Addressing Workforce Challenges in Public Health Laboratories Through ASCP BOC Credentialing

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BACKGROUND

The American Society for Clinical Pathology (ASCP) Board of Certification (BOC) plays a critical role in enhancing workforce experiences and advancing public health outcomes by providing globally recognized, patient-centric credentials. Since ASCP BOC's inception in 1928, laboratory professionals from around the globe have attained more than 641,000+ credentials in total. There are 29 ASCP BOC certification and qualification examinations currently available that span the spectrum of public health, medical laboratory, pathology and emerging specialties.

OBJECTIVE

This study explores the connection between ASCP BOC credentials and improved workforce performance in public health laboratories (PHLs).

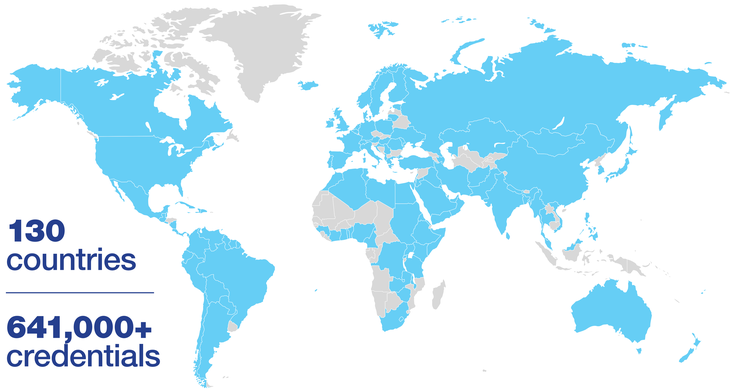
WORKFORCE CHALLENGES IN PUBLIC HEALTH LABORATORIES

Workforce shortages, uneven training access, and related social demographics pose persistent challenges for public health laboratories. According to ASCP's workforce analysis, vacancy rates remain elevated in core laboratory and blood bank departments. High-need areas such as molecular diagnostics and microbiology, have doubled in vacancy rates (see Figure A) since the COVID-19 pandemic. Compounded by decades of program closures—where NAACLS-accredited programs dropped by nearly 25% between 1990 and 2010, but remained relatively stable thereafter (see Figure B)—PHLs are struggling to recruit and retain qualified personnel. Retirement demographics further exacerbate these issues: recent survey data show an increase of laboratory professionals anticipating retirement within five years. The impacts are recognized across most departments, including anatomic pathology, phlebotomy, laboratory information system, performance improvement, and quality assurance (LIS/PI/QA), and molecular diagnostics. While some departments such as chemistry/toxicology, cytology, and microbiology have seen a slight decline in retirement rates, the overall trend reflects growing workforce attrition will continue to strain already limited laboratory talent (see Figure C).

These concerns echo the findings of a 25-year systematic literature review, which identified education, training, credentialing, and succession planning as major challenges affecting the sustainability of the public health workforce. The report emphasized that improved access to credentialing, strategic recruitment, and workforce infrastructure development are urgently needed to maintain public health system capacity.

ASCP BOC CREDENTIALS AS A WORKFORCE DEVELOPMENT SOLUTION

ASCP BOC credentials offer a scalable solution by providing verifiable, applied knowledge pathways into public health-focused roles, ensuring that workforce entrants meet high standards regardless of education or training routes. For example, CMS CLIA has recently recognized ASCP BOC as a certification board for laboratory directors of high-complexity testing. Furthermore, credentialed professionals consistently earn higher wages across nearly all roles and specialties, reflecting the ASCP BOC's credentialing value and market recognition. Historically, credentialed personnel are also preferred by employers (except for 2022 due to the pandemic where shortages had been extremely high and supervisors had to hire many non-credentialed laboratory professionals due to need).



130 countries

641,000+ credentials

APPLICATIONS TO PUBLIC HEALTH DOMAINS

ASCP BOC's rigorous credentialing process is rooted in meticulous examination development and maintenance practices, including regular practice analyses and computer adaptive testing (CAT). These practices ensure that ASCP BOC credentials reflect current expertise, emerging concepts, and the evolving needs of laboratory medicine. The use of ISO17024-accredited standards, validated by ANAB (ANSI National Accreditation Board), guarantees psychometrically fair, legally defensible, and relevant credentialing processes. This robust framework equips credentialed professionals with the skills and knowledge necessary to address complex challenges in PHLs effectively.

In line with the ASCP BOC's value, this study highlights how examinations and credentials, such as Molecular Biology, MB(ASCP), and Microbiology, M(ASCP), enable public health professionals to excel in infectious disease surveillance. Furthermore, the ASCP BOC Credential Maintenance Program (CMP) fosters continuous professional development, ensuring that credentialed professionals stay current with technological advancements and best practices.

Laboratory safety qualifications from ASCP BOC, such as the Qualification in Laboratory Safety (QLS), directly support an public health professional's ability to develop, implement, and adhere to biosafety protocols. These credentials validate specialized knowledge in areas including risk assessment, containment practices, regulatory compliance, and emergency response—core competencies essential for biosafety stewardship. Credential holders are more likely to possess the necessary training to interpret and apply evolving guidelines from agencies like Centers for Disease Control and Prevention (CDC), Occupational Safety and Health Administration (OSHA), and World Health Organization (WHO). As a result, they play key roles not only in following protocols but also in developing, advancing, and auditing institutional biosafety procedures. The credential ensures that laboratory personnel are not just rule-followers but also proactive safety leaders within PHLs.

Figure A: Overall Vacancy Rates (2020 vs. 2022), By Department

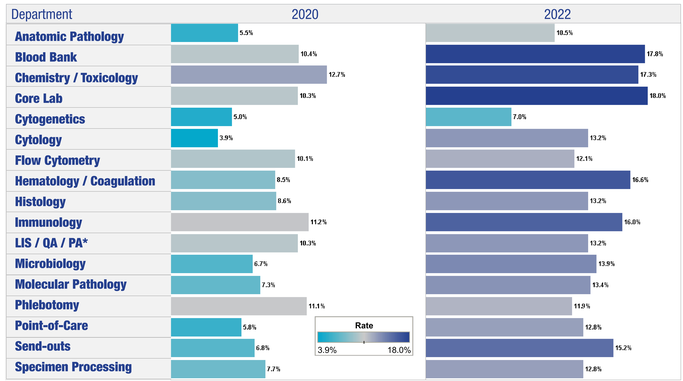
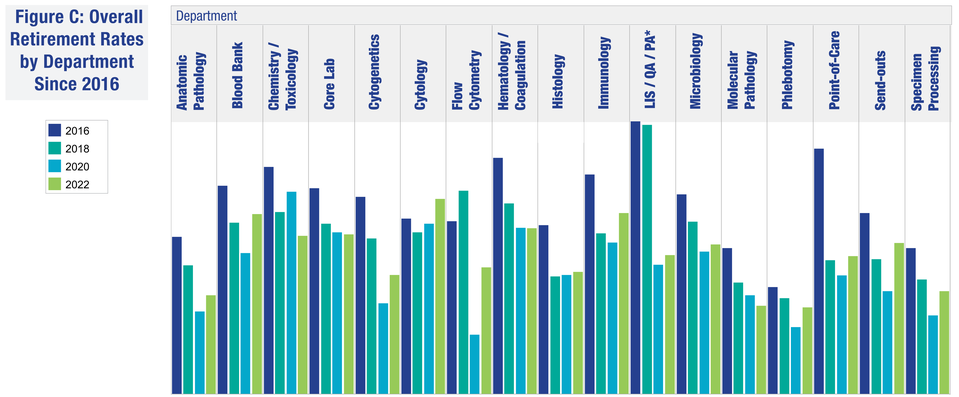


Figure B: NAACLS Accredited Programs

NAACLS

Scan QR code to access the NAACLS accredited program data

Figure C: Overall Retirement Rates by Department Since 2016



SUSTAINABILITY AND INSTITUTIONAL READINESS

Beyond individual applied knowledge, ASCP BOC credentials help organizations align with modern workforce standards by supporting recruitment, succession planning, and career mobility. CMP also enables long-term sustainability by fostering a culture of continuous improvement. In states with more robust certification pathways, public health lab capacity is higher. For example, Nebraska, supported by five accredited programs including a robust distance learning platform, has nearly 150 laboratory professionals per 100,000 residents—more than twice that of states with minimal training access.

ALIGNMENT WITH CDC COMPETENCY GUIDELINES

This study presents data and correlations on ASCP BOC credentials and PHLs which demonstrate the tangible impact of ASCP BOC credentials on workforce applied knowledge and public health outcomes. The CDC and APHL's Competency Guidelines for Public Health Laboratory Professionals define 15 essential domains—including Safety, Surveillance, and Emergency Management—that represent the skills and knowledge needed across the PHL workforce. ASCP BOC credentials, including Molecular Biology MB(ASCP), Microbiology M(ASCP), and the Qualification in Laboratory Safety (QLS), directly align with these domains. These credentials not only validate individual proficiency but also help institutions build standardized and sustainable workforce development programs. By mapping to nationally recognized guidelines, ASCP BOC strengthens institutional capacity to meet evolving public health demands and promotes alignment with federal expectations for PHL excellence.

CONCLUSION

These findings underscore ASCP BOC's mission to provide excellence in credentialing on behalf of patients worldwide and its vision to be the global standard in laboratory professional credentialing. By aligning workforce development strategies with ASCP BOC's proven credentialing framework, PHLs can recruit and retain highly competent professionals who contribute to better health outcomes. This alignment not only supports laboratory excellence but also advances the mission of PHLs to protect and promote public health on a broader scale.

641,000+ credentials attained worldwide since 1928

29,000+ ASCPi credentials attained since 2006

55,000+ credential holders with >= 2 credentials attained

Since 2023,18,000+ applicants have benefited from auto-eligibility / workflow optimization

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