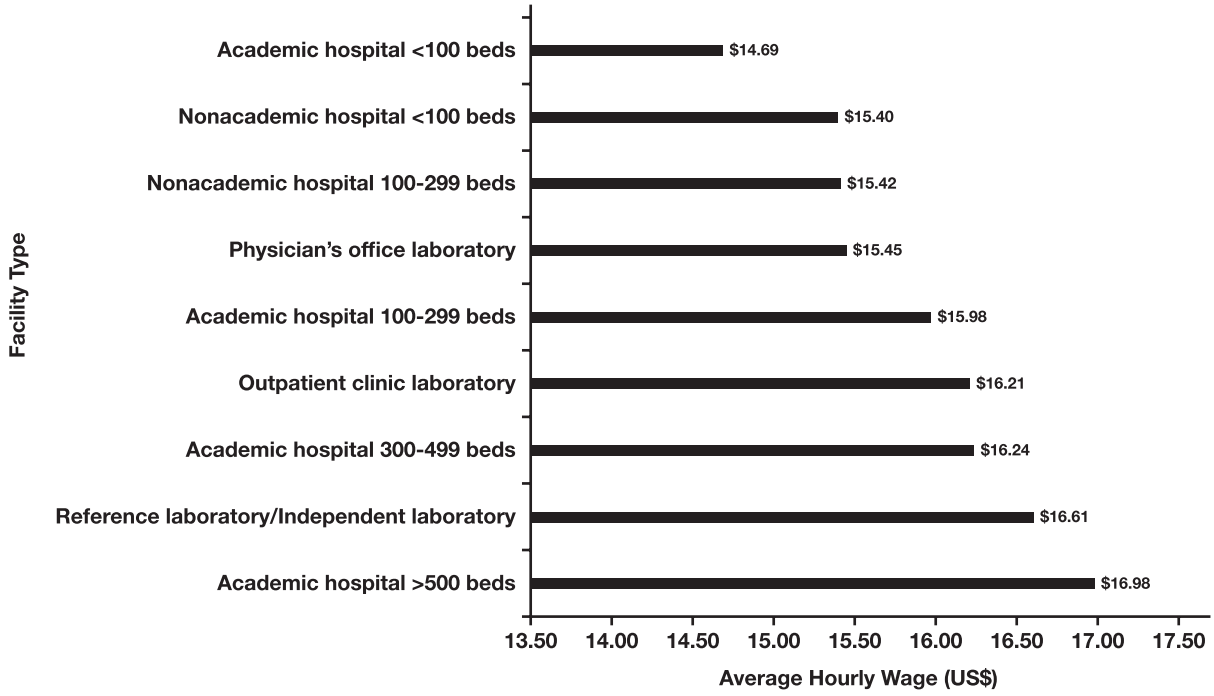

Figure 20 Average hourly wage of all (staff, lead, manager, supervisor, director) phlebotomist respondents by facility.

$35.55 per hour (Table 6). Results show that SBBs have an average of 23.57 years of total experience working in the field and have been working in their current title for 8.84 years (Figures 6 and 7).

Analysis of wage data by staff and lead, facility, geographic areas, and state, as well as average age by state for SBBs, was not performed because the results would provide statistically insignificant values, and for the same reason, average ages by state of each level were not analyzed.

Laboratory Information Systems Personnel

The mean age for staff LIS personnel is 44.97 years. Analysis of wage for staff LIS was not performed due to small sample size.

Leads have an average age of 47.33 years. The average age for all LIS respondents is 48.03 years, which is older than the national average[2] (Figure 5). Respondents from urban areas were 0.97% LIS personnel with an average hourly wage of $35.94 (Table 6). According to survey results, LIS personnel have an average of 24.70 years of total experience in the laboratory field and have been working in their current title for 8.05 years (Figures 6 and 7).

Analyses of wage data by facility, department, and state for administrative personnel were not performed because the results would provide statistically insignificant values. For the same reasons, analyses of the average age for staff, managers, supervisors, and directors and average age by state were not performed.

Point-of-Care Testing Personnel

POCT leads have an average age of 45.70 years and supervisors, 49.50 years. The average age for all POCT respondents is 47.01 years, which is older than the national average[2] (Figure 5). Respondents from urban areas comprised 0.96% POCT personnel with an average hourly wage of $32.15 (Table 6). Results show that POCT personnel have an average of 22.85 years of total experience working in the field and have been working in their current title for 8.24 years (Figures 6 and 7).

Analyses of wage data overall, by occupational level, facility, department, and state, for administrative personnel were not performed because the results would provide statistically insignificant values.

Summary

Results from this survey show an increase in wages for most of the laboratory occupations surveyed. Salaries are up for all staff-level laboratory professionals except MBs, HTLs, and PAs, which have a –1.33%, –1.56%, and –5.62% change in annual hourly wage, respectively, after adjusting for inflation[3] **Table 12**. The annual hourly wage for leads is also up in 2017 except for HTLs (–2.92%)[3] **Table 13**. Supervisors' annual hourly wages are also up compared

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Table 11
Average Hourly Wage for Phlebotomists by State, From Highest to Lowest Paying[a]

State	Hourly Wage
Massachusetts	$20.46
Virginia	$17.65
Pennsylvania	$16.89
Illinois	$16.10
Texas	$16.08
Wisconsin	$15.80
Indiana	$14.68
Ohio	$14.39
North Carolina	$13.88

[a]Sample size was less than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

Table 12
Percent Change in Overall Annual Hourly Wage for Staff Between 2013, 2015, and 2017[a]

Staff	2013[b]	2015[b]	2017	% Change 2015 to 2017
CLA/MLA	$16.82	$16.89	$18.16	7.52
CT	$32.99	$33.25	$34.80	4.65
HT	$25.13	$25.06	$26.08	4.05
CG	$30.03	$31.92	$33.15	3.86
PBT	$16.37	$15.37	$15.86	3.18
MLT/CLT	$21.49	$21.44	$21.98	2.51
MT/MLS/CLS	$28.46	$28.64	$29.25	2.15
MB	$28.28	$28.18	$27.81	–1.33
HTL	$27.94	$27.53	$27.10	–1.56
PA	$48.59	$44.45	$41.95	–5.62

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Table 4.
[b]2013 and 2015 wages adjusted for inflation as of 2017.

Table 13
Percent Change in Overall Annual Hourly Wage for Leads Between 2013, 2015, and 2017[a]

Lead	2013[b]	2015[b]	2017	% Change 2015 to 2017
CT	$36.93	$35.66	$38.08	9.61
CG	$33.80	$36.45	$37.25	4.89
MT/MLS/CLS	$32.32	$32.37	$32.95	4.48
PBT	$17.53	$17.41	$17.44	2.84
HT	$28.12	$28.75	$28.76	2.66
MLT/CLT	$23.48	$24.17	$24.17	2.63
PA	—	$49.08	$48.24	0.90
HTL	$30.17	$31.32	$29.62	–2.92

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Table 4.
[b]2013 and 2015 wages adjusted for inflation as of 2017.

Table 14
Percent Change in Overall Annual Hourly Wage for Supervisors Between 2013, 2015, and 2017[a]

Supervisor	2013[b]	2015[b]	2017	% Change 2015 to 2017
SBB	$36.13	$35.34	$40.02	13.25
CT	$38.91	$37.93	$41.24	8.73
HTL	$34.00	$32.75	$34.04	3.95
MLT/CLT	$23.71	$26.00	$26.51	1.97
MT/MLS/CLS	$34.43	$34.31	$34.64	0.97
HT	$32.82	$31.54	$31.45	–0.29
CG	$41.91	$39.65	$39.43	–0.57

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Table 4.
[b]2013 and 2015 wages adjusted for inflation as of 2017.

with 2015 except for HTs and CGs at –0.29% and –0.57%, respectively[3] **Table 14**. Manager- and director-level comparisons were not conducted due to small sample size. In 2015, salaries for PBTs and CLAs/MLAs were reported to be lower regardless of level. In 2017, PBT and CLA/MLA staff experienced a significant increase in wage rates. Staff, lead, and supervisor CTs are also experiencing wage rate increases while HTLs had a negative percent change in their overall hourly wage in 2017 (Tables 12, 13, and 14). Geographically, laboratory professionals from urban areas earn more compared with the overall average hourly wage. Those who work in facilities located in rural areas earn the least compared with overall hourly wages across the country as well as urban areas and urban clusters (Table 6). According to the US Bureau of Labor Statistics (BLS) Consumer Price Index, the dollar has experienced an average inflation rate of 1.49% per year since 2015.[4] Salaries reported here were adjusted for inflation as of 2017.

Compared with the wage results of 2015, the differences between wages of laboratory professionals working as they accumulate more years of experience in the field have also increased **Table 15**.

This survey also examined the differences in age by occupational title, sex, and race. Compared with previous wage survey results, 2017 shows a younger workforce, albeit just a few years. CGs and CTs, however, continue to have an older workforce than other laboratory professions surveyed. Younger workforce is perhaps the result of high retirement rates occurring in the field.[5] Results show that except for CGs, CTs, and PAs, men are younger compared with women in most of the occupational titles surveyed (Figure 5) **Figure 21** and **Table 16**. The average wage of laboratory professionals based on age continues to increase considerably for every age range, even for CLAs/MLAs and PBTs, whose wages did not have an increase in 2015 **Table 17**. This survey also analyzed wages by sex and found that among CGs, CTs, HTs, and HTLs, males earn more than females. Male PAs earn significantly more than female PAs compared with other occupational titles surveyed. MTs/MLSs/CLSs, MLTs/CLTs, and PBTs earn the same regardless of sex **Figure 22**.

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Table 15
Average Hourly Wage by Time in Current Occupational Title[a]

Time in Current Title, y	CLA/ MLA	CG	CT	HT	HTL	LIS Personnel	MLT/ CLT	MT/ MLS/ CLS	MB	PA	PI/QA Personnel	PBT	POCT Personnel	SBB
0–5	$17.39	$33.97	$33.32	$26.02	$26.78	$43.11	$21.09	$28.58	$28.15	$46.45	$38.15	$15.01	$30.15	$32.89
6–10	$19.23	$32.44	$37.72	$27.29	$32.81	$39.64	$23.41	$31.29	$27.58	$50.36	$38.91	$17.04	$31.04	$33.17
11–15	$19.94	$34.53	$38.26	$30.24	$29.70	$27.67	$23.96	$32.68	$35.21	$50.21	$39.51	$18.73	$32.57	$38.04
16–20	$19.74	$35.80	$37.67	$28.96	$32.26	$33.53	$24.91	$34.29	$35.48	$33.00	$29.83	$19.58	$36.52	$36.59
21–25	$19.70	$38.24	$40.44	$28.69	$56.65	$37.00	$26.25	$34.36	NA	NA	NA	$20.01	$35.42	$37.80
26–30	$27.66	$32.58	$38.04	$30.52	$34.11	$36.94	$27.94	$35.81	NA	$38.95	$49.00	$19.70	$30.33	$31.00
31–35	NA	NA	$39.79	$28.36	$32.33	$26.96	$26.78	$36.19	NA	NA	NA	$18.13	$24.73	$35.80
36–40	$26.97	NA	$39.31	$27.42	$37.25	NA	$27.25	$36.02	NA	NA	NA	$18.82	NA	$56.00
41+	NA	$43.73	$36.00	$29.60	NA	NA	$28.09	$35.66	NA	NA	NA	$17.18	NA	NA

NA, not applicable.
[a]Sample sizes to determine average wage of other time ranges were less than 30 (n < 30) and did not allow for statistically significant comparisons. For definitions of abbreviations, see Table 4.

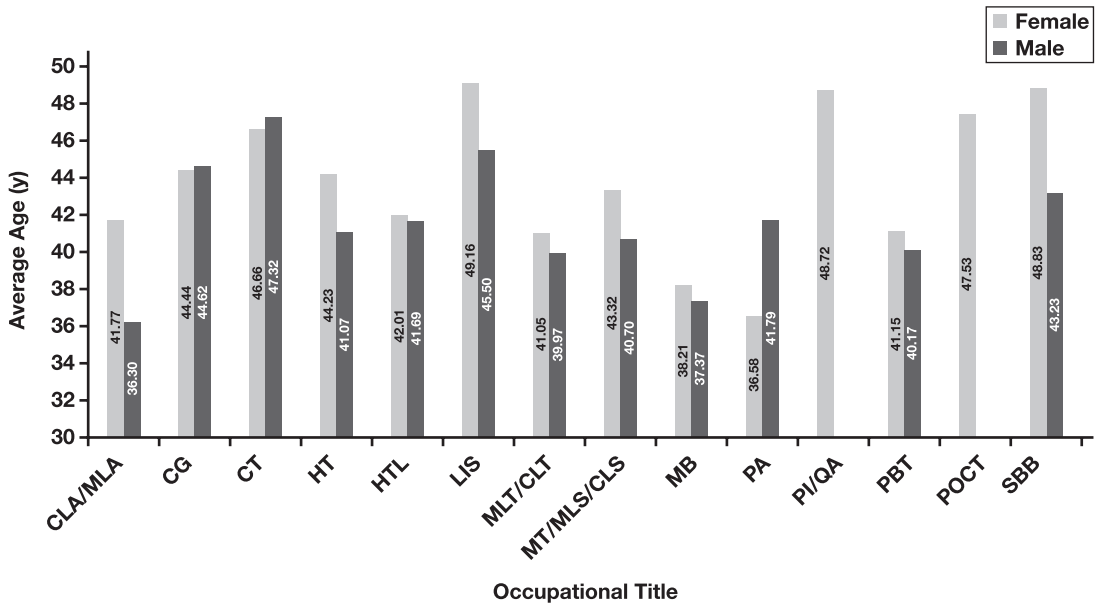

Figure 21 Average age of laboratory professionals by sex. For definitions of abbreviations, see Table 4.

Survey respondents were asked about the benefits and perks they receive from their institution, and medical/dental/vision, pension/retirement, overtime/holiday/weekends, and employee parking continue to be the top fringe benefits they receive. Providing a company phone, free or subsidized room and board, and day care were among the benefits that are not provided to many laboratory professionals **Table 18**.

Last, this survey asked the respondents to provide comments after the completion of the survey. We received a total of 1,452 comments and found that 42.91% expressed appreciation for the opportunity this survey provides in giving the laboratory professionals a platform to encourage advocacy; 39.39% addressed being underpaid/underappreciated (especially compared with nursing and other allied health professions), having a low yearly increase, and getting low maximum pay; 9.02% provided suggestions for future surveys; 4.48% requested more data on wages by region/location, with participants from rural areas commenting on low wages and lack of staff leading to early burnout and those belonging to urban areas noting that their wages are not enough to meet the high cost of living; 2.96% expressed feelings about the lack of appreciation and recognition from their peers; 2.82% provided comments on wages with certification; 2.41% mentioned benefits; 2.27% talked about union memberships; 2.07% commented on education and training and 1.86% on hiring and retention; 0.96% expressed concerns about retirements; 0.62% commented on licensure; and 0.55% mentioned their concerns about nursing personnel performing testing. As noted from the 2015 Wage Survey,

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Table 16
Average Age for Laboratory Professionals by Race[a]

Occupational Title	Race	Mean Age, y	No.
CLA/MLA	Black or African American	42.47	36
	White	40.60	107
CG	Asian	46.79	43
	White	44.46	246
CT	White	47.53	294
	Asian	44.16	37
HT	Asian	45.21	34
	White	44.29	478
	Black or African American	41.93	73
	Hispanic or Latino	38.13	53
HTL	White	42.14	223
	Asian	40.39	31
MLT/CLT	White	41.48	1,655
	Black or African American	40.71	201
	Asian	38.63	87
	Hispanic or Latino	35.50	119
MT/MLS/CLS	White	43.50	4,949
	Asian	41.31	740
	Black or African American	40.94	450
	American Indian or Alaska Native	40.71	45
	Hispanic or Latino	39.71	406
	Mixed race	38.81	47
MB	Asian	40.84	31
	White	37.76	111
PBT	White	41.58	637
	Black or African American	41.19	197
	Asian	39.65	34
	Hispanic or Latino	37.51	77

[a]For definitions of abbreviations, see Table 4.

Table 17
Average Hourly Wage by Age Group and Occupational Title[a]

Age, by Average Hourly Wage										
Age, y	**CLA/MLA**	**CG**	**CT**	**HT**	**HTL**	**MLT/CLT**	**MT/MLS/CLS**	**MB**	**PA**	**PBT**
18-24	NA	NA	NA	NA	NA	$18.22	$24.24	NA	NA	$12.75
25-34	$17.73	$29.77	$31.04	$24.61	$24.98	$20.66	$27.14	$27.22	$45.62	$15.12
35-44	$18.90	$33.41	$37.22	$26.08	$29.57	$21.93	$30.63	$37.94	$49.63	$16.02
45-54	$19.03	$37.50	$36.65	$28.96	$31.62	$23.98	$32.69	NA	$48.68	$17.11
55-64	NA	$37.40	$38.89	$29.30	$35.94	$25.64	$34.70	NA	NA	$18.05
65-74	NA	NA	NA	NA	NA	NA	$35.61	NA	NA	
75+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA, not applicable.
[a]Sample sizes to determine average wage of other time ranges were less than 30 ($n < 30$) and did not allow for statistically significant comparisons. In addition, PAs were not included due to its small sample size. For definitions of abbreviations, see Table 4.

institutions are encouraged to take into consideration laboratory professionals' compensation and base their pay on level of education, training, years of experience, and cost of living as well as making their pay comparable to other allied health professionals with higher salaries.

The BLS reported that the job outlook for medical and clinical laboratory technologists and technicians between 2016 and 2026 is expected to grow 13%, which is faster than the average rate.[6] The BLS also indicated that an increase in the aging population is expected to lead to a greater need to diagnose medical conditions, such as cancer or type 2 diabetes, through laboratory procedures.[6] Figure 5 suggests strategic focus on recruitment and supports the results of the ASCP 2016 Vacancy Survey on filling the upcoming vacancies.[5] Data from the 2016 Vacancy Survey strongly suggest the crucial need in the supply of qualified and certified laboratory personnel. For supervisors in rural areas and small community hospitals, vacancies have been open for many months, leaving their laboratories with heavier workloads. As retirement rates continue to increase, the field needs to intensify its efforts on recruiting the next generation of laboratory personnel. This can be accomplished

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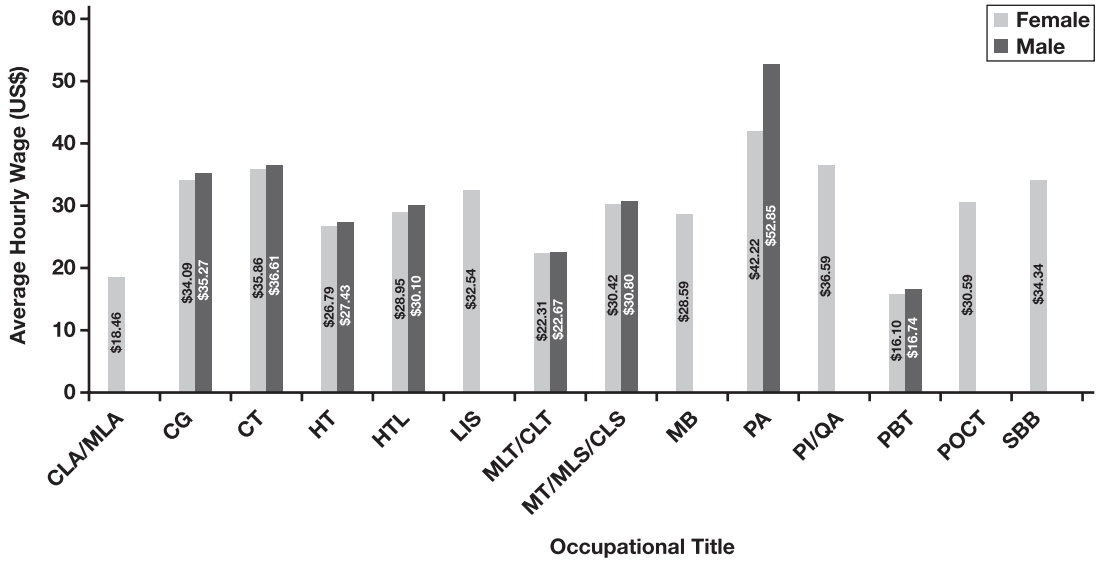

Figure 22 Average hourly wage by sex. For definitions of abbreviations, see Table 4.

Table 18
Percentage of Responses per Benefit/Perk Offered by Institution

Perks Offered by Institution	Total % of Responses per Category
Medical/vision benefits	87.71
Dental benefits	85.04
Pension/retirement benefits	66.99
Free or convenient employee parking	64.28
Premium pay for overtime, holidays, and weekends	59.24
Paying for continuing education	39.43
Paying for tuition	38.58
Miscellaneous bonuses (eg, tied to work, company performance)	25.11
Flexible work hours	22.01
Bonuses not directly tied to work (including holidays and profit-sharing bonuses)	21.79
Paying for certifications or qualifications	17.89
On call	17.73
Transportation allowances	11.26
Paying for professional memberships	10.41
PRN (pro re nata)	9.34
Uniform allowances	7.68
Laptop or tablet	7.50
Day care	6.06
Providing a company phone for you	4.52
Free or subsidized room and board	0.83

by enrolling more students in accredited training programs or getting more people involved in obtaining experience necessary to become certified. Retention of new graduates is critical, and the staffing needs of rural areas need to be highlighted.[5] According to James Wisecarver, MD, PhD, FASCP, strengthening the workforce can also be met through education and awareness of the excellent career opportunities available to individuals in this field.[7] He also encourages the field to be actively engaged with the policy makers at both the federal and state levels if we are to be successful in raising awareness about the value of the profession and the anticipated workforce shortages.

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