The American Society for Clinical Pathology's 2021 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 2021 Wage Survey was conducted through collaboration between the American Society for Clinical Pathology (ASCP) Institute of Science, Technology, and Policy in Washington, DC, and the ASCP Board of Certification in Chicago, IL.

Results: Compared with 2019, results show that mean hourly wage for staff-level personnel increased for only two occupations—cytologist and medical laboratory scientist/medical technologist/clinical laboratory scientist—after adjusting for inflation. Geographically, laboratory professionals from urban areas continue to earn more than their rural counterparts. Most respondents reported no change in their salaries during the coronavirus disease 2019 pandemic.

Conclusions: The pandemic had a significant effect on staffing, workload, and work-life balance of many laboratory professionals. Even with the salary increases reported from the results of this survey, it is evident that the increases have not kept up with the current inflation. Focus on visibility, recruitment and retention, and diversity are essential to develop long- and short-term solutions.

INTRODUCTION

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 pathology and laboratory medicine is a rapidly evolving field. Although ASCP recognizes the importance of continuity, each administration of the Wage Survey represents an opportunity to improve its methodology to collect the most current and 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.

KEY POINTS

- The COVID-19 pandemic had a significant effect on staffing, workload, and work-life balance of many laboratory professionals.
- Even with the salary increases reported from the results of this survey, it is evident that the increases have not kept up with the current inflation.
- Focus on visibility, recruitment and retention, and diversity are essential to develop long- and short-term solutions.

KEY WORDS

Wage survey; CME; Laboratory workforce; Certification; Technologists; Taskforce on workforce; Recruitment; Retention; Urban; Rural; COVID-19 pandemic; Workforce steering committee

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MATERIALS AND METHODS

The 2021 Wage Survey was conducted through collaboration between the ASCP Institute of Science, Technology, and Policy in Washington, DC, and its Board of Certification (ASCP BOC) in Chicago, IL. Individuals who currently work in the field of pathology and laboratory medicine reviewed the survey questions and critiqued the report. Partner organizations were also invited to distribute the survey to their members to get a larger scope of the current issues faced by the laboratory workforce. Electronic survey invitations were sent on April 12, 2021, via Key Survey (an online survey tool). The survey was closed on May 28, 2021. 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. ASCP also collected information on those who were disqualified from this year's wage survey (ie, clinical laboratory educator, retired, unemployed, working in a 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:

- Association for the Advancement of Blood & Biotherapies (formerly AABB)
- American Association for Clinical Chemistry (AACC)
- America's Blood Centers
- Association for Molecular Pathology
- American Medical Technologists (AMT)
- American Society for Clinical Laboratory Science
- American Society of Cytopathology
- American Society of Cytotechnology
- American Society for Microbiology
- Clinical Laboratory Management Association (now part of ASCP)
- National Society for Histotechnology
- Philippine Association of Medical Technologists—USA Inc

The 2021 Wage Survey presents staff-, lead-, supervisor-, manager-, and laboratory director–level data on the following clinical laboratory occupations:

- Cytogenetic technologist (CG)
- Cytologist (CT)
- Histotechnician (HT)
- Histotechnologist (HTL)
- Laboratory Information System (LIS) personnel
- Medical laboratory assistant/clinical laboratory assistant (MLA/CLA)
- 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)

This year's wage survey collected data on wages by clinical laboratory occupation included in the survey, facility, certification, state, and geographic areas (whether 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], and rural [defined as areas with 2,500 or fewer people])[1]; total years of experience; and age. For this survey, 2010 Census Bureau definitions were used to ascertain the urban, urban clusters, and rural areas. In 2022, the Census Bureau released new criteria to identify urban and rural areas that will be implemented in future surveys.[1] To investigate the impact of the coronavirus disease 2019 (COVID-19) pandemic on salaries and staffing, this survey also collected laboratory workforce data on how it affected wages, burnout, laboratory testing, and staffing. Although this survey excluded clinical educators and those not actively working in a clinical laboratory, a separate survey has been conducted for clinical educators of MLS programs, and a survey for MLT programs is in development by the ASCP BOC.[2,3] The clinical educator surveys are administered every 2 years.

KEY FINDINGS

A total of 9,819 responses were received in the current wage survey. Demographic data collected indicate that 82.7% of the respondents are female, 17.0% male, and 0.3% other. TABLE 1 and TABLE 2 show the percentage distribution of all survey respondents by ethnicity and level of education, respectively. The mean age of laboratory personnel who responded to the survey is 42.7 years compared with 42.4 years in 2019. Distribution of respondents by age group shows that most respondents are in the 25- to 34-year-old range at 28.0% TABLE 3. Laboratory professionals work a mean (SD) of 39.9 (8.52) hours per week. TABLE 4 details the total number and percentage of respondents by occupational title.

By occupational level, the percent distribution of respondents is as follows: staff (64.4%), lead (13.5%), supervisor (11.6%),

TABLE 1 Percent Distribution of All Survey Respondents by Ethnicity

Ethnicity	No. (%)
White	6,651 (72.5)
Asian	836 (9.1)
Black or African American	643 (7.0)
Hispanic, Latino, or Spanish	584 (6.4)
Mixed race	266 (2.9)
American Indian or Alaska Native	77 (0.8)
Middle Eastern or North African	51 (0.6)
Native Hawaiian or Other Pacific Islander	27 (0.3)
Other race or ethnicity (please specify)	34 (0.4)

manager (6.0%), director (2.7%), and other (1.8%). The top 10 states in terms of the survey responses received are the following: Texas (7.9%), Florida (4.8%), New York (4.7%), California (4.7%), Ohio (4.2%), Michigan (3.9%), Illinois (3.9%), Pennsylvania (3.7%), Minnesota (3.7%), and North Carolina (3.6%). By region, the respondents are distributed as follows: South Central Atlantic (25.4%), Central Northeast (18.0%), Far West (16.9%), Northeast (16.1%), Central Southwest (12.2%), and Central Northwest (11.4%). Survey respondents were mostly from urban areas at 69.2%, followed by respondents from urban clusters at 24.4% and rural areas at 6.3%.[1]

Results indicated that most respondents (89.4%) currently have one employer, 8.3% of personnel have two employers, and 2.3% have three or more employers within the medical laboratory field. Most laboratory professionals who responded to the survey have full-time permanent positions (90.0%), followed by part-time (6.1%); PRN (pro re nata), on call, as needed (1.5%); per diem (1.2%); and full-time temporary/contract (1.2%). Most of those who reported working as full-time temporary/contract personnel were traveling professionals (64.0% vs 61.3% in 2019), followed by subcontractors (24.6%) and independent contractors/consultants (11.4%).

Over half (56.2%) of the respondents indicated that they had received their clinical training from a civilian professional education program accredited or approved by the National Accrediting Agency for Clinical Laboratory Sciences (which accredits MLA, MLT, MLS, PBT, CG, MB, PA, HT, and HTL), whereas 25.2% selected "on-the-job training," 5.8% selected programs approved by the Commission on Accreditation of Allied Health Education Programs (which accredits CT, SCT [specialist in cytology], and SBB), 4.4% selected Accrediting Bureau of Health Education Schools (which accredits MLT only), 2.0% selected military, and 6.5% selected "don't know/other."

The survey sought information on the type of facility in which a participant is primarily employed TABLE 5. Most respondents are employed in an academic hospital with 500 or more beds.

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

Educational Level	No. (%)
High school	104 (1.1)
College credit not equivalent to a degree	300 (3.3)
Associate's degree	1,431 (15.5)
Bachelor's degree	5,740 (62.4)
Master's degree	1,394 (15.1)
Doctorate degree	83 (0.9)
MD, MD/PhD, or DO	94 (1.0)
Other	59 (0.6)

TABLE 3 Percent Distribution of All Survey Respondents by Age Range

Age Group, y	No. (%)
18-24	358 (3.9)
25-34	2,558 (28.0)
35-44	2,362 (25.9)
45-54	1,719 (18.8)
55-64	1,924 (21.1)
65-74	203 (2.2)
75+	10 (0.1)

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

Occupational Title	No. (%)
MLS/MT/CLS	5,104 (55.5)
MLT/CLT	1,337 (14.5)
HT	408 (4.4)
PBT	356 (3.9)
PA	314 (3.4)
CT	268 (2.9)
HTL	240 (2.6)
CG	219 (2.4)
MB	163 (1.8)
POCT	102 (1.1)
MLA/CLA	92 (1.0)
PI/QA	80 (0.9)
SBB	83 (0.9)
LIS	75 (0.8)
Other	357 (3.9)

[a]Percentage distribution of all survey respondents. For definitions of abbreviations, see Figure 3.

TABLE 5 Percentage of Respondents by Facility

Facility	No. (%)
Academic hospital with 500 or more beds	1,954 (21.2)
Nonacademic hospital with 100-299 beds	971 (10.5)
Academic hospital with 300-499 beds	867 (9.4)
Nonacademic hospital with fewer than 100 beds	819 (8.9)
Academic hospital with 100-299 beds	697 (7.6)
Nonacademic hospital with 300-499 beds	633 (6.9)
Nonacademic hospital with 500 or more beds	427 (4.6)
Outpatient clinic laboratory	422 (4.6)
Physician's office laboratory	376 (4.1)
National reference laboratory/independent laboratory	314 (3.4)
Regional reference laboratory/independent laboratory	254 (2.8)
Government facility	236 (2.6)
Local reference laboratory/independent laboratory	223 (2.4)
Other	217 (2.4)
Military facility, VA, VHA	214 (2.3)
Pathologists' laboratory/private laboratory	183 (2.0)
Academic hospital with fewer than 100 beds	176 (1.9)
Blood center or blood bank	121 (1.3)
Industry	71 (0.8)
Retail laboratory (direct to consumer)	30 (0.3)

VA, Veterans Administration; VHA, Veterans Health Administration.

Most (94.6%) survey respondents indicated they were certified, while 5.4% indicated they were not certified. Data collected show both pathologists' and laboratory professionals' certifying bodies. Not surprisingly, the preponderance of respondents indicated they were certified by the ASCP BOC (95.8% vs 91.3% in 2019), while 4.1% indicated they were certified by the AMT; 1.5% by the American Association of Bioanalysts; 0.8% by the Department of Health, Education, and Welfare/Department of Health and Human Services; 0.4% by the American Board of Pathology; 0.4% by a foreign certification agency; 0.3% by an Accreditation Council for Graduate Medical Education-accredited residency for training; 0.3% by the American Board for Histocompatibility and Immunogenetics; 0.3% by the AACC; 0.20% by the American Board of Medical Microbiology; and 0.2% by the American Society for Quality.

Of all the respondents, 37.5% are licensed by the state in which they currently work as a laboratory professional. Licensed respondents are predominantly from New York. 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, West Virginia, and Puerto Rico FIGURE 1.

Overall, 6.0% of respondents reported being represented by a union at their place of employment. Most respondents are represented by the Service Employees International Union 1199 (14.2%), followed by the American Federation of Government Employees (9.4%), United Food and Commercial Workers (8.9%), and the American Federation of State, County and Municipal Employees (4.9%).

Those who were excluded from the survey (n = 614) include individuals who were working in a non–laboratory-related industry (25.2%), working in a laboratory-related industry (24.3%), unemployed (14.7%), retired (14.0%), clinical laboratory educators (11.1%), working in a research laboratory (eg, biotech industries) (5.7%), and other (5.0%). This year, comparison between certified and noncertified laboratory personnel was not performed because the low sample size of noncertified individuals provided an inaccurate correlation.

Cytogenetic Technologists

The national mean (SD) hourly wage for staff-level CGs is $34.14 ($8.0) FIGURE 2. Hourly wage for staff CGs is higher at national reference/independent laboratories, which pay $35.32, compared with academic hospitals with more than 500 beds at $32.62. On average, staff CGs are 42.8 years old.

CG leads earn a mean (SD) hourly rate of $38.34 ($6.8) FIGURE 2. On average, leads are aged 46.7 years. The mean annual wages of CGs by job level are listed in TABLE 6.

Regardless of occupational level, national reference/independent laboratories continue to pay more, $36.68 per hour compared with academic hospitals with more than 500 beds, at $34.20. The mean age for all CG respondents is 44.4 years FIGURE 3.

CGs make up 3.2% of the respondents from the urban areas and make a mean hourly wage of $35.27 per hour TABLE 7. On average, a CG has 18.9 total years of experience working in the laboratory field and 11.3 average years of working in their current employment FIGURE 4 and FIGURE 5. Most respondents have also been working as CGs for a mean of 16.3 years FIGURE 6.

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

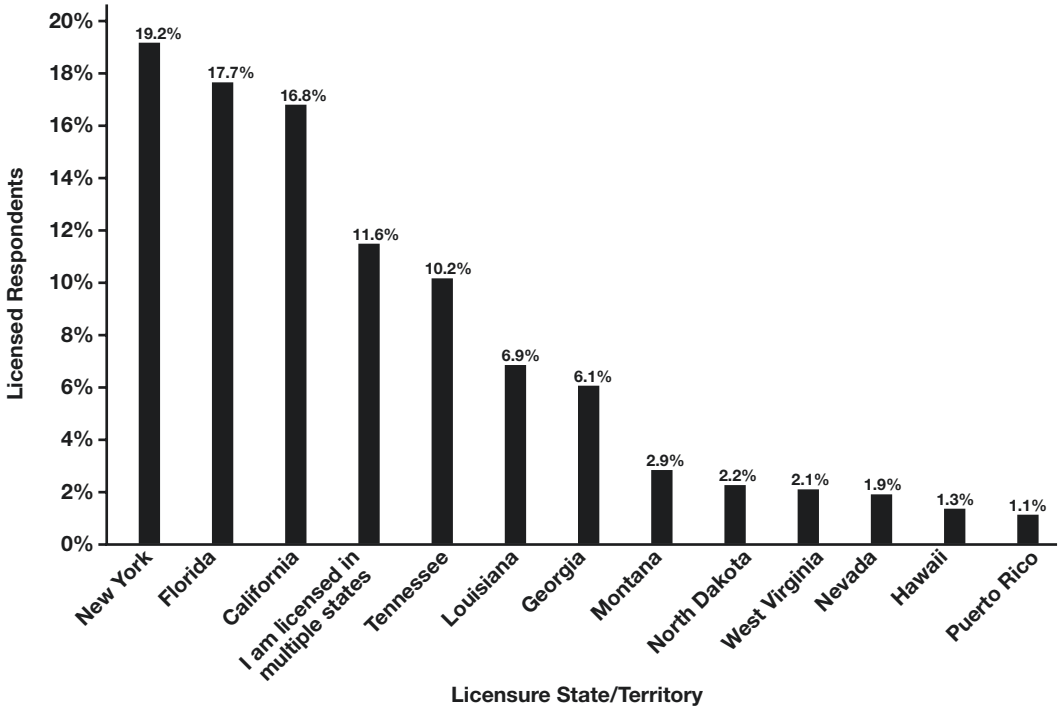

FIGURE 1 Licensed respondents currently working as a laboratory professional, by state (n = 2,268).

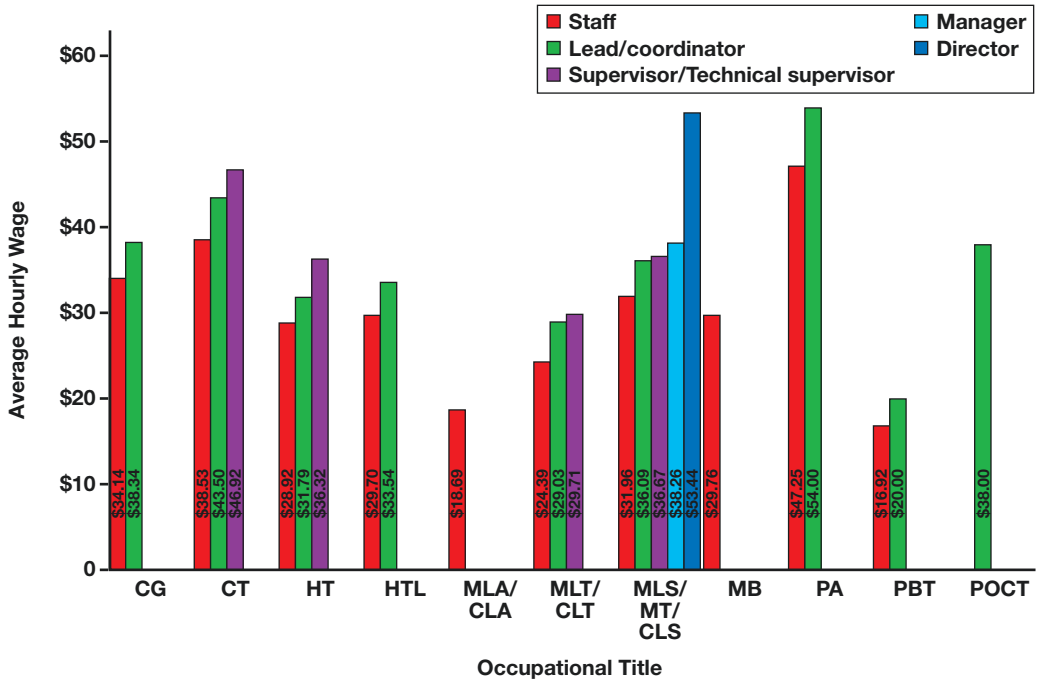

FIGURE 2 Mean hourly wage for laboratory staff, lead, supervisor/manager, and director positions, per occupational title. Sample sizes for some occupational levels were fewer than 30 (n < 30) and did not allow for statistically significant comparisons. CG, cytogenetic technologist; CT, cytologist; HT, histotechnician; HTL, histotechnologist; MLA/CLA, medical laboratory assistant/clinical laboratory assistant; MLT/CLT, medical laboratory technician/clinical laboratory technician; MLS/MT/CLS, medical laboratory scientist/medical technologist/clinical laboratory scientist; MB, molecular biologist; PA, pathologists' assistant; PBT, phlebotomist; POCT, point-of-care testing personnel.

TABLE 6 Mean Annual Wages by Occupational Title and Level[a]

Occupational Title	Mean Annual Wages				
	Staff	Lead/Coordinator	Supervisor/Technical Supervisor	Manager	Director
CG	$71,016.87	$79,756.02	—	—	—
CT	$80,139.31	$90,487.56	$97,599.96	—	—
HT	$60,161.87	$66,129.00	$79,552.70	—	—
HTL	$61,784.77	$69,765.43	$88,679.26	—	—
LIS	—	—	—	—	—
MLA/CLA	$38,877.12	—	—	—	—
MLT/CLT	$50,724.24	$60,380.65	$52,288.88	—	—
MLS/MT/CLS	$63,728.26	$74,289.96	$85,501.95	$94,932.95	$111,148.39
MB	$61,891.93	—	—	—	—
PA	$102,260.56	$112,323.27	—	—	—
PI/QA	—	—	—	—	—
PBT	$35,190.57	$41,591.01	—	—	—
POCT	—	$79,047.10	—	—	—
SBB	—	—	—	—	—

[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 Figure 3.

Cytologists

Staff-level CTs are paid a mean (SD) hourly wage of $38.53 ($7.8) FIGURE 2. Academic hospitals with more than 500 beds pay staff CTs $38.03 per hour; wages from other facilities were not reported due to small sample size (n < 30). According to survey results, staff-level CTs have an mean age of 44.4 years.

Lead CTs earn a mean (SD) hourly wage of $43.50 ($7.9) FIGURE 2, and their mean age is 49.7 years. The mean (SD) hourly wage for CT supervisors is $46.92 ($10.0) FIGURE 2, and they have a mean age of 53.3 years. Mean annual wages of CTs by job level are shown in TABLE 6. Analysis of mean hourly wages paid by facilities for leads, supervisors, managers, and directors was not performed due to their small sample sizes (n < 30).

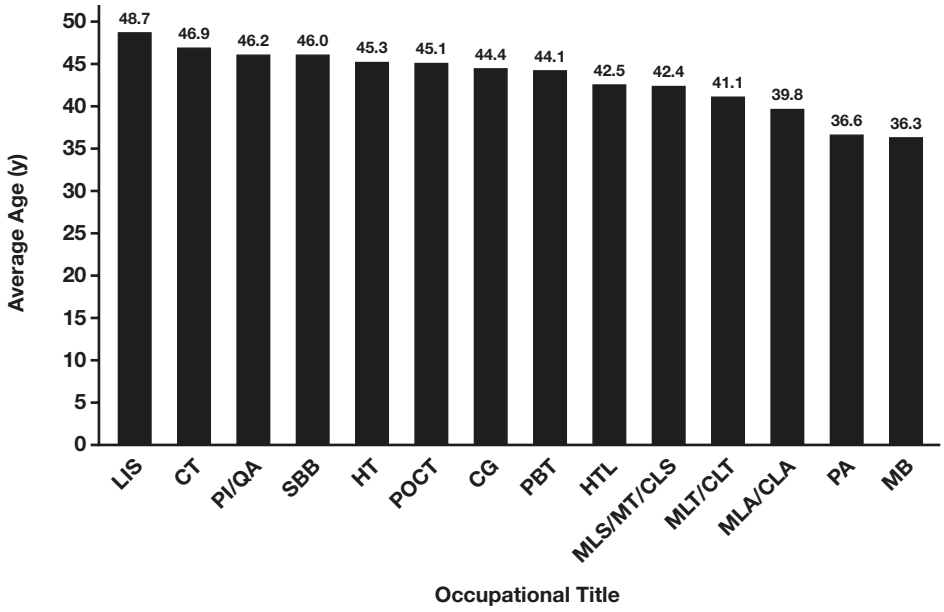

FIGURE 3 Mean age of all respondents by occupational title. CG, cytogenetic technologist; CT, cytologist; HT, histotechnician; HTL, histotechnologist; LIS, laboratory information systems personnel; MLA/CLA, medical laboratory assistant/clinical laboratory assistant; MLT/CLT, medical laboratory technician/clinical laboratory technician; MLS/MT/CLS, medical laboratory scientist/medical technologist/clinical laboratory scientist; MB, molecular biologist; PA, pathologists' assistant; PI or QA, performance improvement or quality assurance personnel; PBT, phlebotomist; POCT, point-of-care testing personnel; SBB, specialist in blood banking.

TABLE 7 Mean Hourly Wage by Occupational Title and Geographical Areas[a]

Occupational Title	Mean Hourly Wage	UA	UC	Rural
CG	$35.13	$35.27	NA	NA
CT	$39.84	$39.75	$39.92	NA
HT	$30.30	$30.85	$29.20	NA
HTL	$31.27	$31.36	$30.80	NA
LIS	$37.26	NA	NA	NA
MLA/CLA	$19.44	$19.49	$18.11	NA
MLT/CLT	$25.00	$25.50	$24.58	$24.04
MLS/MT/CLS	$33.13	$33.73	$31.88	$31.41
MB	$31.12	$31.61	NA	NA
PA	$47.66	$51.04	$48.57	NA
PI/QA	$44.18	$44.10	NA	NA
PBT	$17.63	$18.22	$17.21	$15.82
POCT	$34.82	$36.44	NA	NA
SBB	$37.11	$37.96	NA	NA

[a]Sample size constraints prevented further analysis of wage rate for some occupational levels. Urban areas (UAs) had 50,000 or more people, urban clusters (UCs) had at least 2,500 and fewer than 50,000 people, and rural areas had 2,500 or fewer people. Only includes the geographical areas with enough data to be reported. For definitions of abbreviations, see Figure 3.

Hourly wage for CTs regardless of occupational level shows that academic hospitals with 500 or more beds pay a higher hourly rate at $40.02 compared with nonacademic hospitals with 100 to 299 beds, at $36.52.

The mean age for all CT respondents is 46.9 years FIGURE 3.

Respondents from the urban areas were 3.2% CTs with a mean hourly wage of $39.75. In urban clusters, 2.6% were CTs who average $39.92 an hour TABLE 7. Results indicate that on average, a CT has 21.3 total years of experience in the field and has been in their current position for 11.3 years, the highest number of years among all the occupational groups surveyed FIGURES 4 and 5. Most have been working as CTs for a mean of 19.3 years, the highest among all respondents surveyed FIGURE 6.

Analysis of pay rates by some facilities and states, as well as the mean age by state for CTs, was not performed due to the small sample size.

Histotechnicians

The national mean (SD) hourly wage for staff-level HT is $28.92 ($7.1) FIGURE 2. Academic hospitals with more than 500 beds pay $29.61, and wages from other facilities were not reported due to small sample size (n < 30). According to survey results, the mean age of a staff HT is 43.2 years.

Lead-level HTs are paid a mean (SD) hourly rate of $31.79 ($6.1) FIGURE 2. The mean age of lead HTs is 46.6 years. Meanwhile, HT supervisors earn a mean (SD) hourly rate of $36.32 ($7.4) FIGURE 2. The mean annual wages of HTs by job level are listed in TABLE 8. Supervisors and managers are aged 51.7 years and 46.8 years on average, respectively.

Overall, all HT respondents are paid the highest in physician's office laboratories at $34.27 per hour and the least in nonacademic hospitals with 100 to 299 beds at $27.34 FIGURE 7. The mean age for all HT respondents is 45.3 years FIGURE 3.

HT respondents from urban areas comprise 4.8% of all respondents and get paid a mean hourly wage of $30.85 TABLE 7. HTs from urban clusters, 4.0%, receive a mean hourly wage of $29.20 TABLE 7. According to the survey results, an HT has a mean of 19.2 years of total experience in the laboratory field and has been in their current

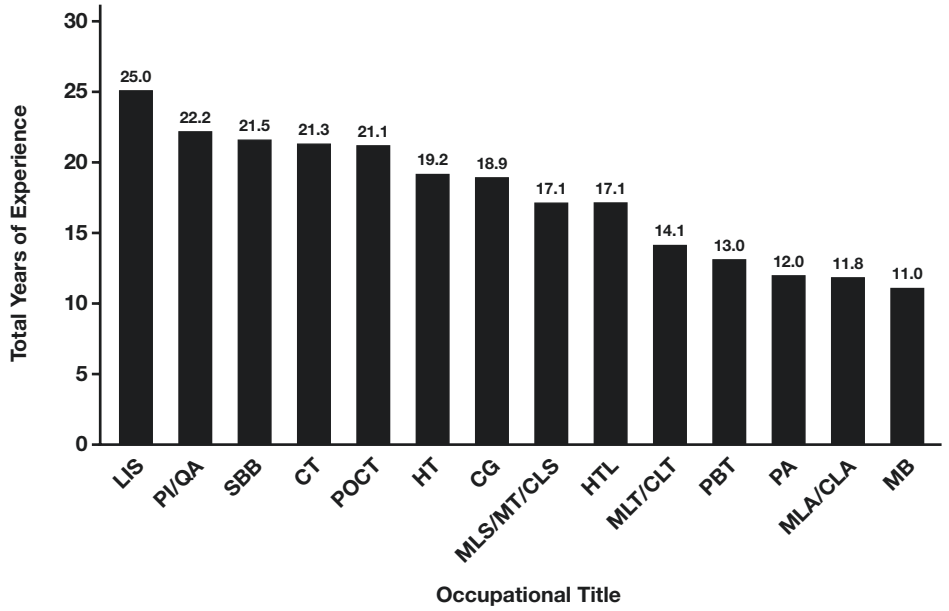

FIGURE 4 Mean years of total experience in the laboratory field by occupational title. For definitions of abbreviations, see Figure 3.

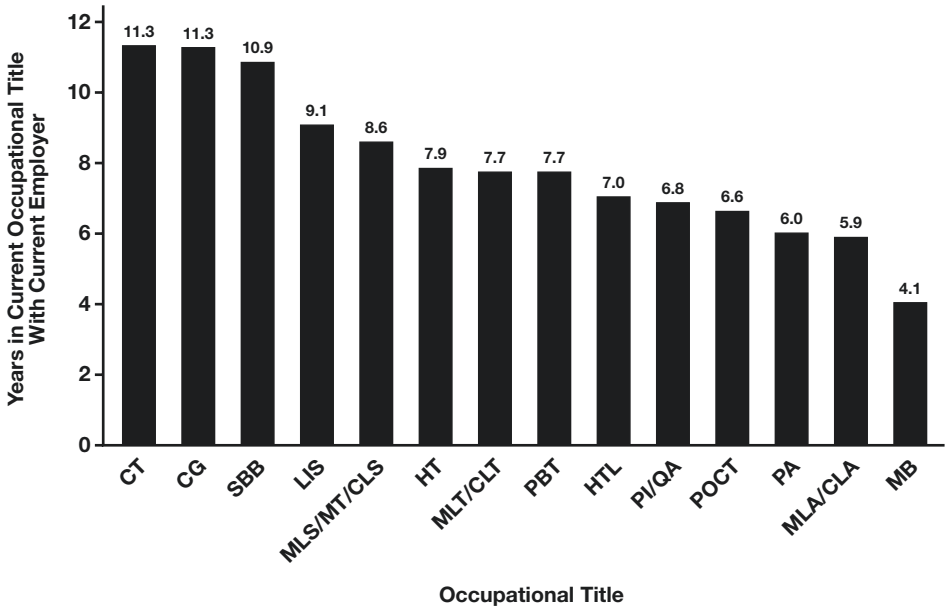

FIGURE 5 Mean years of working in current occupational title with current employer. For definitions of abbreviations, see Figure 3.

position for 7.9 years FIGURES 4 and 5. Most respondents have also been working as HTs for a mean of 14.7 years FIGURE 6.

The sample sizes (n < 30) were too small for meaningful statistical analysis of mean age by all states, pay rates by all facilities, and states surveyed.

Histotechnologists

The mean (SD) hourly wage for staff HTLs is $29.70 ($7.2) FIGURE 2. Staff HTLs have a mean age of 38.8 years.

Lead-level HTLs are paid a mean (SD) hourly rate of $33.54 ($5.3) FIGURE 2. The mean age of a lead HT is 46.6 years. Supervisor HTLs are 48.1 years on average. The mean annual wages of HTLs by job level are listed in TABLE 6.

Analysis of overall hourly wage for facilities was not performed due to the small sample size (n < 30). The mean age for all HTL respondents is 42.5 years FIGURE 3.

HTLs account for 3.1% of respondents from urban areas with a mean hourly wage of $31.36. In urban clusters, there were 1.7% HTLs who get paid $30.80 an hour TABLE 7. Overall, an HTL has a mean of 17.1 years of total experience in the laboratory field and has been working in their current occupational title for a mean of 7.0 years FIGURES 4 and 5. Most have been working as HTLs for a mean of 13.4 years FIGURE 6.

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,

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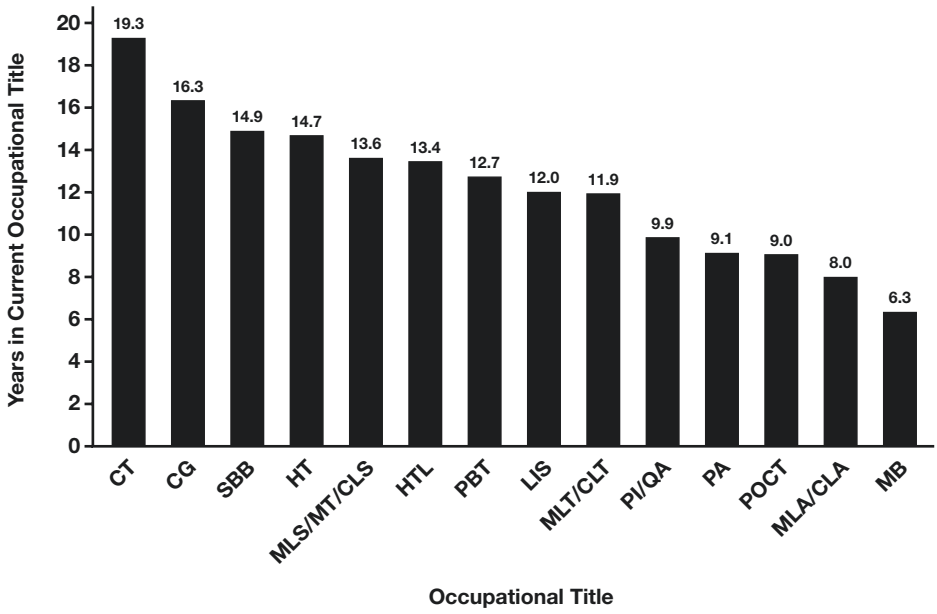

FIGURE 6 Respondents' mean years of working with this occupational title. For definitions of abbreviations, see Figure 3.

FIGURE 7 Mean hourly wage of all histotechnologist (HT) respondents by facility.

analysis of the mean age and wage by state for HTLs was not performed.

Medical Laboratory Assistant/Clinical Laboratory Assistant

Staff-level laboratory assistants (MLAs/CLAs) make a mean (SD) of $18.69 ($4.4) per hour FIGURE 2. Staff mean annual wage is listed in TABLE 6.

Results indicate that the mean age for all MLA/CLA respondents is 39.8 years FIGURE 3.

MLAs/CLAs from urban areas make up 0.8% of the overall urban respondents and earn a mean of $19.49 per hour TABLE 7. MLAs/CLAs in the urban clusters group make up 1.3% of overall urban clusters respondents and earn a mean hourly wage of $18.11 TABLE 7. Results show that regardless of occupational level, an MLA/CLA has a mean of 11.8 years of total experience working in the field and has worked in their current position for a mean of 5.9 years FIGURES 4 and 5. On average, most respondents have also been working as an MLA/CLA for 8.0 years FIGURE 6.

Results of the wage difference between laboratory facilities and states for MLAs/CLAs do not allow for statistically significant comparisons. For the same reason, analyses of the mean age by state and wages for MLAs/CLAs beyond staff level were not performed.

Medical Laboratory Technicians/ Clinical Laboratory Technicians

The national mean (SD) hourly wage for staff-level MLTs/CLTs is $24.39 ($5.7) FIGURE 2. Pay rates for staff tend to be highest in academic hospitals with 500 or more beds, $24.90, and lowest in academic hospitals with fewer than 100 beds, $22.78 per hour FIGURE 8. The mean age of staff MLTs/CLTs is 40.0 years. By state, Minnesota has the oldest staff at 43.9 years, and the youngest is in Iowa at 33.8 years FIGURE 9.

Lead MLTs/CLTs are paid a mean (SD) hourly wage of $29.03 ($6.1) FIGURE 2. Results indicate that lead MLTs/CLTs have a mean age of 46.1 years.

The mean (SD) hourly wage for MLT/CLT supervisors is $29.71 ($10.4) FIGURE 2, and the mean age for this group is 45.9 years. The mean annual wages of MLTs/CLTs by job level are listed in TABLE 6.

Pay rates for all MLTs/CLTs regardless of occupational level tend to be highest in academic hospitals with 500 or more beds, $25.43, and lowest in academic hospitals with fewer than 100 beds, $23.97 per hour FIGURE 10. The mean age for all MLT/CLT respondents is 41.1 years FIGURE 3.

Geographically, all MLTs/CLTs, regardless of position level, are paid significantly higher wages in Massachusetts and lowest in

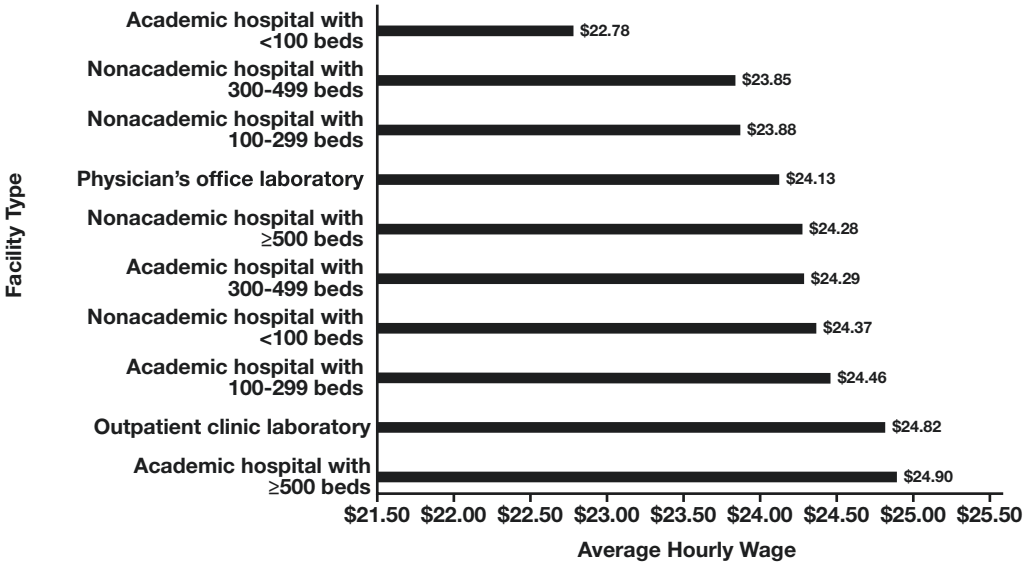

FIGURE 8 Mean hourly wage of staff medical laboratory technicians/clinical laboratory technicians (MLTs/CLTs) by facility.

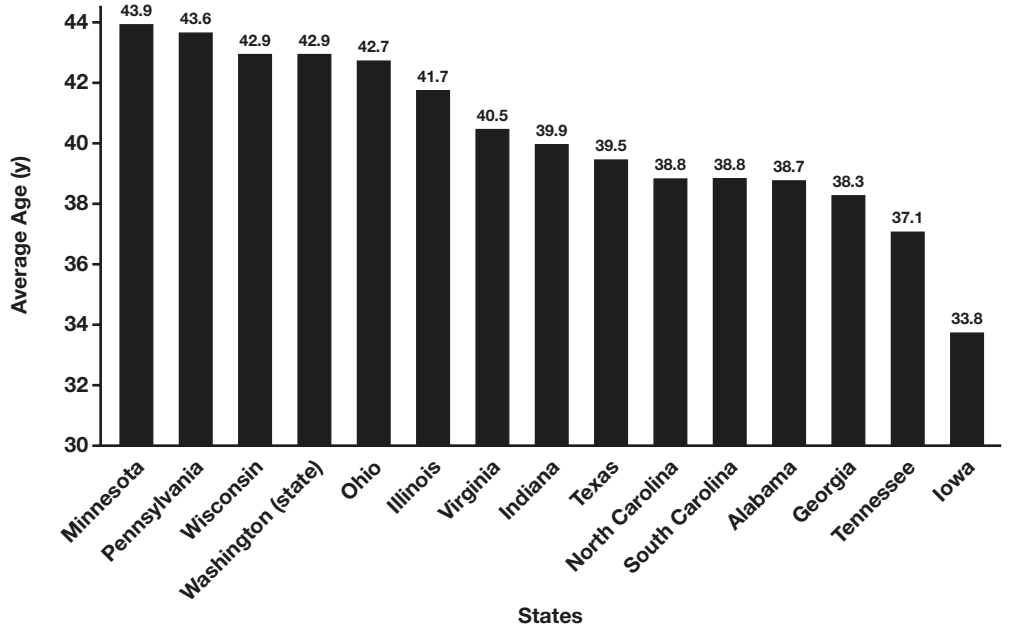

FIGURE 9 Mean ages for staff medical laboratory technicians/clinical laboratory technicians (MLTs/CLTs) by state. Sample size was fewer than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

North Carolina TABLE 8. Sample size was fewer than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons of wages. Pennsylvania had the highest mean age for all MLTs/CLTs regardless of occupational level, while Iowa had the lowest mean age TABLE 9. Sample size was fewer than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons of age.

MLTs/CLTs comprise 11.1% of all respondents from urban areas and get paid a mean hourly wage of $25.50. MLTs/CLTs from urban clusters (comprising 20.5% of all respondents in the urban clusters group) receive a mean hourly wage of $24.58, and MLTs/CLTs in rural areas (comprising 29.0% of respondents in that group) are paid a mean hourly wage of $24.04 TABLE 7.

Overall, an MLT/CLT has a mean of 14.1 years of total experience in the laboratory field and has been working in their current employment for 7.7 years FIGURES 4 and 5. Most respondents have also been working as MLTs/CLTs for a mean of 11.9 years FIGURE 6.

Analyses of mean hourly wages paid by some facilities 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 a mean (SD) hourly rate of $31.96 ($8.0) FIGURE 8. Mean pay rates for staff are highest

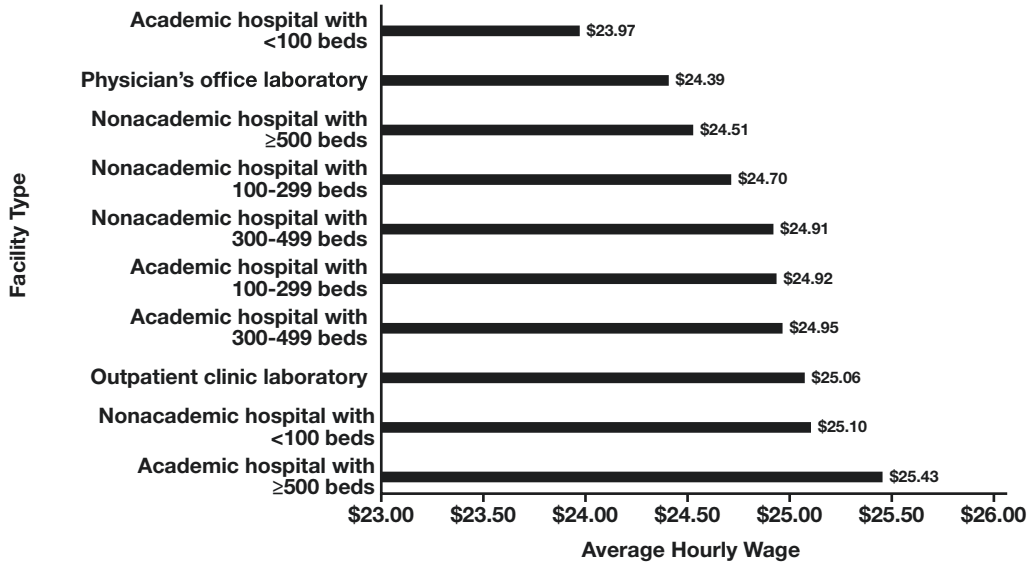

FIGURE 10 Mean hourly wage of all (staff, lead, manager, supervisor, director) medical laboratory technician/clinical laboratory technician (MLT/CLT) respondents by facility.

TABLE 8 Mean Hourly Wage for Medical Laboratory Technician/Clinical Laboratory Technician by State, From Highest to Lowest Paying[a]

State	Hourly Wage
Massachusetts	$30.35
Washington (state)	$29.92
Pennsylvania	$26.71
Illinois	$26.47
Minnesota	$26.41
Indiana	$24.90
Virginia	$24.88
Ohio	$24.83
Wisconsin	$24.30
Kentucky	$24.06
Georgia	$23.86
Oklahoma	$23.12
Iowa	$22.96
Texas	$22.79
Tennessee	$22.50
Alabama	$21.69
South Carolina	$21.21
North Carolina	$21.00

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

TABLE 9 Mean Ages for Medical Laboratory Technician/Clinical Laboratory Technician by State, From Highest to Lowest[a]

State	Mean Age, y
Pennsylvania	45.8
Washington (state)	44.2
Minnesota	44.1
Massachusetts	43.4
Ohio	43.0
Virginia	43.0
Illinois	42.9
Wisconsin	42.9
Kentucky	42.2
Indiana	42.1
Michigan	41.9
Texas	41.1
North Carolina	40.6
Georgia	40.6
Alabama	39.8
South Carolina	39.6
New York	39.5
Tennessee	38.7
Oklahoma	37.0
Iowa	35.2

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

in regional reference laboratories/independent laboratories, at $34.23 per hour, and lowest in national reference laboratories/independent laboratories at $29.57 per hour FIGURE 11. The mean age for staff MLSs/MTs/CLSs is 40.4 years. Geographically, MLS/MT/CLS staff are the oldest in South Carolina and the youngest in Utah FIGURE 12.

MLS/MT/CLS leads make a mean (SD) of $36.09 ($9.3) per hour FIGURE 2. Academic hospitals with 300 to 499 beds pay a significantly higher hourly rate for a lead MLS/MT/CLS compared with all facilities surveyed at $40.81. The facilities providing the lowest pay are nonacademic hospitals with 500 or more beds, at $31.77 per hour FIGURE 13. They have a mean age of 43.9 years. California has the oldest MLS/MT/CLS leads at 46.8 years, and Wisconsin has the youngest at 37.1 years (Supplemental Table 1; all supplemental materials can be found at *American Journal of Clinical Pathology* online).

MLS/MT/CLS supervisors earn a mean (SD) hourly rate of $36.67 ($9.2) FIGURE 2. Results indicate that nonacademic hospitals with 300 to 499 beds pay the highest hourly wage, at $39.71, whereas nonacademic hospitals with fewer than 100 beds pay the lowest wages at $34.45 per hour on average FIGURE 14. This group has a mean age of 46.1 years. Geographically, MLS/MT/CLS supervisors are the oldest in Pennsylvania at 50.3 years and youngest in Texas at 45.6 years (Supplemental Table 2).

The mean (SD) hourly wage for MLS/MT/CLS managers is $38.26 ($10.5) FIGURE 2. Pay rates for managers are highest at academic hospitals with more than 500 beds, at $52.16 per hour, followed by nonacademic hospitals with fewer than 100 beds at $36.85. Results indicate that managers have a mean age of 47.9 years.

MLS/MT/CLS directors earn a mean (SD) hourly wage of $53.44 ($15.1) FIGURE 2. The mean annual wages of MLS/MT/CLS staff by job level are listed in TABLE 6. Directors have a mean age of 50.5 years.

MLS/MT/CLS respondents, regardless of occupational level, are paid the lowest in academic hospitals with fewer than 100 beds at $30.82 per hour and highest in government facilities at $34.58 per hour FIGURE 15. The mean age for all MLS/MT/CLS respondents is 42.4 years FIGURE 3.

The top 10 highest-paying states for all MLS/MT/CLS levels are California, New York, Connecticut, Massachusetts, Washington State, Oregon, Colorado, Maryland, New Jersey, and Montana TABLE 10. MLS/MT/CLS staff comprise 55.6% of all respondents from urban areas and get paid a mean hourly wage of $33.73. MLSs/MTs/CLSs from urban clusters comprise 55.0% of all respondents and receive a mean hourly wage of $31.88. MLSs/MTs/CLSs in rural areas comprise 53.9% of these respondents and make a mean wage of $31.41 per hour TABLE 7. According to survey results, a typical MLS/MT/CLS has a mean of 17.1 years of total experience in the laboratory field and has been working in their current occupational title for 8.6 years FIGURES 4 and 5. Most have been working as MLSs/MTs/CLSs for a mean of 13.6 years FIGURE 6. By state, the mean age for all levels is highest in West Virginia at 45.1 years and lowest in Utah at 37.6 years TABLE 11.

The overall sample size (n < 30) for some facilities and states was too small for meaningful statistical analysis of pay rates.

Molecular Biology Technologists

The mean (SD) hourly wage for staff-level MBs is $29.76 ($6.4) FIGURE 2. The mean annual wage of MB staff is listed in TABLE 6. According to survey results, staff MBs have a mean age of 37.5 years while leads have a mean age of 33.8 years.

The mean age for all MB respondents is 36.3 years, the youngest group compared with all occupational roles surveyed FIGURE 3. MB respondents from urban areas comprise 2.1% of that group and get paid a mean hourly wage of $31.61 TABLE 7. According to survey results, an MB has 11.0 total years of experience working in the laboratory field and a mean of 4.1 years working in their current

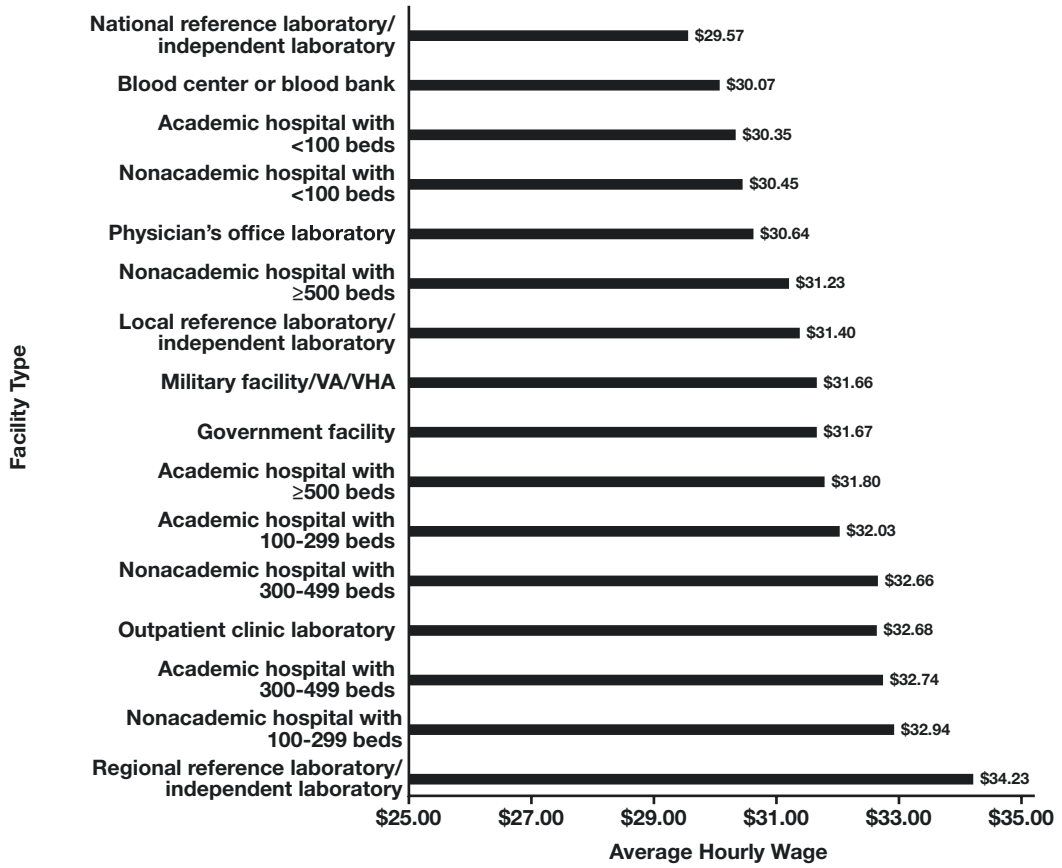

FIGURE 11 Mean hourly wage of staff medical laboratory scientists/medical technologists/clinical laboratory scientists (MLSs/MTs/CLSs) by facility. VA, Veterans Administration; VHA, Veterans Health Administration.

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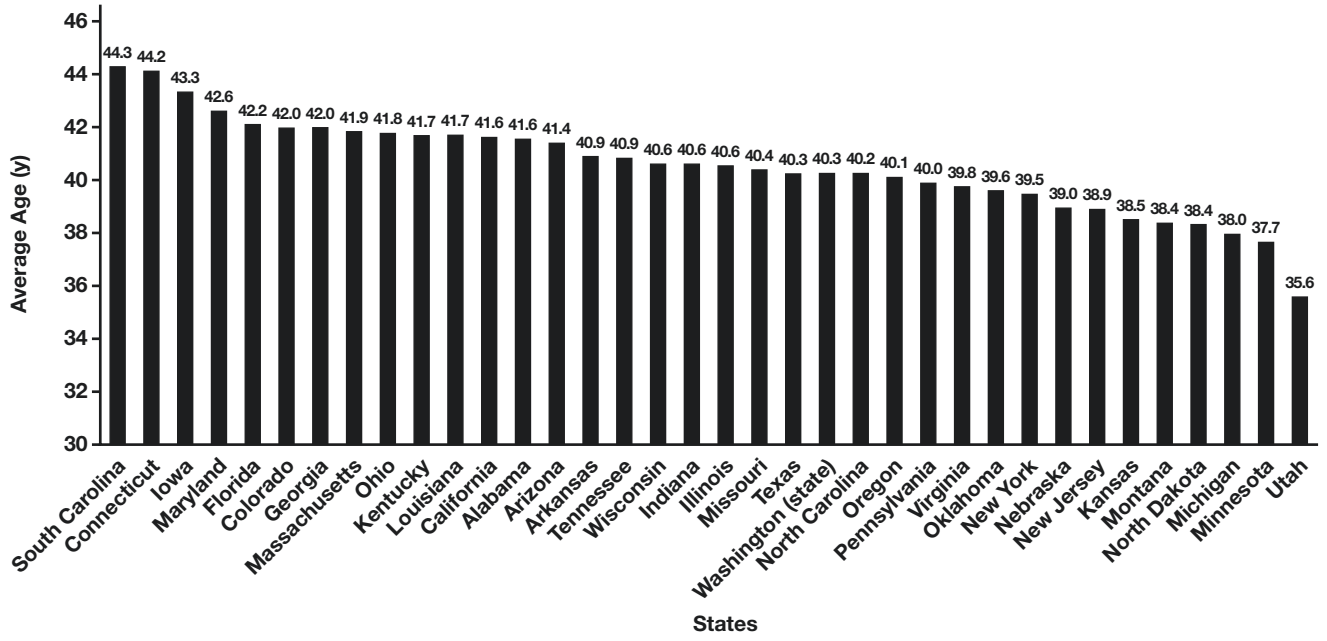

FIGURE 12 Mean ages for staff medical laboratory scientists/medical technologists/clinical laboratory scientists (MLSs/MTs/CLSs) by state. Sample size was fewer than 30 (n < 30) for the rest of the states and did not allow for statistically significant comparisons.

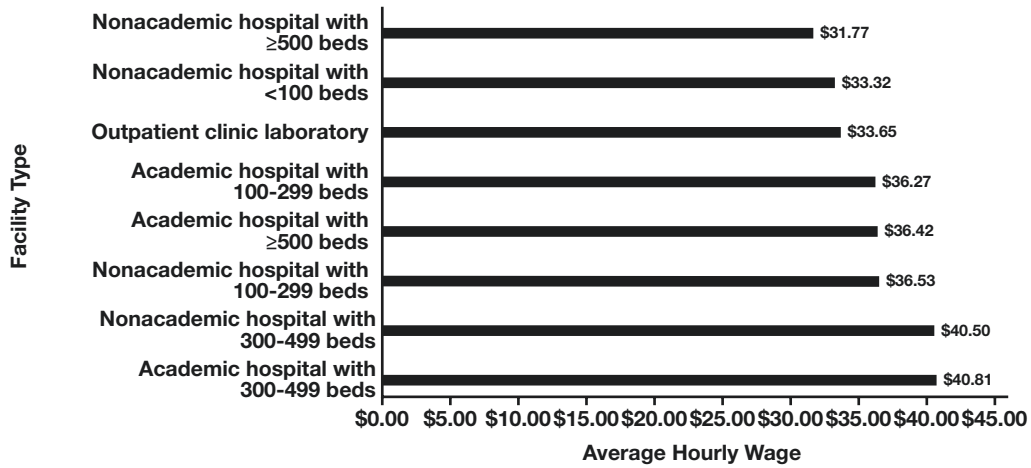

FIGURE 13 Mean hourly wage of lead medical laboratory scientists/medical technologists/clinical laboratory scientists (MLSs/MTs/CLSs) by facility.

occupational title, the least number of years of experience among all the groups surveyed FIGURES 4 and 5. Most respondents have also been working as MBs for a mean of 6.3 years FIGURE 6.

Regardless of occupational level, not all facilities had a large enough sample size for reporting. However, the one facility that had enough sample size included academic hospitals with more than 500 beds paying $32.18 per hour.

Results regarding the wage differences by all 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, mean ages by state of each level were not analyzed.

Pathologists' Assistants

The national mean (SD) hourly wage for staff-level PAs is $47.25 ($9.6) FIGURE 2. Staff-level PAs are paid the highest mean hourly wage in nonacademic hospitals with 500 or more beds, $52.43, followed by nonacademic hospitals with 300 to 499 beds at $51.27 and lowest in academic hospitals with 500 or more beds, $47.41. The mean age for a staff PA is 35.5 years.

Lead PAs are paid a mean (SD) hourly wage of $54.00 ($10.0) FIGURE 2. The mean annual wages of PAs by job level are listed in TABLE 6. Mean ages for leads and supervisors are 39.4 years and 41.3 years, respectively.

Overall PAs are paid $53.83 in nonacademic hospitals with more than 500 beds, $51.73 in nonacademic hospitals with 300 to 499 beds, $50.67 in academic hospitals with more than 500 beds, and $46.80 in pathologists' laboratories/private laboratories (laboratories owned or operated by a pathologist or PhD clinical scientist). Respondents from urban areas comprising 4.2% PAs earn a mean hourly wage of $51.04. In urban clusters, PAs comprise

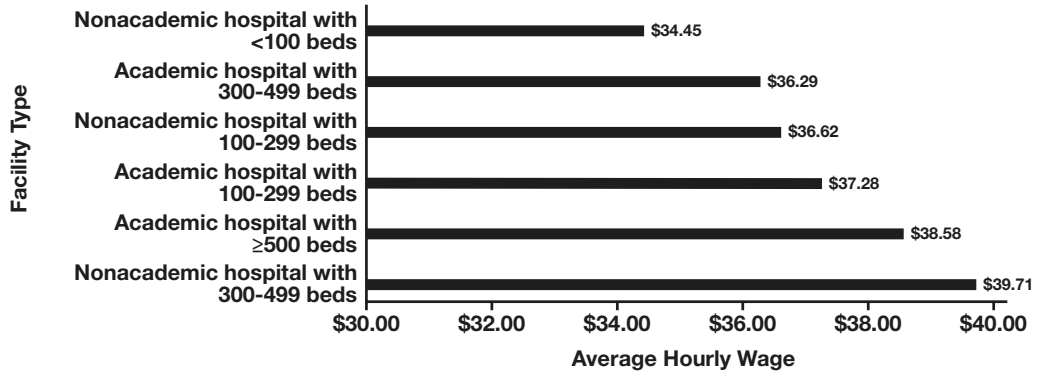

FIGURE 14 Mean hourly wage of supervisor medical laboratory scientists/medical technologists/clinical laboratory scientists (MLSs/MTs/CLSs) by facility.

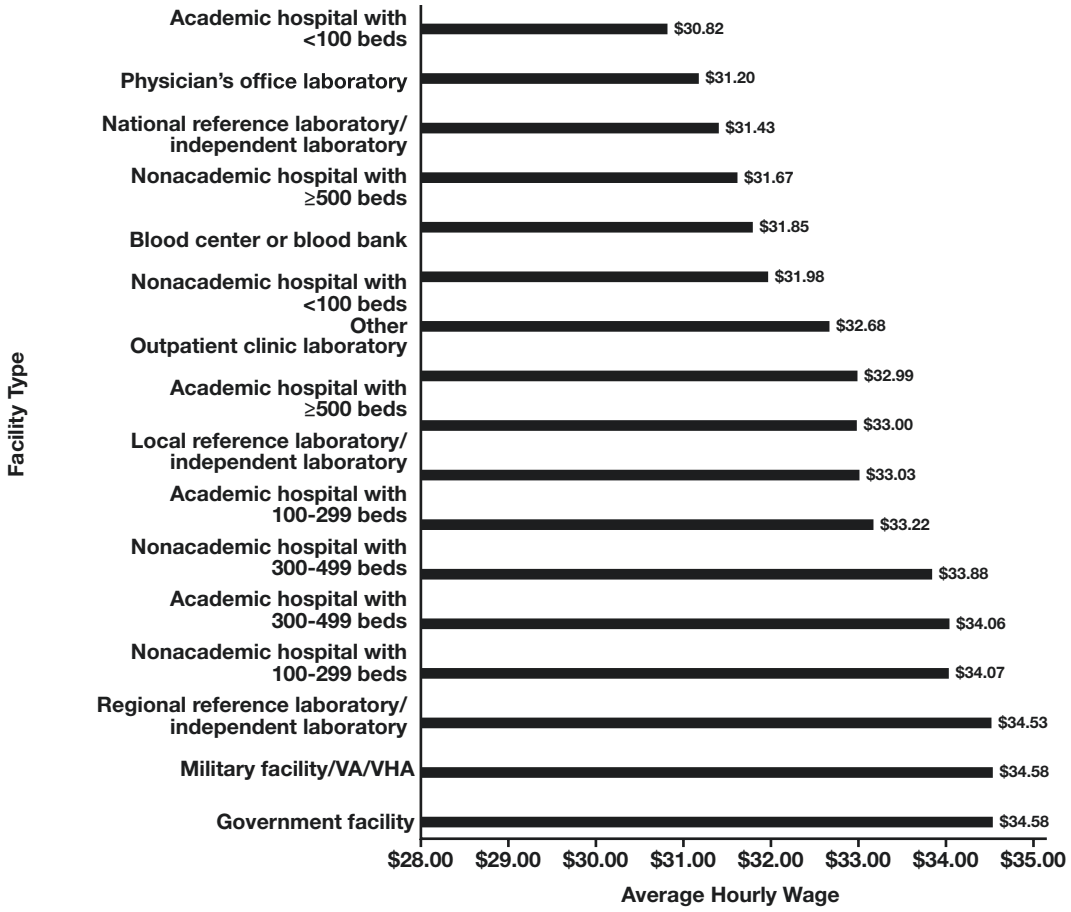

FIGURE 15 Mean hourly wage of all (staff, lead, manager, supervisor, director) medical laboratory scientist/medical technologist/clinical laboratory scientist (MLS/MT/CLS) respondents by facility. VA, Veterans Administration; VHA, Veterans Health Administration.

2.0% of the total respondents and get paid a mean of $48.57 an hour TABLE 7. According to survey results, PAs have a mean age of 36.6 years FIGURE 3. Overall, PAs have a mean of 12.0 total years of experience in the laboratory field and 6.0 years in their current title FIGURES 4 and 5. Most have been working as PAs for a mean of 9.1 years FIGURE 6.

Analyses of wage data by facility for each occupational level were not performed due to the small sample size. Analyses of wages by state and age by state were also not performed for the same reason.

Performance Improvement or Quality Assurance Personnel

The mean age for all PI or QA respondents is 46.2 years FIGURE 3. PI or QA personnel make up 1.0% of the respondents from the urban areas and make a mean hourly wage of $44.10 per hour TABLE 7. According to survey results, a PI or QA has a mean of 22.2 years of total

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TABLE 10 Mean Hourly Wage for Medical Laboratory Scientist/Medical Technologist/Clinical Laboratory Scientist by State, From Highest to Lowest Paying[a]

State	Hourly Wage
California	$55.11
New York	$40.19
Connecticut	$38.12
Massachusetts	$37.68
Washington (state)	$37.38
Oregon	$36.46
Colorado	$35.94
Maryland	$34.43
New Jersey	$34.41
Montana	$34.38
Minnesota	$34.32
New Hampshire	$34.23
Arizona	$33.45
Georgia	$31.98
Illinois	$31.56
Wisconsin	$31.47
Nebraska	$31.22
Michigan	$31.00
Florida	$30.76
Utah	$30.71
Virginia	$30.67
Ohio	$30.66
Pennsylvania	$30.44
Missouri	$30.32
Kansas	$30.17
South Carolina	$30.16
Iowa	$29.97
Kentucky	$29.79
Texas	$29.71
Indiana	$29.66
Tennessee	$29.62
North Dakota	$29.35
Oklahoma	$29.22
Louisiana	$29.18
South Dakota	$28.56
Alabama	$28.35
North Carolina	$27.87
Arkansas	$27.39
Mississippi	$27.11

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

TABLE 11 Mean Ages for Medical Laboratory Scientist/Medical Technologist/Clinical Laboratory Scientist by State, From Highest to Lowest[a]

State	Mean Age, y
West Virginia	45.1
Connecticut	44.8
South Carolina	44.7
Iowa	44.5
Georgia	44.0
Massachusetts	43.8
Maine	43.8
California	43.8
Florida	43.8
Mississippi	43.6
Alabama	43.4
Louisiana	43.4
Pennsylvania	43.1
Maryland	43.0
Arizona	43.0
New York	42.9
Missouri	42.9
Ohio	42.8
Kentucky	42.7
Oklahoma	42.6
Colorado	42.6
Illinois	42.5
New Hampshire	42.5
Texas	42.5
Indiana	42.4
New Jersey	42.2
Montana	42.1
Tennessee	42.1
Virginia	42.0
North Carolina	41.6
Arkansas	41.5
Kansas	41.5
Washington (state)	41.5
Oregon	41.3
Nebraska	41.2
Wisconsin	41.1
North Dakota	40.9
Minnesota	40.3
Michigan	39.7
South Dakota	39.1
Idaho	38.0
Utah	37.6

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

experience in the laboratory field and 6.8 years working in their current occupational title FIGURES 4 and 5. Most respondents have also been working as a PI or QA for a mean of 9.9 years FIGURE 6.

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

Phlebotomists

Staff PBTs are paid a mean (SD) hourly wage of $16.92 ($3.5) FIGURE 2. Results indicate that outpatient clinic laboratories pay the highest

FIGURE 16 Mean hourly wage of staff phlebotomist (PBT) by facility.

FIGURE 17 Mean hourly wage of all (staff, lead, manager, supervisor, director) phlebotomist (PBT) respondents by facility.

hourly wage, at $17.27, and that academic hospitals with 100 to 299 beds pay the lowest hourly wage, at $16.24 FIGURE 16. The data indicate that the mean age for staff PBTs is 43.6 years.

Lead PBTs are paid a mean (SD) hourly wage of $20.00 ($3.6) FIGURE 2, with a mean age of 45.8 years. The mean annual wages of PBTs by job level are listed in TABLE 6. Analyses of mean 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.

Overall, for PBTs, academic hospitals with 300 to 499 beds pay the highest mean hourly wage, at $18.76, and the lowest in academic hospitals with 100 to 299 beds, at $16.72, regardless of occupational level FIGURE 17. PBT respondents from urban areas comprise 3.1% of that group and get paid a mean hourly wage of $18.22. PBTs from urban clusters comprise 4.8% of the total respondents in that group and receive a mean hourly wage of $17.21 TABLE 7.

The mean age for all PBT respondents is 44.1 years FIGURE 3. Overall, a PBT has a mean of 13.0 years of total experience in the laboratory field and 7.7 years working in their current title FIGURES 4 and 5. Respondents have worked as a PBT for a mean of 12.7 years FIGURE 6.

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

Specialists in Blood Banking

The mean age of SBB supervisors/technical supervisors is 46.6 years. The mean age for all SBB respondents is 46.0 years FIGURE 3. SBBs make up 1.1% of the respondents from the urban areas and make a mean hourly wage of $37.96 per hour TABLE 7. Results show that a SBB has a mean of 21.5 years of total experience working in the field and has been working in their current title for 10.9 years FIGURES 4 and 5. Most respondents have also been working as SBBs for a mean of 14.9 years FIGURE 6.

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

Laboratory Information Systems Personnel

The mean age for all LIS respondents is 48.7 years, which is oldest among all the groups surveyed FIGURE 3. According to survey results, LIS personnel have a mean of 25.0 years of total experience in the laboratory field and have been working in their current title for 9.1 years FIGURES 4 and 5. Most respondents have also been working as LIS personnel for a mean of 12.0 years FIGURE 6.

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

Point-of-Care Testing Personnel

The mean (SD) hourly wage for POCT leads is $38.00 ($7.6) FIGURE 2, and they have a mean age of 45.9 years. The mean annual salary of POCT personnel by job level is listed in TABLE 6. The mean age for all POCT respondents (regardless of occupational level) is 45.1 years FIGURE 3.

Respondents from urban areas comprising 1.0% POCT personnel have a mean hourly wage of $36.44 TABLE 7. Results show that POCT personnel have a mean of 21.1 years of total experience working in the field and have been working in their current title for 6.6 years FIGURES 4 and 5. Most respondents have also been working as POCT personnel for a mean of 9.0 years FIGURE 6.

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

IMPACT OF COVID-19 ON SALARY AND STAFFING

The COVID-19 pandemic forced many in the clinical laboratory workforce into the spotlight.[4] The laboratory workforce has been on the frontlines through its involvement in developing and implementing new tests and procedures while performing greatly increased test volumes with rapid turnaround time demands.[4] In order to provide a view of how laboratories throughout the country are affected by the pandemic, the ASCP collected laboratory workforce data on the impact of COVID-19 on wages, burnout, laboratory testing, and staffing. A similar survey was administered by the ASCP in 2020 that asked individuals with a management-level position or human resources position to answer questions on whether there have been changes in testing, staffing, and retention of laboratory professionals during the COVID-19 pandemic.[5]

When asked how the COVID-19 pandemic altered the participant's salary, 84.0% indicated that there has not been a change in their salary at this time TABLE 12. Those whose salaries decreased reported that the decrease was only temporary, 80.8%, while 19.2% reported that it is permanent. TABLE 13 shows types of wage decrease for some occupational titles.

Pre–COVID-19 data indicate that laboratory professionals already experience burnout due to quantity of workload and understaffing.[6] During the COVID-19 pandemic and at the time this survey was administered, over half of the participants reported "presently experiencing burnout," 52.5% (35.8%, no; 11.7%, not sure/don't know). As a result of feeling burned out, 37.1% of respondents are considering getting a similar position in a different clinical laboratory and 30.5% are considering changing careers completely TABLE 14.

The survey also asked how the COVID-19 pandemic affected testing volumes in their laboratory. At the time this survey was administered, 60.3% indicated their testing volumes increased (17.5% decreased, 17.1% no change, and 5.1% not applicable [NA]). Data collected in 2020 asking the same question on testing volumes showed that most respondents, 61.0%, indicated their testing volume decreased.[5] Most respondents who indicated that their testing volumes increased reported an 11% to 25% increase in testing volumes within their laboratory TABLE 15.

Respondents (those who are in supervisory roles: leads, managers, supervisors, and directors) were also asked institutional-level questions on the impact that the COVID-19 pandemic may have had on their institution or organization. Almost two-thirds (61.2%) of the respondents reported that their laboratory encountered a hiring freeze/slowdown during the COVID-19 pandemic (34.3%, no; 4.4%, NA). According to respondents, they reassigned laboratory staff during the COVID-19 pandemic for the following reasons: reassigned to COVID-19 specimen processing, 30.4%; relocated some of their staff from their usual duties to perform severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing, 27.0%; reassigned to another area of the laboratory, 21.7%; added to the "labor pool" at their institution, 14.3%; and requested to work in another area of the facility other than the laboratory, 10.2%. When asked if turnaround times required overtime for existing staff due to the demands of SARS-CoV-2, over half of the respondents, 54.8%, reported yes, while 24.7% reported no (11.9%, not sure/don't know; 8.6%, NA).

SUMMARY

Results from this survey show that by occupational level, salaries are up only for staff-level CTs and MLSs/MTs/CLSs, after adjusting for inflation[7] TABLE 16. Most staff-level occupations show a decrease in hourly wages ranging between –0.53% and –5.48% TABLE 16. The hourly wage for leads is also up in 2021 for all the occupations surveyed except MLSs/MTs/CLSs, PAs, HTs, and CGs TABLE 17. Supervisors' hourly wages are up compared with 2019 except for MLSs/MTs/CLSs TABLE 18. Manager- and director-level comparisons were not conducted due to small sample size. Most occupational titles

TABLE 12 Impact of Coronavirus Disease 2019 on Salaries

Response	No. (%)
Decrease	594 (6.5)
Increase	875 (9.5)
No change	7,736 (84.0)

TABLE 13 Impact of Coronavirus Disease 2019 on Wage Decrease by Occupational Title (Wage 2021)[a]

	Wage Decrease, %		
Occupational Title	Permanent	Temporary	Total No.
CT	7.9	92.1	38
HT	17.0	83.0	53
MLT/CLT	16.4	83.6	55
MLS/MT/CLS	20.5	79.5	268
PA	12.5	87.5	32
PBT	23.3	76.7	30
Other	21.3	78.7	47

[a]Only those occupational titles with statistically significant respondents were included in the analysis. For definitions of abbreviations, see Figure 3.

TABLE 14 Types of Job Changes Considered by Respondents as a Result of Feeling Burned Out

Response	No. (%)
A similar position in a different clinical laboratory	1,791 (37.1)
Changing careers completely	1,473 (30.5)
None of these	1,365 (28.3)
Employment in a related field	1,248 (25.8)
Retiring	635 (13.1)
Other	343 (7.1)

reported at the lead and supervisor level experienced wage rate increases in 2021 TABLES 17 and 18.

Geographically, laboratory professionals from urban areas earn more compared with the overall mean 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 17. TABLE 19 shows the mean hourly wage by region and occupational title.

The differences between wages of laboratory professionals working as they accumulate more years of experience in the field show slight increases TABLE 20. In addition, longer length of time in the laboratory shows increases in pay rates for most occupations TABLE 20.

This survey also examined the differences in age by occupational title and sex. The mean age for the laboratory workforce has not changed significantly compared with previous wage survey results. LIS category shows the oldest workforce while PAs and MBs continue to have a younger workforce than other laboratory professions surveyed FIGURE 3. Results show that men are younger compared with women in most of the occupational titles surveyed except for CTs, HTs, HTLs, and PAs FIGURE 18. The mean wage of laboratory professionals based on age continues to increase considerably for every age range TABLE 21. This survey also analyzed wages by sex and found that males earn more than females for most occupational titles FIGURE 19.

The impact of the COVID-19 pandemic in the laboratory workforce can be seen through salaries, well-being, test volumes, and institutional-level staffing. Despite the important contributions of the laboratory personnel during this time, there were no changes in salaries seen for laboratory professionals. Burnout was experienced by over half of the respondents due to lack of staff and increased testing volumes.

Survey respondents were asked about the benefits and perks they receive from their institution, and medical/dental/vision, pension/retirement, overtime/holiday/weekends, and shift differential pay continue to be the top fringe benefits they receive. Providing a company car and free or subsidized room and board were among the benefits that are least commonly provided to many laboratory professionals TABLE 22.

Last, this survey asked the respondents to provide comments after the completion of the survey. We received a total of 2,801 comments and found that 50.1% addressed being underpaid. Respondents stated that their wages continue to remain low with respect to their occupational role, title, education, and years in the field. Full-time staff also commented that they received lower salaries compared with those who are traveling laboratory professionals. In addition, respondents reported lack of appreciation and recognition from hospital management and other providers, as well as lack of visibility of the profession among the public, 14.0%. Hiring, retention, and staffing challenges were among the most frequent topics that resulted from the qualitative analysis, with 12.3% of respondents (compared with 4.93% in 2019) indicating that there are currently low retention rates, and employers continue to experience difficulties finding applicants.

TABLE 15 Percent Increase in Testing Volumes From Those Who Reported That Their Testing Volumes Increased as a Result of the Coronavirus Disease 2019 Pandemic[a]

Response	No. (%)
1%-10%	1,079 (19.7)
11%-25%	2,239 (41.0)
26%-50%	1,308 (23.9)
More than 50%	839 (15.4)

[a]Statistics based on 5,465 respondents.

TABLE 16 Percent Change in Overall Hourly Wage for Staff Between 2015, 2017, 2019, and 2021[a]

Staff	2015[b]	2017[b]	2019[b]	2021	% Change 2019 to 2021
CT	$36.43	$38.13	$37.99	$38.53	1.41
MLS/MT/CLS	$31.38	$32.05	$31.82	$31.96	0.42
HTL	$30.17	$29.69	$29.86	$29.70	–0.53
CG	$34.98	$36.32	$34.35	$34.14	–0.60
MLT/CLT	$23.49	$24.08	$24.58	$24.39	–0.80
HT	$27.46	$28.57	$29.26	$28.92	–1.15
PA	$48.70	$45.97	$47.90	$47.25	–1.36
MB	$30.88	$30.47	$31.01	$29.76	–4.04
PBT	$16.84	$17.38	$17.64	$16.92	–4.11
MLA/CLA	$18.51	$19.90	$19.77	$18.69	–5.48

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Figure 3.
[b]All previous years' wages adjusted for inflation as of May 2021.

TABLE 17 Percent Change in Overall Hourly Wage for Leads Between 2015, 2017, 2019, and 2021[a]

Lead	2015[b]	2017[b]	2019[b]	2021	% Change 2019 to 2021
MLT/CLT	$26.48	$26.48	$27.97	$29.03	3.77
CT	$39.07	$41.72	$42.64	$43.50	2.02
PBT	$19.08	$19.11	$19.80	$20.00	1.01
POCT	-	$35.64	$37.91	$38.00	0.25
HTL	$34.32	$32.45	$33.51	$33.54	0.10
MLS/MT/CLS	$35.47	$36.11	$36.73	$36.09	–1.74
PA	$53.78	$52.86	$55.34	$54.00	–2.41
HT	$31.50	$31.51	$33.49	$31.79	–5.06
CG	$39.94	$40.81	$42.51	$38.34	–9.80

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Figure 3.
[b]All previous years' wages adjusted for inflation as of May 2021.

TABLE 18 Percent Change in Overall Hourly Wage for Supervisors Between 2015, 2017, 2019, and 2021[a]

Supervisor	2015[b]	2017[b]	2019	2021	% Change 2019 to 2021
MLT/CLT	$28.49	$29.05	$28.87	$29.71	2.9
HT	$34.56	$34.46	$35.81	$36.32	1.4
CT	$41.56	$45.19	$46.76	$46.92	0.3
MLS/MT/CLS	$37.59	$37.96	$38.29	$36.67	–4.2

[a]Sample size constraints prevented further analysis of percent change in overall annual hourly wage for some occupational titles. For definitions of abbreviations, see Figure 3.
[b]All previous years' wages adjusted for inflation as of May 2021.

TABLE 19 Mean Hourly Wage by Occupational Title and Region[a]

Occupational Title/Region	Straight-Time in Dollars, Mean	No. of Respondents for Straight-Time
CG		
Central Northwest	$35.89	27
Central Southwest	$31.86	29
Far West	$39.51	50
South Central Atlantic	$32.88	33
CT		
Central Northeast	$35.87	38
Far West	$48.03	27
Northeast	$40.69	52
South Central Atlantic	$38.30	56
HT		
Central Northeast	$28.76	74
Central Northwest	$27.56	35
Central Southwest	$26.20	43
Far West	$35.35	60
Northeast	$32.15	59
South Central Atlantic	$29.94	70
HTL		
Central Northeast	$28.41	30
Far West	$33.99	27
Northeast	$35.32	28
South Central Atlantic	$31.22	55
MLA/CLA		
Far West	$22.01	26
MLT/CLT		
Central Northeast	$25.01	261
Central Northwest	$24.36	206
Central Southwest	$22.36	147
Far West	$29.85	149
Northeast	$29.30	138
South Central Atlantic	$22.84	359
MLS/MT/CLS		
Central Northeast	$30.91	794
Central Northwest	$31.31	455
Central Southwest	$29.34	531
Far West	$40.87	739
Northeast	$35.97	672
South Central Atlantic	$30.36	1,039
MB		
South Central Atlantic	$30.16	26
PA		
Central Northeast	$45.51	45
Central Southwest	$50.24	34
Far West	$56.51	48
Northeast	$51.59	67
South Central Atlantic	$49.73	58
PBT		
Central Northeast	$17.06	66
Central Northwest	$18.42	25
Central Southwest	$15.98	41
Far West	$20.17	38
Northeast	$18.72	57
South Central Atlantic	$16.92	106

[a]For definitions of abbreviations, see Figure 3.

New to the wage survey report are comments on the impact of the pandemic on the laboratories. This includes staffing changes, effect on test volumes, supply shortages, impact on salaries, and so on, 12.1%. Participants also asked for greater representation through advocacy, 10.8%; expressed having burnout from stress and workload and lack of work-life balance exacerbated during the pandemic, 3.9%; and increased workload during the pandemic worsened by the staffing shortage, 3.6% TABLE 20.

DISCUSSION

The US Department of Labor Bureau of Labor Statistics reported that the job outlook for medical and clinical laboratory technologists and technicians between 2020 and 2030 is expected to grow 11%, which is faster than the mean rate for all occupations.[8] While the job outlook appears promising, the recently published report by the ASCP and University of Washington Center for Health Workforce Studies stated, "There is evidence that laboratory workforce shortages will likely increase in the near future due to increased demand for laboratory services, diminished education and training opportunities, and barriers to recruiting and retaining clinical laboratory workers."[4]

Also, according to US Department of Labor data published June 10, 2022, the annual inflation rate for the United States is 8.6% for the 12 months ending May 2022, the largest annual increase since December 1981 and after rising 8.3% previously.[9] Salaries in this report were adjusted for inflation as of 2021. Even with the salary increases reported from the results of this survey, it is evident that the increases have not kept up with the current inflation.

Laboratory professionals have played a key role in the fight against the pandemic through timely and accurate reporting of test results. However, many reported a lack of appreciation and recognition from the hospital administration, contributing to burnout and causing them to leave the field. This underscores a need to recognize the essential contributions that laboratory professionals make to patient care and support their efforts.[4] These supports include financial incentives, continuing education, flexible work scheduling, recognition of value to health care teams, and opportunities for professional development and career advancement.[4]

The COVID-19 pandemic has also increased the urgency to ensure a steady supply of incoming laboratory professionals. Focus on

TABLE 20 Mean Hourly Wage by Time in Current Occupational Title[a]

Time in Current Title With Current Employer, y	CG	CT	HT	HTL	MLA/CLA	MLT/CLT	MLS/MT/CLS	MB	PA	PI/QA	PBT	POCT
0-5	$32.60	$36.83	$28.22	$29.45	$18.28	$23.26	$31.21	$29.96	$49.31	$42.73	$16.47	$32.31
6-10	$36.11	$42.42	$31.11	NA	NA	$26.61	$33.93	NA	$51.75	NA	$17.85	NA
11-15	NA	NA	$33.65	NA	NA	$26.87	$34.48	NA	$56.46	NA	$19.63	NA
16-20	NA	NA	$34.71	NA	NA	$27.87	$37.84	NA	NA	NA	NA	NA
21-25	NA	NA	NA	NA	NA	$30.39	$37.06	NA	NA	NA	NA	NA
26-30	NA	NA	NA	NA	NA	$30.22	$36.83	NA	NA	NA	NA	NA
31-35	NA	NA	NA	NA	NA	$29.39	$38.66	NA	NA	NA	NA	NA
36-40	NA	NA	NA	NA	NA	NA	$39.10	NA	NA	NA	NA	NA
41+	NA	NA	NA	NA	NA	NA	$39.93	NA	NA	NA	NA	NA

[a]Sample sizes to determine mean wage of other time ranges were too small and did not allow for statistically significant comparisons. NA, not applicable. For definitions of other abbreviations, see Figure 3.

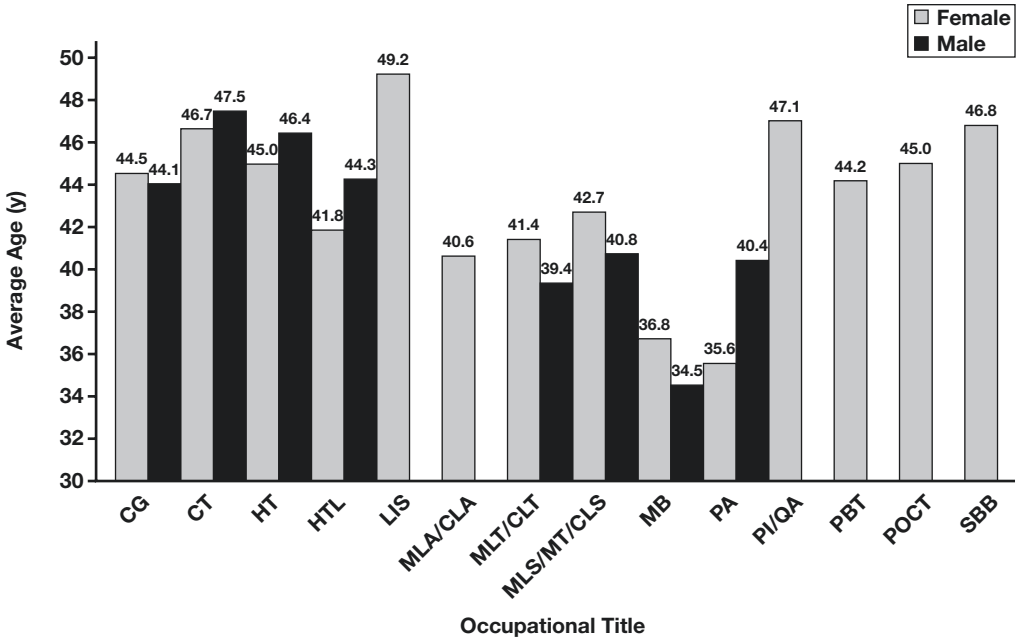

FIGURE 18 Mean age of laboratory professionals by sex. For definitions of abbreviations, see Figure 3.

TABLE 21 Mean Hourly Wage by Age Group and Occupational Title[a]

Age, y	CG	CT	HT	HTL	MLA/CLA	MLT/CLT	MLS/MT/CLS	MB	PA	PI/QA	PBT
18-24	NA	NA	NA	NA	NA	$20.24	$26.83	NA	NA	NA	NA
25-34	$29.96	$34.84	$26.48	$28.80	$18.03	$22.57	$29.81	$29.09	$47.74	NA	$15.67
35-44	$34.62	$41.38	$28.95	$30.21	NA	$24.61	$33.38	NA	$53.35	NA	$18.15
45-54	$37.92	$40.86	$31.59	$34.88	NA	$27.42	$35.20	NA	$56.07	NA	$17.77
55-64	$39.39	$40.66	$34.68	$36.76	NA	$28.45	$37.25	NA	NA	NA	$19.05
65-74	NA	NA	NA	NA	NA	NA	$37.61	NA	NA	NA	NA
75+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[a]Sample sizes to determine mean wage of other time ranges were too small for statistically significant comparisons. NA, not applicable. For definitions of abbreviations, see Figure 3.

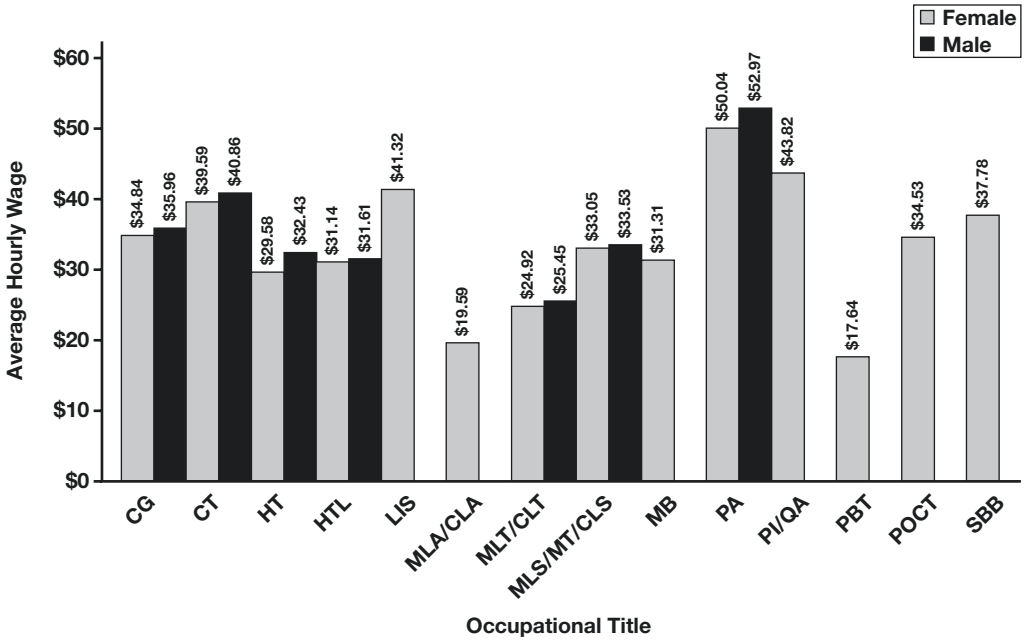

FIGURE 19 Mean hourly wage by sex. Sample sizes to determine mean wage by sex of other occupational titles were too small for statistically significant comparisons. For definitions of abbreviations, see Figure 3.

TABLE 22 Percent of Responses per Benefit/Perk Offered by Institutions

Benefits	No.	Total % of Responses per Category
Medical/vision benefits	8,400	91.3
Dental benefits	8,133	88.4
Pension/retirement benefits	6,868	74.6
Shift-differential	6,452	70.1
Premium pay for overtime, holidays, and weekends	6,197	67.3
Free or convenient employee parking	3,861	41.9
Paying for tuition	2,949	32.0
Paying for continued education	2,799	30.4
Monetary bonus (eg, sign-on bonus, referral bonus, miscellaneous bonuses)	2,646	28.7
Performance bonuses	1,964	21.3
On-call	1,856	20.2
Flexible work hours	1,609	17.5
Bonuses not directly tied to work (including holidays and profit-sharing bonuses)	1,582	17.2
Paying for certifications or qualifications	1,397	15.2
PRN	1,058	11.5
Laptop/tablet	893	9.7
Paying for professional memberships	781	8.5
Transportation allowances	634	6.9
Uniform allowances	587	6.4
Telecommuting	340	3.7
Providing a company phone for you	322	3.5
Company car	76	0.8
Free or subsidized room and board	66	0.7
Other	162	1.8

PRN, pro re nata.

TABLE 23 2021 Wage Survey Comment Analysis Executive Summary

Comments	No. (%)
Comments that addressed being underpaid	1,404 (50.1)
Comments that addressed underappreciation	391 (14.0)
Comments that addressed hiring/retention/staffing	345 (12.3)
Comments that addressed COVID-19 pandemic	339 (12.1)
Comments that addressed advocacy/union	302 (10.8)
Comments that addressed burnout/work-life balance	108 (3.9)
Comments that addressed workload	100 (3.6)
Comments on wage survey	71 (2.5)
Comments that addressed certification/licensure	66 (2.4)
Comments that addressed lack of qualified candidates	61 (2.2)
Comments that addressed hazard pay	59 (2.1)
Comments that addressed location/region	51 (1.8)
Comments that addressed retirements	51 (1.8)
Comments that addressed education/training	43 (1.5)
Comments that addressed benefits	36 (1.3)
Comments that addressed concerns about personnel qualification	30 (1.1)
Comments that addressed career advancement	24 (0.9)
Other comments/thanks to surveyors	760 (27.1)
Total number of comments	2,801

COVID-19, coronavirus disease 2019.

visibility, recruitment and retention, and diversity are essential for developing long- and short-term solutions.[4] Examples of solutions include developing clearly defined pathways for individuals who may be interested in entering the laboratory workforce, addressing retention challenges (salaries, burnout, providing opportunities for career progression), advocating for higher wages, and identifying structural barriers and solutions that may affect equitable access to employment in the laboratory professions or entering the field.[4]

The ASCP recognizes that meeting future workforce needs will require actions by and collaboration among a wide range of stakeholders. As a response to these urgent challenges, the ASCP developed a Laboratory Workforce Steering Committee whose mission is to focus on promoting the laboratory profession through initiatives that aim to increase the availability of clinical laboratory workforce supply and strengthen the pathways into and among these careers long into the future. The steering committee will also serve as the strategy drivers for the program by initiating discussions and taking an active role in calling attention to the three focus areas developed from extensive research (improve the visibility of clinical laboratory occupations, improve workforce recruitment and retention, and focus on diversity and inclusion in the laboratory), where there are opportunities to improve recognition of the clinical laboratory workforce and enhance careers in the field.[4]

We also developed a *Blueprint for Action*,[10] which summarizes the needs identified from the Garcia et al[4] report and recommends actions to address challenges and barriers supported by the report findings. Each aim presents recommendations with action items aligned with the three focus areas and includes key actors, target audiences, and suggested tasks.[10]

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