ASLM
AFRICAN SOCIETY FOR LABORATORY MEDICINE

ADVANCING THE LABORATORY PROFESSION AND NETWORKS IN AFRICA

LAB CULTURE

THE ASLM NEWSLETTER FOR LABORATORY PROFESSIONALS ACROSS AFRICA

August 2013, Issue 8

Are We Prepared for the Next OUTBREAK?

IN THIS ISSUE:

Lab Culture | Call for Submissions

ASLM is accepting submissions to *Lab Culture*, our quarterly newsletter. We invite you to submit articles (200-500 words) on the following topics:

- Standards & Accreditation
- Research
- Education & Training
- Clinical Medicine

If you are interested in contributing an article or photo, or in advertising with *Lab Culture,* please email us at newsletter@aslm.org.

AJLM – Call for Papers

The African Journal of Laboratory Medicine is currently accepting submissions.

AJLM serves as a forum for perspectives on the role of laboratories in public health and clinical care. It also fosters communication among laboratory staff, clinicians, scientists, the medical community, public health officials and policy makers.

AJLM is published on a rolling basis, and is available for free online. Article topics of particular interest include:

- the conversion of laboratory expertise, procedures and technology into clinical care,
- the intersection of laboratory and medical science, laboratory-based epidemiology, and laboratory investigations, and
- the real-world application and effectiveness of laboratory science.

For more information on AJLM or to submit manuscripts, please visit www.ajlmonline.org or contact editor@ajlmonline.org.

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Illustration of an Ebola virus electron micrograph.

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CULTIVATING NEW OPPORTUNITIES AND PREPARING FOR FUTURE CHALLENGES

Over the past few months, the ASLM team has been hard at work, facilitating laboratory training workshops, participating in diagnostic-related meetings, and expanding our staff to better accommodate the needs of our members and growing organisation. In May and June, ASLM co-facilitated two Laboratory Quality Management System training workshops in Abuja, held by the Institute of Human Virology, Nigeria. In July, ASLM co-sponsored and participated in the second Xpert MTB/RIF African regional training workshop of the US Government. During the meeting, Society representatives presented ASLM's planned involvement in the TBXpert Project, a new World Health Organization/UNITAID initiative to roll-out automated diagnostic testing for tuberculosis in the African region.

As well as participating in these recent trainings and meetings, we have been preparing for our own conference. I am pleased to announce that ASLM will host its first international francophone conference from 1-4 October 2013 in Abidjan, Côte d'Ivoire. The conference will focus on *HIV/AIDS and Antimicrobial Resistance in Africa: New Public Health Challenges*.

Aside from promoting collaboration and knowledge-sharing at regional meetings, ASLM endeavours to increase access to science education and encourages research publication by African laboratory professionals. ASLM, in conjunction with the *African Journal of Laboratory Medicine* (AJLM), will soon offer Continuing Medical Laboratory Education (CMLE) credits. AJLM will publish its first special issue on the Strengthening Laboratory Management Toward Accreditation (SLMTA) programme early next year. Individuals will be able to earn CMLE credits for submitting manuscripts or providing peer-review of articles.

This issue of *Lab Culture* focuses on the preparation of African laboratory professionals for a more enriching career in laboratory medicine. Our latest Feature article, "Are We Prepared for the Next Outbreak?", available on page 7, concerns the important role of the laboratory in infectious disease outbreak detection and response. The article addresses critical aspects of laboratory preparedness for unexpected situations. I hope you enjoy issue 8 of *Lab Culture*. Thank you for reading.

Dr. Tsehaynesh Messele, CEO, ASLM

MEET THE ASLM SECRETARIAT TEAM

Madeline DiLorenzo, Director of Programmes

Ms. DiLorenzo, who joined ASLM earlier this year, is a magna cum laude graduate of Brown University, USA, where she studied international relations. She has worked with the Clinton Health Access Initiative in Vietnam and Togo, with the Global Alliance to Immunize against AIDS in Mali, and with the Massachusetts General Hospital Medical Practice Evaluation Center and the Columbia University Institute on Medicine as a Profession, USA. She will pursue her medical degree at the Albert Einstein College of Medicine, USA, in fall 2014.

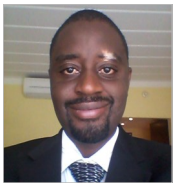
Ruth Girma, Senior Administrative Assistant

Ms. Girma joined ASLM as the new Senior Administrative Assistant in August 2013. She previously served as Programme Officer for John Snow Inc., a USAID Deliver Project, as well as a conference organiser for Courtesy Associates and the United Nations Economic Commission for Africa. Ms. Girma has a degree in Business Administration and Information Systems from Addis Ababa University, and a Diplôme d'Université en Management and Licence en Administration des Entreprises from the Université de Poitiers, France.

Menyeshu Hailu, Programme Coordinator

Ms. Hailu, who joined ASLM in 2011 and began serving at Programme Coordinator in 2012, comes to ASLM with a wealth of experience coordinating international conferences. She helped coordinate the 16th International Conference on AIDS and STIs in Africa (ICASA2011) in Addis Ababa, and served as an events coordinator for the Lorna Sundberg International Center at the University of Virginia, USA. Ms. Hailu holds a bachelor's degree in sociology from the University of Virginia.

Talkmore Maruta, Senior Programme Specialist



Mr. Maruta joined ASLM in May 2013 as Senior Programme Specialist. He has implemented international health programmes for the Clinton Health Access Initiative and the Foundation for Innovative New Diagnostics. He holds a bachelor's degree in medical laboratory sciences from the University Of Zimbabwe, School Of Health Sciences, and a master's degree in public health from the University of Limpopo, South Africa. Mr. Maruta is currently pursuing a PhD in public health.

Teferi Mekonen, Senior Programme Specialist

Mr. Mekonen joined ASLM in February 2012. He previously served as Laboratory Project Coordinator for the US Centers for Disease Control and Prevention and as Laboratory Strengthening Programme Director for International Clinical Laboratories. He has a bachelor's degree in biology from Asmara University, Eritrea, a master's degree in microbiology from Addis Ababa University, Ethiopia, and a master's degree in public health from Mekelle University, Ethiopia.

Bineyam Negash, Information Technology Officer

Mr. Negash, who joined ASLM in June 2013, brings information technology and laboratory information systems expertise to ASLM. Previously, he served as the Management Information System Director for International Clinical Laboratories. Mr. Negash holds a degree in management information services from Unity University, Ethiopia.

Ndlovu Nqobile, Senior Programme Specialist

Before joining ASLM in April 2013, Mr. Nqobile served as Laboratory Project Coordinator for the African Field Epidemiology Network in Kampala, Uganda, where he implemented laboratory programmes. He also served as Assistant Field Coordinator for the Masters in Public Health training programme at the University of Zimbabwe. Ndlovu holds a bachelor's degree in medical laboratory sciences and a master's degree in public health from the University Of Zimbabwe.

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Mesfin Tibebu, Finance and Operations Manager

Prior to joining ASLM in June 2013, Mr. Tibebu served as Chief Accountant for Damco Djibouti, an international logistics firm, and held other finance leadership positions with Libya Oil and Shell Oil companies. He holds an accounting and management degree from Addis Ababa University, Ethiopia, as well as international accounting training certifications from the Association of Chartered Certified Accountants, a UK-based finance institute.

Corey White, Senior Communications Officer

Before joining ASLM in 2012, Mr. White managed international public health programmes for the American Society for Microbiology. He also served as a health policy analyst for the US National Governors Association as well as coordinated state-wide health initiatives for the US State of Louisiana's HIV/AIDS Programme. Corey obtained his master's degree in 2003 from the Public Administration Institute of Louisiana State University, USA.

ASLM CO-SPONSORS TRAINING WORKSHOP ON PIONEERING RAPID TB DIAGNOSTIC TECHNOLOGY

ASLM co-sponsored the second African regional training workshop on the Cepheid Xpert MTB/RIF from 23-25 July in Gaborone, Botswana. Cepheid Xpert MTB/RIF is an automated diagnostic test for detecting *Mycobacterium tuberculosis* and resistance to rifampicin, an antibiotic used to treat tuberculosis (TB). The US Government, in partnership with TB CARE I (KNCV Tuberculosis Foundation) and ASLM, convened public health officials, clinical experts and laboratory personnel with the purpose of assisting participating African countries in the roll-out of Xpert MTB/RIF, particularly for the diagnosis of TB in HIV-infected individuals.

People living with HIV are up to 50 times more likely to contract TB than HIV-uninfected people.[1] Delayed TB diagnosis is common among individuals co-infected with HIV/TB, who are more likely to have smear-negative pulmonary TB.[2] Consequently, HIV-related TB deaths pose a major public health concern in settings where HIV is widespread. The Xpert MTB/RIF test has greater sensitivity than sputum smear microscopy, especially in cases of HIV/TB co-infection.[3]

During the workshop, ASLM leaders presented the Society's expected role in the TBXpert Project, a new collaborative programme from the World Health Organization and UNITAID. Between 2013 and 2015, the TBXpert Project will distribute approximately 1.4 million Xpert MTB/RIF test cartridges and over 220 GeneXpert instruments in 21 recipient countries.[4] ASLM's role is to collaborate with national and sub-regional partners to *(continued on next page)*

PROVIDING TECHNICAL ASSISTANCE ON POINT-OF-CARE TESTING IN ETHIOPIA

The Ethiopian Health and Nutrition Research Institute (EHNRI), a technical arm of Ethiopia's Federal Ministry of Health, addresses priority public health and nutrition problems through problem-solving research and public health emergency management, as well as through the establishment and maintenance of quality laboratory systems in the country. EHNRI is responsible for developing a strategy and implementation guidelines for quality assurance, monitoring and evaluation of diagnostic technologies, training and certification of healthcare workers, and for the evaluation, selection, servicing and maintenance of laboratory equipment and facilities. Recently, ASLM was invited to join a Task Force established by the Institute and contributed primarily to the development of a Strategy for Implementation of Point-of-Care Technologies and Guidelines for the Implementation of Point-of-Care CD4 Testing Technologies in Ethiopia. Other members of the Task Force, chaired by ENHRI, included the US Centers for Disease Control and Prevention, Private Health Sector Program of the United States Agency for International Development, World Health Organization and Clinton Health Access Initiative.

[1] Frequently asked questions about TB and HIV. (2013). In World Health Organization. Retrieved August 1, 2013, from http://www.who.int/tb/challenges/hiv/faq/en/

[2] "Xpert MTB/RIF increases timely TB detection among people living with HIV and saves lives." (n.d.). In World Health Organization. Retrieved August 1, 2013, from http://www.who.int/tb/challenges/hiv/Xpert_TBHIV_Information_Note_final.pdf

[3] "Xpert MTB/RIF increases timely TB detection among people living with HIV and saves lives." (n.d.). In World Health Organization. Retrieved August 1, 2013, from http://www.who.int/tb/challenges/hiv/Xpert_TBHIV_Information_Note_final.pdf

ensure optimal use of Xpert MTB/RIF in African national TB control programmes (NTPs) as well as to help monitor project progress. The Society will support Xpert MTB/RIF implementation in Ethiopia, Kenya, Mozambique, Republic of Congo and Tanzania. ASLM-specific activities in project countries will include:

- ◊ coordinating on-site mentoring of NTP staff and partners to ensure correct use of TBXpert products;
- ◊ co-organising training workshops on the optimal use of Xpert MTB/RIF in country-specific epidemiological settings;
- ◊ facilitating the documentation and reporting of site-specific data on project progress and impact indicators;
- ◊ monitoring supply chains to facilitate accurate forecasting of TBXpert product requirements;
- ◊ facilitating importation procedures as needed;
- ◊ leveraging existing capacity and SLIPTA activities to help NTPs and their partners incorporate Xpert MTB/RIF into national laboratory policies.

Since 2010, WHO has recommended Xpert MTB/RIF as a primary diagnostic test for the rapid and simultaneous detection of TB and rifampicin resistance.[5] The test can be performed outside of centralised reference laboratories provided that sufficient infrastructure and trained staff are available.[6] By scaling up implementation of Xpert MTB/RIF TB in participating African countries, the TBXpert Project has the potential to drastically accelerate and improve detection and treatment rates for TB and multi-drug-resistant TB. Through its involvement in the TBXpert Project, ASLM will help promote capacity to provide accurate disease diagnosis, monitoring and treatment in the African region.

The Xpert MTB/RIF workshop provided opportunities for participants to better understand the practical aspects of Xpert MTB/RIF implementation and develop their national Xpert MTB/RIF scale-up plans. The workshop also increased awareness of latest global policy guidance on Xpert MTB/RIF and allowed participants to exchange experiences regarding Xpert MTB/RIF implementation, including challenges and lessons learned.

For more information on Xpert MTB/RIF, please visit: http://www.who.int/tb/laboratory/mtbrifrollout/en/index.html.

By: Rachel Crane (Editorial Team); Contributors: Talkmore Maruta, MPH (ASLM) and Corey White, MPA (ASLM)

Participants of the African Regional Training Workshop on Xpert MTB/RIF.

[4]"TBXpert Project." (n.d.). In World Health Organization. Retrieved August 1, 2013, from http://www.who.int/tb/publications/TBXpert_briefing_note.pdf

[5]Xpert MTB/RIF TB Test. (n.d.). In TB Facts. Retrieved August 1, 2013, from http://www.tbfacts.org/xpert-tb-test.html

[6]"Xpert MTB/RIF increases timely TB detection among people living with HIV and saves lives." (n.d.). In World Health Organization. Retrieved August 1, 2013, from http://www.who.int/tb/challenges/hiv/Xpert_TBHIV_Information_Note_final.pdf

TWO NEW COUNTRY AMBASSADORS JOIN ASLM

ASLM Ambassadors serve as advocates for and facilitators of ASLM programmes in-country, promoting Society goals and activities through collaboration with regional health officials and organisations. To better serve laboratory medicine communities on a local scale, ASLM may appoint multiple Ambassadors per country to appropriately advocate in varied fields related to the organisation's mission. ASLM is pleased to welcome Dr. Madisa Mine as ASLM Ambassador to Botswana, as well as the addition of a second Ambassador to Kenya, Mr. Michael Wanga.

Other current ASLM Ambassadors include: Prof. El-Hadj Belabbes (Algeria), Prof. Jean Sakandé (Burkina Faso), Prof. Daniel Sess (Côte d'Ivoire), Dr. William Ampofo (Ghana), Dr. Matilu Mwau (Kenya), Mr. Reuben Mwenda (Malawi), Prof. Dennis Agbonlahor (Nigeria), Dr. Adil Ismail (Sudan), Dr. Mohamed Ally Mohamed (Tanzania) and Mr. Charles Kiyaga (Uganda).

Dr. Madisa Mine

Dr. Mine joins ASLM as Ambassador to Botswana. He serves as a consultant virologist and as Technical Director at the Botswana Harvard HIV Reference Laboratory in Gaborone. Dr. Mine was previously a lecturer in genetics, molecular genetics and biotechnology at the Botswana College of Agriculture, Gaborone. He earned his doctor of philosophy degree in molecular biology from Murdoch University in Perth, Australia.

Mr. Michael Wanga

Mr. Wanga joins ASLM as Ambassador to Kenya. He currently serves as Chief Executive Officer of the Kenya Medical Laboratory Technicians and Technologist Board. Mr. Wanga collaborates closely with the Kenya Ministry of Health and Ministry for Medical Services. He holds a certificate of medical laboratory technology and a bachelor's degree in law. Mr. Wanga is currently pursuing a master's degree in business administration from Strathmore Business School, Nairobi.

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[1] WHO (2013)
The use of antiretroviral drugs for treating and preventing HIV infection.

[2] WHO (2011)
Fluorescent light-emitting diode (LED) microscopy for diagnosis of tuberculosis policy.

[3] WHO (2010)
Community-based reduction of malaria transmission.

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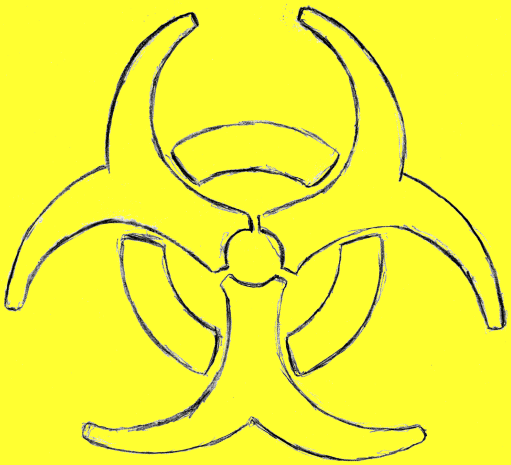
Are We Prepared for the Next OUTBREAK?



An infection is spreading, patients are dying, and the source is still unknown. Before a clinical response can be mounted, it is laboratory staff who must identify the disease – but how can the laboratory prepare for the unexpected?

ANATOMY OF AN OUTBREAK

On 19 February 2005, a World Health Organization (WHO) response team reached a diamond mining camp near the town of Zobia in the Democratic Republic of the Congo (DRC). Forty-eight residents had already died of severe respiratory infections since mid-December, and dozens more had fallen ill.[1] Slow reporting and difficulty reaching the site had delayed the WHO team's arrival, and they were anxious to make a diagnosis. Based on the rapid progression of symptoms, with patients dying within two to four days of infection, the suspected culprit was pneumonic plague.*

Outbreaks are, almost by definition, unpredictable. An outbreak is said to occur when cases of a disease exceed the expected baseline for a given region, population or season.[2] An outbreak could be of an endemic disease that suddenly flares out of control; or a disease returning to an area where it was once thought eradicated; or a new disease reaching a naïve (i.e. unexposed and therefore non-immune) population. In the worst case, an outbreak may spread through multiple countries and over several years, encountering everywhere an abundance of susceptible hosts. Whatever the specific details, this much is certain: if local medical authorities have equipped themselves only for the infections they expect, they will be unprepared to cope with the human toll of an outbreak.

In the case of Zobia, the DRC had for years only encountered plague in the Ituri region, hundreds of kilometres east of the diamond mine.[3] Staff at Zobia had no experience dealing with plague, and had neither the training nor the equipment to make a diagnosis. Even when the WHO team arrived on the scene two months after the index case, they had to contend with the particular challenges pneumonic plague presents to laboratory staff. Clinical signs are ambiguous, with only the speed at which patients deteriorate distinguishing pneumonic plague from numerous other respiratory diseases. A diagnosis can be confirmed by isolating the pathogen, *Yersinia pestis*, in the laboratory, but the researchers at Zobia lacked the capacity to do so onsite. Rapid diagnostic tests (RDTs) are also available, but they work by confirming an increase in *Y. pestis* specif-

*Pneumonic plague is a rare and severe form of plague that occurs when the bacterium *Yersinia pestis* infects the lungs. Symptoms of infection often include fever, headache, nausea, cough and bloody sputum. Pneumonic plague progresses rapidly and is frequently fatal.

[1]"Lessons Learned about Pneumonic Plague Diagnosis from 2 Outbreaks, Democratic Republic of the Congo." (May 2011). In Emerging Infectious Diseases Journal, CDC. Vol. 7, No. 5. Retrieved from http://wwwnc.cdc.gov/eid/article/17/5/10-0029_article.htm

[2]Disease outbreaks. (2013). In World Health Organization. Retrieved from http://www.who.int/topics/disease_outbreaks/en/

[3]"Lessons Learned about Pneumonic Plague Diagnosis from 2 Outbreaks, Democratic Republic of the Congo." (May 2011). In Emerging Infectious Diseases Journal, CDC. Vol. 7, No. 5. Retrieved from http://wwwnc.cdc.gov/eid/article/17/5/10-0029_article.htm

pestis specific F1-antigens in a patient's blood over a period of 10 days – a long time in a crisis, and a procedure that involves multiple blood draws. At Zobia, researchers had a hard time even obtaining two samples from a single patient, as miners left the isolation centre to return to work as soon as they recovered.[4]

Obstacles to diagnosis are far from unique to plague. Rashid Ansumana, Research Director at Mercy Hospital Research Laboratory in Kulanda Town, Bo, Sierra Leone, recalls a 2010 outbreak in Uganda that was alternately diagnosed as Ebola, amoebic dysentery, alcohol poisoning, and plague, before it was finally found to be yellow fever. It is not a laboratory's capacity to identify any single elusive disease, but its flexibility that will define its response to an outbreak. As Ansumana says, "An ill-equipped medical laboratory is sure to fail in detecting an outbreak, investigating an outbreak case, or [finding its] cause." Although the researchers at Zobia were fortunate in making a correct first diagnosis, a weak laboratory system hampered their ability to confirm their suspicions. The first-line laboratory had nothing in the way of diagnostic kits for plague, apart from the RDTs the WHO team brought with them. A second-line laboratory was established in distant Kisangani, DRC, where more logistical support was expected, but even here water shortages and power outages undermined laboratory work. Ultimately, specimens had to be flown to Kinshasa, and from there to Madagascar, a trip that took an average of nearly three weeks to complete.

The DRC incident illustrates the difficulties that the medical community faces when an outbreak occurs in a resource-limited setting. Far-flung rural populations and decades-long conflicts present significant barriers to timely response. To reach Zobia, the WHO team had to negotiate with a beleaguered DRC government and enter a region actively patrolled by United Nations peacekeepers. Many areas lack established laboratories altogether, and clinicians may not be trained to diagnose unfamiliar diseases even if they have sufficient materials. For this reason, extensive international cooperation is often needed just to make a diagnosis, let alone to contain an outbreak. And because an effective laboratory is a machine of many interconnected parts, even areas that make modest investments in laboratory capacity are vulnerable. "Laboratory services remain the most neglected areas in sub-Saharan Africa," says Ansumana, "having inadequately trained staff, [little] standardised infrastructure and inadequate equipment…A weakness in one spot for a laboratory network could be a weakness for all."

"Laboratory services remain the most neglected areas in sub-Saharan Africa…A weakness in one spot for a laboratory network could be a weakness for all."

Yet Zobia also proves the high cost of letting outbreak preparedness fall by the wayside. By the time the plague diagnosis could be confirmed, the outbreak had run its course and resulted in 57 deaths. The source of the outbreak was never found, and even the total number of cases remains unknown. A year later, a second pneumonic plague outbreak struck a gold mine in nearby Bolebole, with almost identical results.[5]

A CONSTANT STATE OF ALERT

Pneumonic plague is a frightening disease. It can be fatal in as little as 24 hours, and unlike the bubonic or septicaemic forms of plague, it can be spread by coughing, travelling rapidly through a previously healthy population as aerosolised bacteria travel from lung to lung. But as an outbreak risk in Africa, plague is only a small player at a table that includes such giants as cholera, dysentery and Lassa fever. Some outbreak risks, like the Ebola virus and avian influenza, are sensational diseases that attract massive international alarm. Others, like meningococcal meningitis, draw little attention yet quietly kill thousands every year. Some are chronic threats like measles, and others come entirely by surprise – Chikungunya and human monkey pox were rarely seen oddities until respective outbreaks in 1999 and 2004 fuelled fears that they could explode into major epidemics.[6] Even the most prevalent and predictable diseases, closely monitored for patterns and lavished with international control efforts—diseases like malaria, tuberculosis, and HIV—await universally applied diagnostic standards for accurate surveillance.

The same chronic factors that make resource-limited countries in Africa vulnerable to disease in general also make them more prone to outbreaks. Widespread poverty and inadequate access to clean water make individuals especially susceptible to infections, while underreporting of cases, limited medical resources and civil unrest hamper governments' ability to respond. Expanding urbanisation means that isolated cases can quickly escalate into full-fledged outbreaks, while globalisation increases the rate at which exotic pathogens can discover new populations. Even climate change may prove to be a factor in future outbreaks. The vectors for mosquito-borne diseases like malaria and yellow fever are highly sensitive to *(continued on next page)*

[4, 5] "Lessons Learned about Pneumonic Plague Diagnosis from 2 Outbreaks, Democratic Republic of the Congo." (May 2011). In Emerging Infectious Diseases Journal, CDC. Vol. 7, No. 5. Retrieved from http://wwwnc.cdc.gov/eid/article/17/5/10-0029_article.htm

[6] "Trends of Major Disease Outbreaks in the African Region, 2003-2007." (March 2010). In East African Journal of Public Health. Vol. 7, No. 1.

changes in the environment,[7] and may become less predictable as they move to new territory.

Lack of access to clean water makes individuals more susceptible to infections.

Africa is also home to an abundance of zoonotic diseases, which pose a unique risk for outbreaks because their non-human reservoirs allow them to emerge in areas no infected human has travelled. Some zoonoses, like plague and sleeping sickness, are already widespread; others, like anthrax and brucellosis, are persistent at low levels; and a few, like the Nipah virus, are present in wild reservoirs but not yet identified in humans in Africa. Ansumana points out that Africans may be unusually vulnerable to acquiring new zoonoses. "Zoonotic diseases pose the highest outbreak risk to Africa and the world at large, but in Africa, because of our close relationship with animals, poor veterinary practices and affinity for bush meat, the risk is higher."

"Preparedness and flexibility, in both training and in terms of work time, are necessary for facing an outbreak"

With so many risk factors and potential pathogens, health workers and especially laboratory staff in Africa must be on a constant state of alert. In the early stages of an outbreak, there are two overarching priorities that will play a crucial role in determining the impact of an outbreak. The first is a swift and accurate diagnosis, allowing clinicians to dispense the appropriate treatments and assess risk factors for the future spread of the disease. The second is communicating the details of the outbreak, to the local populace and to higher rungs of the health service, so that the outbreak's spread can be limited and supplies dispatched.

These two priorities are equal and intertwined. Without an accurate diagnosis, it is impossible to say what activities may put people at risk, or which reagents and pharmaceuticals will be needed onsite to diagnose and treat new cases. Furthermore, without effective communication, health workers at the scene can only respond to cases as they come in, not prevent the disease from spreading or lay the groundwork for future responses.

A COOPERATIVE APPROACH

Outbreak preparedness does not offer the type of single-shot solution that attracts international donors. Much of what can be done on a local level to prepare for an outbreak is the same capacity building needed for all laboratory services. Training and retraining of laboratory staff must be emphasised: workers who are educated to recognise the symptoms of unfamiliar diseases, and perform the tests to confirm their diagnosis, will be able to suggest treatments and preventive measures in the early stages of an outbreak. Well-equipped labs, and well-maintained supply chains, will ensure that qualified staff do not find themselves limited by their materials.

Due to their tendency to rapidly and unexpectedly increase caseloads, outbreaks also require organisational leadership from laboratory management. "Preparedness and flexibility, in both training and in terms of work time, are necessary for facing an outbreak," says Dr. Guy-Michel Gershy-Damet, the WHO Regional Advisor for HIV Laboratories in Burkina Faso. "Managing an increased workload requires a reorganisation of work and availability of personnel during an emergency situation. During an outbreak, staff must be able to adhere to a flexible work time." Dr. Gershy-Damet also recommends that laboratory staff undergo specific training for dealing with dangerous pathogens without themselves becoming victims, something he warns is rare in African countries.

One responsibility that laboratories may find unfamiliar is to rapidly notify the highest authorities of the extent and details of an outbreak. Dr. Austin Demby, the Director of the US President's Emergency Plan for AIDS Relief (PEPFAR) at the US Department of Health and Human Services, says the "connection between front line folks and the tertiary level is critical, and really difficult" to achieve. In remote rural areas, direct contact with the decision-making centres is by no means guaranteed. Still, without prompt communication, national and international resources cannot be brought to bear on an outbreak at the stage when it is easiest to control.

[7] "Lessons Learned about Pneumonic Plague Diagnosis from 2 Outbreaks, Democratic Republic of the Congo." (May 2011). In Emerging Infectious Diseases Journal, CDC. Vol. 7, No. 5. Retrieved from http://wwwnc.cdc.gov/eid/article/17/5/10-0029_article.htm

While local staff may have few options in an outbreak if their laboratories are already under-resourced, there is a great deal that ministries of health and international organisations can do to improve outbreak preparedness in Africa. Over the past decade and a half, there has been a growing recognition of the role that international networks can play in minimising the threat of outbreaks. Crucial programmes in this effort include Integrated Disease Surveillance and Response (IDSR)[8] and the International Health Regulations 2005 (IHR).[9]

What is IDSR?

- Integrated Disease Surveillance and Response
- Adopted by all 46 member states of the WHO Regional Office for Africa in 1998.
- Major functions:

⇒Share information between member states to widen the frame of reference;
⇒Use epidemiological data to warn members of potential outbreaks;
⇒Mobilise resources and personnel during an outbreak;
⇒Track effectiveness of interventions;
⇒Increase local participation in surveillance.

What is IHR?

- International Health Regulations
- First adopted by the WHO in 1969, and most recently revised in 2005.
- A legally binding treaty between almost every WHO member state worldwide. Each iteration of the IHR has been devoted to preventing the spread of diseases across borders, but IHR 2005 places new emphasis on surveillance and close communication between nations. It mandates that members inform the WHO of events that suggest the potential for an international outbreak, and establishes an official contact point for each member state. IHR 2005 began implementation in 2007, and member states were obliged to fully meet its requirements by 2012; however, due to resource limitations, most member states have received a two-year extension, and may apply for a further two-year extension.

The common threads in recent outbreak control agreements have been a focus on surveillance and the pooling of resources. By establishing well-defined channels by which clinics and laboratories can report outbreaks to international partners, ministries of health can create an early warning system, direct resources across borders to compensate for local shortages, and form a larger picture of which diseases constitute major outbreak risks in the future.

Early results of these programmes have been highly encouraging. IDSR has helped to meet a goal adopted by the WHO African Regional Office in 2006, to reduce mortality from measles in Africa by 90% over the 1999 figures.[10] International surveillance under IDSR made this goal feasible by allowing targeted vaccinations of areas determined to be at the greatest risk for measles outbreaks, and directing vaccination campaigns to areas near the boundaries of ongoing outbreaks. By the end of 2006, the goal had been met, with a 91% reduction of measles deaths over the 2000 figures.[11] Cooperation across the network allowed vaccination campaigns to stretch limited resources further, although WHO cautions that this approach leaves potentially dangerous vaccination gaps intact.

The key to the success of these international programmes has been the level of accountability they bring to outbreak preparedness. When WHO Member States signed onto IDSR, a team of experts from WHO and the US Centers for Disease Control and Prevention (CDC) were able to evaluate the surveillance measures in place in each country, standardise reporting procedures and suggest improvements. WHO and CDC have also conducted laboratory training, including training in bio-safety measures. IHR has even greater potential to strengthen surveillance networks as it moves toward full implementation, because the treaty is legally binding.

ON THE FRONT LINES

Unfortunately, as long as laboratories in remote parts of Africa remain short on materials, power, and human resources, international cooperation can only make the most of a limited arsenal. Educating skilled laboratory workers, establishing robust supply chains, and directing aid to the laboratory system remain the best protective measures against devastating outbreaks. Dr. Demby counsels a strategic approach to finding funding for the laboratory. "I hope countries will realise the vision and invest when these outbreaks occur – that's when everyone is willing to support [laboratory capacity-building]." *(continued on next page)*

[8] "Global Health - Integrated Disease Surveillance and Response. (2012, January 25). In Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/globalhealth/dphswd/idsr/

[9] Alert, response, and capacity building under the International Health Regulations (IHR). (2013). In World Health Organization. Retrieved from http://www.who.int/ihr/en/

[10] Regional Strategic Plan for the Expanded Programme on Immunization, 2006-2009. (2006, June 17). AFR/RC56/7.

[11] Regional Strategic Plan for the Expanded Programme on Immunization, 2006-2009. (2006, June 17). AFR/RC56/7.

The good news is that successful laboratory programmes can be self-perpetuating. The Uganda Virus Research Institute (UVRI) is just one organisation that has turned a substantial government investment in laboratory systems into a string of triumphs against developing outbreaks. In 1988, the AIDS crisis spurred the Ugandan government to establish an AIDS unit within UVRI, in cooperation with the UK Medical Research Council, and to provide significantly expanded funding to the new unit.[12] Over the next several years, laboratory workers received new tools for infant diagnosis, including polymerase chain reaction (PCR) capabilities, and were trained in their use.[13] When avian influenza broke out in neighbouring Sudan in 2006, UVRI researchers had experience with PCR and were able to rapidly expand their efforts to track the new disease. Ugandan laboratories identified strains of avian flu in chickens in the capital city of Kampala,[14] and took successful measures to prevent a local outbreak. Although no one had avian flu in mind when UVRI was strengthened in the 1980s, investment in the institute has had ripple effects that provide increased protection against outbreaks of all kinds.

Basic diagnostic methods such as rapid diagnostic tests and microscopy can be important to ruling out certain causes of outbreaks. Image reproduced with the kind permission of Mr. Rashid Ansumana.

UVRI has also demonstrated that a well-staffed laboratory system can successfully adjust its outbreak strategy over time. The first Ugandan outbreak of Ebola, in 2000, claimed over 200 lives, as the virus spread unchecked to family members of victims, mourners and medical workers.[15] Yet recent outbreaks have been met with a coordinated response that has saved lives. When the Kibaale district was struck with suspected cases of Ebola in July 2012, UVRI was immediately dispatched to confirm the diagnosis.[16] Meanwhile, health workers promptly notified both WHO and the highest echelons of the Ugandan government so that a public information campaign could counter the spread of the disease. This combination of swift diagnosis and effective communication limited the death toll of this recent outbreak to just 17.

UVRI's vigorous embrace of outbreak preparedness remains the exception rather than the rule in African laboratory science. Too many outbreak stories follow the example of Zobia, with tragic codas – 57 dead in Zobia, 45 dead in the subsequent plague outbreak in Bolebole.[17] Yet the recent strides in Uganda also show that outbreak preparedness need not be an endlessly uphill battle. Once established, a healthy and flexible laboratory can adapt its methods to cases beyond its original purview; and every laboratory that fluidly communicates with international networks strengthens the entire African community's response to, and understanding of, the diseases that threaten to become epidemics.

As the front-line defenders against outbreaks, laboratories are faced with the unenviable task of preparing for the unpredictable. For this, they need material and logistical support from their ministries of health, and from organisations worldwide. This is why the efforts of ASLM, and of others who call global attention to the need for first-rate laboratory systems in Africa, are so critical. The burden of infectious disease is never a purely local issue, and this is never truer than in the event of outbreaks, which can cross borders and populations indiscriminately if not skilfully managed. As Dr. Demby implores, when it comes to outbreaks, "Let the lab not be the bottleneck to programme expansion." Instead, let the laboratory be the first unbreakable link in a chain that extends from diagnosis, through communication and containment, to preventive measures and heightened readiness for outbreaks in the future.

Disclaimer: The views and perspectives expressed by this article's contributors consist of personal opinions and do not necessarily reflect the official policy or position of any agency.

By: Aaron Krol, MFA (Editorial Team); Contributors: Rashid Ansumana (MHRL, Sierra Leone); Guy-Michel Gershy-Damet, PhD (WHO); Austin Demby, MPH, PhD (HHS-PEPFAR)

[12] Welcome to MRC Uganda. (n.d.). In MRC/UVRI Uganda research Unit on AIDS. Retrieved from http://www.mrcuganda.org/

[13] Fernandes, P. (2013, 23 July). Personal interview with Austin Demby.

[14] "Uganda-Sudan: Border districts on alert over bird flu." (2006, September 22). In IRIN News. Retrieved from http://www.irinnews.org/report/61158/uganda-sudan-border-districts-on-alert-over-bird-flu

[15] "Outbreak of Ebola Hemorrhagic Fever – Uganda, August 2000-January 2001." (2001, February 9). In CDC Morbidity and Mortality Weekly Report. 50(05) 73-7. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5005a1.htm

[16] "Quick detection, vigorous public health response hasten end of Ebola outbreak." (2012, October 19). In WHO Media Centre. Retrieved from http://www.afro.who.int/en/media-centre/pressreleases/item/5049-uganda-quick-detection-vigorous-public-health-response-hasten-end-of-ebola-outbreak.html

[17] "Lessons Learned about Pneumonic Plague Diagnosis from 2 Outbreaks, Democratic Republic of the Congo." (May 2011). In Emerging Infectious Diseases Journal, CDC. Vol. 7, No. 5.

ASLM FACILITATES LABORATORY QUALITY MANAGEMENT SYSTEM TRAINING WORKSHOPS

ASLM facilitated a Laboratory Quality Management System (LQMS) Training of Trainers (ToT) workshop and an LQMS implementers training workshop in Abuja, Nigeria, from 20-31 May and 17-21 June, respectively. The workshops, hosted by the Institute of Human Virology, Nigeria (IHVN) and supported by the US Centers for Disease Control and Prevention (CDC) and the US President's Emergency Plan for AIDS Relief (PEPFAR), sought to promote the implementation and understanding of LQMS, which capacitates technically competent laboratory workforce to provide quality services and contribute to the improvement of the healthcare system.

At the LQMS ToT workshop, four trainers instructed 18 participants on the proper development and application of LQMS. After a keynote address by Dr. Sam Peters, the head of the Clinical Laboratory Department at IHVN, trainers from the Association of Public Health Laboratories (APHL), IHVN and ASLM mentored participants to enhance their expertise in laboratory quality management processes and their ability to train others. The participants are now qualified to conduct facility-level LQMS training for laboratory managers and quality officers in clinical and public health laboratories.

The five-day LQMS implementers training workshop convened 15 participants, providing instruction on the successful implementation of LQMS, facilitating understanding of the Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA), familiarising participants with the SLIPTA audit process, and aiding participants' development of action plans to improve existing LQMS. Participants learned a variety of skills, including use of the SLIPTA checklist, development of action plans, and reinforcement of strategies for communication and collaboration.

Participants of the May 2013 LQMS ToT Workshop, Abuja.

Correct operation and continual improvement of LQMS are essential to achieving organisational and technical conditions necessary for optimal laboratory operations, as well as to achieving SLIPTA accreditation, which authenticates laboratory quality and credibility. Through its participation in LQMS training workshops for laboratory professionals and trainers, ASLM is aiding the expansion of a more competent African laboratory workforce, empowering professionals to improve laboratory quality processes towards the achievement of international accreditation.

Participants of the June 2013 LQMS Implementers Workshop, Abuja.

Mr. Teferi Mekonen, Senior Programme Specialist at ASLM, participated in both workshops as a trainer. For more information on ASLM's future involvement in LQMS ToT workshops, please contact Mr. Mekonen at tmekonen@aslm.org.

By: Rachel Crane (Editorial Team) and Laurel Oldach (Editorial Team); Contributor: Teferi Mekonen, MSc, MPH (ASLM)

ASLM BOOSTS LABORATORY QUALITY IMPROVEMENT THROUGH SLIPTA

In accordance with the laboratory improvement plans of the World Health Organization, Regional Office for Africa, ASLM has been carrying out Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) audits in laboratories across the African region. In 2012, ASLM auditors performed SLIPTA audits at four laboratories in Kenya and four laboratories in Tanzania. This year, ASLM has audited 11 laboratories in Lesotho, Mozambique, Rwanda and Zambia. The greatest improvements observed were in client management, purchasing and inventory, process control, facilities and safety. The major challenges faced by participating laboratories included internal auditing, corrective actions, identification of root causes and maintenance of documentation such as quality manuals and standard operating procedures. SLIPTA auditors-in-training were present during many of the audits, receiving practical training as part of ASLM's strategy for building auditing capacity in-country. Seven trainees have been mentored through the auditing process.

PUBLICATION: An Attainable Goal

Knowledge is worth more when it is shared. Scientific publication is the best way to ensure that research findings reach a broader audience; it is not only a measure of scientific productivity, but also a spur to further productivity as researchers learn from one another. We spoke with Mr. Stephen Balinandi, who recently published a study in the African Journal of Laboratory Medicine (AJLM), about his experience publishing his work, and the state of publication in his field.

A patient arrives in the hospital in Kampala, Uganda, complaining of a fever, cough and sore throat. This familiar suite of symptoms, often referred to as influenza-like illness (ILI), may lead the unwary observer to assume that the patient is infected with influenza. However, a recently published study[1] shows that in as many as 88% of cases, the assumption would be wrong. After a preliminary study by Mr. Stephen Balinandi showed that only 12% of patients arriving in hospital with influenza-like symptoms were in fact infected with influenza virus, Mr. Balinandi and his fellow authors were eager to determine the aetiologies of the remaining cases. He noted that, "different countries have different profiles for these respiratory viruses – and I wanted to know the profile for Uganda." His study, which assigned viral aetiology for about 50% of cases, was the first published on ILI in Uganda since the 1970s, when many of the viruses contributing to ILI had yet to be discovered. This knowledge, now freely available through the open-source AJLM website (ajlmonline.org), will be of great use for individual case management and for respiratory disease surveillance programmes in Uganda.

> "I am grateful to the [AJLM] chief editor because she helped me tremendously to refine my paper. I have not seen this with other journals!"

Mr. Balinandi is not alone in observing that "in developing countries and particularly in Africa, there is a lot of publishable information." Despite an expanding research infrastructure, publication rates remain low across the continent compared to other regions. Some economic and technological reasons for low publication rates include brain drain (i.e. migration of educated professionals to other countries) and lack of access to published research.[2] On the level of individual laboratories, the decision to publish usually rests with busy principal investigators, who have to juggle many other responsibilities. Publication is not a priority, says Mr. Balinandi, because "the 'who you are' status in Africa is not yet attached to the number of publications you have made – unlike in other societies, especially in the developed world. Scientists in Africa are more preoccupied with working out a living than spending a moment writing a study report for the journal!"

Another barrier to publication, especially among junior scientists, is a lack of confidence in the impact of their findings. Mr. Balinandi discourages this concern. He says that despite the "assumption that it is only 'big' ideas (or discoveries) that are publishable…every publication has got its home."

One home for African scientists' work is AJLM, where Mr. Balinandi published his own study. AJLM, the official journal of ASLM, offers a straightforward avenue to publication, with online manuscript submission available. After peer-review, accepted articles are edited and published to the AJLM homepage, where they are freely available. Mr. Balinandi says that he found AJLM staff to be very supportive, especially in the editing stages of publication. "I am grateful to the chief editor because she helped me tremendously to refine my paper. I have not seen this with other journals! An often simple spelling (or grammatical) mistake attracts a rejection of your paper. AJLM came out differently here and this was very encouraging."

For junior scientists who have never yet published, Mr. Balinandi advises, "Let them just start." A paper is written as a collaborative effort between all its authors, and he predicts that after all authors contribute their thoughts, scientists will find that "what they thought was a 'small' idea – not worth publishing – all of a sudden becomes a great paper!"

Disclaimer: The opinions and conclusions discussed herein are solely those of the individual interviewed and not necessarily those of the US Centers for Disease Control and Prevention.

By: Laurel Oldach (Editorial Team); Contributor: Stephen Balinandi (CDC-Uganda)

[1]Balinandi S, Bakamutumaho B, Kayiwa J, Ongus J, Oundo J, Awor A and Lutwama J. The viral aetiology of influenza-like illness in Kampala and Entebbe, Uganda, 2008. AJLM. 2013; 2(1).

[2]Ondari-Okemwa E. Scholarly publishing in sub–Saharan Africa in the twenty–first century: Challenges and opportunities. First Monday. 2007; 12(10). http://firstmonday.org/ojs/index.php/fm/article/view/1966/1842

AJLM TO PUBLISH SPECIAL ISSUE ON SLMTA

The *African Journal of Laboratory Medicine* (AJLM), ASLM's official peer-reviewed journal, will publish its first special issue on the Strengthening Laboratory Management Toward Accreditation (SLMTA) programme early next year. SLMTA is a quality improvement programme for laboratories in resource-limited settings. This supplemental issue of AJLM will highlight the implementation and impact of SLMTA since its 2009 launch. So far, SLMTA has been embraced by 37 countries across the globe.

To support the development of this special issue, AJLM editorial team members and SLMTA programme administrators co-hosted a manuscript writing course in Gaborone, Botswana from 9-15 June. They also hosted a smaller course in Harare, Zimbabwe from 22 July to 1 August. In total, 14 authors and five mentors collaborated to develop manuscripts for the AJLM special issue.

SLMTA Writing Course Participants and Mentors.

By: Elizabeth Luman, PhD (CDC-Atlanta)

Volunteers Needed!

Publication Mentors:

Seeking experienced laboratory researchers, epidemiologists, and statisticians to help with research methods and analysis, scientific communication skills, manuscript preparation and submission, and peer review. Mentors will offer guidance for papers recommended for consideration for publication. Subject matter expertise not necessary. Volunteer time commitment depends on mentee needs.

Writing Workshop Mentors:

Seeking laboratory researchers, statisticians, and epidemiologists with extensive publication experience. Help with daily lectures and discussions and work with a small group of participants on manuscript development. Mentors will provide guidance on research methods, analysis, laboratory or epidemiology subject matter within their expertise, manuscript preparation, scientific interpretation, and communication skills. The time commitment is a two-week workshop.

Manuscript Submission:

Seeking laboratory-related manuscripts. Of particular interest: the role of laboratories in clinical care and public health, the translation of laboratory knowledge, the juncture of laboratory and medical science, laboratory-based epidemiology, and laboratory investigations. Submissions accepted in French or English.

Peer Reviewers:

Seeking objective reviewers with a high level of expertise to evaluate the quality of manuscripts. Reviewers will offer detailed comments and suggestions, and make recommendations to accept, accept with revisions, reconsider with major revisions, or reject submissions. Reviewers will be contacted before being forwarded manuscripts. A 2-3 week turnaround is expected.

For more information or to volunteer, please contact: editor@ajlmonline.org.

ASLM TO OFFER CONTINUING EDUCATION CREDITS

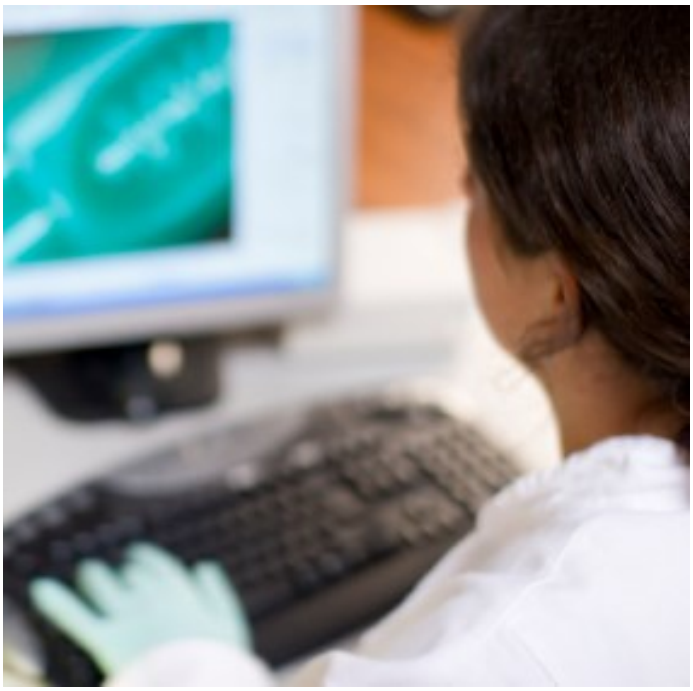
ASLM is soon to offer Continuing Medical Laboratory Education (CMLE) credits through the American Society for Clinical Pathology (ASCP). ASLM recognises the need for continuing education in an industry that is always evolving. Laboratory professionals must stay up to date on new developments to be effective, efficient and accurate. As the healthcare system relies on laboratory diagnostics to provide the highest standard of care, it is essential that laboratory staff are trained to use the most cutting-edge methods and technologies that will offer patients the best care possible, and will also earn laboratory scientists respect and a competitive advantage in their field.

ASLM, with the *African Journal of Laboratory Medicine* (AJLM), will offer several options for earning CMLE credits, including providing peer review of articles for AJLM, submitting manuscripts and responding to questions about AJLM articles. To encourage scientists to read articles that discuss new developments and topics related to laboratory medicine, authors will provide a list of learning objectives and three to five questions that assess the readers' comprehension of the articles' main points. These quizzes will be available online for ASLM members and AJLM subscribers. One CMLE credit will be awarded for every quiz completed. A total of ten CMLE credits may be earned annually through the completion of these quizzes.

It is essential that laboratory staff are trained to use the most cutting-edge methods and technologies that will offer patients the best care possible.

CMLE credits will also be earned through the completion and submission of peer reviews of journal articles. To earn credits, those submitting reviews for publication will have to complete the entire process as outlined by AJLM, ultimately providing thoughtful and constructive critiques of articles. Three CMLE credits will be earned for every review submitted and accepted. A total of five reviews may be completed for credits annually, allowing submitters to earn up to 15 CMLE credits every year.

Additionally, AJLM will provide credits for the submission of manuscripts that are accepted for publication. 10 CMLE credits will be provided for single authorship, dual authorship, or if the submitter is the first (senior) author. Five



CMLE credits will be awarded for articles in which the submitter is not the first author. When the article is accepted by AJLM, the submitter may print out a certificate indicating the number of CMLE credits earned.

In addition to collaborating with AJLM, ASLM is working with the African Centre for Integrated Laboratory Training (ACILT) to provide CMLE credits. ACILT is based in Johannesburg, South Africa on the campus of the South African National Institute for Communicable Diseases, a division of the National Health Laboratory Service (NHLS). The Centre offers a range of interactive courses geared toward front-line laboratory staff, programme managers, strategic planners and policy makers. The number of CMLE credits for each course varies; one CMLE credit is earned for every "contact hour," or time spent in training or in lectures. For more information on courses offered by ACILT, visit the Centre's website at http://www.cdc.gov/globalaids/resources/laboratory/Lab-Training-Center.html.

By: Jessica Fried, MPH (Editorial Team); Contributor: Elizabeth Luman, PhD (CDC-Atlanta)

ACILT: Improving Patient Outcomes Through Stronger Laboratories

A recent evaluation report on all countries supported by the US President's Emergency Plan for AIDS Relief (PEPFAR) documented the challenges faced by laboratories to scale up HIV/AIDS services.[1] While the report highlighted these challenges, the importance of building of a stronger laboratory workforce in Africa was also brought to the fore. In 2008, to address the shortages in skilled laboratory staff, the US Centers for Disease Control and Prevention (CDC), with funding from PEPFAR, collaborated with the South African National Health Laboratory Service (NHLS) to establish the African Centre for Integrated Laboratory Training (ACILT), a regional training centre in Johannesburg, South Africa. The Centre is uniquely positioned to support Africa's rapidly growing demand for a well-trained, competent and motivated laboratory workforce to aid in the fight against HIV, TB and malaria.

Several national and international partners contributed to the establishment of ACILT, and are active through the governance of the Centre and course facilitation. Some partners assist in translating and administering courses in French and Portuguese, thereby greatly increasing participants' skills, competencies and knowledge of standardised procedures. Because of their relevance to all PEPFAR-supported countries, most courses are conceived and developed at CDC's International Laboratory Branch in Atlanta.

ACILT hopes to improve public health and combat major infectious diseases through the use of quality laboratory practices. It recognises that these "quality laboratory practices" must first be developed by capacity building. ACILT sees the need to provide accessible and relevant training courses in Africa. This is attainable through the dedication and support of partnerships that have been prioritised by the US government since its re-authorisation of PEPFAR in 2008. From 2008 to mid-June 2013, ACILT has provided 96 total course offerings to 1,136 participants from 39 countries in Africa, Asia and the Caribbean regions. All courses at ACILT are free and serve to enhance the technical skills of bench scientists, policy makers, strategic planners, biosafety professionals and quality managers.

Courses offered at ACILT range from National Laboratory Strategic Planning and Supply Chain Management Systems to Early Infant Diagnosis and Antigen-Avidity EIA, among others. The Centre also provides a Training of Trainers course in Strengthening Laboratory Management Toward Accreditation (SLMTA), a programme supported by ASLM and impacting an important PEPFAR indicator, "number of laboratories accredited in a country".

Since 2011, ASLM has served to guide and strengthen laboratory network development in Africa to build capacity for country ownership of HIV/AIDS programmes. Both ACILT and ASLM strive to standardise and harmonise laboratory training; promote laboratory workforce development in Africa through personnel development and capacity building; create opportunities for continuing education; and provide certification programmes for laboratory professionals.

ACILT and ASLM strive to:

- Standardise and harmonise laboratory training
- Promote laboratory workforce development in Africa through personnel development and capacity building
- Provide certification programmes for laboratory professionals
- Create opportunities for continuing education

ASLM's partnership with ACILT extends beyond SLMTA. With its aim of promoting laboratory workforce strengthening in Africa through personnel development and capacity building, ASLM also hosted the first five-day ASLM Grant and Proposal Writing Workshop at ACILT in October 2012. 19 public health officials from 10 African countries participated in capacity building to successfully compete for laboratory-related grants from donors such as the Global Fund, the Gates Foundation and the US government.

With ASLM's recent proposal to offer Continued Medical Laboratory Education (CMLE) credits at ACILT, the courses taught at the Centre continue to attract a variety of laboratory professionals and may soon garner even more attention, as credits will be recognised by the American Society for Clinical Pathology. The number of *(continued on page 18)*

[1] Institute of Medicine of the National Academies. (February 2013). *Evaluation of PEPFAR* (Report Brief). Retrieved from http://www.iom.edu/~/media/Files/Report%20Files/2013/PEPFAR/PEPFAR_RB.pdf

LEVERAGING RESOURCES FOR AN INTEGRATED EMERGENCY RESPONSE

After 2001, the US Government made significant investments in preparing local, state and federal agencies to respond to biological threats. The immediate investments not only assisted with the development of preparedness and response capabilities, they helped to revitalise the US public health system. State public health laboratories leveraged the increased capacity to respond to emerging threats (e.g. influenza A virus subtype H1N1), foodborne outbreaks and natural disasters such as hurricanes and floods.

Globally, many countries are expanding the capabilities of their national laboratories. Although most resource-limited countries are focusing on diagnostic tests for HIV, TB, malaria and other infectious diseases, there is also significant interest in surveillance and laboratory testing for emerging pathogens. It is therefore critical that programme managers and ministries of health recognise the need to leverage support and benefit laterally from any investment.

Under the 2005 International Health Regulations (IHR) framework (see page 10 for more information) of the World Health Organization (WHO), Member States must report on smallpox, polio caused by a wild-type poliovirus, human influenza caused by a new subtype (i.e. novel influenza), and Severe Acute Respiratory Syndrome.[1] Furthermore, Member States must notify WHO in a timely manner of any threat that qualifies as a Public Health Emergency of International Concern (PHEIC) caused by an infectious, chemical, biological or radiological agent.[2] Given IHR requirements, many countries are developing or enhancing laboratory capabilities to respond to PHEIC.

One essential capability for effective country response to PHEIC is laboratory emergency preparedness, which entails developing and implementing specific plans and capabilities in advance of an event. The US Laboratory Response Network (LRN), formed in 1999 by the US Centers for Disease Control and Prevention (CDC), the Association of Public Health Laboratories (APHL) and the Federal Bureau of Investigation (FBI), began as a system for identifying, testing and characterising potential agents of biological and chemical terrorism.[3] Today, the LRN is charged with maintaining an integrated network of state and local public health, veterinary, agriculture, military, and water- and food-testing federal and international laboratories that can respond in a standardised way to a variety of public health emergencies.

The approach of the LRN could serve as a model for network-building, partnerships, scientific standards, notification and electronic data messaging – all elements critical to countries seeking to comply with the IHR (2005).

To better prepare for a public emergency, laboratories should consider the following activities:

Planning:

- ◊ Convene key stakeholders to determine the role of the laboratory in emergency preparedness.
- ◊ Identify key partners early in the planning process.
- ◊ Develop communications and crisis management document.
- ◊ Develop Continuity of Operations Plans that describe what is in place, what the laboratory does to respond, and what is required to maintain the continuity of essential functions.

Testing:

- ◊ Exercise laboratory capability and capacity to perform testing.

Evaluating:

- ◊ Regroup after exercises to determine laboratory performance and identify areas for development.

Improving:

- ◊ Make continuous quality improvements to ensure compliance with regulatory requirements, working in a safe environment, and sharing timely and accurate results to protect the public's health.

The capabilities of laboratories vary greatly by country. With few resources and rapid migration, many resource-limited countries have difficulty sustaining a robust laboratory capacity to detect emerging threats. As such, ASLM plays a critical role in bringing together laboratory networks across Africa, ensuring that laboratory professionals have the tools and training to develop preparedness programmes. Furthermore, the Society can work with international partners such as APHL to adopt an LRN approach across the continent, facilitating communication, ensuring lessons are learned and preparing Africa for future outbreaks.

By: Chris N. Mangal, MPH (APHL); Editor: Rachel Crane (Editorial Team)

[1]World Health Organization. (2005). International Health Regulations (2nd Ed.). Geneva, Switzerland: WHO Press. Retrieved August 2, 2013, from http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf

[2]World Health Organization. (2005). International Health Regulations (2nd Ed.). Geneva, Switzerland: WHO Press. Retrieved from http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf

[3]Emergency Preparedness & Response Site. (2013, May 2). US Centers for Disease Control and Prevention. Retrieved August 2, 2013, from http://www.bt.cdc.gov/lrn/

Improving Patient Outcomes Through Stronger Laboratories

(continued from page 16)

credits offered for each course will be dependent upon the number of "contact hours", or the time spent in training or attending a presentation; thus, one contact hour will equal one CMLE credit hour. Currently, South African professionals who are registered with the Health Professional Council of South Africa are eligible to receive credits. Making CMLE credits more easily available will promote learning in a constantly evolving industry and, ultimately, aid in the development of a stronger laboratory workforce.

The success of ACILT is attributed to strong, sustainable partnerships that have been formed with key stakeholders including NHLS and ASLM. Through the commitment and support of the partners and strong participation from countries, ACILT has and will continue to contribute to building a highly skilled laboratory workforce capable of managing efficient laboratories that support improved patient outcomes.

By: Elsie van Schalkwyk (NHLS-SA); Richard Poxon (NHLS-SA); Alison Coppin (NHLS-SA), Zawadi Chipeta, PhD (CDC-SA); Ritu Shrivastava, MPH, PhD (CDC-Atlanta) and Varough Deyde, MS, PhD (CDC-SA); Editor: Jessica Fried, MPH (Editorial Team)

ASLM

AFRICAN SOCIETY FOR LABORATORY MEDICINE

1er Congrès Francophone
1er au 4 Octobre 2013
Université Félix Houphouët-Boigny
Abidjan, Côte d'Ivoire

ASLM2013

ASLM a le plaisir de vous annoncer le 1er congrès francophone ASLM2013 qui se tiendra à l'Université Félix Houphouët-Boigny – Cocody, Abidjan, Côte d'Ivoire du 1er au 4 Octobre 2013. Le thème du congrès portera sur le "VIH SIDA et Résistances aux Anti-Infectieux en Afrique: Nouveaux Défis pour la Santé Publique". Le congrès réunira au moins 500 participants dont des professionnels du laboratoire, des cliniciens, des directeurs de programme, des épidémiologistes, des chercheurs, des étudiants et des décideurs politiques pour discuter des questions relatives à la prise en charge de l'infection à VIH SIDA, aux résistance aux anti-infectieux, à l'évaluation et réseautage des laboratoires, au système du management par la qualité et à la gestion des infrastructures de laboratoire.

TEMPS FORTS DU CONGRES

- Diverses réunions satellites et ateliers y compris des réunions de groupe thématique, séances de démonstrations d' équipements, et des sessions de formation
- Table ronde des ministres de la santé
- Allocutions et interventions en séance plénière de dirigeants dans les domaines de laboratoires biomédicaux et de santé publique
- Présentations orales et d'affiches

DATES A RETENIR

- **Début d'inscription et de soumission des résumés: 15 juillet 2013**
- **Fin de soumission des résumés: 1er septembre 2013**
- **Notification d'acceptation et fin d'inscriptions officielles: 15 Septembre 2013**
- **Fin des inscription tardives: 30 Septembre 2013**

PRINCIPAUX ORATEURS DE ASLM2013
CONFERENCE INAUGURALE

Professeur Serge Eholie est le Secrétaire Général du African Network for HIV Practitioners on HIV/AIDS (ANEPA) et Vice-Président de l'Alliance Francophone des Acteurs de Santé contre le VIH. Les travaux de recherche du Professeur Eholie se sont focalisés sur le défis, pour le pays a ressources limitées, de pouvoir assurer la prise en charge thérapeutique des patients sur antirétroviraux.

Professeur Souleymane Mboup est pharmacien de formation, a une maitrise en Immunologie et un doctorat en Bactériologie - Virologie. Il est le chef du laboratoire de Bactériologie – Virologie de l'hôpital universitaire Le Dantec, Université de Dakar, Sénégal, depuis 1984. Professeur Mboup est un chercheur distingué et reconnu pour son importante contribution dans l'analyse et le contrôle du VIH/SIDA en Afrique de l'ouest et plus particulièrement au Sénégal.

Pour de plus amples informations, veuillez visiter les sites internet suivants : www.aslm.org, www.cresac.org et www.mexci.org

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Direction des Infrastructures de l'Equipement et de la Maintenance

UNIVERSITÉ FÉLIX HOUPHOUËT-BOIGNY

Mexci
Medical Expo Côte d'Ivoire

CRESAC
CENTRE REGIONAL D'EVALUATION EN EDUCATION, ENVIRONNEMENT, SANTE ET D'ACCREDITATION EN AFRIQUE

ASLM

AFRICAN SOCIETY FOR LABORATORY MEDICINE

1st Francophone Conference
1-4 October 2013
Université Félix Houphouët-Boigny
Abidjan, Côte d'Ivoire

ASLM2013

ASLM is delighted to announce its first international francophone conference, "HIV/AIDS and Antimicrobial Resistance in Africa: New Public Health Challenges" which will be held 1-4 October 2013 at the Université Félix Houphouët-Boigny - Cocody, Abidjan, Côte d'Ivoire. More than 500 participants (i.e. laboratory professionals, clinicians, programme managers, epidemiologists, researchers, students, and policy makers) are expected to attend to address issues related to: HIV/AIDS infections care and treatment, antimicrobial resistance, laboratory assessment and networking, quality management systems (QMS) and laboratory infrastructure management.

CONFERENCE HIGHLIGHTS

- Various satellite meetings and workshops including equipment demonstration sessions and trainings
- Ministerial roundtable
- Keynote addresses from leaders in the fields of laboratory medicine and public health
- Plenary session and symposia
- Oral and poster presentations

IMPORTANT DATES

- 15 July 2013 -- Abstract submission and registration open
- 1 September 2013 -- Abstract submission closes
- 15 September 2013 -- Abstract acceptance notification & early-bird registration closes
- 30 September 2013 – Late registration closes

ASLM2013 OPENING SESSION KEY SPEAKERS

Professor Serge Eholie, MD, PhD, is among other things a professor of Tropical and Infectious Diseases at the Medical Faculty of the University of Abidjan, Côte d'Ivoire, and the General Secretary of the African Network for HIV Practitioners on HIV/AIDS (ANEPA). Professor Serge Eholie focuses on the challenges of sustaining antiretroviral therapy initiatives in developing countries

Professor Souleymane Mboup, PharmD, MSc, PhD, is the head of the Bacteriology Virology department at the University Hospital Le Dantec, University of Dakar, Senegal, since 1984. Professor Mboup is a distinguished researcher for his important contributions to the analysis and control of HIV/AIDS in West Africa, particularly Senegal.

For more information, please visit: www.aslm.org, www.cresac.org or www.mexci.org

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