Sustaining Global Healthcare Efforts

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Global Health

In a world that is growing progressively smaller, emerging health issues in resource-limited nations don’t stay within these nations’ boundaries. They cross borders. HIV, H5N1, and SARS are prime examples.

Containing emerging pathogens is vitally important, and that’s why ASCP is assisting in building a sustainable infrastructure throughout countries with current or emerging epidemics, such as those within sub-Saharan Africa. Access, treatment, and assistance with health policy in these countries will help prevent future catastrophic issues throughout the world.

Through ASCP’s Center for Global Health and the ASCP Board of Certification, the Society is expanding its influence to improve health care around the globe. Without an accurate diagnosis of HIV, there is little hope for treatment or prevention.

In collaboration with the Centers for Disease Control and Prevention (CDC), ASCP provides training in resource-limited countries through the Strengthening Laboratory Management Towards Accreditation (SLMTA) program. ASCP consultants serve as trainers and mentors to assist in-country laboratory managers in such areas as productivity and inventory management, test result reporting, and quality assurance to prepare laboratories for accreditation, thereby ultimately improving the quality of healthcare delivery.

In the last year alone, ASCP’s Center for Global Health has provided training to 1,105 medical laboratory scientists throughout 15 countries in Central Asia, Eastern Europe, and sub-Saharan Africa. More than 364 laboratory professionals in Mozambique completed workshops to learn about laboratory improvement processes as they work toward laboratory accreditation. ASCP’s efforts extend beyond Africa to include training in Vietnam and Cambodia, Kyrgyzstan, Haiti, and Ukraine.

In this issue, we examine the impact that ASCP and you—our members—have made over the last decade to strengthen the quality of laboratory medicine in resource-limited nations. ASCP President Steven H. Kroft, MD, FASCP, maintains that ASCP members have good reason to be concerned about the state of health care around the globe. As populations worldwide become increasingly mobile, we become a single global community.

In her article “A Decade of Change,” editor Molly V. Strzelecki notes that when PEPFAR (President’s Emergency Plan For AIDS Relief) was implemented a decade ago, few of the recipient countries had access to even rudimentary laboratory services, let alone quality services. Today, PEPFAR draws closer to its goal of creating an AIDS-free generation. ASCP is helping meet this goal by establishing high-quality testing services throughout PEPFAR countries and educating the next generation of healthcare workers.

While accurate diagnoses and treatment for individuals with HIV/AIDS have improved significantly, now people are living longer and developing other chronic diseases, such as cervical and breast cancer, according to Former Ambassador-at-Large and U.S. Global AIDS Coordinator Eric Goosby, MD, in a Q&A with Critical Values. Another challenge that resource-limited countries face is procurement of medical laboratory equipment. Marie Levy examines the obstacles that medical laboratories face and explores possible solutions.

Throughout his active involvement as an ambassador for ASCP, Jack A. Hager, MT(ASCP)SBB, has fielded multiple inquiries from members asking why the Society is actively involved in global health initiatives. The answer? We live in an age when the majority of the world is interconnected, virtually and physically. I regularly correspond with colleagues around the globe. Video conferencing has allowed us to hold virtual meetings with participants from multiple continents. I’m always amazed that I can be in China in 24 hours.

As members of the global healthcare workforce and the largest society in pathology and laboratory medicine, it is incumbent upon us to take a leadership role in supporting other countries’ efforts for developing sustainable, high-quality health systems that improve patient care around the globe. We look to you, our members, as the critical change agents who can help others in less fortunate countries survive through your crucial interventional efforts. However, our work has only just begun.

As always, thank you for your continuing support of ASCP. Please send me your comments and suggestions at Blair.Holladay@ascp.org. My very best to each of you.

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Dr. Holladay is Executive Vice President of ASCP.
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The Evolution of Medical Laboratory Technology in Pakistan

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38 ASCP News
I fielded this query recently from a pathologist colleague at a meeting, and it certainly wasn’t the first time I had been asked a question of this nature. If you have attended a recent American Society for Clinical Pathology (ASCP) Annual Meeting or have paid any attention to communications coming out of ASCP, it is hard not to notice that the organization has become seriously engaged in global health activities in the past eight years. The question of “Why?” is an important one; after all, we have plenty of healthcare issues to deal with here at home, right?
Before I answer the question of “Why?” I should probably summarize the “what”—what it is, exactly, that ASCP is doing on the international stage. Through our involvement with PEPFAR—the President’s Emergency Plan For AIDS Relief, originally created by President George W. Bush (see accompanying article in this issue of *Critical Values*)—ASCP has been helping build sustainable laboratory infrastructures in developing nations, particularly sub-Saharan Africa. Focused on diagnosis, management, and prevention of HIV, ASCP has helped develop the diagnostic pillar that supports these efforts—because without accurate and timely diagnostics, the PEPFAR effort would crumble.

**Touching Lives**

Targeting workforce development and accreditation, ASCP has helped design curricula, develop faculty, and improve the knowledge and skills necessary to support public health. ASCP’s PEPFAR activities have directly touched 1,105 participants, 209 labs, and 29 MLS programs in 18 countries. The systems that are being established are, in turn, literally helping millions. PEPFAR has been so phenomenally successful that people in these nations are living longer, and consequently dealing more and more with non-communicable diseases, such as cervical and breast cancer. Thus, the focus is shifting from clinical lab activities to anatomic pathology services, and ASCP plans to be right there to provide support in filling the enormous gaps that exist in anatomic pathology in these nations.

As it stands, ASCP is a partner with Laura and Barbara Bush’s Pink Ribbon/Red Ribbon Campaign, which targets cervical cancer in HIV-positive populations (those of you who attended the ASCP 2012 Annual Meeting in Boston may have heard Mrs. Bush speak on this topic). ASCP has been working with the country of Botswana to fill the gaps in anatomicpa
thology services for diagnosing cervical cancer (see ASCP Immediate Past President Joel Schilling’s article on this effort in the April 2013 issue of Critical Values). Finally, the ASCP Board of Certification certifies laboratory professionals internationally through the ASCPi program, bringing the gold standard of laboratory professional certification to more than 80 countries.

Our Shrinking World

So now, why? Even if any of us as individuals have trouble seeing the relevance of global health to us personally, our society (meaning the United States, not ASCP) has very good reason to be concerned about it. The world is figuratively shrinking by the day, with populations worldwide becoming more and more mobile; we are truly becoming a single global community. Thus, both existing and emerging communicable diseases in developing nations pose direct threats to public health in the United States. If you don’t believe that reversing the rampant growth of HIV-infected populations worldwide isn’t relevant to the United States, think again. Perhaps by building robust healthcare systems in developing nations we can even prevent the next global scourge from ever happening. Furthermore, poor public health destabilizes communities, cultures, and governments; and unstable nations are a threat to U.S. national security.

ASCP is also helping the cause of national security in a more direct fashion, through a contract from the U.S. Department of Defense. This involves assisting the Defense Threat Reduction Agency in the development of a program to train and qualify medical laboratory specialists. This program will be piloted soon in Eastern Europe.

“Ok, I get it, but I don’t see why my ASCP dues should fund these efforts.”

Rest assured, all of ASCP’s global activities are self-sustaining or grant-funded. So your dues are being used to build the programs, activities, and benefits designed to help you as an individual be successful in developing your career. As a matter of fact, the infrastructure built to support ASCP global activities indirectly helps support some ASCP member programs. So, it’s a win-win.

“I thought ASCP stood for American Society for Clinical Pathology. Aren’t global health activities kind of out of its scope?”

ASCP is a 501(c)(3) organization, incorporated to advance the public good. Our mission is to “provide excellence in education, certification, and advocacy on behalf of patients, pathologists, and laboratory professionals.” Nothing in these basic organization principles suggests geographic boundaries to our beneficence. And we are, indeed, the American Society for Clinical Pathology. As Americans, we inherit a long national legacy of generosity toward those in other nations who are less blessed by the good fortune, abundant resources, and social and economic stability that we have enjoyed. I, for one, believe that ASCP should continue this American tradition.

Dr. Kroft is Professor of Pathology, Vice Chair for Clinical Pathology, and Director of Hematopathology at the Medical College of Wisconsin in Milwaukee.
The American Society for Clinical Pathology offers information and education that can aid your practice as pathologists or laboratory professionals. Whether you read the printed journals or get your information online, the *American Journal of Clinical Pathology* (AJCP) and *Lab Medicine* provide the latest research, reports, and studies. Here are some highlights from recent issues.

**AJCP**

The February issue of *AJCP* features an article by Dr. Jean Sakandé et al about the implementation of an external quality assessment program for laboratories in Burkina Faso, as well as an article by Mr. Edwin Kibet et al that looks at improvement in performance at a laboratory in Kenya as a result of international accreditation. The March issue contains an article by Dr. Jennifer Spicer et al regarding implementation and evaluation of a case-based microbiology curriculum. This is the second article in an ongoing education series. In the April issue, Dr. Robert Schmadeka et al have a review article that covers current concepts related to the clinicopathologic features of triple-negative breast carcinoma. These articles and others can be accessed at www.ajcp.com as part of your ASCP membership.

**Lab Medicine**

The Winter 2014 issue of *Lab Medicine* features an article by Dr. Jiajia Yu et al on recent advances in clinical applications of circulating cell-free DNA integrity, as well as a case study on small cell carcinoma of the cervix in a 32-week pregnant woman, by Dr. Haiying Liu et al. An article by Dr. Kenneth Blick and colleagues looks at an alternative method for measuring free phenytoin after a popular assay was discontinued.

Visit www.labmedicine.com and labmedicineblog.com for great information on global health issues. Usman Waheed, BS, MLT, and colleagues discuss the notion that phlebotomy departments are the backbone of the laboratory: http://labmed.ascpjournals.org/content/44/1/e69.full.

On Lablogatory, blogger Marie Levy shares her knowledge about medical laboratory infrastructure in developing countries with our readers. Ms. Levy spent more than five years working in the Global Outreach department of the American Society for Clinical Pathology. While at ASCP she implemented a grant from the Centers for Disease Control and Prevention.
By Jack A. Hager, MT(ASCP)SBB

Where Our Health and Global Health Merge

Benjamin Franklin (1706-90), in a letter to Jean-Baptiste Leroy, dated 1789, quoted what was an already familiar and fatalistic proverb:

“In this world nothing can be said to be certain, except death and taxes.”

There are diverse individual views on this quote, but it is reasonable, at least from my experience, to conclude that though most of us accept death and taxes as certainties, we also try to avoid or delay them as much as possible, and prefer to consign both to someone else.

Views on health care are also varied, but at a very simplistic level, individual and organizational views of health care can be categorized into three groups: My Health, Our Health, and Their Health.

My Health is probably the most obvious category, wherein concern is focused on meeting personal needs for a long, healthy, and productive life. Very few individuals or organizations have no interest in their own well-being or longevity.
Our Health is where the interest or concern extends to others for whom a genuine sense of care and compassion exists. The scope of the “our health” category is manifold and may be limited to family, friends, and associates, or be so sweeping as to include everyone everywhere.

Their Health is a category where consideration, thought, and resources are allocated to the health of people who are geographically distant and/or with whom we have limited association.

For some individuals and organizations, there really is no “their health” category, because the concern for others whom we genuinely care about, or the “our health” category, extends to all mankind. We can be certain that the American Society for Clinical Pathology (ASCP) is one such organization, because for a number of years through the ASCP Global Outreach program, work has been progressing around the world to improve laboratory quality and patient health outcomes. Global Community is, along with Knowledge, Advancement, and Collaboration, one of the four goals and areas of special interest for ASCP in 2014.

Global health and, by extension, the work ASCP is involved in, may seem on the surface to be mainly a “their health” issue because the work is being done on other continents and is providing for people worldwide. I’ve had members ask me why ASCP is so involved in global health. The answer in part is that because we live in an age when so much of the world is interconnected, global health has become pertinent to all three of the healthcare views mentioned above. Twenty years ago, the citizens of the United States didn’t consider...
West Nile Virus (WNV) an issue within the “my health” realm. WNV was an endemic disease found only in Africa, and thus was considered a “their health” problem. Today, whether in Southern California or Maine, it is in everyone’s best interest to take precautions against WNV during the summer.

Similarly, in the 1970s HIV was not an “our health” issue. It was not even a “their health” issue, except for perhaps a handful of people who were studying the bizarre manifestations of the infection. Today there are no communities and very few people who would not consider HIV to be a pertinent “our health” topic. President Obama exercised sound logic last fall when he extended the 10-year-old President’s Emergency Plan for AIDS Relief (PEPFAR) that was started by President George W. Bush. Also, in December, around the time of the 25th World AIDS Day, it was announced that the U.S. would shift $100 million from existing programs to a newly announced initiative to find a cure for HIV.

The global health initiatives ASCP is involved in are effective. For example, regarding the topic of HIV, a recent United Nations report states that the rate of new HIV cases has fallen 33 percent since 2001. New cases of HIV/AIDS worldwide fell from 2.5 million in 2011 to 2.3 million in 2012, while deaths related to the illness dropped to 1.6 million in 2012, down from 2005’s peak of 2.3 million. Unfortunately, the number of patients without access to treatment in low- and middle-income countries grew by almost 20 percent, to 9.7 million, indicating that there is more work to be done on prevention and treatment.

An ever-growing number of infectious diseases other than WNV and HIV have moved from being “their health” issues to “our health” and “my health” issues. Chagas disease, leishmaniasis, and a whole host of mosquito-borne viruses such as dengue fever and chikungunya are crossing continents. The various strains of influenza viruses continue to circumnavigate the globe.

Though the quote on death and taxes is spot on, it is also fatalistic. We need not be fatalistic on health issues; it is better instead to act proactively and collaboratively as ASCP is doing. Another famous historical leader, Woodrow Wilson, is quoted as saying, “One cool judgment is worth a dozen hasty counsels. The thing to do is to supply light and not heat.” This is an astute strategy when it comes to global health issues.

A great example of proactive and collaborative efforts is this season’s outbreak of the H1N1 influenza virus. As of this writing, H1N1 is being identified as a major component of the 2013-2014 flu season. Although the World Health Organization (WHO) announced the last H1N1 (or swine flu) pandemic was over in August 2010, epidemiologists knew H1N1 was still circulating. Thankfully, H1N1 was included in both last year’s and this year’s flu vaccines. In retrospect, that was an insightful decision given that in 1918, during President Wilson’s term, the H1N1 virus killed more people than World War I.

ASCP’s decision to make global health a strategic organizational priority “supplies light” by means of providing pathology services otherwise unavailable to thousands of people. Besides being the right thing to do, it shows that we have learned many lessons from history. Collaboration in the interest of global health has resulted in smallpox, measles, mumps, and diphtheria being generally eliminated as health concerns, and malaria mostly eliminated from the United States. We do not know what lies ahead, but collaboration on global health issues will provide us hope that someday we can speak of similar elimination of diseases such as HIV, WNV, and malaria worldwide.
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During medical school and residency training, I was continually impressed with the number of medical mission trips available in various specialties. However, I was often disappointed that I did not readily come across similar opportunities for pathologists. Part of this was due to my own lack of in-depth investigation, but overall there appear to be substantially fewer medical mission trips to resource-poor settings for trainees in pathology than for other medical specialties. This certainly is not due to a lack of need.
Considering the Numbers

Let’s look at a few numbers. In 2010, there were 17,986 practicing pathologists¹ for a population of more than 308 million in the United States² (approximately 5.7 pathologists per 100,000 people). In Sudan during the same year, there were 51 pathologists (40 of whom practice in the capital city of Khartoum) for a population of nearly 40 million³ (approximately 0.13 pathologists per 100,000 people). The paucity of pathologists within resource-poor settings creates an added barrier to patients receiving quality medical care. Additionally, this shortage of pathologists has resulted in poor integration of pathology into public health policy decisions,⁴ which further compounds the current dilemma.

Simply increasing the number of pathologists worldwide, however, will not result in improved patient care. We must also educate the core users of pathology and laboratory services: the ordering physicians. Demonstrating to pertinent stakeholders the importance and added value of appropriate use of pathology diagnostic services will both improve care and increase demand for such services,⁵ which in turn will likely influence resource allocation to make such changes possible.⁶ As Dr. Roberts discusses in the article referenced here, when we are part of medical missions, it is essential that we play an active role not only in educating pathologists, but also in educating our current and future clinical colleagues.⁷

Assembling the Team

Our specialty has lagged behind others on international outreach, but we are now beginning to increase our participation worldwide. While we continue to open new doors and build relationships across the world, it is absolutely essential that pathology trainees are included. Involving residents in this process offers a unique opportunity for trainees to witness the practice of pathology in a resource-poor setting and gives exposure to an entirely different set of disease processes, including but not limited to infectious diseases and advanced malignancies not often seen in the United States. Additionally, in my personal experience, seeing firsthand the unique challenges faced by pathologists in western Africa has led me to view my own daily practices in a much different way and has made me particularly cognizant of waste within our system and the readily available luxuries we often take for granted.

Four years ago, I never would have imagined making international outreach part of my future practice. However, my single, short experience truly opened my eyes to the great need in resource-poor settings and definitely sparked a personal interest. While not all trainees will want to incorporate such practice into their future, many will—if they’re given the initial opportunity. There is no better time to start than within residency training. I highly encourage and implore residency programs to strongly support residents who are interested in such endeavors. It is not possible to simulate the practice of pathology in a resource-poor setting without being immersed in the daily practice itself.

Building the team does not stop at trainees. What we do every day at home is not possible without a diverse network of individuals. From obtaining, transporting, and processing tissue to tracking and reporting results, the job of delivering quality patient care is in the hands of numerous uniquely trained professionals. Hence, it is only logical that those same vital team members are included when building programs abroad. We must encourage the entire team’s participation. When organizing international outreach trips, we should consider the specific goals and purpose of that trip and include as many parts of the laboratory team as possible to fully address all aspects of our goals.

Building Sustainable Infrastructures

When we travel abroad on medical missions, it is essential to keep in mind the larger issue at hand. Assisting laboratories with their current cases provides short-term benefit. However, it is essential that we not only address the core problems at each location but also focus on developing sustainable solutions to help build the world’s pathology and laboratory workforce. We must find ways to generate support and interest in the specialty in order to simply have the necessary trained workforce at hand.

Even when we have enough individuals and have developed appropriate training and continuing educational programs, broader systems-based problems need to be addressed. We must truly open our minds as we go abroad because what we do at home is not necessarily transferable to other locations. Investing time with local and national governments and hospitals will be essential to developing the infrastructure and logistics that are often lacking in these countries. Ultimately, the challenges and struggles faced by pathologists and laboratories worldwide are extremely complex and require the efforts of the entire laboratory team.

References


Dr. Stall is a fourth-year pathology resident at the University of Michigan, Ann Arbor, Mich.
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Clinical laboratories represent an area of health care that has undergone a great deal of improvement in recent years. The introduction of a variety of laboratory tests and diagnostic techniques in the wake of technological advancements has given a new perspective to the field of medical laboratory technology. Since the future role of medical laboratory technology is strongly challenged by new technological pressures, it is necessary to understand the evolution of this field of medical science in order to address curriculum- and training-related issues of the discipline, especially in a developing country like Pakistan where there is a need for continuous professional development and highly specialized training. The true role of medical laboratory technology can only be achieved by setting up specialized institutions, updating and standardizing the curriculum, and instituting a Pakistan Medical Technology Council. This review highlights the history of medical laboratory technology in Pakistan and future recommendations that are imperative for bringing this important medical profession up to date.

**Growth in Laboratory Medicine**

Medical laboratory technology is one of the most dynamic and rapidly growing scientific fields, and the practice of modern medicine is incomplete without the role of the clinical laboratory. Medical laboratory professionals play a critical role in the management of modern health care by assisting in the diagnosis of diseases; these professionals are considered the detectives of the healthcare world, searching for clues that will help in better diagnosis and patient care. Medical laboratory technology has thus become a very advanced field, and modern hospitals now have very sophisticated and automated diagnostic laboratories where medical laboratory technologists (MLTs) have the option to specialize in various subspecialties of the field.

However, in resource-limited settings, diagnostic laboratories are still quite basic and the MLTs working in such setups are usually generalists. In addition, MLTs are also in demand in the research laboratories of industrial, public health, and medical laboratories and as teachers in hospitals, colleges, and universities.

**A Brief History**

The first proper, full-fledged modern clinical laboratory was opened at Johns Hopkins Hospital in Baltimore in 1896 for the assessment of human body fluids. At that time, the
importance of laboratory examination in diagnostics and therapeutics was not recognized. Laboratories consisted of a small setup ancillary to the physician’s office or hospital, with physicians doing the testing themselves. Laboratory investigations were considered an expensive luxury and clinical laboratory science was a poorly understood, vague, and ill-defined occupation.

The early 1920s marked the emergence of the field of clinical laboratory science as a distinct profession. With advancement in clinical laboratory science, the skills and knowledge required by these assistants became more clearly defined in order for them to competently exercise their duties. The field grew in terms of the number of practitioners and the volume and variety of laboratory tests performed.

In the 1950s, technological advances laid the foundation for advancement in instrumentation, automation, quality control, and quality assurance. These advancements not only enhanced the precision and accuracy of results, but also provided more efficient analytical processes. The demand for clinical laboratory staff paved the path to establishing training institutes with numerous programs for laboratory technicians all over the world.

**National Scenario**

The path that started in Baltimore affected many developments in Pakistan. After independence in 1947, Pakistan inherited a rudimentary healthcare services system that had to cater to the needs of some 30 million inhabitants. The hospitals were devoid of any trained laboratory technologists, so untrained paramedical staff performed this role. The first diploma/certificate-awarding organization for laboratory medicine was established in 1957 as the West Pakistan State Medical Faculty, followed by the School of Medical Technology in 1961. The establishment of the University Grants Commission (now the Higher Education Commission) under the University Grants Commission Act of 1974 further strengthened its foundations.

The first School of Medical Technology, founded at the National Health Laboratories (now National Institute of Health) in Pakistan, offered a one-year diploma in medical laboratory technology (MLT). This diploma was later upgraded to a two-year course equivalent to a higher secondary school certificate in MLT. Subsequently, various paramedical institutes were established to offer MLT diploma/certificate courses. However, training was often least available for existing staff who were in desperate need of it, particularly those working in small hospital laboratories that did not have easy access to training institutions.

Rapid advancements in technology and the rise of automated instruments in the clinical laboratory changed the nature of work for laboratory technicians. Consequently, their work evolved from the performance of a few relatively simple procedures to the performance of a variety of tests using increasingly complex methodologies and instruments. Cognizant of these developments, the Government of Pakistan initiated a bachelor’s degree program in medical laboratory technology at Jinnah Postgraduate Medical Centre, Karachi, in the early 1970s. That program was discontinued a few years later but initiated again at the National Institute of Health, Islamabad, and Sheikh Zayed Federal Post Graduate Medical Institute, Lahore, in the early 1990s.
Laboratory personnel were classified into two groups: medical technologists (having a bachelor’s degree in laboratory technology) and laboratory technicians (having a diploma in laboratory technology), based on their level of education, training, and experience. Currently, more than 30 institutes affiliated with various universities are offering a BS program in MLT in Pakistan. The diploma- and certificate-awarding institutes and educational boards operate under the umbrella of respective Departments of Health through Provincial Medical Faculties, and their role is that of examining bodies for the institutes. All universities are autonomous bodies associated with the Higher Education Commission (HEC), Pakistan.

In 2006, the University of Health Sciences, Lahore, initiated a master’s program in MLT with a research component in one of the specified fields, such as microbiology or biochemistry. In 2012, the same university also initiated an MPhil degree program in MLT with specialization in one of the above mentioned fields. It is estimated that there are approximately 7,000 qualified medical laboratory technologists in Pakistan at present. However, it is critical to note that two provinces (Balochistan and Gilgit-Baltistan) and the state of Azad Jammu Kashmir do not have a teaching institute for MLTs. There is a wide diversity in the standard of the institutes and no regulatory or accreditation system. Lack of regulation, however, is not a feature of such allied health sciences professions as medicine, dentistry, nursing, and pharmacy, which have organized professional bodies (Pakistan Medical and Dental Council, Pakistan Nursing Council, Pakistan Pharmacy Council) with the mandate of registration and licensing of professional institutes and professionals.

In May 2013, the American Society for Clinical Pathology (ASCP) established an advisory board in Pakistan to assist in promoting international certification there. This is an important development and likely to strengthen the field of MLT in the country.

**Curriculum Revision**

As there was no mechanism for providing systematic instruction, each training program established its own educational criteria, curriculum, and training standards. Growth of the sector led to a need to develop a standardized training program for laboratory technicians that would include minimum educational prerequisites and technical qualifications.

There is a diversity of opinion regarding curriculum revision and standardization. A minority believes that the process of education for laboratory technicians should be based on the same pedagogical principles as in any other educational system. This group recognizes that both knowledge and extensive independent judgment are required in the clinical laboratory, though some also believe clinical laboratory practice is a skill that develops through repetitive drilling of laboratory techniques and extensive academic preparation is a waste.

However, most individuals connected with the education of laboratory technicians believe that the practice of medical technology is purely mechanical and requires little thought. A whole year of practical training, consisting primarily of drilling six to 10 routine techniques, was believed to be adequate preparation for laboratory technicians. It was also thought that the length of the training program should be kept to a minimum so that “persons in modest circumstances” (i.e., those from lower socio-economic backgrounds who could not spare the time or money) could enroll in training programs. The nature of medical laboratory practice has evolved and therefore new roles and expanding responsibilities for medical technologists in the areas of management, supervision, research, and education are required. The existing curriculum does not adequately address the new roles and responsibilities of medical technologists. In most cases, this curriculum is outdated as well.

The curricula for MBBS, BDS, BS Nursing, BS Physiotherapy, and PharmD are uniform and standardized across Pakistan. Every institution has to execute the same curricula; however, that is not the case in the field of medical laboratory technology, which is working in complete isolation. The services provided are of varying standards with a few institutes still offering a two-year BS in medical laboratory technology while the rest (more than 25) have a four-year program of BS MLT. Many centers offering degrees, diplomas, certificates, and courses in medical laboratory technology have mushroomed to existence to fill the human resource gap in clinical laboratories. Revisiting the medical laboratory technology profession and trying to reposition, rejuvenate, and restructure its current curriculum to meet and, if possible, surpass the currently achieved standard of healthcare services is crucial to further modernize health care in Pakistan.
It is critical for MLTs to have systematic and organized educational experiences that will help them stay knowledgeable about advances in education and technical methods throughout their careers. The time has come for educators to re-examine and revise the entire educational program so it can enable MLTs to function effectively in their new roles. They now have to prepare professional MLTs who not only supervise technical procedures in the laboratory, but also could participate in research and teaching. The broadening horizons of clinical laboratory practice have created new opportunities for MLT practitioners and are posing new challenges for MLT educators. It is essential to develop the professional cadre for clinical laboratories, and carefully review the existing curriculum from different academic boards and universities. This is needed to develop a common template that can then be adopted countrywide through the support of the HEC, Government of Pakistan, which has exercised similar protocol for several professional degrees. HEC needs to play a significant role in implementing this reform process, and the academic institutions should fully embrace the change.

Pakistan Medical Technology Council

In Pakistan, the allied health fields have had professional bodies for a very long time. The Pakistan Nursing Council was established in 1948; the Pakistan Pharmacy Council in 1967; and the Pakistan Medical and Dental Council in 1962. There is, however, no such body to protect the interests of the field of medical laboratory technology. With the rapid advancements in this field and the growth of this sector in Pakistan, there is a need for a professional body to determine a career structure and resolve core issues such as recruitment policy, promotion channels, staffing patterns, job descriptions, and continuous medical education in the medical laboratory technology field.

The first national body for medical technology was established in 2010 as the Pakistan Association of Medical Laboratory Sciences (PAMLS). In India, a similar body has been in existence since the 1970s. PAMLS has organized two national conferences, in 2010 and 2011, with more than 500 medical technologists and laboratory professionals participating. However, PAMLS is currently inactive and needs government attention and support. Another organization, the Medical Laboratory Technologists Association of Pakistan, has also been set up to promote MLT professional growth and development.

It is crucial that these two organizations work together for the advancement of this field. These two groups should pave the path for the establishment of an accreditation body, i.e., a Pakistan Medical Technology Council (PMTC), similar to the Pakistan Nursing Council or Pakistan Pharmacy Council. This accreditation body should be identical to the National Accrediting Agency for Clinical Laboratory Sciences in the U.S., which accredits and sets standards for medical laboratory training programs, and ASCP, which certifies individuals upon meeting certain academic, experience, and/or training prerequisites and upon successfully passing an exam.

The major objectives of PMTC should include: (1) standardizing the curriculum for medical laboratory professionals; (2) inspecting and monitoring academic institutions for approval based on established standards, including curricula content, minimum classroom and teaching aid facilities, and faculty education and experience; (3) providing licenses to practitioners; (4) acting as an advisory body for MLT at the federal and provincial levels; and (5) registering and licensing the medical laboratories.

PMTC should also help to establish and recognize medical laboratory technology as an entity separate from pathology, with its own specialists and career structure.

Conclusion

The laboratory is providing more information about the human condition more rapidly and more accurately than ever before. Minimum criteria for training programs conducted in paramedical schools need to be established, programs and institutes that meet the required standards (via establishment of PMTC) should be accredited, and uniform curricula across the country should be enforced. These actions will result in transforming the emerging field of laboratory sciences in Pakistan into an occupation that possesses a defined body of knowledge, a consistent system for training, and objective methods of assessment.

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In developing countries, medical laboratory equipment procurement can be an enormous challenge. From funding for the initial purchase, to equipment maintenance, to supply chain management for obtaining reagents, there are many areas that can stymie the procurement and useful life of much needed equipment.

As in the United States, laboratories and hospitals in developing countries are run by any number of groups. There are government hospitals, hospitals established by faith-based organizations, and independent hospitals started by non-religiously affiliated individuals or charities. While there may be some government oversight of practices, procedures, and standards, in many instances there is no oversight, or what oversight exists is not enforced. This leaves practices, procedures, and standards, including the procurement of medical laboratory equipment and supplies, up to the hospital and/or laboratory leadership.

As laboratory practices around the world become increasingly automated, equipment procurement has become a crucial aspect of lab management. In developing countries, equipment procurement presents unique challenges, such as voltage compatibility, routine maintenance, and ongoing reagent procurement.

**Installation and Maintenance**

In resource-limited settings where many people live on less than $2 per day, Ministries of Health and local hospitals do not have the large budgets necessary to buy laboratory equipment. In such situations it is tempting for them to accept donations of gently used equipment from well-meaning donors in developed countries. While these donations are well-intentioned and can be greatly appreciated by the recipient, the donation may introduce challenges instead of providing much needed equipment for the lab.
First of all, equipment donations frequently do not come with assisted installation, a maintenance package, or end-user training. While it may be possible to receive technical support from various international companies in some larger cities in developing countries, technical support is difficult to obtain elsewhere. Often, the companies that American laboratories use don’t have a presence in the developing world. Thus, the first step in donating a piece of equipment, the transport and installation, may be a large enough hurdle to make the donation unhelpful.

It should also be noted that beyond the purely technical aspects of transport and installation, customs can present a large stumbling block. Each country has its own customs requirements and fees for moving technical equipment in and out of the country, and these can become very costly and cumbersome.

Even if the initial transport and installation of the donated equipment is planned for and implemented successfully, the next important hurdle is continued maintenance. Is the maintenance package for the donated equipment still valid, or has it expired? Does it extend to the new region where the equipment will be located? A small rural lab in a developing country that does not have the funding to procure its own equipment will most likely not have the funding to obtain a maintenance package for the continued care of the equipment. And without a specific maintenance package, a small breakdown in functionality may render the donation useless very quickly.

One other important detail to consider is the difference in standard voltage between the U.S. (and other developed countries) and countries in the developing world. Equipment that is manufactured for use in the U.S. will not have the correct voltage for use in much of the developing world. As an
example, standard voltage requirements in the U.S. are 120 volts with 60 Hz frequency, whereas in Tanzania they are 230 volts with 50 Hz frequency (with slight regional variations). There are ways to overcome these differences with various adapters. However, in cases where the power supply is limited and frequent blackouts or brownouts occur, it is important to investigate whether the adapters are effective enough to prevent equipment malfunction. It would be useless to transport the equipment, ensure proper installation, and plan for the provision of supplies and maintenance only to see the equipment harmed by a power surge or other electricity-related issue.

End-User Training

Whether equipment is donated or is procured by a local ministry or hospital, there are other areas beyond the equipment’s initial procurement and installation to consider. Proper usage techniques, care and routine maintenance, and ongoing procurement of the necessary supplies and reagents will all affect equipment functionality and thus proper testing ability throughout the life of the equipment.

End-user training is crucial for proper usage techniques and for the ongoing functionality of the machine. The lab staff needs to understand the correct procedures for running the machine. It is also crucial that they understand and follow through on routine maintenance procedures. This can be a challenge in notoriously understaffed labs. In addition, depending on the local management structure and culture, it is important that the lab staff are empowered to conduct the routine maintenance, understand the procedures to follow if there is a problem, and be in a position to alert management to necessary fixes and needed replacement parts and supplies. (Note that in some cases staff may fear that if they report a problem it will be blamed on them, or they may be hesitant to report a problem for certain cultural reasons.) If breakdowns and other challenges are routinely not being reported, management should explore why this is the case. Is it because there are no clear communication channels available to the staff? Or perhaps funding constraints make it necessary for staff to use their personal cell phones for phone calls to report problems? The communication problems must be fixed in order to fix the equipment itself.

End-user training on equipment maintenance may differ from one region of the world to another and even among regions in a specific country. In dry, dusty climates equipment may need to be cleaned and protected differently than in a humid tropical climate where moisture is constantly a problem. In addition, the challenges of maintenance and of obtaining replacement parts will not be the same for rural labs as for those in major cities.

Long-Term Functionality

Supply and reagent procurement also must be factored into any plans for obtaining new equipment. The laboratory budget must account for the ongoing costs of running the equipment and processing the tests. A beautiful new piece of equipment is useless if the reagents needed to process the tests are not available. Each time equipment is procured, a budget must be allocated for ongoing supply procurement.

In many situations this may require an analysis of supply chain logistics within the specific country. In many developing countries, reagents and supplies are provided by donors, often through bilateral or multilateral funding agreements with developed country governments or groups such as UNAIDS (the Joint United Nations Program on HIV/AIDS). There have been numerous instances in which such funding has run out, or has languished in various government approval processes. Such funding cuts or delays may mean that needed reagents are not procured and the equipment sits idle in the lab. Where possible, it is crucial to have backup plans in place to ensure that supplies are available when needed.

One way to do exactly this is through a financial analysis of income and expenditures for the lab. As part of the Strengthening Laboratory Management Towards Accreditation program, the American Society for Clinical Pathology led a training session with the staff at a hospital lab in Kigali, Rwanda, and encouraged the staff to conduct a financial analysis of their laboratory operations. The lab staff crunched the numbers to determine the costs of supplies and reagents. They compared these numbers to the income generated by each patient and test. The result illustrated that the cost of the necessary supplies and reagents was fully covered by the income generated through paying patients every time a specific test was run. Thus the hospital made money by purchasing the supplies and reagents and processing patient tests, and lost money by having the equipment sit idle and turning away patients due to lack of supplies. This evidence was used to lobby hospital and laboratory leadership to procure the necessary reagents for the lab.

As outlined above, equipment procurement in the developing world can be challenging, and there are factors both common around the world and unique to resource-limited settings to consider in the procurement process. When attempting to donate equipment across international borders, careful consideration of the logistics and needs at the end-user site must be accounted for prior to making the donation. Still, when donated or purchased equipment is procured correctly, with training, maintenance, and supply needs accounted for, such equipment can be of great importance to labs in developing countries. In the long run it will increase productivity in the lab and the overall hospital and, most important, will improve patient care.

Projects described in this article were supported by Cooperative Agreement No. 5U2GPS001285 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the author and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

Ms. Levy worked at ASCP for more than five years as part of the team implementing a CDC-funded grant to improve medical laboratory infrastructure in developing countries. She now works in firm and corporate relations at Northwestern University School of Law. Additionally, she volunteers for a nonprofit organization that implements education and health projects in East Africa and writes monthly blog posts for Lablogatory on the Lab Medicine website.
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We look forward to seeing you in Tampa!
In 2003, President George W. Bush, with bipartisan support from Congress, launched what would become a landmark effort in the fight against HIV/AIDS. The President’s Emergency Plan for AIDS Relief (PEPFAR) embarked on a mission to end the global AIDS crisis with the ultimate hope of creating an AIDS-free generation.

With $15 billion in funding over five years, PEPFAR set out to scale up services for people in resource-limited countries. At that time 4 million people in sub-Saharan Africa, for example, needed care for HIV/AIDS, while only 50,000 people received it. PEPFAR sought to redress that problem. The program’s initial objectives were to support the treatment of 2 million
In the past 10 years, PEPFAR has revolutionized how HIV/AIDS is treated globally by providing care to 10 million people infected with HIV in resource-limited countries; supporting the care of 10 million people with HIV/AIDS, including children who were vulnerable or orphaned because of the disease; and providing education and counseling for 7 million people with the hope of preventing new infections.1

Multiple agencies joined the effort to make these priorities a reality, including the U.S. Department of State, the Department of Defense, the Department of Health and Human Services, the U.S. Agency for International Development, and the Peace Corps. Outside groups, from multinational corporations to educational and healthcare organizations, also par-
anticipated. But, most important, PEPFAR garnered the support of many in-country partners in Ghana, Namibia, Cambodia, Nicaragua, Haiti, and Turkmenistan, among others, which helped the efforts take root and change the way HIV/AIDS is tested for and treated in participating countries.

In 2008, PEPFAR was reauthorized in no small part because of its successful first chapter. PEPFAR surpassed its original goals, supporting the treatment of 2.1 million people and the care of 10.1 million people affected by HIV/AIDS. By September 30, 2008, outreach efforts had helped provide prevention counseling to more than 58 million people. Today the Obama administration continues PEPFAR’s commitment, having reauthorized the legislation in 2012. In fiscal year 2012, PEPFAR supported HIV testing for 49 million people, and approximately 750,000 HIV-positive women were given antiretroviral therapies, preventing an estimated 230,000 infant HIV infections.

A Path to the Laboratory

These numbers validate the major accomplishments of the legislation, but the amount of work that went into these achievements cannot be tabulated. Professionals in health care, policy, politics, and education played a part in implementing PEPFAR, and pathology and laboratory professionals were essential to its success.

Even from the earliest days, it was clear that quality pathology and laboratory services would be key in generating positive outcomes. After all, without accurate diagnosis of HIV there would be little hope for treatment or prevention. When PEPFAR first started, however, few of the countries involved had access to laboratory services, let alone quality services. Without establishing and strengthening the laboratory, the goals of PEPFAR would be unattainable.
“Accurate diagnostics are truly a pillar of health care, and a pillar of HIV care and treatment,” says Trevor Peter, PhD, senior director for diagnostics with the Clinton Health Access Initiative and chair of the African Society for Laboratory Medicine. Dr. Peter has worked with several PEPFAR partners in the past 10 years and has seen the program grow through partnerships with outside groups. “Without accurate diagnostics we would simply not be where we are today in terms of scale-up, in terms of what PEPFAR has done. Diagnostics have been pivotal.”

PEPFAR has heavily sought to strengthen laboratories, he continues, from increasing testing capacity, to training personnel, to providing all of the various enabling systems that support the laboratory. PEPFAR helped advance basic day-to-day quality assurance and laboratory data management, and simplified supply chains and procurement. Because of PEPFAR’s investment, developing countries now have testing commodities available to them, Dr. Peter adds, and they also have the support needed to strengthen the capacity and capabilities of the laboratories.

“That not only increases a laboratory’s performance, but enables it to run more tests, and run them more efficiently,” Dr. Peter says. “The investments and support from PEPFAR have been fundamental both in terms of increasing testing and doing so in a quality-assured way. And because of that, these countries have stronger health systems.”

The Road Ahead

In its 2013 Evaluation of PEPFAR, the Institute of Medicine cited the strengthening of laboratory services and quality as a signature achievement of the effort. And in 2012, with the release of the PEPFAR Blueprint—a roadmap for the initiative in the coming years—it is clear that the laboratory’s involvement will be crucial in order for the program to move out of emergency mode and into a sustainable, country-owned effort.

“We need to ensure we sustain the gains we’ve made over the past 10 years in terms of strengthening the laboratory’s services and systems to make sure rapid HIV tests are done with the most accuracy,” says John Nkengasong, PhD, chief of the International Laboratory Branch of the Division of Global HIV/AIDS for the Centers for Disease Control and Prevention. “We need to make sure that we develop systems to support laboratory services including PCR, CD4, and more. We need to continue building those systems, and that’s where we’ve taken a holistic approach to strengthening systems by advocating for countries to move their labs toward accreditation, which is the known international standard for laboratories.”

Implementing quality standards and establishing a sustainable workforce are the next steps in PEPFAR’s continued success. To help accomplish this, PEPFAR has provided support to the Stepwise Laboratory Improvement Process Towards Accreditation (SLIPTA) program, which pushes laboratories toward international accreditation; and the Strengthening Laboratory Management Towards Accreditation (SLMTA) initiative, a laboratory management course.

“PEPFAR has championed these programs, and they in turn have become very successful,” Dr. Peter says. He adds that SLMTA, started in 2008, is now in more than 30 countries, and is one of the most widely used laboratory management training courses in the world.

“As more labs in resource-limited countries become accredited, service quality will increase, which should improve accurate treatment and outcomes for people with HIV/AIDS. In turn, PEPFAR is recognizing that as people live longer with HIV/AIDS, they also become susceptible to diseases that previously hadn’t affected them, such as breast cancer, cervical cancer, and tuberculosis, making quality laboratory services even more crucial. Former Ambassador-at-Large and U.S. Global AIDS Coordinator Eric Goosby, MD, acknowledged this in a 2013 PEPFAR blogpost: “Moving forward, PEPFAR will continue to rely on strong lab systems for the deployment of new, appropriate technologies—including point of care technologies—to test for viral load, CD4, HIV, and TB drug resistance, and early infant diagnosis of HIV, among others. This includes assisting countries in their adoption of technologies with proven impact, such as a new, molecular-based TB test that has dramatically reduced the time to diagnosis and treatment for people living with TB and HIV.”

Accurate diagnoses and treatments for people with HIV/AIDS have been substantially improved over the past decade by PEPFAR’s support for quality laboratory testing and treatment. Now, 10 years after its start, PEPFAR draws increasingly closer to its goal of creating an AIDS-free generation. Central to that goal will be pathology and laboratory medicine.

References


Ms. Strzelecki is Senior Editor of Critical Values.
By the Numbers

In the past 10 years, great strides have been made toward bringing treatment to HIV/AIDS patients, and increasing the quality of laboratory testing in resource-limited countries. The American Society for Clinical Pathology (ASCP) has been a leader in these activities, providing training and mentorship to laboratory professionals in multiple countries. Here, a quick look at some of ASCP’s recent activities, as well as other global health endeavors.

If you’d like to get involved in global health outreach, check out the opportunities available with ASCP’s Center for Global Health. Visit http://www.ascp.org/ISTP/Global-Outreach.aspx to find out about upcoming opportunities.

References
Number of countries in which ASCP provided training for laboratory professionals in 2013, including Cambodia, Haiti, Nigeria, Cote D’Ivoire, Ukraine, and Vietnam, among others.

Amount of grant funding ASCP received from the Centers for Disease Control and Prevention. The grant covers ASCP’s involvement in a five-year cooperative agreement to support laboratory training and quality improvement in resource-limited countries.

Number of laboratory professionals who participated in training provided by ASCP’s Center for Global Health in 2013. Workshops covered topics including Strengthening Laboratory Management Towards Accreditation (SLMTA), SLMTA mentorship, quality management systems, CD4, biosafety, and basic laboratory operations.

Current cost to the President’s Emergency Plan for AIDS Relief (PEPFAR) to support individual HIV/AIDS treatment per year. This is a decrease from $1,100 in years past, thanks to PEPFAR improving efficiency, reducing commodity costs, and employing best practices during implementations. Further reductions in cost are expected as PEPFAR programs mature.¹

Number of participants in Mozambique’s SLMTA 2 and SLMTA 3 workshops, the highest attendance of a single ASCP training course in 2013.

Men, women, and children on antiretroviral treatment at the end of FY2012.¹
Eric Goosby, MD, has spent his career treating patients with HIV/AIDS, advocating on their behalf, and changing the way the disease is diagnosed and managed across the globe.

After graduating from medical school and completing his internship, residency, and fellowship at the University of California San Francisco, Dr. Goosby became the medical director for San Francisco General Hospital. In 1982, just after HIV/AIDS became an epidemic in the United States, he helped open the first inpatient and outpatient AIDS clinics in San Francisco, and later worked on the Ryan White Care Act, which improved funding for the care of low-income HIV/AIDS patients. In the mid-1990s, Dr. Goosby traded the West Coast for the East, and set up an office for HIV/AIDS policy through the U.S. Department of Health and Human Services (HHS) under former Secretary Donna Shalala. It was during that time that Dr. Goosby also helped establish an advisory committee for a safe blood supply in the United States, and helped develop the HHS guidelines for the correct use of antiretroviral drugs for adults, adolescents, pregnant women, and children with HIV.

In 2000, Dr. Goosby went global with his efforts to treat HIV/AIDS. He returned to San Francisco and helped found the Pangaea Global AIDS Foundation, a private non-profit organization that was established to improve treatment for people in
resource-limited countries in sub-Saharan Africa, Southeast Asia, and China—places that did not have personnel trained to handle HIV/AIDS, though the disease had been present in those areas for 25 years. The goal, Dr. Goosby says, “was to test the idea that we can take care of a complicated, chronic, progressive disease in settings that were truly constrained, both on a human resource level and lacking laboratory support. To think that you could introduce successful treatment that required a diagnostic capability was widely not believed to be possible.”

But it was possible. Dr. Goosby and colleagues established care in Rwanda, South Africa, Botswana, and, with the help of the Chinese government, in about 70 rural sites in China. As the HIV/AIDS epidemic grew, the world marshaled resources to fight the disease. In 2003, President George W. Bush established the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), which brought treatment and care to people in resource-limited countries that were heavily affected by HIV/AIDS. PEPFAR initially went into 15 countries, predominantly in sub-Saharan Africa. Today, that number stands at 65.

In 2009, President Obama appointed Dr. Goosby Ambassador-at-Large and U.S. Global AIDS Coordinator to oversee PEPFAR. In 2012, then-Secretary of State Hillary Rodham Clinton added an additional job to Ambassador Goosby’s portfolio—head of the State Department’s Office of Global Health Diplomacy. In November 2013, after directing PEPFAR’s strategy for four years, Dr. Goosby stepped down from his appointment to return to the University of California San Francisco to lead a new center on implementation sciences in the Global Health Sciences program and treat patients at San Francisco General Hospital and Trauma Center. Here he talks with Critical Values about PEPFAR’s accomplishments and where it is headed next.

Critical Values (CV): When you became the U.S. Global AIDS Coordinator in 2009, PEPFAR had been in operation for six years. How had the program’s priorities changed in that time?

Eric Goosby (EG): If you went into a hospital in southern Africa in 2003, you would see two or three people in a bed, sometimes four or five, with HIV or related illness in any medical or pediatric ward. There would be people on the floor in the hallway, in front, and around the building. In every country we visited, there was a six- to seven-week wait to bury a loved one in a Christian burial. Zambia, Botswana, Namibia, and four of the five provinces in South Africa ran out of wood to make coffins. Economies were dropping precipitously.

That’s where the HIV/AIDS epidemic was when President Bush started PEPFAR. He wanted to stop the death and dying and get the sickest people on treatment quickly, and he started that in an aggressive way. PEPFAR was about making drugs available and getting treatment outside of the capitals and into remote, rural areas.

Pivoting off of the emergency response and into a sustain-
able response was the big focus of PEPFAR in 2009. And the most sustainable systems are run by local health officers and nurses. In the last five years, we’ve made considerable progress in transitioning PEPFAR to local ownership.

However, in many countries, you have one doctor for every 350,000 to 600,000 people, and that just doesn’t work with complicated diseases. Out of necessity, a huge task shifting has occurred in most of the countries participating in PEPFAR. We incorporated nurses, pharmacists, and laboratory technicians to play expanded roles in everything from specimen collection, blood drawing, running tests, to doing physical exams and initiating antiretroviral therapy, and diagnosing and treating opportunistic infections. We brought in providers who could train people and allow them to ask questions and think with someone who has more experience. The providers either rotated through the clinic, or were available by cell phone to talk with the health officer while the patient was in front of them. It worked very well and allowed us to move to scale in many of the countries.

As part of PEPFAR’s efforts, we also helped create the African Society for Laboratory Medicine (ASLM), an accreditation capability, because in order for these efforts to continue there needs to be high-quality, controlled laboratory support. When we started ASLM in 2010, there were only about 320 accredited laboratories in Africa, and 300 of them were in South Africa. The rest of the continent had 20, all of them [in the] private sector.

We had a cadre of people based out of the Centers for Disease Control and Prevention in Atlanta who trained a cadre of people in the African Union to be the accreditation agents for laboratories in Africa. It’s taken off in a big way; laboratory leadership loves the program, and it’s considered very prestigious to get the accreditation, which can take about three to four years. It is changing what has been symptom management of HIV/AIDS to diagnosis and treatment management, which will really revolutionize the way medicine is practiced for all diseases.

**CV: The ultimate goal of PEPFAR is to achieve an AIDS-free generation. What does that look like?**

**EG:** An AIDS-free generation is specifically speaking to a time when a person who is HIV positive receives appropriate antiretroviral treatment that stops progression of the virus and makes them less or not infected. It means that a person with a diagnosis of HIV does not progress to a diagnosis of AIDS. It means that women with HIV who are pregnant will not spread it to their babies, so we’ll stop pediatric HIV.

That knowledge of how to diagnose and treat, how to prevent progression in an individual, how to prevent progression of the virus through a community, is known. Five years ago we didn’t know how to arrest progression through an individual so their immune system is not destroyed. And now we know it’s through the use of highly effective drugs.

The antiretroviral therapies we have today really do stop progression, and if an HIV-positive person takes his medication properly, he will die from something else. The drugs are not rife with side effects like they were in the 1980s and 1990s.

The average age of death for an HIV-positive person in the developed world is 78 years. In sub-Saharan Africa, the average age of death [for a healthy person] used to be in the mid-60s or 70s, but as HIV came in, the average age dropped to the 40s. It stayed there until PEPFAR and the Global Fund—the other big treatment capability on the planet—started to roll out treatment.

Classic prevention interventions—talking about high-risk behaviors, using condoms, not sharing needles—did not show a drop in incidence for the past 27 years. It wasn’t until treatment came to scale in the heavily impacted and resource-limited countries that we saw a change. Three years ago we began to see the number of new infections start to drop. The slope of that decline increased, and it has become very steep in the last two years.

**CV: What still needs to happen to achieve an AIDS-free generation, and how can pathologists and laboratory professionals play a role?**

**EG:** The main impediment to achieving an AIDS-free generation now is providing technical assistance to the primary implementer in countries, which is the Ministry of Health. We need a concerted effort to develop technical assistance strategies, human resource targeting, and capacity expansion of their ability to perform these functions, or a lot of what has been gained through PEPFAR will be diluted in a matter of years. If it is not supported in the right way, it will disappear completely.

As the gross national product of these heavily impacted, resource-poor countries rapidly expands, these countries that have been a part of PEPFAR have a one-of-a-kind chance to piggyback on the expanding wealth they’re experiencing and siphon off some of that money for health and education before it goes in the general kitty. Earmarking that resource for an investment in the health of their population is something we need to insist on in our diplomatic exchanges with governments.

And without quality-control systems and without laboratories, complicated, chronic, progressive diseases of all types, not just HIV, will not be successfully treated. Our dependency need for a supportive laboratory for appropriate diagnosis and appropriate treatment is essential. The laboratory’s role is essential.

A sea change has occurred because of PEPFAR’s insistence and the necessity of needing a more rigorous diagnostic exercise to go with the evaluation of every patient. And the platform that has been created is responsible for the pivot we’re seeing in how medicine is practiced in resource-poor settings. Sub-Saharan Africa, Southeast Asia, Eastern Europe—they are all shifting because of the combination of medical training and nurses and doctors coming together with the laboratory. Laboratory management and laboratory technicians are the critical piece.

Ms. Str zelecki is Senior Editor of *Critical Values.*
Building a Stronger Interdisciplinary Medical Team Around the Globe

ASCP has embarked on several innovative initiatives that seek to change the paradigm of how medical care is delivered to patients around the globe and emphasize the importance of pathology and laboratory medicine to multidisciplinary medical teams.

In February, the Society launched a series of education summits in Europe to provide the latest research that will help pathologists and medical laboratory scientists better diagnose and treat one of the most deadly forms of cancer—non-small cell lung cancer (NSCLC). Lung cancer is the most common cause of cancer-related deaths in Europe as well as in North America. More than 375,000 new cases of NSCLC are diagnosed every year in the European Union, with only a 30 percent survival rate a year after the initial diagnosis.

A collaboration among ASCP, the American College of Chest Physicians, the France Foundation, and the European Society for Pathology, this initiative brings together the four major specialties that treat NSCLC—pulmonologists, oncologists, radiologists, and pathologists—to facilitate communication and vastly improve diagnoses and patient outcomes in Europe.

“Historically, each of these disciplines has worked separately and relied only on a specific piece of information from another specialty. This new paradigm facilitates interaction between them to improve patient outcomes,” says Helmuth Popper, MD, chair of the Education Committee of the European Society for Pathology and Professor at the Institute of Pathology at the Medical University of Graz, Austria.

Informally known as the GAIN European Initiative, the curriculum is funded by an independent educational grant from Pfizer. Faculty for each workshop includes specialists from the United States along with local pathologists from the region where each workshop is presented.

Sharing Best Practices Benefits Patients

“While each country may have some unique situations that vary from country to country, when it comes to patient management, there are no boundaries,” Dr. Popper says. “Providing educational activities that bring together specialists from around the world to exchange information and share best practices will benefit all patients.”

Another initiative gaining traction around the globe is an educational program for pathologists on myelodysplastic syndrome (MDS), a rare blood disorder that is difficult to diagnose. MDS transforms into acute myelogenous leukemia in about one-third of patients and is often discovered in its late stages. The diagnosis cannot be made in isolation and requires effective communication among all members of the MDS medical team. If there is not a uniform method of expressing what the diagnosis is, it leads to misinterpretation.

ASCP brought together pathologists, hematopathologists, flow cytometrists, cytogeneticists, and molecular geneticists to probe the latest advances in science and best practices for diagnosing and treating MDS during a symposium on MDS at ASCP 2013 Chicago last fall. Nearly 220 learners attended, including 70 from around the world who participated via a simulcast of the session online.

Expanding Global Outreach

ASCP has expanded its influence in Asia and South America to respond to a critical need to improve the delivery of patient care, while building awareness of the need for the medical laboratory profession. The Society is developing a collaboration with KingMed, the largest independent
laboratory in China, to provide educational products that will advance the professional skills of its employees and help promote innovative science. KingMed has more than 5,000 employees who provide medical laboratory services for more than 13,000 medical institutions throughout China.

“China has a population of more than 1.3 billion people,” says Shiwen Song, MD, PhD, FASCP, ASCP chief science officer, who helped facilitate the collaboration. “ASCP has an opportunity to help China improve its patient care and to work with a country with such an immense economy.”

KingMed would like support from ASCP to build a standardized educational system for its pathology residents, fellows, and practicing pathologists, and to provide international certification training for its laboratory professionals.

Meanwhile, ASCP members pledged their heartfelt support for colleagues in the Philippines who were affected by Typhoon Haiyan and the earthquake that occurred in its aftermath last fall. Members contributed more than $5,000 to the ASCP-PAMET USA, Inc. Give a Hand, Take a Hand Philippines Relief Fund to rebuild schools for laboratory professionals that were destroyed in the Tacloban area and beyond.

“What sets ASCP apart is our humanitarian outreach about the globe, building medical laboratory infrastructure to help people stay alive,” says ASCP President Steven H. Kroft, MD, FASCP. “Our members—pathologists and medical laboratory scientists—use research to change the scope of medical practice so that we are more nimble and on the forefront of advances in medical care.”

Preparing for Change

Advances in technology and medical research, coupled with healthcare reform, are revolutionizing the way that patient care is delivered in the United States. On behalf of members, ASCP has been vigorous on several fronts, notably through its participation in the American Board of Internal Medicine’s Choosing Wisely campaign and through its advocacy efforts in Washington, D.C.

In an environment where pathologists and laboratory scientists have to do more with less, a key component of healthcare reform is appropriate test utilization. Since ASCP announced its list of five diagnostic tests that may be duplicative or unnecessary as part of the initiative, the Society has continued to seek ways to support pathologists and laboratory professionals in reducing inappropriate or overutilized lab testing while improving the quality and safety of medicine.

In December, ASCP joined with the California Society of Pathologists to host a symposium, funded by a grant from the Robert Wood Johnson Foundation, in San Francisco to help California pathologists implement ASCP’s best practices and effect positive clinical outcomes and cost reduction. George D. Lundberg, MD, FASCP, former editor, JAMA and MedScape, and other distinguished speakers urged medical laboratories to focus on the quality outcomes of diagnostic testing in order to thrive in this era of healthcare reform.

A new online toolkit, part of ASCP’s Choosing Wisely initiative, was unveiled to provide additional resources to pathologists and laboratory professionals as they promote the initiative. The toolkit can be accessed at www.ascp.org/choosingwisely.

Additionally, ASCP members’ voices were heard when they submitted more than 10,000 letters last fall to the Centers for Medicare and Medicaid Services (CMS) and Congress in opposition to CMS’s highly controversial proposal to cap Medicare payments for important life-saving diagnostic tests and procedures. CMS announced in December that it would drop the proposal from its CY 2014 Medicare Physicians Fee Schedule Final Rule.

One-Stop Destination to Navigate ABP Requirements

The year 2014 is the first in which pathologists who were certified by the American Board of Pathology (ABP) after Jan. 1, 2006, will have the opportunity to take the Maintenance of Certification Part III cognitive exam to maintain their certification. ASCP is here to help pathologists meet ABP certification requirements.

Find out more about all of these initiatives and more on ONE Lab, ASCP’s exciting new online community that provides members with fresh perspectives, an opportunity to network with colleagues, and tools to enhance their knowledge, share best practices, and advance their careers.
Join us in sunny Tampa for the event of the year!

- **New Insights**: Dive into the latest innovations in pathology and laboratory medicine, and stay on top of the next emerging advances in the field.

- **Expert Speakers**: Learn from and interact directly with the most respected names in the industry.

- **Unforgettable Experience**: Witness the energy and excitement first-hand, alongside 1500+ professional peers from across the globe.

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