HUMANITARIANISM
ASCP Fights HIV/AIDS
Around the World
p.6

SPECIAL REPORT
The Future of
Pathology and
Laboratory Medicine
p.26
We all know that the term “critical values” refers to laboratory results that indicate life-threatening conditions requiring prompt clinical intervention. It is the responsibility of the laboratory to communicate these results immediately to a health care provider. The American Society for Clinical Pathology chose the name Critical Values for its new quarterly newsmagazine for several reasons:

• First, as a tribute to ASCP Past President and 2007 ASCP Master Award winner George D. Lundberg, MD, MASCP, and his colleagues at Los Angeles County–University of Southern California Medical Center, who first championed the concept of critical values in 1972. In 1988, reporting critical values became mandated by federal law in the Clinical Laboratory Improvement Amendments Act (CLIA). (Dr. Lundberg reflects on three decades of critical values reporting and considers future directions in a wide-ranging interview at www.medscape.com/viewarticle/560353.)

• Second, as a way to call attention to the imperative for pathologists and laboratory professionals to improve communication with customers. No doubt, effective reporting of critical values is a long-standing challenge for clinical pathology, and an emerging issue for anatomic pathology. Meeting the challenge requires the effort of the entire laboratory team—pathologists working with laboratory professionals—reaching out to health care colleagues outside the laboratory and engaging in constructive dialogue with nurses, ordering clinicians, and hospital administrators.

• And third, as a way to share the values of the Society—what we hold dear—and to explore the important issues facing the profession of pathology and laboratory medicine. In this inaugural issue, we call attention to the value of humanitarianism. Through ASCP, pathologists and laboratory professionals are reaching out to colleagues in resource-poor nations around the world, especially those burdened by the highest incidences of AIDS. Through ASCP, pathologists and laboratory professionals are finding a new purpose and defining a new future, for themselves, their colleagues, and the profession.

In this issue, ASCP members share their experiences in the laboratories of Africa, their discoveries about the dichotomy between rich and poor nations, and about the surprising similarities. Also in this issue, ASCP shares its view of the future of pathology and laboratory medicine, described in two separate reports that emerged from a deliberative process that began in late 2005. An article about neonatal intensive care unit physicians reveals their varying desires to be paged on critical values, depending on whether they are residents, fellows, or attending physicians. An accompanying commentary calls for the development of standards to determine critical values for neonates. And finally, we hope, to cultivate an awareness of the way society views pathology and laboratory medicine through a special section called Arts in Culture.

In the April issue of Critical Values, we will explore the value of service—to patients, colleagues, ordering clinicians, and the profession. We will include examples of excellent service. And we will include ways you can serve the profession through ASCP, and ways ASCP serves the profession by serving you.

Dr. Lee Hilborne is the President of ASCP.

by Lee H. Hilborne, MD, MPH, FASCP, DLMS,ASCP

American Society for Clinical Pathology
ASCP Fights HIV/AIDS Around the World

In August 2005, the U.S. Centers for Disease Control and Prevention awarded the ASCP a cooperative agreement to support laboratory training and quality improvement for diagnosis and laboratory monitoring of HIV/AIDS patients in resource-limited countries that are part of the President’s Emergency Plan for AIDS Relief (PEPFAR).

This program enhances laboratory testing practices and services, thereby improving care and treatment for individuals with HIV/AIDS. Consultants work with ASCP staff and other ASCP volunteers in training, laboratory and helping build laboratory infrastructure mainly in sub-Saharan African countries severely affected by HIV/AIDS.

ASCP’s original role in the program was to provide lab training in hematology, chemistry, and CD4 testing and to provide quality improvement programs for diagnosis and laboratory monitoring of HIV/AIDS patients in resource-limited countries. More recently, the Society’s efforts have expanded to include the strengthening of laboratory infrastructure, pre-service training curriculum review, phlebotomy training, and laboratory management training.

In October 2007, funding through the cooperative agreement increased to $2.8 million, an increase of $1.6 million over the previous year.

“We are encouraged that the CDC and the U.S. Dept. of Health and Human Services continue to support our efforts to staunch the spread of this disease through laboratory training and education,” said ASCP Immediate Past President John S.J. Brooks, MD, FASCP. “We have a lot of work to do, but ASCP volunteers, its supporters and other groups with shared goals are dedicated to the mission of stopping this disease.”

With continued research and recent promising results in AIDS vaccination plus Congress-backed funding to encourage doctors to remain in Africa, much-needed attention is being called to the mission of stopping AIDS worldwide.

During the past two years, ASCP members have provided technical assistance as well as facilitated training workshops in Ethiopia, Guyana, Kenya, Lesotho, South Africa, Swaziland, Tanzania, and Zambia. The successful outcomes of these activities were a key factor in the CDC’s decision to grant the Society’s application for a third year of funding.

While programs will continue in these countries, the new funding will also support laboratory strengthening initiatives in Rwanda, Nigeria, Namibia, Haiti and Cote d’Ivoire.

Karen A. Brown, MS, MT(ASCP), was part of the ASCP team that traveled to Maseru, Lesotho, in July 2007 and trained 37 laboratory professionals in CD4, clinical chemistry, and hematology. The training was conducted in collaboration with Ministry of Health and Social Welfare – Lesotho, the Clinton Foundation HIV/AIDS Initiative, and the National Health Training College in Maseru.

“This African Experience has made me appreciate where I was born, where I live, and the opportunities I have had during my life,” said Brown. “It was also a wonderful chance to utilize my professional passion in another setting.”

Statistics show that some 40 million people are living with HIV/AIDS in developing countries -- that’s nearly one in every five adults -- orphaning more than 650,000 children.

“Pathologists and laboratory professionals by nature are a group of people always looking for solutions and ways to improve people’s lives through discovery,” said Dr. Brooks. “It’s literally and figuratively in our blood to create initiatives and partner with others to find answers to the domestic and international problems of today.”

The Institute Advisory Committee provides guidance and oversight to the ASCP Institute. The mission of the ASCP Institute is to improve global health by exploring, identifying, and implementing innovative methods and partnerships that improve laboratory practices and enhance the image of laboratory medicine. The vision of the ASCP Institute is to position the ASCP as the most trusted source for medical laboratory information and innovation by becoming the definitive and most respected think tank for laboratory medicine worldwide.

Michael L. Wilson, MD, FASCP, Chair
Kay Doyle, PhD, MT(ASCP)
Jo Anne B. Edwards, MEd, MT(ASCP)
Lee H. Hillborne, MD, MPH, FASCP, DLM(ASCP)

Devery Howerton, PhD
James Linder, MD, FASCP
Ann M. Nelson, MD, FASCP
Mary Nix, MS, MT(ASCP)

ASCP Institute Staff
Theresa Somrak, JD, CT(ASCP), Director
Barbara Hoffman, MA, MT(ASCP), Project Director

Kaitlin Sandhaus, Senior Project Manager
Toria Shaw, Project Manager
Shannon Heard, MBA, Project Manager
Kate Kusiak, Project Coordinator
Beth Schumacher, Project Coordinator
Stacy Kancianicki, MA, Grants Administrator
Lara Juhlen, Project Assistant
Out of the Laboratory and Into the World

by Gregory S. Henderson, MD, PhD, FASCP

This is an excerpt from Dr. Henderson’s ASCP 2007 Annual Meeting opening Keynote Address, October 18, 2007, in New Orleans.

In 2003 President Bush rolled out a humanitarian plan that, despite political stripe, all would agree is unprecedented in its vision, its scope, and its generosity. This program committed $15 billion dollars in US funds over 5 years for the treatment of HIV and related diseases in the nations most severely affected by the epidemic. The program is called the President’s Emergency Plan for AIDS Relief or PEPFAR. However, shortly after it was launched, there was a realization that we in this room are all too familiar with. It seems as if the role for laboratory medicine and pathology was overlooked. There was the sudden epiphany that it is extremely hard to make decisions about administering expensive anti-retroviral therapy if you can’t do a CD4 count on a patient. The scales fell from many eyes when it became painfully apparent that in order to treat the opportunistic infections that define AIDS, one might need the expertise and infrastructure to perform cultures and sensitivities, CBCs, and basic metabolic profiles. Does this sound painfully familiar to you?

To their credit, this “oversight” was rapidly realized and addressed, and your professional society—the ASCP—has taken the lead in meeting this need. Shortly after the necessity for laboratory medicine was “discovered”, the CDC approached the ASCP for help in developing laboratory services in the nations deemed at greatest risk.

The ASCP formed what is now called the ASCP Institute to respond to this need with a small staff and recruited volunteers. And, in August 2005—right about the same time that we in New Orleans were quite literally up to our necks in water—the ASCP deployed its first two major laboratory efforts in Ethiopia and Kenya.

Now, as the program begins its third year, sustained laboratory efforts have been established in Guyana, Haiti, Kenya, Lesotho, Namibia, Nigeria, Rwanda, South Africa, Swaziland and Cote d’Ivoire (that’s the Ivory Coast for those of you who are not from New Orleans). That is a current total of twelve countries with well-run functioning diagnostic laboratories, where once there were none. By my calculations that is an annual growth rate of 300%. I bet you wish your investment portfolio had done this well. In each of these countries the ASCP Institute staff and volunteers devote their time and expertise to facilitate the trainings, conduct assessments and provide technical assistance. ASCP Institute volunteer members have created the training materials that are now used all over the world.

What is the process by which the ASCP Institute starts with nothing and brings laboratory medicine to these countries? First, there are in-country on-site assessments, which are initial visits to determine the specific needs of the country. They conduct lab site visits, review and modify training materials, and meet with in-country leadership to get their support of the process.

Next, there is the Training of the Trainers. Whether the training revolves around Chemistry, Hematology, CD4 counts, Phlebotomy or Laboratory Management, all participants receive intensive primary instruction and then receive training on how to teach. All of these trained trainers are then expected to conduct trainings for bench-level medical technologists within their own region and throughout the country.

And finally to help insure the sustainability of the effort in each country, the ASCP Institute has begun a pilot program in Tanzania revolving around laboratory schools. In this program they have conducted initial assessments to gather current curriculum from five lab schools. They have revised curricula, written objectives, and discussed and practiced teaching techniques. They have procured new equipment, textbooks and computers for all 5 schools.

And in March of 2008, the Pre-Service Work Group will return to Tanzania to meet with the school faculty and administrators to present the new curricula that has been developed. What does success actually look like? Let me tell you the story in Ethiopia. After the initial assessment in 2005, there have been four basic trainings and two train the trainers sessions in Chemistry, Hematology and CD4 enumeration. Five volunteers along with graduates of the train the trainer program have expanded efforts outside the capital, Addis Ababa, to the interior of the country. The ASCP has partnered with Joint Commission International (JCI) to assist the Ethiopia National Reference Lab to prepare for International Accreditation.

In a few weeks, a volunteer pathologist from Howard University will arrive to spend two months at the National Reference Lab assisting the laboratory in its preparation for initial inspection. And next week, the members of the Institute will board a plane to Ethiopia to work with the faculty at the laboratory schools of Addis Ababa University and Gondar University to roll out the new curriculum to train the next generation of laboratory professionals.

Now I need to emphasize that what I have just listed for you is a status report in only one of 12 countries, and all of this has been achieved in two years by a staff that only recently rose to nine people, approximately 25 volunteers and with an annual budget of about $2 million. Now I am very, very tempted to suggest that with that track record, the ASCP may want to
How Can You Help?

Here’s a list of ways you can get involved with other international organizations involved in humanitarian efforts.

Explore Doctors Without Borders

Offering the choice to work in the field or work in the office, Médecins Sans Frontières (MSF) recruits medical, administrative and logistical support personnel to provide medical care to people in crisis in more than 70 countries worldwide. Every year, around 3,000 MSF field staff provide life-saving medical and also medical assistance to people who would otherwise be denied access to even the most basic health care. They bring their motivation, professional abilities and practical experience to their work in the field. MSF is also in need of a strong and reliable team of staff, interns and volunteers to help with the general running of the office. Visit www.doctorswithoutborders.org.

Worldwide Lab Improvement, Inc.

Worldwide Lab Improvement equips medical labs in mission hospitals and clinics in developing countries. To see a list of desired equipment, visit www.wwlab.org.

Fundraisers

LifeScan, Inc., a Johnson & Johnson company, donated $20,000 to the Juvenile Diabetes Research Foundation International (JDRF), the world’s leading nonprofit, nongovernmental funder of diabetes research. The donation was the culmination of a LifeScan-sponsored benefit walk held during the three-day meeting of the American Association for Clinical Chemistry (AACC) and the American Society for Clinical Laboratory Science (ASCLS) held in July of 2007. Talk to the leadership at your workplace about organizing a fundraiser.

Tropical Pathology and Infectious Disease Association

TPAIDA was born out of a humanitarian expedition to Peru in 2005 organized by pathologists at Weber State University in Ogden, UT. Students and doctors lamented the serious lack of life-saving medical care and health care in Peru. TPAIDA was born out of a humanitarian expedition to Peru in 2005 organized by pathologists at Weber State University. TPIDA is an international association of physicians, pathologists, and other health professionals interested in tropical medicine and related fields.

Lab Equipment and Books

The Health Centers labs in Ethiopia need lab equipment and books — new or gently used. ASCP is cooperating with the Clinton Foundation HIV/AIDS Initiative (CHAI) and Project CURE (Commission on Urgent Relief & Equipment) to supply laboratory equipment and books to the Health Centers labs in Ethiopia. To view the full list of items needed, e-mail labdonations@clintonfoundation.org, or call (720) 341-3152. Please send donations to: PROJECT CURE/CHAI PROJECT, 10377 East Geddes Ave., Centennial, CO 80112. In some cases, your shipping costs may be reimbursed by the charity. Project CURE (Commission on Urgent Relief & Equipment) is the world’s largest distributor of donated relief to the developing world. Visit www.projectcure.org and www.clintonfoundation.org for more information.

Lab in a Suitcase

Developed by International Aid, an international relief and development agency, Lab-in-a-Suitcase® contains basic laboratory instruments to conduct 70-80% of typical blood and urine analyses required to accurately diagnose the most common diseases. This portable kit can function without electricity, using power-producing solar panels. The kit is a tremendous breakthrough for health workers struggling to care for those with illnesses in the most remote areas. At least half of the 23 osteopathic schools have overseas training. Most of these relationships are philanthropic. Contact your medical school for details.

Lab in a Suitcase

Developed by International Aid, an international relief and development agency, Lab-in-a-Suitcase® contains basic laboratory instruments to conduct 70-80% of typical blood and urine analyses required to accurately diagnose the most common diseases. This portable kit can function without electricity, using power-producing solar panels. The kit is a tremendous breakthrough for health workers struggling to care for those with illnesses in the most remote areas. At least half of the 23 osteopathic schools have overseas training. Most of these relationships are philanthropic. Contact your medical school for details.

Mercy Ships

Mercy Ships is a global charity that uses hospital ships to bring medical care, relief and development to areas of the world that are very poor. According to their website, “We welcome those who have the time to devote to the work of bringing hope and healing to the world’s poorest peoples. Volunteers come on a short-term basis from as little as two weeks to as long as one year of service. Others serve with Mercy Ships in a career capacity.” For more information, visit www.mercyships.org.

Lab in a Suitcase

Developed by International Aid, an international relief and development agency, Lab-in-a-Suitcase® contains basic laboratory instruments to conduct 70-80% of typical blood and urine analyses required to accurately diagnose the most common diseases. This portable kit can function without electricity, using power-producing solar panels. The kit is a tremendous breakthrough for health workers struggling to care for those with illnesses in the most remote areas. At least half of the 23 osteopathic schools have overseas training. Most of these relationships are philanthropic. Contact your medical school for details.

Expanding opportunities for Clinical Laboratory Science (ASCLS) held in July of the culmination of a LifeScan-sponsored benefit walk held

Internationality.10377 East Geddes Ave., Centennial, CO 80112. In some cases, your shipping costs may be reimbursed by the charity. Project CURE (Commission on Urgent Relief & Equipment) is the world’s largest distributor of donated relief to the developing world. Visit www.projectcure.org and www.clintonfoundation.org for more information.

Lab in a Suitcase

Developed by International Aid, an international relief and development agency, Lab-in-a-Suitcase® contains basic laboratory instruments to conduct 70-80% of typical blood and urine analyses required to accurately diagnose the most common diseases. This portable kit can function without electricity, using power-producing solar panels. The kit is a tremendous breakthrough for health workers struggling to care for those with illnesses in the most remote areas. At least half of the 23 osteopathic schools have overseas training. Most of these relationships are philanthropic. Contact your medical school for details.

Mercy Ships

Mercy Ships is a global charity that uses hospital ships to bring medical care, relief and development to areas of the world that are very poor. According to their website, “We welcome those who have the time to devote to the work of bringing hope and healing to the world’s poorest peoples. Volunteers come on a short-term basis from as little as two weeks to as long as one year of service. Others serve with Mercy Ships in a career capacity.” For more information, visit www.mercyships.org.

Lab in a Suitcase

Developed by International Aid, an international relief and development agency, Lab-in-a-Suitcase® contains basic laboratory instruments to conduct 70-80% of typical blood and urine analyses required to accurately diagnose the most common diseases. This portable kit can function without electricity, using power-producing solar panels. The kit is a tremendous breakthrough for health workers struggling to care for those with illnesses in the most remote areas. At least half of the 23 osteopathic schools have overseas training. Most of these relationships are philanthropic. Contact your medical school for details.

Tropical Pathology and Infectious Disease Association

TPAIDA was born out of a humanitarian expedition to Peru in 2005 organized by pathologists at Weber State University in Ogden, UT. Students and doctors lamented the serious lack of life-saving medical care and health care in Peru. TPAIDA was born out of a humanitarian expedition to Peru in 2005 organized by pathologists at Weber State University.
Reflections on Laboratory Training in Ethiopia and Tanzania

by Marian J. Cavagnaro, MS, MT (ASCP)DLM

I have been a laboratory professional since 1975. I began working with HIV/AIDS in the early 1980s as a laboratory supervisor at Jackson Memorial Hospital, Miami, FL. It has been a profound experience to train laboratory professionals in Ethiopia and Tanzania over the last two and a half years. My experiences in Africa have been life changing and life affirming. Trained and competent laboratory professionals are needed everywhere in the world. I have been involved with education and governance in ASCP for over 20 years. This has truly been an amazing opportunity to share my experience.

HIV/AIDS has become the most important health problem in Ethiopia and a threat to the social and economic fabric of the nation. There has been a strong response since the late 1990s from public health officials, international organizations, local nongovernmental organizations (NGOs), and social researchers to the epidemic. Capacity building efforts in Ethiopia include the following organizations: Ethiopian Ministry of Health, HHS/CDC Ethiopia, Ethiopian Health and Nutrition Institute (EH-NRI), Ethiopian Public Health Association.

Key components of capacity and infrastructure development include the following tasks:

- Develop standardized protocols
- Implement use of rapid HIV diagnostics
- Improve quality assurance/quality control measures
- Renovate and improve current laboratory structures
- Purchase laboratory equipment and supplies
- Train existing laboratory staff
- Build capacity to conduct research
- Complete in-country evaluation of dry-spot technology for HIV testing

To ensure reliable laboratory results – this is why ASCP is involved in building laboratory capacity in the PEPFAR countries.

Africa consists of many nations and many cultures. HIV/AIDS remains the fastest growing threat to economic, social and human development in Africa. Sub-Saharan Africa remains the region worst affected by the AIDS pandemic. The region has just over 10 percent of the world’s population but is home to two-thirds of the people living with HIV. Ethiopia, with a population of 64 million, is the third highest infected population in the world, with 3.5 million people. It is right on the border of Eritrea and Somalia. Here is a country, one of the very few in the world, which boasts of an ancient civilization, a written language and literature, an indigenous Christian Church, and its own liturgical language (Ge’ez).

Never doubt that a small group of thoughtful committed citizens can change the world. Indeed, it’s the only thing that ever has.

—Margaret Mead

The global response to HIV/AIDS will be successful through the increased commitment, leadership and accountability of all the stakeholders. The engagement and support of the host countries is central and critical to the efforts of all. Sustained success depends on leadership by host governments and nongovernmental sectors and, ultimately, the local ownership of the resources, capability, and capacity required to address this pandemic and support the programs over time.

In January 2005, during our first trip to Ethiopia, our team attended Timkat Ceremonies in Addis Ababa. It was there that the Patriarch of the Ethiopian Orthodox Church, His Holiness Abune Paulos, urged the public to support HIV/AIDS awareness education. In his benediction in connection with the Ethiopian Epiphany, Abune Paulos said the awareness of the public on HIV/AIDS is still minimal despite the education being provided by religious leaders and other pertinent bodies. The pandemic has already orphaned children in considerable numbers.

In June 2007 I completed requirements and received a Master of Religious Studies. My thesis project was titled, “A Multi-faceted Approach to Support and Capacity Building in Resource-Limited Countries Living with The HIV/AIDS Crisis.” My experiences in training in Africa have been truly spiritual and transformational. It is has been about relationships and hope and encouragement.

I have learned and gained so much from being totally present to the people of Africa, their culture, and their environment. It has been humbling at times, and many times joyful. I am in awe at the resilience, stamina, and fortitude of the people who live in resource-limited countries. I have enjoyed participating in the Ethiopian cultural dance. The laboratory professionals were so gracious and welcoming, and excited that the ASCP consultants joined them in their dance. It truly is a way to celebrate and foster relationship building.

Marian Cavagnaro is Director of Laboratory Services at Memorial Hospital, West Palm Beach, FL.

Many of the issues that we face as laboratory professionals in the United States are the same issues facing laboratory professionals in Africa.

These include the need for the following:

- Laboratory infrastructure and leadership
- Well-written standard operating procedures
- Good record keeping and documentation
- Consistent labeling of specimens
- Sample quality at collection
- Adequate transportation and storage of specimens
- Selection and or standardization of automation
- Good manual back-up procedures
- Adequate reagent and supplies
- Consistent monitoring and use of quality control materials
- Working equipment with adequate preventive maintenance programs and service
- Adequate training and supervision of health workers at all levels
- Good safety practices
- Recruitment and retention of a trained technical staff

It is not enough to be compassionate. You must act.

—His Holiness, Tenzin Gyatso, 14th Dalai Lama

There are many medicines and cures for all kinds of sick people. But unless kind hands are given in service and generous hearts are given in love, I do not think there can ever be any care for the terrible sickness of feeling unloved.

—Mother Theresa
It’s Not About Me

by Perthena Latchaw, MS, MT(ASCP)

R ick Warren begins his best selling book, The Purpose-
Driven Life, with the words, “It’s not about you.” On my
fourth trip to Africa in August 2006 with ASCP, I knew with-
out a doubt that the purpose of my life was henceforth “not
about me.”

Three of us, Janice Tompkins, MPH, MT(ASCP), Marian
Cavagnaro, MS, MT(ASCP)/DLM, and I traveled together to
Kilimanjaro, Tanzania. At that point, we split up, each to a
different city in the country. Our task was to assist and ob-
serve the national laboratory training team, as they trained
their own lab professionals. This was the first “roll out,” a term
we came to appreciate more in the weeks to follow.

Tanzania was the first country to use ASCP’s Training of
Trainers (TOT) module. A few months earlier in Arusha,
Tanzania, we had trained about 30 of Tanzania’s best lab pro-
fessionals. This was the first “roll out,” a term to plan and conduct “roll outs” across the entire country, and
simultaneously train the rest of their colleagues. It was this
opportunity to sit at the front desk with my candle and get to
know the young woman and young man who alternated 12
hour shifts. Every night the cook made me a pizza on a wood
stove. I don’t think I ever had better pizza.

The lack of electricity was widespread because of a continu-
ing drought. The local residents depend heavily on the rains
for hydroelectric power for electricity. So we had many “brown
outs” during the week of training.

Every morning at 7:30, a hired driver would arrive to pick
me up at my hotel and take me to the training site. He was
always playing a tape of “How Great Thou Art” in Swahili.
When I told him I knew the man who wrote that song, he was
surprised and flashed a smile that lasted all week. One eve-
ning, just about sunset, as he was taking me back to the hotel,
he stopped the van in the middle of the road and said, “Get
out.” I looked a little startled, but he pointed to the right and
said, “Get your camera; she’s not shy today.” He was talking
about Mount Kilimanjaro, which is so often covered in clouds
during the day. The clouds had parted this particular evening.
The opening day of the training, as with all trainings in Af-
rica, a local dignitary officially opened the activities. After the
official group photo was taken, we broke into three groups:
Chemistry, Hematology and CD4. The participants had come
from all over the Northern Zone of Tanzania, most by bus.
They were staying in the Crane Hotel, the site of the training.
Every afternoon, our smiling driver took us to the hospital lab,
which was our host for the “hands on” part of the week’s train-
ing. There the participants would be trained on new equip-
ment purchased for this project.

Every day at 10 a.m. and 3 p.m., we would stop and have
tea and a snack. It was at this time I got a chance to sit and
visit with the participants and learn more about them. Our tea
breaks were outside on the top of the hotel. From there, you
could see Mount Kilimanjaro, when it was not cloud covered.

By week’s end, the national trainers had performed magnifi-
cently, especially knowing they were under the microscope for
being the first to do this type of training. Any bumps along the
road were just lessons learned for the benefit of the next train-
ing. I learned how to better help the next group; they learned
that their experience would be valuable to future trainings. And,
as an official opened the training, a member of the Ministry of
Health was there to officially close the meeting and commit his
support to them.

Since August 2006, I have participated in five more trainings:
two Training of Trainers and three rollouts, all in other African
countries. The message is the same for me: It’s not about me.
It’s about serving and saving the lives of beautiful, appreciative
people. Life is far more than personal fulfillment. I have been
given this amazing opportunity to use what I have spent my life
learning, to find the purpose for the rest of my life.

Perthena Latchaw is Medical Laboratory Program Director
at Seminole State College in Seminole, OK.
Messages from the ASCP President

You may be used to seeing messages from the ASCP president and the Chair of the ASCP Council of Laboratory Professionals in LABMEDICINE and AJCP. But now they can all be found on the ASCP website and in each issue of ASCP eNewsBriefs.* If you missed a few, just go to ascp.org/aboutus/leadership, and click on “Messages from Leadership.”

Here’s a sampling of messages by ASCP President Lee H. Hilborne, MD, MPH, FASCP, DLM(ASCP):

October 2007
Proud to be – ASCP

I realize the tremendous honor it is to be able to spend the next year working for our profession and representing members of the nation’s largest and most diverse organization for pathologists and other laboratory professionals. This year ASCP is 85 years old – older than more than 70 health center labs. Aiding the MoH for laboratory services is the National Laboratory Operation Partners; PEPFAR (including Centers for Disease Control and Prevention (CDC), USAID, Zambia Prevention Care and Treatment Partnership (ZPTC), Centers for Infectious Disease Research of Zambia (CIDRZ), AIDS Relief/Catholic Relief Services, Churches Health Association of Zambia, and Partnership for Supply Chain Management System (John Snow Inc./DELIVER); Japanese International Cooperation Agency (JICA); Clinton Foundation; and Zambia National Response to AIDS (World Bank).

Increasing incidence of HIV/AIDS has led to the augmented need for better quality and advanced laboratory services nationwide. Collaborative efforts through the Ministry of Health with CDC, JICA, ZPTC, AIDS Relief and CIDRZ have helped to create a National Laboratory Strategic Plan for improving quality of laboratory services through development and implementation of policies and procedures. By working together in this effort the MoH and partners are aiming to coordinate and integrate standardization across all clinical laboratory services in Zambia.

The National Laboratory Strategic Plan is being implemented in phases - Central and Provincial laboratories first, District laboratories second, and the rural health center laboratories last. The time line is set for 2007 - 2009. The goals of this initiative are as follows:

1. Implement Standard Operating Procedures (SOPs) for all assays and tests. The last review of Zambian laboratory SOPs was 1997. This step will include an annual review SOP for the SOPs, monitoring and evaluating the implementation plan, and establishing Safety Manuals for all levels in the system.
2. Establish and strengthen Internal Quality Control (IQC) via workshops, distribution of guidelines, procurement logistics, curriculum development, training of all levels, supervision and monitoring.
3. Establish an External Quality Assurance Program (EQA) that is sustainable.
4. Revise the current Lab Information System (LIS) in relation to flow, workshops and manuals, within the process to develop an automated LIS.
5. Put in place, in conjunction with MoH and CDC, an EQA unit. The unit would be traveling for oversight and monitoring of all Zambian labs in all the provinces.

* If you don’t receive e-NewsBriefs, log into the ASCP website and update your contact information and e-mail preferences.

November 2007
ASCP – Making a World of Difference

For more than 85 years pathologists and laboratory professionals have considered ASCP their professional society-recognizing the excellence of our educational programs, our laboratory professional certifications, and our many advocacy efforts on behalf of the profession. No wonder ASCP is stronger in North America than ever before. Even more importantly, we are now starting to gain global recognition as well...

December 2007
Now the Rest of the Story

Several healthcare issues have recently become hot topics in the public media. One is the so-called “superbug,” methicillin-resistant Staphylococcus aureus (MRSA), and its increased incidence – especially in the healthcare setting. Another is the human papilloma virus (HPV). Besides being extremely prevalent, HPV is an important etiologic agent for cervical cancer. Some experts are even suggesting that molecular testing for HPV might be more useful than traditional Pap testing...

Setting the Stage for QA/QC Training in Zambia

by April N. Naegali, MPH, MT(ASCP)

The Zambia Public Health Laboratory System serves the nine provinces of Zambia with a population of over 11 million. The Zambia Ministry of Health (MoH) oversees all national clinical laboratory activities in the country’s specialized labs, central labs, nine provincial labs, 72 district labs, and more than 70 health center labs.

The Zambia Public Health Laboratory System serves the nine provinces of Zambia with a population of over 11 million. The Ministry of Health (MoH) oversees all national clinical laboratory activities in the country’s specialized labs, central labs, nine provincial labs, 72 district labs, and more than 70 health center labs.

Aiding the MoH for laboratory services is the National Laboratory Operation Partners; PEPFAR (including Centers for Disease Control and Prevention (CDC), USAID, Zambia Prevention Care and Treatment Partnership (ZPTC), Centers for Infectious Disease Research of Zambia (CIDRZ), AIDS Relief/Catholic Relief Services, Churches Health Association of Zambia, and Partnership for Supply Chain Management System (John Snow Inc./DELIVER); Japanese International Cooperation Agency (JICA); Clinton Foundation; and Zambia National Response to AIDS (World Bank).

Increasing incidence of HIV/AIDS has led to the augmented need for better quality and advanced laboratory services nationwide. Collaborative efforts through the Ministry of Health with CDC, JICA, ZPTC, AIDS Relief and CIDRZ have helped to create a National Laboratory Strategic Plan for improving quality of laboratory services through development and implementation of policies and procedures. By working together in this effort the MoH and partners are aiming to coordinate and integrate standardization across all clinical laboratory services in Zambia.

The National Laboratory Strategic Plan is being implemented in phases - Central and Provincial laboratories first, District laboratories second, and the rural health center laboratories last. The time line is set for 2007 - 2009. The goals of this initiative are as follows:

1. Implement Standard Operating Procedures (SOPs) for all assays and tests. The last review of Zambian laboratory SOPs was 1997. This step will include an annual review SOP for the SOPs, monitoring and evaluating the implementation plan, and establishing Safety Manuals for all levels in the system.
2. Establish and strengthen Internal Quality Control (IQC) via workshops, distribution of guidelines, procurement logistics, curriculum development, training of all levels, supervision and monitoring.
3. Establish an External Quality Assurance Program (EQA) that is sustainable.
4. Revise the current Lab Information System (LIS) in relation to flow, workshops and manuals, within the process to develop an automated LIS.
5. Put in place, in conjunction with MoH and CDC, an EQA unit. The unit would be traveling for oversight and monitoring of all Zambian labs in all the provinces.

November 2007
ASCP – Making a World of Difference

For more than 85 years pathologists and laboratory professionals have considered ASCP their professional society-recognizing the excellence of our educational programs, our laboratory professional certifications, and our many advocacy efforts on behalf of the profession. No wonder ASCP is stronger in North America than ever before. Even more importantly, we are now starting to gain global recognition as well...

December 2007
Now the Rest of the Story

Several healthcare issues have recently become hot topics in the public media. One is the so-called “superbug,” methicillin-resistant Staphylococcus aureus (MRSA), and its increased incidence – especially in the healthcare setting. Another is the human papilloma virus (HPV). Besides being extremely prevalent, HPV is an important etiologic agent for cervical cancer. Some experts are even suggesting that molecular testing for HPV might be more useful than traditional Pap testing...

Setting the Stage for QA/QC Training in Zambia

by April N. Naegali, MPH, MT(ASCP)

The Zambia Public Health Laboratory System serves the nine provinces of Zambia with a population of over 11 million. The Ministry of Health (MoH) oversees all national clinical laboratory activities in the country’s specialized labs, central labs, nine provincial labs, 72 district labs, and more than 70 health center labs.

Aiding the MoH for laboratory services is the National Laboratory Operation Partners; PEPFAR (including Centers for Disease Control and Prevention (CDC), USAID, Zambia Prevention Care and Treatment Partnership (ZPTC), Centers for Infectious Disease Research of Zambia (CIDRZ), AIDS Relief/Catholic Relief Services, Churches Health Association of Zambia, and Partnership for Supply Chain Management System (John Snow Inc./DELIVER); Japanese International Cooperation Agency (JICA); Clinton Foundation; and Zambia National Response to AIDS (World Bank).

Increasing incidence of HIV/AIDS has led to the augmented need for better quality and advanced laboratory services nationwide. Collaborative efforts through the Ministry of Health with CDC, JICA, ZPTC, AIDS Relief and CIDRZ have helped to create a National Laboratory Strategic Plan for improving quality of laboratory services through development and implementation of policies and procedures. By working together in this effort the MoH and partners are aiming to coordinate and integrate standardization across all clinical laboratory services in Zambia.

The National Laboratory Strategic Plan is being implemented in phases - Central and Provincial laboratories first, District laboratories second, and the rural health center laboratories last. The time line is set for 2007 - 2009. The goals of this initiative are as follows:

1. Implement Standard Operating Procedures (SOPs) for all assays and tests. The last review of Zambian laboratory SOPs was 1997. This step will include an annual review SOP for the SOPs, monitoring and evaluating the implementation plan, and establishing Safety Manuals for all levels in the system.
2. Establish and strengthen Internal Quality Control (IQC) via workshops, distribution of guidelines, procurement logistics, curriculum development, training of all levels, supervision and monitoring.
3. Establish an External Quality Assurance Program (EQA) that is sustainable.
4. Revise the current Lab Information System (LIS) in relation to flow, workshops and manuals, within the process to develop an automated LIS.
5. Put in place, in conjunction with MoH and CDC, an EQA unit. The unit would be traveling for oversight and monitoring of all Zambian labs in all the provinces.

Leading the effort to enhance laboratory services in Zambia is the CDC staff: Ms. Ali Taylor, Laboratory QA Manager; Ms. Dailess M. Nsofwa, Public Health Laboratory Scientist; and Bereneice Madison, PhD, Chief of Laboratory Infrastructure and Support. The late Mr. Boric Siwimba, Public Health Laboratory Scientist, was also a leader in this effort. CDC Zambia oversees four of nine Provinces and their corresponding laboratories. Recently staff has been active in assessing laboratory needs and providing equipment and training for local laboratories. Additional issues for future prioritization include: lab infrastructure/utilities, staffing, sample quality, equipment, reagents and quality control (QC) materials, safety and infection control issues, good laboratory practices (GLPs), and general quality assurance (QA) and QC.

As part of this ongoing initiative, CDC Zambia invited the American Society for Clinical Pathology (ASCP) to assist in assessing and providing QA and QC training for Zambian Laboratories. Technical consultation provided by the ASCP will be done in two-parts: the first on-site occurred in June 2007, and the second is proposed for 2008.

Common variables observed in the initial assessment of the need for assistance in order for quality of laboratory services to improve and for the National Laboratory Strategic Plan to succeed include: laboratory staff (as attrition is high), consistent reagent and control material delivery, preventive maintenance, and general training in QA/QC. Procurement of reagents and QCs materials should be a priority for the Zambia Public Health Laboratory System to ensure availability of supplies and quality services as they expand.

April N. Naegali, Visiting Scientist Fellow, U.S. Regulatory Affairs Eli Lilly and Co.
Greetings from Lesotho, the “Mountain Kingdom” in South Africa. I want to share with you my wonderful experience teaching phlebotomy in another country. In August 2006 I had an opportunity to teach phlebotomy and pre-analytical variables in Lesotho, South Africa. I and another faculty member were involved in the President’s Emergency Plan for Aids Relief (PEPFAR). This act was approved by the U.S. Congress in May 2003. The legislation approved the expenditure of $15 billion dollars over the course of five years to fight the war against HIV/AIDS. This plan is in place to prevent new HIV/AIDS infections, treat the disease with life-extending drugs, and provide education and training to health care workers in many African countries.

In Africa there is a need for adequately trained personnel. Equipment is poor, resources are limited, and better testing for more accurate diagnosis and treatment of HIV patients is sorely needed. Twenty five million people in Africa are infected with the AIDS viruses. The HIV/AIDS prevalence rate in Lesotho is 29 percent, one of the highest in the world. The government of Lesotho has started a proactive initiative called “Know Your Status” to test every person in the country for HIV. The testing program is being funded by the Clinton Foundation.

The American Society for Clinical Pathology (ASCP) conducted this phlebotomy training program in collaboration with the Centers for Disease Control and Prevention in Atlanta, Centers for Disease Control and Prevention in South Africa, Ministry of Health Lesotho and Becton Dickinson (BD). The ASCP has been involved with these outreach programs to help improve detection, diagnosis and treatment of AIDS for many countries in Africa for two years.

Our visit was interesting and exciting. Our flight to Johannesburg, South Africa, took 16 hours from New York, and then we connected to a flight for Maseru, Lesotho. Maseru is the capital of this country. Lesotho is a land-locked kingdom geographically situated within the borders of South Africa. When we were on our approach into the capital, our eyes met with beautiful mountains and green landscapes. Lesotho is the highest country in the world. Eighty percent of the country lies above 5,900 feet. It was a beautiful country but not what I thought Africa would look like.

The Lesotho economy is known for agriculture, livestock, crop cultivation and animal husbandry. The fruit and vegetables were wonderful.

We were introduced to the students on Tuesday morning. There were 19 students ranging in age from early 20s to mid 40s. Before the teaching and training began, we had a wel-
coming ceremony that included speeches, prayers and singing – a little different from the way we start our meetings here in the United States.

Our group of trainees had little health care experience. Most held the job title “HIV counselor.” Their “clients” – not “patients” – would visit them at small clinics located throughout Lesotho. Their training consisted of communication skills, some education about HIV training, and the performance of screening tests for HIV.

Our task was to train them in the art of phlebotomy and pre-analytical variables so that they could draw a good blood specimen for follow up and confirmatory HIV testing. We developed several learning units that consisted of proper use of phlebotomy equipment, adult venipuncture, skin puncture, safety and infection control, needle safety and quality assurance. This country has no set standards for phlebotomy, so our objective was to set good standards for good specimen collection and quality specimen integrity.

Each morning began with song and prayer. This brought tears to our eyes. All the students spoke English. Most spoke several languages. We covered lecture first and then we practiced what we taught. In the afternoon the students practiced on phlebotomy arms that ASCP supplied. Over all, the phlebotomy training consisted of three intense days.

To get all students to participate, we handed out little bars of chocolate for answers to our questions. At one point they would chant “bevel up,” “wash hands and change gloves for every patient,” “please spell your name,” and “use the needle only once.” They also chanted the correct order of draw.

After the third morning they were ready to draw blood from each other. There were lots of nervous students but they listened to direction well and were supportive of each other. On the last day we reviewed all the information we taught. We asked questions and the students answered. Their reward was chocolate. Chocolate was flying throughout the room. The students’ excitement and enthusiasm was incredible. We gave them a lot of information to learn and absorb and they still asked for more. They did not run out of class when the day was over but stayed and thanked us over and over for coming to teach them.

This experience left me with a feeling that this is why I am an educator. We are very spoiled in this country. The equipment that they have is minimal. Alcohol pads and sterile gauze were not known to them as they are to us. They had access to cotton and “spirits” for cleaning. Safety needles were also not an option. BD did supply them with safety needles and plastic tubes for the training.

These students learned the art of phlebotomy in three days. They were happy, excited, had lots of questions, and learned how important their jobs as phlebotomists would be to help improve health care in their country. It was a good feeling that we set standards for them and that they will draw quality specimens. Because the training was so well received and successful, we have since visited Swaziland to help this country improve its health care for its people.

Kathleen Finnegan is Clinical Assistant Professor, Stony Brook University.
that I begin to jiggle my foot to the beat. The song does have a catchy beat. (Wouldn’t my teenagers be shocked if they could see their mom now?) Soon we drive onto the base, with a plume of dust following our vehicle – it is dry here this time of year – and park in front of a small building which serves as the laboratory. As always, I am courteously greeted with an exuberant, “Hello, Madam!” and I proceed through the front doors with my laptop briefcase noisily rolling behind me, the wheels kicking up another plume of dust.

I have been serving as a technical assistant for over a week, and today we will begin discussing quality control, accuracy and reproducibility. Both the chemistry and hematology analyzers are finally generating numbers, and we will begin interpreting the numbers into results. When I first arrived, nothing was reportable. If a number was even able to be generated, it was usually a zero. Most, however, were asterisks or heavily flagged.

We learned a lot the previous week as we “tore the instruments down.” Reagent is now reconstituted properly and used within its expiration date. Maintenance programs are now in place and being done. Everything is clean, dated and stored correctly. I no longer recognize the laboratory, and so far I have not “killed their enthusiasm for learning.” In fact, I get a real sense of pride radiating from the staff when quality is being achieved. The staff is now incorporating the phrases they have heard over and over again into action: “Not documented, not done.” “Labeling only at the patient’s side.” “No patient results until QC is acceptable.”

Near the end of my month-long stay, we begin incorporating test tracking through all phases. I modified the requisition I use in the United States to be applicable for the clinic. All critical values and reference ranges are defined and in place. Their procedure and policy manual is written and available at the bench side. Now we just need to firmly cement the foundation that was laid during the previous three weeks. I find the time went by much too quickly and many projects will need to be designed at a later date. I am proud of myself and my family back home. Everyone not only survived but grew from the experience.

When I reflect on my one-month assignment in Swaziland, I am so appreciative to have had the opportunity to use my clinical laboratory science knowledge in creative and problem solving areas. I was viewed and listened to as an expert in a way our profession deserves to be treated. Many people have asked me how I could have operated in such a “backward” environment, and where did I begin when there was no knowledge about the clinical laboratory. My answer always surprises people. What I saw and addressed in Swaziland is similar to what I have seen and addressed in laboratories here: Laboratories that choose to use untrained personnel instead of valuing knowledge and expertise in our profession. Laboratories that view regulatory guidelines as goals instead of as the bare-bones minimum. Laboratories that treat patient safety as a checkmark instead of an integral way of operating.

Anna M. Murphy is a chemical laboratory science master’s student at the University of Medicine and Dentistry of New Jersey.

Anna M. Murphy is a chemical laboratory science master’s student at the University of Medicine and Dentistry of New Jersey.

ASCP Consultants

ASCP appreciates and acknowledges the following individuals who have served the Society as consultants on the PEPFAR project:

Thomas Alexander, PhD, D(ABMLI)
Wendy Amason, MS, MT(ASCP)
Susan Victoria Baker, MT(ASCP)
Michele Best, MT(ASCP)
Jean Bickell, MT(ASCP)
Karen Brown, MS, MT(ASCP)
Polly Cathcart, MT(ASCP)SC
Marion Coraggio, MS, MT(ASCP)DLM
Bette C.readValue, MS, MT(ASCP)SH
Steve Delany, PhD
Patricia J. Ellinger, MASC, MT(ASCP)SH
SBB
Linda L. Felt, MASC, MT(ASCP)SH
JoAnn Ferro, MS, MT(ASCP)
Kathleen Finnegan, MS, MT(ASCP)SH
Loretta Fitzpatrick, MA, MLT(ASCP), CMA, CPT
Vicki Freeman, PhD, MT(ASCP)SC
Candace Golightly, MS, MLT(ASCP)
Marc Golightly, PhD
Nancy Groves, MD, FASCP
William Groves, MD, FASCP
Roland Guadry
Lee H. Hilborne, MD, MPH, FASCP, DLM(ASCP)
Ellen Hope-Keatts, PhD, SH(ASCP)
Bette Jamieson, MEd, MT(ASCP)SH
Cindy Johns, MSA, MT(ASCP)SH
Nnennaya Kalu, MSc, MT(ASCP)
Perthena Latchaw, MS, MT(ASCP)
Kathleen McKenzie, DA, MT(ASCP)NM
Amy McGrath, MT(ASCP)
Barbara McKinney, MD, FASCP
Anna M. Murphy, MT(ASCP)
Catherine Murphy, MS, MT(ASCP)SCT
April N. Nagel, MPH, MT(ASCP)
Kate Renchenhouse-Olson, PhD, SH(ASCP)
Cathy Robinson, MSA, MT(ASCP)
Todd Roeh, MT(ASCP)
Wanda Sarkas, MBA, MT(ASCP)
John Snyder, PhD, MT(ASCP)SH
Lekidefa Taddeese-Heath, MD
Janice Tompkins, MPH, MT(ASCP)
Leslie Wolfson, MT(ASCP)

Mbabane, Swaziland
The Future of Pathology and Laboratory Medicine

An ASCP Task Force Report

Introduction

At the summer 2005 meeting, the Board of Directors of the American Society for Clinical Pathology held a strategy session on the future of pathology and laboratory medicine. That session led to the formation of a task force, chaired by the President-elect, to examine and address the issues. The charge to the task force was to identify and address the trends facing the professions of pathology and laboratory medicine. In 2006, the board convened a second task force to delve further into the forces of change. This report reflects the combined findings of the two task forces.

It’s tough to make predictions, especially about the future.

—Vigil Berre

Predicting the future is difficult; predicting it in detail much more so. Thus, the task force decided to follow its charge and describe general trends affecting pathology and laboratory medicine, rather than focusing on the details in each of the specialties in the field. In addition, this trend is potentially enables more accurate prediction about the future since it represents hindsight projected forward. Also, since prediction involves judgment, the task force relied more on the collective wisdom of its members than on external opinions.

THE TRENDS:
Internal Perspective

Patient safety and quality

Since the seminal report of the Institute of Medicine, To Err is Human (2000), sustained public interest has developed around patient safety. The answers to the question of safety will be based on two factors: data and standardized processes. No profession is better positioned than the laboratory professions to be central to the effort to improve patient safety, since standardized processes are what we are all about, and the laboratory collects and has the ability to analyze the vast majority of information about the patient. The laboratory, in effect, possesses the data on which evidence-based medicine is based.

Laboratory professionals have the potential to teach the rest of the health professions how to standardize the approach to the patient and to systematize the care process. Laboratory professionals, more than most providers in health care, understand from experience how to work in teams. Health care continues to evolve into a team endeavor, and it is the coordination of that team that will do most to improve the care of the patient.

In addition, the power of informatics can be applied to the mass of laboratory data to identify problem areas, synthesize findings, recognize correlations, and identify trends. Pathologists and other laboratory professionals and their professional associations have not emphasized many of the major societal issues in health care—the plight of the underserved, the uninsured, cost of care, the lack of a system of care.

We have primarily devoted our professional energies to delivering high quality pathology and laboratory medicine services without devoting as much attention to the system around us or how best we fit into that system. The issue of patient safety might just be the issue that pulls us into the mainstream of health care, because we have the skill set to do something positive about it.

Technology

Pathology is the basis of all the medical specialties, and for centuries commanded the most prestige. Not until the end of the 19th century, when ether became the first reliable anesthetic, were surgeons able to do much more than amputation. And not until World War II, when antibiotics began to become widely available, were internists able actually to conquer disease. Laboratory medicine faces a similar revolution as the discoveries and technology of molecular biology, the growing sophistication of digital imaging, and the techniques of nanotechnology begin to have immense practical importance in patient care.

The manner in which the professions of pathology and laboratory medicine embrace this revolution will determine our future. If we choose to incorporate these technologies into our daily practice, we will be central to patient care. If we do not transform ourselves, we will be peripheral players at best.

Perhaps in no other field of health care than in laboratory medicine have there been such numerous advances and revolutionary growth of new technologies, each having their genesis in the basic science of biology and medicine. From basic science discoveries in genomics, proteomics, metabolomics, cell biology, and molecular and diagnostic biology have developed such technologies as flow cytometry, high throughput molecular biology, nanotechnology, robotics, bioinformatics, advanced imaging, and multiple automated processes. Three examples, which follow, typify the potential impact of changes in science and technology on health care and the practice of pathology and laboratory medicine.

Molecular pathology

Right now we’re using staining and thin-sectioning technologies that are over 100 years old, although it’s becoming increasingly possible to actually do a genetic analysis of tumor cells. Instead of just looking at the morphology of cells, it’s increasingly possible to look at the cellular blueprints, the DNA, and in so doing begin to more accurately predict the biologic behavior of that tumor on the basis of its DNA or the proteins the tumor produces.

—Bruce A. Friedman, MD

The explosive growth of genomics, especially in pathogen detection, but more recently in pharmacogenomics and in diagnostics, will mean at the least that morphologic identification will be refined by molecular identification. While there is still disagreement among pathologists, it may well mean the demise of the glass slide and conventional microscopy over time.
Genomic identification is nearing its mature phase, with a broad range of assays for bacteria, viruses, and other microorganisms—for viral load monitoring, viral genotyping, rapid detection, and STD detection, and as an adjunct to traditional methods. Genetic testing for the existence of or predisposition to disease is now common, with over 500 genetics laboratories testing for up to 900 diseases. Future applications will include analysis of disorders of complex inheritance and analysis of pharmacologic therapy. The payoff for genomics in oncology is especially great, as the field moves from predisposition testing and diagnosis to prognosis and therapy selection—"theradiagnostics." At the least, molecular identification can parse subgroups distinctly differently than morphologic identification and can determine targeted therapy. The safety and efficacy of cancer therapy, and thus the prognosis for the patient, depend on therapy choice, tumor genomics, and patient genotype. The question for the laboratory professional is which component of the health care system and what group of health professionals will own this technology. Pathologists and laboratory professionals should take ownership of the technology for the best interests of patient care.

**Digital imaging**

Parallel to the development of molecular pathology has been the development of digital imaging. Less than a decade ago, there was no portable storage device (floppy disc, CD-ROM) that could hold all the necessary information on one glass slide. Now, small collections of slides fit on CDs, Zip drives, and memory sticks, and the compressibility of information continues to follow Moore's Law; that is, computer processing power doubles every 18 months. The work of several commercial companies now enable, at least in theory, proficiency testing of cytology performance to be virtual, since Z-axis (three-dimensional) information can now be placed on portable storage devices. As compressibility has increased, so has image clarity. Digital cameras are now used by professional photographers not only because of the convenience and infinite editing possibilities, but also because the image itself is as good as that of film. The digital database, as compared with glass, is compact and manipulable and does not deteriorate. Perhaps most importantly, the digital image database is quantitative rather than qualitative.
HPV vaccine

A recent and striking example of the potential consequences that scientific discovery and technological advances can have on laboratory diagnosis, clinical practice, and patient outcomes is the advent of testing for human papilloma virus (HPV) and the Food and Drug Administration (FDA) approval of Merck’s quadrivalent HPV recombinant vaccine. The full implications for the fields of cytopathology and cytotechnology have yet to be felt, but the likely outcome is career displacement of some professionals in this field.

Information systems

The laboratory was one of the first hospital departments to develop computerized information systems. However, the data they maintain has most often been raw, reported in single test batches or on individual patients. Rarely have those data been mined for the knowledge base they contain. Public health laboratories, having a wealth of such population data, have only recently belatedly been given adequate resources to upgrade their data systems.

In addition, pathology and laboratory reports remain unchanged, not reaching their full potential, and lacking in the sort of imagination that would make them active learning tools for the clinician and patient. With the advent of an electronic medical record becoming a universal reality, the need to integrate the laboratory information system with the patient record is mandatory. Having masses of quantitative data widely accessible for analysis has the potential for beneficial scientific discovery.

Beyond the potential for laboratory data mining is the integrative potential of those data. Currently reported by the laboratory as individual bits of data, to then be synthesized by the clinician, such data could instead arrive at its source—the laboratory—into true information, perhaps including other clinical data, which would be immeasurably more helpful to the clinician caring for the patient. By conceiving of laboratory information in this way, the laboratory professional would transform the commodity of laboratory data into a true consultative service, indispensable in patient care. The laboratory professional, as the ultimate consultant, would similarly become an indispensable part of the health care team.

Information systems are also emerging as facilitators of clinical decision-making in the clinical laboratory. Rules-based, auto-verification systems allow for the assignment of certain objective tasks to computers, while freeing up human talent for more subjective or interpretive tasks. Similar systems allow for the automated routing of samples or test results for extended analysis or for further medical interpretation, and enable cross-talk among different clinical laboratories to facilitate medical decision-making. As laboratory information systems become more complex, so will this clinical functionality.

Globalization

The driver of technological change is health system change, and the most important driver of health system change is economics. There will always be the imperative for higher quality at lower cost. As the aging of the patient population puts increasing pressure on the health care system, increasing pressure will come from all payers, but especially government, to lower the costs of the system. Competitive bidding for laboratory services is but one example. For the laboratory, economic pressures will mean regionalization and other economies of scale, as national laboratories contract with health systems and as “condominium” or “pod” labs flourish.

While legal barriers exist in some cases (e.g., requirements of licensure or certification), those barriers are falling. This is another reason that the pathologist of the future must be on the forefront of knowledge of scientific and technological advances and to become the indispensable provider of a diagnostic service and consultation—to reverse the outsourcing of image reading globally. Globalization is therefore both a threat and an opportunity.

Roles in the health system

It is a truism that to survive economically, all one has to do is to make oneself indispensable. The laboratory professional is endangered currently because we are not indispensable. Laboratory results—and to some extent, anatomic pathology diagnoses—are perceived as commodities, not services, by many people. And commodities cannot be produced by the lowest bidder. Part of the reason for this state of affairs is automation, which has reduced what was once labor-intensive to technology-intensive work (so-called “disruptive technologies”).

Another contributing factor is the stereotypical personality of many in the fields of laboratory medicine and pathology—which is a passion for detail and getting it right, but little passion for patient contact. This was not always so, for the “clinical” in clinical pathology originally referred to the pathologist as clinician. For many of our clinical colleagues, however, we are perceived as trending away from patient care.

The interaction with colleagues in other areas of patient care has also become minimal in many settings, rather than being seen as members of a health care team, laboratory professionals are seen more often as the producers of a product, a commodity. Another part of the reason for the current state of the profession is the penchant to “split” rather than “lump.” That is, pathologists and other laboratory professionals simply are more comfortable as micro-specialists rather than as generalists. This has led in some cases to artificial distinctions among and between subspecialties.

With the blurring of lines between specialties, most especially between anatomic pathology and laboratory medicine, these artificial distinctions will need to disappear. Opportunities abound to change these situations and to become indispensable, but they will require time, imagination, and energy. To lose the fields of health care may reinvent themselves for the better in the last 40 years. The general practitioner was a fading breed, overtaken by the specialist, when the concept of many in the fields of laboratory medicine and pathology—a passion for detail and getting it right, but little passion for patient contact. This was not always so, for the “clinical” in clinical pathology originally referred to the pathologist as clinician. For many of our clinical colleagues, however, we are perceived as trending away from patient care.

The interaction with colleagues in other areas of patient care has also become minimal in many settings, rather than being seen as members of a health care team, laboratory professionals are seen more often as the producers of a product, a commodity. Another part of the reason for the current state of the profession is the penchant to “split” rather than “lump.” That is, pathologists and other laboratory professionals simply are more comfortable as micro-specialists rather than as generalists. This has led in some cases to artificial distinctions among and between subspecialties.

With the blurring of lines between specialties, most especially between anatomic pathology and laboratory medicine, these artificial distinctions will need to disappear. Opportunities abound to change these situations and to become indispensable, but they will require time, imagination, and energy. To lose the fields of health care may reinvent themselves for the better in the last 40 years. The general practitioner was a fading breed, overtaken by the specialist, when the concept of many in the fields of laboratory medicine and pathology—a passion for detail and getting it right, but little passion for patient contact. This was not always so, for the “clinical” in clinical pathology originally referred to the pathologist as clinician. For many of our clinical colleagues, however, we are perceived as trending away from patient care.

The interaction with colleagues in other areas of patient care has also become minimal in many settings, rather than being seen as members of a health care team, laboratory professionals are seen more often as the producers of a product, a commodity. Another part of the reason for the current state of the profession is the penchant to “split” rather than “lump.” That is, pathologists and other laboratory professionals simply are more comfortable as micro-specialists rather than as generalists. This has led in some cases to artificial distinctions among and between subspecialties.

With the blurring of lines between specialties, most especially between anatomic pathology and laboratory medicine, these artificial distinctions will need to disappear. Opportunities abound to change these situations and to become indispensable, but they will require time, imagination, and energy. To lose the fields of health care may reinvent themselves for the better in the last 40 years. The general practitioner was a fading breed, overtaken by the specialist, when the concept of many in the fields of laboratory medicine and pathology—a passion for detail and getting it right, but little passion for patient contact. This was not always so, for the “clinical” in clinical pathology originally referred to the pathologist as clinician. For many of our clinical colleagues, however, we are perceived as trending away from patient care.
Economically, medical technologists are toward the lower end of the pay scale for health professionals with comparable education, while pathologists tend toward the higher end. The lab technician and medical device industries have coped with the thinning of the technologist workforce by increasing automation. Pathologists have coped with the demise of Medicare Part B payments for laboratory services by concentrating on anatomic pathology, and left the day-to-day tasks of the laboratory in most cases to technologists, clinical chemists, and microbiologists.

The management literature notes a gap between a skilled professional’s ability to innovate and the general public’s ability to adopt the innovation. A partial outcome of this is that the profession loses interest in doing more routine tasks it previously did, but which the public still desires. Into the gap come new groups to fill the need; hence, the rapid development of pathology assistants. The initial response of the original profession is almost always to oppose the development of the gap-fillers, but this strategy almost never works. The better strategy, according to many in the literature, is to embrace the new group and to continue to innovate.

Health care is no longer what it was—the care of an individual doctor for an individual patient—although that component still exists, but only as a component. Health care of necessity requires many people fulfilling a variety of roles in a variety of settings. Pathologists and laboratory professionals know this probably better than any other health professionals, since their work requires different skills—histotechnologists and the anatomic pathologist, the cyto- and hematopathologist, the medical technologist and the laboratory director, working as a team. And pathology and laboratory medicine, as distinct from the ancillary roles of providing data about patients, are seen as clinical fields, and theirs is the environment in which the profession is indispensable. At least from the buying perspective, neither of these assumptions held much hope. In the first instance, buyers already have access to sufficient data on which to make purchasing decisions, and in the second, buyers perceive no need for the service component and are, in fact, actively pursuing policies that further commoditize laboratory outputs. On the other hand, some degree of hope was garnered from the hospital sector in the second instance, since there is still a role of providing data (per case and per diem) that would be necessary for better decision making.

A danger for hospital laboratories is policies of insurers that drive laboratory testing to regional and national laboratories, where the insurers can negotiate lower prices that are then reflected in the rates negotiated with hospitals. Hospitals may then be saddled with the infrastructure to perform necessary testing, while the national laboratory capitalizes on the lower marginal cost, (i.e., the routine test being done by the pathologist and the laboratory director, working as a team. And laboratories, especially those in the network of better decision making. The literature notes a gap between a skilled professional’s ability to innovate and the general public’s ability to adopt the innovation. A partial outcome of this is that the profession loses interest in doing more routine tasks it previously did, but which the public still desires. Into the gap come new groups to fill the need; hence, the rapid development of pathology assistants. The initial response of the original profession is almost always to oppose the development of the gap-fillers, but this strategy almost never works. The better strategy, according to many in the literature, is to embrace the new group and to continue to innovate.

Health care is no longer what it was—the care of an individual doctor for an individual patient—although that component still exists, but only as a component. Health care of necessity requires many people fulfilling a variety of roles in a variety of settings. Pathologists and laboratory professionals know this probably better than any other health professionals, since their work requires different skills—histotechnologists and the anatomic pathologist, the cyto- and hematopathologist, the medical technologist and the laboratory director, working as a team. And laboratories, especially those in the network of better decision making. The literature notes a gap between a skilled professional’s ability to innovate and the general public’s ability to adopt the innovation. A partial outcome of this is that the profession loses interest in doing more routine tasks it previously did, but which the public still desires. Into the gap come new groups to fill the need; hence, the rapid development of pathology assistants. The initial response of the original profession is almost always to oppose the development of the gap-fillers, but this strategy almost never works. The better strategy, according to many in the literature, is to embrace the new group and to continue to innovate.
Clinical Service
Pathologists, with such notable exceptions as hematopathologists, have within one generation largely eschewed the clinical component of medicine (in this usage, "clinical" refers to patient care, not to the clinical laboratory). As such, they have become to a degree estranged from other physicians, and this has been a factor in the perception of laboratory results as commodities.

Imaging
Two aspects of the ability to convert tissue samples to images threaten pathology as a profession. One is that images can be transmitted instantaneously anywhere in the world, to be read potentially at much lower cost than in this country. Radiologists have already experienced this phenomenon with the outsourcing to other countries of nighttime emergency room and urgent inpatient radiographs. The other is that, as radiologists found when cardiologists discovered the efficacy of cardiac imaging, the image is not necessarily the province of one specialty.

Suggestions for Action
The interviewees did feel that there were active steps that the laboratory professions could take to counter these threats. These seemed to fall into somewhat distinct themes.

Efficiency
Because the focus of most of the interviewees was on health care costs, most mentioned concepts of "waste," "unnecessary testing," "misdiagnosis," and "false positives." They, in turn, suggested that the laboratory profession could have an effect on these negative aspects of health care. Among those suggestions were consumer education (to not demand unnecessary tests), the development of guidelines for (especially high cost, sophisticated) diagnostic testing, improving pre- and post-analytic components of testing, and transmitting information on clinical testing optimally.

Collaboration
In line with the interviewees’ perception that pathologists and other laboratory professionals were rarely involved in policy development in the larger health care system, several recommended the participation of ASCP in ongoing collaborative activities: the American Medical Association-sponsored Consortium, advice to insurers (e.g., Aetna) on new technologies, the National Committee on Evidence-Based Design lay of the National Group on Health, AHRQs ongoing technology assessments (of which few, if any, have addressed diagnostic technologies), and participation in several groups involved in the development of the electronic medical record.

Technology
The interviewees all recognized the revolution taking place in molecular biology, even if they were not certain of its implications. Some focused on the buyer’s problem with any new technology—that rather than replacing an outmoded technology, it merely was additive. Mentioned in this context was the effect on Pap smears as screening tools versus HPV testing as a screening or targeted approach. Unknown were the effects of more sophisticated genomic testing, although the concern was that it was likely to be more expensive and over- or inappropriately utilized. Concern was expressed over the haphazard way in which new technology enters clinical practice. Some suggested that there could be an appropriate role for laboratory professionals in structuring the growing chaos.

Information
Due to the perspective of the interviewees as both buyers of health care services and producers of health care information, all harbored the viewpoint that accurate, timely, and transparent information would lead consumers—clinicians, patients, and payors—to make more appropriate health care choices. Several saw the laboratory as having a significant role in this process, from the development of clinical testing guidelines, the provision of direct patient information and counseling, the development of testing "formularies," and the coordination of laboratory data with the complete medical record, especially when that record becomes universally electronic.

Summary
In summary, pathology and laboratory medicine are at a crossroads. Taking an active, rather than passive, role is the better way to determine our own path. Institutions and individual professionals must participate in the large issues affecting health care as well as in those specific to our field—partnering, collaborating, leading—so that the value of what we do is recognized and rewarded. Partnering, communicating, and educating provide the mechanisms to help the profession rejuvenate.

Appendix
Several organizations are noted in the body of the Task Force report, some of which may not be familiar to all readers. Those are briefly described here.

Agency for Healthcare Research and Quality
AHRQ is the lead federal agency charged with improving the quality, safety, efficiency, and effectiveness of health care for Americans. As one of 12 agencies with the U.S. Dept. of Health and Human Services, AHRQ supports health services research that will improve the quality of health care and promote evidence-based decisionmaking. It has a staff of approximately 300 and a budget (2005) of $320 million. Approximately 80 percent of its budget is invested in grants and contracts focused on improving health care.

ECRI Institute (originally Emergency Care Research Institute, then ECRI)
ECRI is a non-profit private sector organization dedicated to bringing the discipline of applied scientific research to discover which medical procedures, devices, drugs, and processes are best. It is designated as a Collaborating Center of the World Health Organization and an Evidence-Based Practice Center by AHRQ. Founded in 1961, from its early roots in research and as an evaluator of medical technologies, it now plays a major role in technology planning, procurement and management, patient safety, quality and risk management, health care policy and research, and health care environments management.
**2006-2007 Task Force**

**Chair:**
John S.J. Brooks*, MD, FASCP, Dept. of Pathology, Pennsylvania State University, Hershey

**Members:**
C. Bruce Alexander, MD, FASCP, Dept. of Pathology, University of Alabama, Birmingham
Karen A. Brown, MS, MT(ASCP), Dept. of Pathology, University of Utah, Salt Lake City
Jo Anne B. Edwards, MEd, MT(ASCP), Department of Pathology, Allegheny General Hospital, Pittsburgh
William G. Finn, MD, FASCP, Dept. of Pathology, University of California at Los Angeles, Los Angeles
Dominique P. Coco, MD, Brigham and Women’s Hospital, Boston
William G. Finn, MD, FASCP, Dept. of Pathology, University of Michigan Health Center, Ann Arbor, MI
Mary J. Cavagnaro, MS, MT(ASCP), DLM, Memorial Hospital West, Pembroke Pines, FL
David F. Keren, MD, FASCP, Warde Medical Laboratory, Stamford, CT
Alexandra Shaye, MD, University of Texas, MD Anderson Cancer Center, Houston
Gene P. Siegal, MD, PhD, FASCP, Dept. of Pathology, University of Alabama, Birmingham
Jan F. Silverman, MD, FASCP, Dept. of Pathology & Laboratory Medicine, Allegheny General Hospital, Pittsburgh
John R. Snyder, PhD, MT(ASCP), Ohio State University at Lima School of Allied Medical Professions, Lima, OH

**Staff:**
John K. Ball, MD, JD, MACP, ASCP Executive Vice President
Linda Tyson, MPA, ASCP Board Relations Manager

---

*Dr. Brooks is now ASCP Immediate Past President. He was President-elect when the task force was convened.

**Dr. Hilborne, who is now ASCP President, was President-elect when the task force was convened.*

---

**Make Art/Stop AIDS**

Make Art/Stop AIDS is an international network of scholars, artists, and activists committed to ending the global AIDS epidemic. In February 2008, the Fowler Museum at University of California Los Angeles (UCLA) will open this multimedia, contemporary art project that demonstrates the power of art to raise awareness, to inspire activism, and ultimately, to help end global AIDS. It is curated jointly by representatives from UCLA, Columbia University and the Durban Art Gallery in South Africa. Make Art/Stop AIDS is one of the first museum exhibitions of its kind to deal with the AIDS epidemic on a global scale, drawing primarily on the work of practicing contemporary artists. Visit [http://makeartstopaids.org/MASAPprograms.html](http://makeartstopaids.org/MASAPprograms.html).

---

**Medical Museum Exhibits**

We've noticed a trend in museums focusing on medicine, science and anatomy. Well, let's face it, art museums have always focused on the beauty of anatomy . . . but now, they are discovering the beauty of biology.

**Body Worlds**

Body Worlds is an ongoing traveling exhibition of preserved human bodies that are prepared using a technique called plastination to reveal inner anatomical structures. The original Body Worlds exhibit consists of about 25 full body plastinates with organs shown to highlight certain biological systems. There are also bodies with various medical conditions, for example, artificial hip joints or heart valves; a liver with cirrhosis; and the lungs of a smoker and non-smoker placed side by side. A second, similar exhibition called Body Worlds 2 opened in 2005 and a third exhibition, Body Worlds 3, premiered in 2006. To find an exhibit near you, visit [www.bodyworlds.com/en.html](http://www.bodyworlds.com/en.html).

**Anatomy in the Gallery**

The International Museum of Surgical Science in Chicago has an exhibit through January 18, 2008, in which artists visually interpret the bodily experiences of disease and pain in their artwork. “Internal Medicine” features three distinct series of wood engravings by Rosemary Feit Covey. The Brain Tumors series was commissioned by tumor patient David Craig Welch shortly after he was diagnosed in order to depict his experiences while undergoing major surgery and other medical procedures, whereas the Porcupine Girl series of prints personifies various aspects of the artist’s own experience with a life-threatening medical condition. In the third series, called Vanitas, Vanitas, Feit Covey draws upon a 17th-century Dutch type of still life that emphasized the fleetingness of life in order to explore the global impact of health and illness in the modern world. Based on a true story, this series comprises colored pencil, watercolor, and mixed-media “drawings” that Barbara Kendrick created in order to portray the feeling of nerve pain, a chronic condition she developed as the result of a severe case of shingles in 1993. To illustrate the changes in perception she experiences during bouts of this pain, which can be brought on by the slightest of breezes, Kendrick takes poetic license with anatomy, recombining and jumbling images of the brain, nervous system, and cellular structures. Visit [www.imss.org/anatgallery.htm](http://www.imss.org/anatgallery.htm).

---

**2005-2006 Task Force**

**Chair:**
John S.J. Brooks*, MD, FASCP, Dept. of Pathology, Pennsylvania State University, Hershey

**Members:**
Linda Tyson, MPA, ASCP Board Relations Manager
Vice President
ASCP Executive Staff
Lee H. Hilborne**, MD, MPH, FASCP, DLM(ASCP), Dept. of Pathology, University of California at Los Angeles, and the Rand Corp., Los Angeles

**Members:**
Russell K. Byrnes, MD, FASCP, Dept. of Pathology, University of Southern California, Los Angeles
Marie J. Cavagnaro, MS, MT(ASCP), DLM, Memorial Hospital West, Pembroke Pines, FL
Dominique P. Coco, MD, Brigham and Women’s Hospital, Boston
William G. Finn, MD, FASCP, Dept. of Pathology, University of Michigan Health Center, Ann Arbor, MI
Carol A. Gomes, MS, MT(ASCP), HTL, DLM, Dept., Stony Brook University Medical Center, Stony Brook, NY
David F. Keren, MD, FASCP, Warde Medical Laboratory, Ann Arbor, MI
Mark H. Stoler, MD, FASCP, Dept. of Pathology, University of Virginia Health System, Charlottesville
Neonatologists’ desire to be paged about certain critical laboratory values differs based on the role they play, according to a study conducted at Johns Hopkins Children’s Center. The findings were presented Oct. 28, 2007, at the American Academy of Pediatrics National Conference in San Francisco.

Fellows wanted to be paged the most; attending physicians wanted to be paged the least; and resident physicians fell in the
middle, according to researcher Christoph U. Lehmann, MD, who works in the Divisions of Neonatology and Information Science. "Residents lack the knowledge to know what’s important to know when," Lehmann said. "Fellows have the knowledge, and they are trying to do everything. They are overzealous. And attendings have the knowledge and the experience. They don’t need to know every (test result). Sometimes it’s best to watch and not act on everything."

In the study, conducted in March 2006, 31 residents, six fellows, and 10 attending physicians rated critical values as either "important to know" or "important to know now" via pager. The critical values evaluated were white blood cell count (WBC), absolute neutrophil count (ANC), C-reactive protein (CRP), hematocrit, platelets, sodium, potassium, bicarbonate, calcium, creatinine, and triglycerides. Except for low ionized calcium (iCa), all of the physicians indicated the same "desire to know" the critical values. Attending physicians were less likely to consider iCa important to know.

However, "there were significant differences in the proportion of respondents who wanted to be paged for high creatinine, low iCa, high potassium, and high sodium levels," the study abstract states. "Attendings reported that these four values did not require a page. Fellows and residents wanted to be paged about these values except for high creatinine (fellows) and high sodium (attendings) levels."

The researchers concluded that there were significant differences on what critical values should be paged, and that the study points to the need to define what truly critical values are for newborns and to stop extrapolating from critical values either.

Lehmann acknowledged how hard it is for the laboratory to reach the right person with the right critical value at the right time, because at different times of the day or night different physicians have varying responsibilities for patients. He tried to help by devising a paging system to alert NICU physicians to critical values, "but nobody used it. There were way too many pages."

For instance, he said, if today’s WBC is 40,000, the physician would want to be paged, but if yesterday’s WBC was 42,000, then the physician does not want to be paged today for a WBC of 40,000. Lehmann is working on a new paging system that would suppress these types of alerts, which represented about 90 percent of alerts that NICU physicians had been receiving.

"With lab results, the value of information depends on how old they are, the prior knowledge of the physician, and the context of the information, such as the associated [test results] and diagnoses," Lehmann said. "Colleagues have different thresholds (for receiving critical value alerts) depending on what they want to know."

In a news release from Johns Hopkins, the researchers said that the study points to the need to define what truly critical values are for newborns and to stop extrapolating from critical values for adults, which they described as "an archaic, round-about system that is currently the status quo in hospitals nationwide."

Anusha Hemachandra Streubel, MD, MPH, formerly of Johns Hopkins and now assistant professor of neonatology at the University of Colorado Health Sciences Center, also contributed to the study.

Ellen Sullivan is senior communications manager at ASCP.

I commend the researchers for exploring this difficult topic (see article, page 36). Critical laboratory values are test results suggesting that the patient is in imminent danger unless appropriate therapy is instituted. The Joint Commission requires hospitals to track and improve the timeliness of reporting and receipt of critical test results by direct licensed caregivers. However, there are no clear recommendations as to exactly which tests are critical or what the actual critical value of an individual test is.

This has led laboratories to develop their own lists based on ad hoc publications in the United States and other countries. Consequently, there is a great variability in the number of tests considered to be critical. Those include both truly critical tests with limits that reflect potential life-threatening emergencies and also test results that ought to receive attention but do not generally constitute a medical crisis.

Dr. Maria Proytcheva is Director, Hematology Laboratory, Children’s Memorial Hospital, and Assistant Professor, Feinberg School of Medicine at Northwestern University, Chicago.

The study represents the experience of one institution; yet that experience ably points out how a significant portion of the results that were called to the physicians were not critical. In addition, attendings, fellows, and residents themselves differed considerably in the information they thought might be critical.

Defining standards to determine critical value ranges for neonates is a fundamental task that needs to be undertaken as a priority of the first order. This will require the active participation of both neonatologists and laboratory physicians. A credible nationally representative organization of pathologists and laboratory scientists is needed to undertake this task. Once proper pediatric critical laboratory test results are identified and defined, further studies on promotion and national adoption of those values, on variability of responses among physicians, and determination of the best way to communicate should follow.

I recommend the researchers for exploring this difficult topic (see article, page 36). Critical laboratory values are test results suggesting that the patient is in imminent danger unless appropriate therapy is instituted. The Joint Commission requires hospitals to track and improve the timeliness of reporting and receipt of critical test results by direct licensed caregivers. However, there are no clear recommendations as to exactly which tests are critical or what the actual critical value of an individual test is.

This has led laboratories to develop their own lists based on ad hoc publications in the United States and other countries. Consequently, there is a great variability in the number of tests considered to be critical. Those include both truly critical tests with limits that reflect potential life-threatening emergencies and also test results that ought to receive attention but do not generally constitute a medical crisis.

The children’s hospitals have responded to the absence of clear recommendations by adopting critical values from adult hospitals. However, adult hospitals have yet to try to reach consensus on standards themselves. As a consequence, no accepted standards exist on pediatric (including neonatal) critical laboratory values either.
Save the Date!

DELIVERING TODAY’S RESULTS FOR A HEALTHIER TOMORROW

National Medical Laboratory Professionals Week 2008

Watch your mail for the lab week planning guide, and visit www.labweek.org for more information.