ASCP^{i}: AN INTERNATIONAL CERTIFICATION EXAMINATION PROGRAM FOR LABORATORY PROFESSIONALS

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Abstract

For more than 20 years, the medical laboratory profession has been faced with numerous challenges at both the national and international levels. Key problems confronting laboratory professionals include, but are not limited to: an aging workforce; a shortage of qualified laboratory professionals; a lack of harmonization of medical laboratory education program curricula; increased mobility of laboratory practitioners who seek comparable employment outside their country of origin; and the need for international laboratory practice standards. In 2002, the American Society for Clinical Pathology Board of Registry (ASCP BOR), the premier American laboratory certification agency founded in 1928, began to formally address these problems within their newly created Globalization Task Force. After many years of conducting research, meeting with members of the international laboratory community, and evaluating laboratory practice analyses in select foreign countries, the Task Force concluded that an international certification examination and eligibility routes be established for international laboratory professionals. In 2006, the ASCP BOR Board of Governors approved the Task Force's recommendation and created an international certification examination program. The new credential was designated ASCP^{i}, and the ASCP BOR began offering select examinations in South Korea that same year. By April of 2009, ASCP^{i} had increased the number of countries approved for international certification to twenty-eight. Beginning in May 2009, ASCP^{i} became available to qualified laboratory professionals, worldwide. From the inception of the program, ASCP^{i} examinations were only offered in the English language; however recently, based upon popular demand from members of the Spanish-speaking laboratory community, ASCP^{i} examinations are currently being translated into Spanish.

This paper will provide the history and progress of the Task Force activities, along with key results and lessons learned from the ASCP BOR international laboratory certification program. The authors believe that ASCP^{i} serves as an important vehicle to foster international laboratory practice standards and promote a universal and intercultural competent citizenry within the global laboratory workforce of the 21st century.

Keywords – medical laboratory, globalization, harmonization, international practice standards, ASCP^{i}

1 INTRODUCTION

Test methodologies and instrument systems used in the medical laboratory are changing rapidly world wide. As the laboratory industry grows, so does the need for continuing competencies of laboratory professionals. Healthcare systems are expected to provide safe healthcare practitioners in all service areas, including laboratory services, and the public demands that health professionals meet minimal levels of competence throughout their careers. In the United States (U.S.), medical laboratory professional certification is the process by which a credentialing body grants recognition of competence to a person who meets certain predetermined qualifications by that body and affirms that the person has demonstrated the knowledge to perform his or her essential tasks in the laboratory. U.S. certification is

awarded upon successful completion of a computer adaptive certification examination after meeting certain predetermined qualifications.

The American Society for Clinical Pathology Board of Registry provides competency-based certification examinations in several categories of laboratory medicine. The American Society for Clinical Pathology Board of Registry is the premier American laboratory certification agency. Founded in 1928, the Board of Registry is a separate certifying body within the organizational structure of the American Society for Clinical Pathology. The ASCP membership includes over 130,000 members consisting of laboratory professionals, pathologists, and other physicians. The BOR has certified over 430,000 medical laboratory professionals in 22 categories in the United States since its inception. The mission of the BOR is to provide excellence in certification of laboratory professionals on behalf of patients worldwide. Beyond their initial certification, domestic laboratory practitioners need to maintain continued competency throughout their career. The BOR also provides recertification through its certification maintenance program.

Prior to the ASCP BOR international laboratory certification program, there were limited opportunities for foreign educated laboratory professionals across the globe to obtain international certification. This report will highlight key events that led to the development of ASCP globalization and the progress which has been made in terms of BOR global activities, international certification, and responses to challenges and changes within the laboratory profession.

2 BACKGROUND

Since the development of the laboratory profession in the 1920s in the United States, medical laboratory professionals have contributed significantly to the diagnosis, treatment, and monitoring of disease, as well as biomedical research and disease prevention. Laboratory professionals perform and/or supervise the performance of laboratory testing in general or specialized areas of the medical laboratory. Data collected in medical laboratories are correlated to pathophysiology and used by clinicians for diagnosis, treatment, monitoring and prevention of disease. Education levels of medical laboratory professionals in the U.S. and abroad range from associate to doctoral degrees. Upon successful completion of an approved medical laboratory degree program, graduates are eligible to take a domestic certification examination and apply for state licensure, which is mandated and regulated by individual states. Not all states in the United States require licensure to practice in a medical laboratory.

Throughout its more than eighty year history, the laboratory profession has been faced with many challenges and rapid changes. For example, laboratory personnel have had to learn how to operate highly sophisticated and advanced instrumentation; they became involved in research and development of new diagnostic technologies, and witnessed the evolution of complex laboratory information systems. Over the years, the American Society for Clinical Pathology recognized the shifting global demands placed on the laboratory profession by the widespread use of laboratory-based advanced technologies, along with key challenges confronting the laboratory profession such as: acute, cyclic workforce shortages across the United States and abroad; increased mobility of qualified laboratorians who are unable to seek comparable employment outside of their state or country of origin; the lack of mutual recognition and international standards within the laboratory profession; and limited transnational education and training programs to prepare laboratory practitioners for the global workforce of this millennium [1]. The trend toward globalization fueled the Board of Registry's interest in developing an international credentialing program, which led to the creation of a BOR Globalization Taskforce to formally address key domestic and international challenges facing the laboratory profession.

3 HISTORY AND PROGRESS OF THE BOR GLOBALIZATION TASKFORCE AND ASCP[i]

In February of 2002, during the ASCP BOR Board of Governors strategic planning meeting, the creation of a Globalization Taskforce was identified as a major goal for developing international collaboration and

enhancing the quality of laboratory professionals internationally through BOR certification. That same year, an international survey was conducted of over 250 nationally accredited medical laboratory programs located within Australia, Hong Kong, Malaysia, Malta, Republic of Ireland, Sri Lanka, the United Kingdom, and the United States. This research study, endorsed by ASCP BOR, examined laboratory program directors' thoughts and opinions about questions related to international professional certification, international student exchanges, and mutual credentialing, among other topics. Results from the international professional certification category of the questionnaire indicated that over 75% of U.S. respondents favored international certification and 100% of non-U.S. respondents favored international certification. No consensus was reached, however, in terms of eligibility requirements for international laboratory professional certification. Along with findings from other research investigations such as environmental scans of domestic and international workforce trends regarding laboratory personnel; analysis of models for globalization and harmonizing standards; identification of potential strategic alliances and funding sources; coupled by the strong level of interest in international certification among colleagues overseas, the outcomes from this study increased the impetus for the ASCP BOR to pursue globalization [2]. Toward that end, the BOR Globalization Taskforce was formally established in 2002.

Since its creation, the Taskforce has been actively engaged in a variety of BOR globalization initiatives and activities. The original members of the Taskforce included officials from the Australian Institute of Medical Scientists, the Institute of Biomedical Science, a representative from the Department of Chemistry, The American University in Cairo, Egypt, and other laboratory leaders from the United States, each of whom possessed vast domestic and international expertise and experience in the laboratory profession. Taskforce members met via conference calls during the first two years. In 2004, the Taskforce convened their first face-to-face meeting in Los Angeles, CA. At that meeting, several recommendations were made by the Taskforce and subsequently approved by the BOR Board of Governors. A key Taskforce recommendation involved working with the BOR Research and Development Committee on an international practice analysis and developing a needs assessment survey tool detailing specific information about in-country education, training, and laboratory practice. The Taskforce also recommended that the Board of Registry seek American National Standards Institute (ANSI) accreditation through the ISO/IEC 17024 standard for selected BOR certification programs. The ISO/IEC 17024 standard, released in 2003, was designed to harmonize the personnel certification process worldwide. In 2005, the Taskforce recommended that an international certification examination program be developed for qualified laboratory students and practitioners, which would be designated ASCP^{i} ("i" indicating international). Initial ASCP^{i} examinations and eligibility routes were developed for three examination categories: international medical technologist, international medical laboratory technician, and international technologist in molecular pathology. In January 2006, these three ASCP BOR international certification exams became available and were initially launched in Seoul, Korea.

3.1 2007

In 2007, the BOR experienced rapid growth in the ASCP^{i} international certification program and several major developments took place. The Taskforce was converted to standing committee status and renamed the ASCP BOR Globalization Committee (GLC). The BOR expanded ASCP^{i} offerings to Hong Kong, Panama, and the Philippines and the International Certification Committee was developed for the Philippines and South Korea. Uniform international standards for ASCP^{i} were established, along with an international phlebotomy technician examination and eligibility routes. In addition, the first of several articles related to ASCP international certification were published [3] [4], and the first issue of the ASCP^{i} International Certification Report was published (Fig. 1).

Throughout the year, some GLC members participated in ASCP^{i} – related strategic planning meetings with international colleagues and others were invited speakers at international conferences that convened in the Caribbean region, Guyana, New Zealand, Panama, Saudi Arabia, and the United Arab Emirates. Representatives from the laboratory community, educators, and health officials in these countries expressed a strong interest in the ASCP BOR international certification program. In Guyana, the Minister of Health designated ASCP^{i} as the sole source of certification for medical laboratory personnel in that country. By the end of the year, ASCP celebrated its 100th international certified candidate. The BOR

applied for, and was granted, ANSI accreditation for select certification programs through the ISO/IEC 17024 standard.

Fig. 1 The cover page of a 2009 Issue of the ASCP[i] International Certification Report

3.2 2008

By early 2008, ASCP had received nearly 700 international applications from South Korea and the Philippines. The Globalization Committee met in Panama to review international eligibility requirements and evaluate proposals and needs assessments from current and potential countries that expressed interest in ASCP[i]. Guyana, Hong Kong, and Panama were approved for international certification. Advisory Boards were created in the Caribbean region, Egypt, India, Saudi Arabia, Taiwan, and the United Arab Emirates. International certification eligibility routes were revised for greater international uniformity. Scholarships were approved to subsidize certification examination fees for eligible international applicants in resource-limited countries. Several GLC members were invited speakers at venues such as the Health Unit at the U.S. State Department in Washington, DC; the World Congress of Biomedical Laboratory Science in India; the Philippine Association of Medical Technologists-USA in Texas; and the People to People Ambassadors Program for laboratory professionals in Russia. By the end of the year, ASCP had received a total of 1300 international applications from seven countries - China, Guyana, Hong Kong, India, Philippines, Saudi Arabia, and South Korea. A regional office was opened in Panama to provide more localized assistance and support for potential ASCP[i] applicants in Central and South America. Another major development took place that year in that the Committee considered developing a translated version of ASCP[i] examinations.

3.3 2009

This year began with the expansion of the ASCP BOR international certification program to a total of 28 countries: Argentina, Australia, Bermuda, Brazil, Chile, China, Costa Rica, Czech Republic, Dominican Republic, Greece, Guyana, Hong Kong, India, Jamaica, Japan, Kuwait, Panama, Philippines, Poland, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Trinidad & Tobago, Turkey, and United Arab Emirates. Representatives from Singapore and Taiwan finalized their Advisory Boards and joined the ASCP[i] International Consortium. In the spring, the GLC met in Malmö, Sweden to review international

examination statistics; examine needs assessments; evaluate proposals for international office space; and discuss present and future ASCP^{i} exam categories. Strategic meetings also took place with local Nordic colleagues to introduce the international certification program in the region. Key recommendations were made by the committee. They included, but were not limited to, developing a new international examination and eligibility routes for cytotechnologists as well as the development of a specialty gynecological option for cytotechnologists and categorical exams in chemistry and microbiology. Another recommendation was to translate the international examinations into select languages. Since a considerable portion of the international community speaks Spanish, Spanish was the first language recommended by the Committee for translation of ASCP^{i} exams to better serve the Spanish-speaking community. The Spanish version of select ASCP^{i} certification examinations became available October 1, 2009. Other languages may be considered for translation as needed in the future.

Most importantly, the ASCP BOR international certification program was further expanded to include qualified applicants worldwide. As of early September 2009, nearly 2000 international applications have been received from sixteen international countries including China, Costa Rica, Guyana, Hong Kong, India, Jamaica, Jordan, Myanmar, Panama, Philippines, Saudi Arabia, Singapore, South Korea, Taiwan, and Turkey. To date, nearly 1000 examinees from ten countries have passed ASCP^{i} international certification examinations. Members of the GLC continue to be actively engaged with members of the ASCP^{i} International Consortium and several members participated in international conferences such as the 9th Chinese Laboratory Medicine Conference, which convened in Hong Kong in June.

4 LESSONS LEARNED

There were many “lessons learned” from embarking upon a globalization process and an international certification program. The learning curve was steep for many individuals involved in charting the course toward globalization. The BOR globalization and international certification program was successful because of the cooperative efforts, ongoing dedication, global vision, and leadership of the BOR staff, and members of the Globalization Committee, Board of Governors, and Examination Committees. We learned that a process of this magnitude and importance took more time, research, and resources (both financial and human) than we originally realized. Due diligence was crucial along the way to support the goals and objectives of each component of the globalization process. We realized that non-native English speaking candidates may not want to take the international certification exam written in English, which proved to be the case when we met in Panama and debated this issue with representatives from South America. We learned then that we had to move toward a translated version to accommodate the needs of the Spanish-speaking community. At the same time, as ASCP^{i} expands to more non-native English speaking countries, we shall consider translating the certification exams in other languages in the future. Also, given the success of the Panama regional office, we have learned that other regional offices around the globe will be very beneficial. Perhaps one of the most important lessons that we learned during the BOR globalization process was that with comradeship, patience, perseverance, and careful planning we were able to accomplish our goals and enjoy the journey despite the unforeseen obstacles that got in our way over the years!

5 SUMMARY AND DISCUSSION

The ASCP BOR international certification program ASCP^{i} was designed and implemented in response to global demand for a reliable healthcare system to ensure public health and patient safety and to promote high quality international laboratory practice standards in medical laboratories, worldwide. ASCP^{i} confirms that an individual has demonstrated that she or he possesses the crucial knowledge to perform essential tasks within areas of the medical laboratory. And, ASCP^{i} has opened the doors for foreign educated and trained lab personnel with an international credential to become more competitive when seeking job placement at home or abroad.

The International Consortium for ASCP^{i}, which consists of in-country Advisory Boards, has been expanded to include 14 international countries, along with their respective affiliated professional organizations, hospitals, and educational institutions and continues its rapid growth (Fig. 2). A key role of

the Globalization Committee and the ASCP[i] International Consortium is to determine if prospective ASCP[i] applicants meet ASCP[i] eligibility requirements for their designated category. ASCP[i] is only extended to individuals whose education and medical laboratory training programs are deemed comparable with those of the United States. Advisory Board members are an integral part of the ASCP[i] program and support the Globalization Committee in a variety of ways. For example, Advisory Boards develop a communications strategy inside and outside of their country; provide marketing details; compose a media plan; help the BOR improve international examinations; aid with the verification of applicant education/experience; identify in-country laboratory education and training programs; and identify contacts in hospital-based medical laboratories and other laboratory sites.

Fig. 2 Current ASCP Board of Registry Globalization Committee Organization Structure

ASCP[i] certificants who wish to immigrate to the United States should plan on taking the ASCP domestic version of the exam to establish competence with the United States regulatory and federal policy-related questions, which are not included in any of the ASCP[i] certification examinations. Should an ASCP[i] certificant immigrate to the U.S. and have their credential recognized, individual laboratory/hospital employers will be responsible for making equivalency decisions. ASCP[i] is approved by the State of California for laboratory workers to become licensed; however, ASCP[i] certificants immigrating to one of the other licensure states may have to take and pass a state-approved examination since ASCP[i] is not yet recognized in all licensure states in the U.S. In addition, individuals hoping to immigrate to the United States based on their laboratory background must still apply for a H1-B visa and obtain a VisaScreen certificate that is issued by CGFNS International, formerly the Commission on Graduates of Foreign Nursing Schools (www.cgfns.org). CGFNS International is an internationally recognized authority on credentials evaluation that verifies the education, registration and licensure of nurses and health care professionals worldwide. Test of English as a Foreign Language (TOEFL) scores are required for immigration purposes through the VisaScreen process; however, TOEFL scores are not required to take the ASCP[i] exam. Obtaining a VisaScreen certificate suggests a high probability that the potential immigrant may likely be able to obtain a job in the United States.

Rates of international mobility of health professionals have been on the rise and suggest a need for consideration of creating standards of practice, expansion of credentialing programs, and licensure for the health professions across international boundaries. Should this migratory pattern continue, a defined standard of practice is essential to assure quality international standards for educating and training health professionals available to staff health-related services. In the case of the laboratory profession, legislative regulations at the domestic and international levels have been developed in the last two decades, such as International Organization of Standardization (ISO) and the International Electrotechnical Commission (IEC) standards supported by recommendations of laboratory professional societies [5]. ISO and IEC form the specialized system for standardization, worldwide. For example, ISO 15189 is an internationally recognized standard for quality management in the medical laboratory for use by accreditation bodies that recognize the competence of medical laboratories [6] [7]. As Burnett and Blair reported [7], ISO 15189 is a significant step towards harmonization of medical laboratory practice, but it also brings to light new issues as to how it will be used or interpreted in different countries. In the United States, the bodies that validate compliance and competence of individuals against specific requirements are the certification agencies. In other countries certification agencies are referred to as registration and assessment bodies and or registrars. The ASCP Board of Registry has been the gold standard for domestic and international certification for the laboratory profession.

International standards such as ISO/IEC 17024 emerged with the primary objective of achieving and promoting a globally acceptable benchmark for certification organizations and those personnel who are certified by them. The ISO/IEC 17024 standard is the basis for the recognition of certification bodies and their certification schemes to facilitate their acceptance domestically and internationally. ANSI continues to create the benchmark of excellence in American voluntary standardization and conformity assessment systems since 1918. As previously stated ANSI is the only United States representative and member of ISO and IEC, which is one of the primary reasons this organization was chosen by the Board of Registry for their accreditation.

6 CONCLUSION

With up to 80% of the data generated in a standard U.S. medical chart containing information produced by the medical laboratory, the importance of the role that laboratorians play in health services is magnified. Although we do not formally educate laboratory practitioners internationally, health issues are nevertheless international in scope and will only increase as health care problems become more universal in diversity and impact on local, regional, and national economies. Specific examples of this are the acute threats of bioterrorism such as the use of anthrax spores for terrorist purposes that occurred in the United States post-September 11, 2001 and the worldwide pandemics of AIDS and tuberculosis. Other emerging infectious cases such as outbreaks of different strains of Avian Influenza (bird flu), Severe Acute Respiratory Syndrome (SARS) and what now is formally called novel H1N1 influenza virus

continue to spread worldwide. In outbreaks such as these and in routine daily operations laboratory workers across the globe are called upon to provide clinicians with timely, appropriate and accurate laboratory tests and to help them diagnose disease and interpret patient test results. That said, emerging infectious diseases and globalization trends drive the need to develop multinational models for quality assessment and management of laboratory personnel such as harmonizing education standards and credentialing to promote consistent quality management practices and protect public safety. The authors do not claim that BOR international certification can solve all issues facing the laboratory profession; however, we believe that ASCP[i] certification is an accepted vehicle by which all qualified domestic and foreign educated and trained laboratory graduates and laboratory workers can be validated at the national and international levels.

In conclusion, in order for laboratory workers to function effectively in the global laboratory workforce of the 21st century there continues to be a need to develop a professionally competent and intercultural citizenry. The BOR Globalization Committee, through its organization structure of Advisory Boards across the globe, is responding to this need. Even though the BOR globalization process undergoes continuous quality improvement, more progress will be needed from the international community of healthcare administrators, educators, and practitioners toward building and strengthening medical laboratories worldwide. International certification is one effort in the credentialing process which provides a unique opportunity for laboratory professionals to address a growing concern in the delivery of proper and reliable health care services not only in the United States, but also globally.

7 REFERENCES

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