

Professional certification in point-of-care testing

T. Scott Isbell¹, Elaine Colwell², Elizabeth L. Frank³, Brad S. Karon⁴,
Veronica Luzzi⁵, Lou Ann Wyer⁶

¹ Department of Pathology, Division of Laboratory Medicine, Saint Louis University, U.S.A.

² Department of Professional Education, American Association for Clinical Chemistry, U.S.A.

³ Department of Pathology, University of Utah Health, U.S.A.

⁴ Department of Laboratory Medicine and Pathology, Mayo Clinic Rochester, U.S.A.

⁵ TriCore Research Institute, U.S.A.

⁶ Sentara Healthcare, U.S.A.

ARTICLE INFO

Corresponding author:

T. Scott Isbell PhD, DABCC, FAACC
Division of Laboratory Medicine
Department of Pathology
Saint Louis University School of Medicine
St. Louis, Missouri
United States
Phone: +1-314-977-4635
E-mail: scott.isbell@health.slu.edu

Key words:

quality assurance, professionalism,
professional certification, standards

ABSTRACT

Professional certification is affirmation and documentation that the certified individual has the knowledge, training, and skills necessary to practice some aspect of medicine or other profession. Herein is a description of the genesis of a professional certification in point of care testing (POCT), inclusive of rationale and goals. A distinction between professional certification and certificate training programs is made. Details regarding eligibility to sit for the board exam are provided along with a list exam content areas. Finally, successes of this professional certification program are highlighted.

INTRODUCTION

Per recent market reports the size of the point-of-care testing (POCT) sector is anticipated to reach USD 50.6 billion by 2025 up from USD 29.5 billion in 2020 (1). Demand remains high for easy to use, portable technologies providing rapid results, that when properly integrated into clinical workflows, have been shown to improve patient outcomes, increase health-care provider and patient satisfaction and decrease cost (2). Point of care testing can be found throughout the hospital – in operating rooms, the emergency department, intensive care units, and the general medical wards. POCT devices have proven useful in the field as tools to assess patients during transport to hospital within ambulance and helicopters. They are found in long term care facilities and are often used to make transfer of care decisions. The personnel operating these devices usually are not laboratory medicine professionals trained in clinical laboratory science but rather other healthcare professionals such as nurses, respiratory therapists, and medical assistants. In the U.S.A., pharmacists can be added to this list, given the expansion of POCT in community/retail pharmacy settings. Per the U.S.A based National Community Pharmacists Association (NCPA),

Point-of-care testing provides an excellent opportunity for community pharmacies to enhance revenue by expanding patient care services while improving health at the patient and population levels (3).

Community pharmacies offer an attractive alternative to the emergency department for minor acute illnesses, especially given their abundant locations and expanded hours. For more information of one example, I point you to a recent review in the *Journal of Clinical Microbiology* by S. R. Herbin, D. G. Klepser, and M. E. Klepser on the subject of pharmacy-based infectious

disease management programs incorporating CLIA-waived POCTs (4).

POCT TRAINING

Training in the oversight and management of POCT is variable. There is no standardized curriculum to teach principles of best practice in point of care testing embedded within schools of nursing, pharmacy or even medical laboratory technology/clinical laboratory science. Much of training for many POCT personnel occurs on-the-job. Certificate programs in POCT are available to supplement or learn about POCT. These programs include but may not be limited to the AACC POC Specialist Program (elaborated more below), a Pharmacy-based Point-of-Care Testing Certificate Program from the NCPA launched in February 2021, a Point-of-Care Testing (POCT) Specialist REACH Certificate Course from the American Medical Technologists association and the Community Pharmacy-based Point-of-Care Testing Certificate Program from the National Association of Chain Drug Stores (NACD). Based on a review of publicly available course learning objectives the certificate programs offered by laboratory medicine based associations are focused primarily on quality management and the administration of point of care testing programs while pharmacy association certificate programs, having some overlap, appear to be focused more on the clinical application of POCT in a pharmacy setting and include such topics as assessment of clinical signs and symptoms of common infectious diseases (e.g. influenza, group A Streptococcal disease) and the performance of physical assessments (e.g. cervical lymph node examination, oxygen saturation, body temperature).

POC SPECIALIST CERTIFICATE PROGRAM

Recognizing early a gap in POCT education, AACC in collaboration with the Critical and

POCT Division (CPOCT) of the AACC launched in 2008, a Point-of-Care (POC) Specialist Certificate Program - an assessment-based online course, consisting of eight learning modules covering topics including: regulations, quality management, policies/procedures, instrument selection/validation, connectivity/information technology (IT), education/training, administration, and communication (5). Upon completion of the online modules, participants are administered an examination to assess their learning and are provided a certificate of successful completion. To date, 1733 individuals have completed this professional development certificate program. Future versions of this course may be expanded to include international regulatory standards such ISO 15189 (Medical Laboratories) and ISO 22870 (Point of Care Testing) thus providing professional development course with an even broader worldwide application.

ASSESSMENT BASED CERTIFICATE PROGRAMS VS. PROFESSIONAL CERTIFICATION

It is important to mark the distinction between professional certification and a course which yields a certificate. Many professional education courses offer a certificate of attendance: a record that an individual attended the program. A certificate of attendance does not reflect whether an individual has successfully completed the program. Assessment-based certificate programs recognize when a participant has successfully participated in and completed the intended education and training objectives (6). The AACC POC Specialist Program, for example, is an assessment-based certificate program. This educational, professional development course has specific learning outcomes that a participant must prove they have accomplished to be awarded a certificate. The purpose of this program is to provide education and training to be more knowledgeable about POCT applications,

knowledge which can then be applied in daily practice. Successful completion is determined by the participant achieving an accomplishment, signified by the provision of an official document, i.e., certificate by an authoritative body, in this case AACC. From an educational perspective, this is akin to certificate programs granted by institutes of higher education (i.e., the authority) where there are requirements and standards (i.e., learning objectives and assessments) that must be satisfied.

Professional certification is the affirmation and documentation that the certified individual has met predetermined standards of knowledge, training, and skills deemed necessary to practice some aspect of medicine or other profession. Professional certifications are administered by a governing body, or board, of relevant stakeholders – often practitioners who themselves have demonstrated an elevated level of learning and competency and are normally certified by the very board they serve on. These boards are legally or administratively autonomous from other entities and responsible for all essential decisions related to the certification activities (6). In the medical field, certifications often become requirements to practice, individuals are said to be “board certified.” Examples of U.S.A. professional certification boards within the specialty of laboratory medicine include but are not limited to, the American Board of Clinical Chemistry (ABCC), the American Board of Pathology (ABP), the American Board of Medical Microbiology (ABMM), American Society for Clinical Pathology (ASCP) Board of Certification, American Medical Technologists (AMT), and the American Board of Medical Genetics and Genomics (ABMGG).

CREATION OF A PROFESSIONAL CERTIFICATION IN POCT

Given the opportunity and position to lead, the continued and predicted growth of POCT, along

with the need to set professional standards, AACC made the establishment of a professional board certification in POCT one of its strategic priorities. In 2017, AACC formed a task force for the development of a professional certification examination to assess one’s applied knowledge and competencies in the field of POCT. The task force was populated by individuals with expertise in POCT with a range of educational backgrounds from bachelors to doctoral level (PhD), representing different perspectives (point of care coordinator, medical directors of POCT, and industry scientists). See Table 1. for list of task force members. In addition, the task force relied on the extraordinary work of a larger group of POCT experts to assist with exam development, see Table 2. The task force partnered with professional psychometricians, individuals who, per the U.S.A. based Psychometric Society, are trained in the science of quantitative measurement practices in psychology, education, and the social sciences. In other words, experts

in assessments or testing. This partnership was crucial to ensure an accurate and valid assessment was developed. (Table 1 and Table 2)

Following the development of the certification exam an AACC POCT Professional Certification Board was established to oversee all aspects of the professional certification process from application, to examination, scoring, and maintenance of the exam item bank. Two of the members of the task force were selected to serve on the inaugural board along with other well-recognized experts. See Figure 1 for organization and initial population of the board. The goal over time is that the AACC POCT Professional Certification Board will eventually be populated by those individuals that it has certified.

Individuals that successfully meet eligibility requirements and pass the certification exam are credentialed as Certified Point-of-Care Testing Professionals, abbreviated as CPP, and are encouraged to use this credential as a suffix following their educational degree (7). (Figure 1)

Table 1 AACC Professional Certification exam development task force

Name	Title	Institution
T. Scott Isbell PhD, DABCC, FAACC	Medical Director, Clinical Chemistry and POCT	Saint Louis University School of Medicine
Corinne Fantz PhD, DABCC, FAACC	Director, Scientific Affairs POCT	Roche Diagnostic Corporation
Kerstin Halverson, MS	Clinical Applications Manager	Instrumentation Laboratory
Karen Jenkins MT(ASCP)	Point of Care Coordinator	Emory University Hospital – Midtown
Peggy Mann MS, MT(ASCP), CPP	Ambulatory POCC/Program Manager	University of Texas Medical Branch
Elaine Colwell [ex-officio]	Associate Director, Professional Education	American Association for Clinical Chemistry

Table 2 Professional Certification exam item writers

Name	Institution
Adonica Wilson	A. I. duPont Hospital for Children
Alan Wu	University of California at San Francisco
Bob Kaplanis	Laboratory Sciences of Arizona/Banner Health
Bradley Karon	Mayo Clinic
Brenda Suh-Lailam	Ann & Robert H. Lurie Children’s Hospital of Chicago
Charbel Abou-Diwan	Nova Biomedical
Charlotte Bismark	Dixie Regional Medical Center
Christine Cursio	University Health Network
Christopher McCudden	The Ottawa Hospital General Campus
Corrine Fantz	Roche Diagnostic Corp.
David Kinninburgh	Alberta Centre for Toxicology
Dawn Smith	UNC Health Care
Elia Mears	Joint Commission on Accreditation of Healthcare Organizations
Elizabeth L. Frank	University of Utah and ARUP Laboratories
Gerald Kost	University of California Davis
James Nichols	Vanderbilt University Medical Center
Julie Shaw	The Ottawa Hospital University of Ottawa and Eastern Ontario Regional Laboratories Association
Karen Jenkins	Emory University Hospital Midtown
Kathleen David	TriCore Reference Lab
Kerstin Halverson	Instrumentation Laboratory

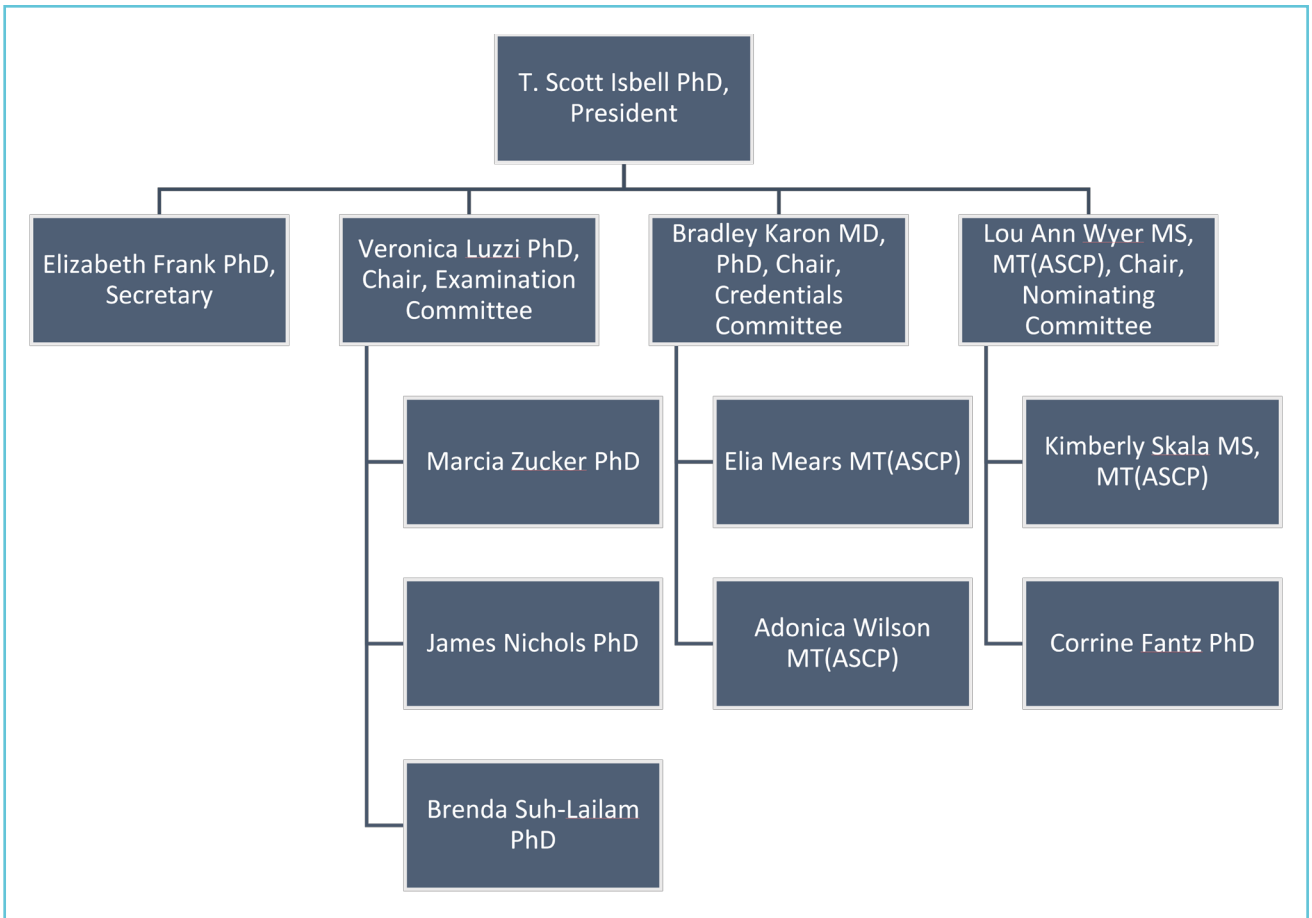
Kim Skala	Instrumentation Laboratory
Lilah Evans	Thomas Jefferson University Hospital
Lou Ann Wyer	Sentara Healthcare
LuAnn Hildebrand	York Hospital
Marcia Zucker	ZIVD LLC
Mark Kellogg	Boston Children’s Hospital
Nam Tran	University of California Davis
Nichole Korpi-Steiner	University of North Carolina
Nicole Tolan	Sciex Diagnostics
Octavia Peck-Palmer	University of Pittsburgh Medical Center
Paul Yip	University Health Network
Peggy Mann	University of Texas Medical Branch
Rachel Edwards	Texas Children’s Hospital
Robert Nerenz	Dartmouth-Hitchcock Medical Center
T. Scott Isbell	Saint Louis University School of Medicine
Sheila Cruthis	Moses Cone Health System
Sonya Evans	Greenville Health System
Veronica Luzzi	TriCore Research Institute
William Clarke	Johns Hopkins University School of Medicine

The Certified Point-of-Care Testing Professional (CPP) credential certifies individuals as proficient in point-of-care testing.

The credential is evidence that the individual has demonstrated competency in U.S.A. regulations and compliance, quality management,

education and training, instrument selection and validation/verification, connectivity and information technology, leadership and communication, specimen types, policies and procedures, clinical applications, and technology and methodology.

Figure 1 Inaugural AACC POCT Professional Certification Board



The first ever professional certification exam in POCT was administered by the board in November 2018. The exam has been administered twice a year in the spring and the fall since 2019. To date sixty-nine individuals have met the requirements of the board, successfully passed the certification exam, and attained CPP certification.

REQUIREMENTS TO SIT FOR THE EXAM

Who is a candidate for POCT professional certification? Professional certification is geared towards those individuals who have significant responsibility related to point-of-care device selection and validation, quality management, operator training, regulatory compliance, and overall management of a point of care program.

This could include laboratory managers, nursing managers, point-of-care coordinators, respiratory therapists, pharmacists, pharmacy practitioners, and physician assistants. Professional certification is a visible way to let colleagues, institutions, and your patients know that you are competent practitioner of POCT. While there is a focus on the application of U.S.A. regulatory/compliance knowledge, this does not preclude international applications, all who meet the eligibility criteria will be considered.

To be eligible for the CPP credential, you must have either a four-year degree in a biological, chemical, physical, or medical laboratory science or in nursing and at least two years of direct work experience in point-of-care testing. Alternatively, individuals with a two-year

degree in medical laboratory science or medical laboratory technology and four years of direct work experience in point-of-care testing will be considered. Interested applicants can find eligibility requirements and apply for certification at www.aacc.org/cpp. Applications to sit for the board exam are reviewed by the POCT Professional Certification Board's Credentials Committee. For detailed information please refer to the AACC Point-of-Care Professional Certification – Procedures for Examination and Certification handbook (8).

LOOKING TO THE FUTURE

It is one of the goals of the POCT Professional Certification Board that as the number of individuals credentialed as a CPP grows so does their potential for greater leadership opportunities, greater job security, and higher pay. Testimonials from recently certified individuals are indicating this to be true. Darlene Paskovics, CPP notes, "my CPP allowed me to advance to a leadership position and apply my knowledge to a diverse group of testing platforms," and Christa Williams, CPP states, "achieving my CPP designation has given me an edge in my field and will open new career opportunities." Metrics of success for this professional certification program, will be the observation of increased numbers of CPPs providing technical and quality direction for POCTs, writing practice guidelines, advancing the field through research, and serving on

national and international boards and committees concerned with best practice in POCT.

REFERENCES

1. Point of Care/Rapid Diagnostics Market by Product (Glucose, Infectious Disease (Hepatitis C, Influenza), Coagulation), Platform (Microfluidics, Immunoassay), Mode of Purchase (Prescription, OTC), Enduser (Hospital, e-comm, Home Care) - Global Forecast to 2025. Markets and Markets Report. February, 2021.
2. PriceCP.Pointofcaretesting. *BMJ*. 2001;322(7297):1285-1288. doi:10.1136/bmj.322.7297.1285
3. Point of Care Testing. National Community Pharmacists Association (NCPA). <https://ncpa.org/point-care-poc-testing> Accessed March 27, 2021.
4. Herbin, S. R., et al. (2020). "Pharmacy-Based Infectious Disease Management Programs Incorporating CLIA-Waived Point-of-Care Tests." *J Clin Microbiol* 58(5): e00726-00719.
5. AACC POC Specialist Certificate Program. <https://www.aacc.org/education/online-certificate-programs/certificate-programs/point-of-care-specialist-certificate-program>
6. Institute for Credentialing Excellence. Defining Features of Quality Certification and Assessment-Based Certificate Programs. Washington, DC: Institute for Credentialing Excellence, 2010.
7. AACC Launches Point-of-Care Professional Certification. CLN. 2018 <https://www.aacc.org/media/press-release-archive/2018/08-aug/aacc-launches-point-of-care-professional-certification>
8. AACC Point-of-Care Professional Certification – Procedures for Examination and Certification. https://www.aacc.org/-/media/Files/Education-and-Career/POC-Certification-Test/AACC-PointofCare-Professional-Certification-Candidate-Handbook_08012019.pdf?la=en&hash=3D239915B1011E36FFBF8E4B046131FFAA55CF05