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## WHO considers single-dose HPV vaccine schedule

The World Health Organization announced in April that it will consider changing its regimen recommendation for the Human Papillomavirus (HPV) vaccine, which protects against cervical cancer, the fourth most common cancer in women.

The current policy advises two doses of the vaccine for 9- to 14-year-old girls, while girls 15 and older as well as the immunocompromised, beginning at age 9, should receive three doses. The Strategic Advisory Group of Experts (SAGE) on Immunization, which advises the WHO on global vaccine policies and strategies, recently evaluated evidence that single dose regimens are equally effective as two and three dose regimens. One Costa Rica study conducted by researchers from the National Cancer Institute and other institutions found women who received either one or two doses of the vaccine had the same protection against HPV infections as a three-dose group.

Following its evaluation, SAGE suggested the WHO update its dose schedules for HPV as follows:

- one or two doses for the primary cohort ages 9 to 14
- one or two doses for young women ages 15 to 20
- two doses with a 6-month interval for women older than 21.

“Giving a single dose is less expensive and logistically easier compared with multiple doses,” said Dr. Doug Lowy, Deputy Director of the National Cancer Institute. “Single dose vaccination will make it more feasible to vaccinate more women in low- and middle-income countries.”

Further evidence is needed to show that the reduced dose schedule provides protection for immunocompromised individuals, according to SAGE. A high incidence of HPV-related cancers has been seen in those who are immunocompromised or living with HIV as well as in girls who face sexual abuse.



Photo Courtesy of WHO

*HPV vaccination campaigns have seen slow uptake in many low- and middle-income countries. Moving from a two- or three-dose regimen to a one- or two-dose one could help reach the goal of 90% vaccination by 2030.*

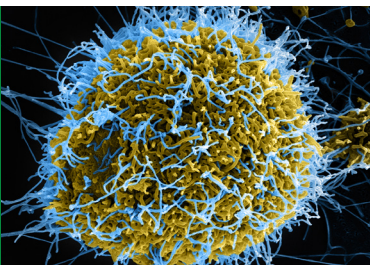
“The HPV vaccine is highly effective for the prevention of HPV serotypes 16 & 18, which cause 70% of cervical cancer,” said Dr. Alejandro Cravioto, SAGE Chair.

In 2018, an estimated 570,000 women worldwide received a diagnosis of cervical cancer and about 311,000 women died from the disease, according to the WHO. Almost all cervical cancer cases are linked to infection with high-risk HPV, an extremely common virus transmitted through sexual contact. Most HPV infections resolve spontaneously and cause no symptoms, yet persistent infection can cause cancer.

Lowy noted that “the vaccine has very high efficacy,” but it only prevents new infections. “As most women are exposed to HPV soon after initiating sexual activity, it is important to vaccinate them before they become sexually active.”

The WHO will conduct a stakeholder consultation before revising its position paper on HPV vaccination. A decision is expected in October.

## FOCUS



### Fogarty's response to Ebola: Where are we now?

- Building a bench of researchers in post-Ebola Liberia
- Partnering to fight against viral disease in West Africa
- Developing a new generation of researchers in Sierra Leone

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# WHA seeks to strengthen global health workforce

The 75th World Health Assembly (WHA) addressed pressing global health challenges at their May 2022 meeting. These challenges include supporting the global health care workforce, acting against noncommunicable diseases (NCDs), strengthening health emergency preparedness, improving clinical trials, preparing urban areas for emergencies, preventing and controlling infection, and revitalizing responses to HIV, viral hepatitis and sexually transmitted infections. Delegates of the 194 member states of the WHA, the main decision-making body of the WHO, meet annually to agree on priorities and policies.

## Supporting the health workforce

The WHA adopted the Working for Health Action Plan (2022-2030) which recommends ways to optimize, build, and strengthen the global health care workforce. Measures taken since 2016 to address health workforce shortages have generated progress in many areas. For example, the global shortfall of workers is projected to drop from 18 to 10 million by 2030. Still, gains have been uneven across regions and the impact of the pandemic is still being felt in terms of health care system disruptions and added workload for medical and health staff.

The action plan highlights the importance of a strengthened workforce to benefit overall health and economic prosperity of all societies. The “Working for Health” model shows how progress can be made by optimizing existing healthcare systems to build more capacity and by strengthening the protection and performance of health care workers.

## Actions on noncommunicable diseases

The world is falling short in reducing premature deaths from noncommunicable diseases (NCDs), and the Assembly approved several recommendations to address them. The WHO estimates that every minute, 28 lives between the

*One strategic roundtable at the 75th World Health Assembly discussed health emergency preparedness, response, and resilience.*

ages of 30 and 70 are cut short by cardiovascular disease, cancer, diabetes, chronic respiratory diseases, or mental health conditions. Twenty-five of those deaths occur in LMICs.

Underinvestment in health systems to treat NCDs has been a major contributor to this issue. The UN Health Agency reports spending \$0.84 per person per year could prevent and treat these diseases and conditions and so save nearly 7 million lives between now and 2030. Delegates approved a new implementation roadmap to accelerate action on NCDs that aims to help member states achieve the NCD-related targets in the United Nation’s Sustainable Development Goals (SDGs).

The Assembly also supported the creation of first-ever global targets for addressing diabetes, a global strategy on oral health, and new recommendations to prevent and manage obesity, among other key actions.

## Emergency preparedness and response

The Working Group on Strengthening WHO Preparedness and Response to Health Emergencies (WGPR), first established in 2021, issued its final report, “Strengthening WHO preparedness for and response to health emergencies.” The report proposes a variety of actions, including boosting manufacturing capacity for countermeasures (vaccines, therapeutics, diagnostics, essential supplies) and supporting regional manufacturing and diversification of production of countermeasures. The WGPR report also recommends developing processes for the transfer of technology and know-how to developing countries, strengthening whole genomic sequencing and analysis capability, and investing in health infrastructure workforce education, skills, and jobs. The intention is to engage local communities in health emergency prevention, preparedness, and response.

The WGPR acknowledged the importance of rapid and broad sharing of pathogens for effective disease surveillance but called attention to the sustainability of recently established initiatives, such as the WHO BioHub and WHO Hub for Pandemic and Epidemic Intelligence. The BioHub is a global system for sharing biological materials with epidemic or pandemic potential while the WHO Pandemic Hub focuses on detecting new events with pandemic potential, monitoring disease control measures for pandemic risk management, and leveraging innovations in data science for public health surveillance using a methodology called “pandemic and epidemic intelligence.”

In conclusion, the WGPR proposed a working group on the International Health Regulations, which will help guide discussions on changes to protocols.



# Researchers in Ethiopia and India find common ground

Global health research trainees rarely encounter opportunities to develop their own South-South collaborations. The lucky few who fleetingly meet their counterparts from other countries usually do so at consortium meetings tacked onto the end of their training programs. “They always get a lot of value from talking to each other, there’s a lot of opportunity for growth and learning there,” said Dr. Shivani Patel of Emory University. Recognizing this, she partnered with colleagues to create a program that brings scholars together from the very start of their training.

The result, the Collaborative Research, Implementation, And Leadership Training to Address Chronic Conditions across the Life Course (COALESCE) program, seeks to facilitate locally driven research and implementation by training 116 researchers and practitioners from India and Ethiopia.

An unlikely pairing of countries and continents it would appear. Yet the collaboration includes two of Emory’s long-standing institutional partners, India’s Centre for Chronic Disease Control and Ethiopia’s Addis Ababa University. “COALESCE is about creating a space to invest in yourself, right? In your daily life, no one’s going to say: ‘let’s talk about how to build a network’ or ‘let’s talk about how to seek mentorship,’” said Patel, associate director of COALESCE.

She envisions a stepping-stone for budding researchers who aspire to conduct independent research addressing chronic conditions. “Our partners in Ethiopia and India tell us that opportunities for post-doctoral training that support the transition to independence are lacking,” said Patel. Without that support, early career researchers stagnate or leave research after years of assisting senior investigators instead of pursuing their own interests. “If we want science that addresses the needs of diverse populations across the globe, then we need to support scientists in becoming independent researchers.” This is “critically important” for growing local capacity and developing North-South and South-South collaborations, she said.

## Learning to lead

The pandemic stymied the first (2019) class of COALESCE, yet an innovative remote program still benefitted trainees. “In our first year, on the Ethiopian side we had more clinicians, whereas on the Indian side we had more researchers,” said Patel. These differences in background and needs led to terrific conversations and diverse outcomes.

“As training director, I saw the Ethiopian fellows improve their abilities to think through scientific questions and present to scientific audiences. On the Indian side, I saw



India’s Centre for Chronic Disease Control is a collaborator in the COALESCE program. Pictured: Participants learn about a study at the Centre.

fellows build networks and grow collaborations.” Papers, pilot proposals, and other deliverables—all delayed by the pandemic—are now coming to fruition. One trainee has already received funding from Wellcome Trust. Other indicators of the program’s success are the quality of applicants received in the second and third round and the number of applications, which “nearly doubled,” according to Patel.

Emily Chuba, program manager, said that, though COALESCE is strengthened by Emory’s “strong strategic partnerships” and previous global health programs, its scope is more expansive than those of the past because it emphasizes professional development. “We’re focused on the part of science that’s ‘team’—how do you collaborate with others?” For example, trainees undergo assessments to gain self-awareness of how they communicate and “show up” as a team member, said Chuba. “They learn to lead.”

In addition to learning from expert researchers, COALESCE trainees will engage with health care stakeholders and representatives from the Ethiopian and Indian Ministries of Health. This added dimension should help to advance policies and enhance scientific capabilities in both countries, said Chuba. Meanwhile, the program will continue to provide a platform for previous Emory global health trainees to become mentors. “Our global health scholars see the value of capacity building and want to contribute to their home countries. Past trainees, who have returned to their institutions and worked their way up, are now poised to serve as mentors for a new generation.”

# PROFILE

## Evaluating meningitis causes among patients in Uganda

In northern Uganda, little is known about meningitis—its specific causes, the number of people affected, the impact of prevention measures. Meningitis is an infection and inflammation of the fluid and membranes around the brain and spinal cord caused by viruses, bacteria, or fungi. Dr. Abigail Link became interested in how cryptococcal (fungal) meningitis (CM) was diagnosed and treated in the region when a scientist friend visited her in Lira, where she worked as a lecturer. “Here in the north, if the hospital is out of stock, costs are shifted to patients. Those who can’t afford the diagnostic test or medication don’t get treated,” explained Link.

Seeing this gap, her former colleague, Dr. Paul Bohjanen, who had been researching CM in Kampala, helped start a program where Lira patients could get treated even if unable to pay. “For my Ph.D. dissertation, I helped analyze that program. What we found is about half of the patients with symptoms did not have a diagnosis of CM.” An opportunistic infection that afflicts people living with HIV, cryptococcal meningitis symptoms include fever, intense headache, stiff neck, nausea, vomiting, sensitivity to light, drowsiness, and confusion.

Link decided to continue this research for a Fogarty project by answering the question: If not CM, what other types of meningitis are making these Ugandan patients sick? Using data from a regional hospital, she will determine disease causes and conduct surveys and interviews with both patients and providers to understand their experiences as well as the barriers to improving health outcomes. “We’re in the middle of that right now, enrolling patients in the program, and, come September, we’ll do a preliminary analysis,” she said.

COVID-19 delays prevented her from completing her project in 2021 as planned. Though a disruptive force, the pandemic also brought unexpected insight. “I learned how much I can rely on the people on the ground,” she said. Though her work is ongoing, Link already has published an evaluation of cryptococcal



**Abigail Link, RN, MPH, PhD**

Fogarty Fellow:	2020-2021
U.S. institution:	University of Minnesota
Foreign institution:	Makerere University in Kampala
Research topic:	Meningitis surveillance and outcomes in Uganda

meningitis cases. She also plans to further train her team, which now includes a manager, three nurses, and three medical officers, to help collect and analyze new data. “They’ve begun to see the fruits of their labor in the form of findings from the patients that have come in over the past five to six years.”

Working in Lira prior to her Fogarty project helped her “get buy-in and partners because people have seen me here for the past five years in different roles. In any society it’s about making connections so that was definitely advantageous for me,” said Link.

Fogarty’s staff and project management lessons taught her much-needed organizational skills. She also praised the networking opportunities provided by Fogarty. “Other fellows working in your same country can be great guides and mentors. I’ve asked other Ugandan researchers, ‘I’m thinking about this for a project — what kind of cultural differences should I be aware of?’” Most of all she appreciated the amount of time provided by a Fogarty fellowship. “Unfortunately, we global health researchers tend to form a research question based on what we feel is the need. But it’s more important to interact with the people and understand what gaps they see.”

Looking to the future, Link plans to apply for NIH funding to “develop a mental health screening tool that will be implemented in HIV clinics in Lira.” She also plans to collaborate with Lira University on a training grant. “I chose nursing versus medicine because I wanted to have quality time with patients and take on the role of a caregiver versus the role of a person who diagnosis and prescribes,” said Link.

## JUDITH LEVY, PHD

*Judith Levy is Associate Professor Emerita in Health Policy and Administration at University of Illinois in Chicago (UIC) and Director of the Fogarty UIC/Atma Jaya Catholic University Training Program in Advanced Research Methods and Translational Science. She earned a Ph.D. in sociology from Northwestern University. Her pioneering work in HIV/AIDS research over the last four decades has appeared in prestigious journals and publications.*



### Why sociology, why global health research?

A central question of sociology asks: How and why do people come together collaboratively to form cities, communities, neighborhoods, and extended families? My research extends these questions to explore community-based models, peer prevention strategies, and culturally acceptable norms to promote and reinforce safer sex and drug practices within key populations and across their social networks.

As to why global health research, I grew up on the islands of Maui and Oahu in pre-state Hawaii. The islands' rich cultural heritage and blending of many ethnic and racial populations greatly influenced the tenor and direction of my research. Also, at the start of the AIDS pandemic, I participated on the advisory team that WHO convened to develop what were then the first guidelines for studying HIV risk behavior in multiple countries. The natural next step was to conduct my own international research while encouraging others to do so.

### Why is it important to study HIV in Indonesia?

HIV incidence continues to climb in many regions of Indonesia. The country has many talented clinicians and university faculty capable of leading and conducting effective HIV research that could inform public policy, prevention, and clinical practice. They just need the advanced theoretical and methodological skills to do so. Fogarty-sponsored training provides that.

My own research in Indonesia has benefited greatly from UIC's long history of HIV research and interventions within the archipelago. Building on these established relationships, in 2003, my colleagues at UIC and Atma Jaya Catholic University (AJCU) in Jakarta and I received funding from the World AIDS Foundation to conduct HIV prevention workshops in four Indonesian cities. Other projects and studies, including an AIDS International Training and Research (AITRP) grant and my current Fogarty training program in HIV translational science, grew from there.

### Tell us about your accomplishments in Indonesia.

For nearly 23 years, I directed the UIC AIDS International Training and Research Program (the UIC-AITRP) with six universities in four countries: Indonesia, Chile, Malawi, and China. The program included short-term and MPH

degrees, yet we also graduated 23 Ph.D. students, among them nine Indonesians. When our AITRP trainees returned to their countries, they trained the next generation of HIV investigators. They also persuaded scientists and faculty from their home institutions to join them in AIDS research.

In Indonesia, returning UIC-AITRP trainees founded AIDS research programs at both AJCU and the College of Nursing, University of Indonesia. Later, Professor Irwanto, our first postdoc, partnered with me to successfully develop AJCU's existing AIDS research program into an AIDS Research Center (ARC) serving faculty, students, and researchers across the archipelago. Based on ARC's success— buttressed by continuing Fogarty training and capacity-building—Dr. Evi Sukmaningrum, who earned her doctorate as a UIC-AITRP trainee, spearheaded the effort to have ARC formally designated a "Center of Excellence" in research and training by the Indonesian Ministry of Education and Culture. This designation recognizes ARC's contributions to AIDS research in health policy and social innovation.

### What's ahead for you?

Papua New Guinea has the highest rates of HIV infection in Indonesia. Prevention efforts among indigenous populations have little success due to geographic, socioeconomic, and cultural barriers. Through NIAID funding, Drs. Robert Bailey (UIC), Ignatius Praptoraharjo (AJCU/ARC), and I are partnering with the Papua indigenous community to develop and pilot a voluntary, indigenous model of medical male circumcision. This one-time prevention method is well-suited for a population that cannot consistently access prevention supplies and distrusts outside efforts to promote safer behavior.

A second project involves a Tajikistan/UIC partnership that is conducting a NIAID-funded clinical trial to test the effectiveness of a peer prevention model for HIV. The model we developed is designed to reduce drug and sexual HIV risk behaviors among social networks of Tajik labor migrants who inject drugs while working in Moscow. The pilot study and first half of the clinical trial have shown positive results. If success continues, the model could be culturally adapted and tested for use in Indonesia where drug use fuels the epidemic.

## Fogarty's response to Ebola: Where are we now?

The public health system in West Africa was simply not built to combat a virus like Ebola in 2014. Without any approved vaccines or therapeutics at the time, the lack of medical personnel, supplies, and personal protective equipment meant that fighting an outbreak of this magnitude would be an uphill battle without intervention from outside the region. Liberia, Guinea, and Sierra Leone were the three countries most impacted by the outbreak, and in total more than 11,300 lost their lives.

The research community has learned much more about the Ebola virus since 2014. Today, we have an Ebola vaccine that has already been used to help control outbreaks in the Democratic Republic of Congo (DRC) and monoclonal antibody therapeutics to treat the virus and prevent new outbreaks in the region.

Scientists are now even looking at the potential of using the Ebola virus to benefit cancer patients, as some studies have shown that elements of the virus can be used to treat glioblastomas, a deadly brain tumor for which there is currently no cure.

Unfortunately, we have also learned that Ebola can linger in disease-privileged sites like the eye, brain, and urogenital system for several years after infection and, in some cases, has reinfected survivors. Ebola's long-term side effects include fertility issues, cataracts, and blindness.

The National Institute of Allergy and Infectious Diseases (NIAID) Partnership for Research on Ebola Virus in Liberia (PREVAIL) program developed with the Liberian

**“Fogarty has been able to leverage what NIAID started in West Africa to help build long-term sustainable capacity for research in the region.”**

ministry of health in 2014, helped accelerate the development and clinical research of vaccines and therapeutics for Ebola. This program has been instrumental in testing vaccine candidates and developing therapeutics and has contributed to many of the research findings we have

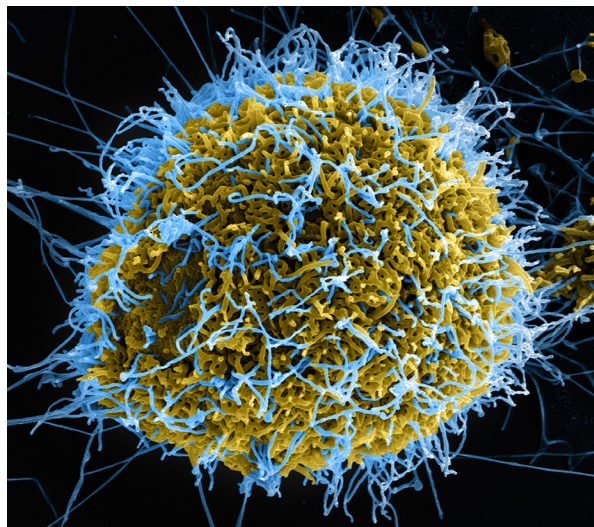
today. Fogarty has been able to leverage what NIAID started in West Africa to help build long-term sustainable capacity for research in the region.

Many healthcare workers who participated in the initial Ebola efforts and the PREVAIL studies have become trainees in Fogarty-funded programs, pursuing higher education and conducting independent research. Four of Fogarty's capacity-building programs in the region—the Mali-Guinea Emerging Infectious Disease Research Training Program, the Training in Clinical and Epidemiological Research for Liberia (TRACER) program, the

Boston University and University of Liberia Partnership to Enhance Emerging Epidemic Virus Research (BULEEVR), and the Partnership for Research in Emerging Viral Infections-Sierra Leone (PREVSL) — all aim to help West Africa grow the next generation of infectious disease researchers.

Elizabeth Higgs, a Global Health Science Advisor with NIAID, who was part of the team that initially launched the PREVAIL study in Liberia, said, “There is no quick fix, but this is how it starts. Ten years from now West Africa could be in a very different place due to these investments.”

So far in 2022, an Ebola outbreak was declared in the DRC, a small outbreak of leptospirosis is being tracked in Tanzania, and Marburg was reported in Ghana. This while the world is still grappling with the effects of the COVID-19 pandemic and the expanding monkeypox global health emergency. Capacity-building projects like the ones Fogarty funded in West Africa after the 2014-2016 Ebola outbreak can help meet this global need to prevent future epidemics.



The research community has learned much more about Ebola since 2014. This colorized micrograph shows Ebola virus particles (blue) budding from an infected cell (yellow-green).

Photo courtesy of NIAID

# Building a bench of researchers in post-Ebola Liberia

When the Ebola epidemic first hit Liberia in late 2013, there were fewer than 200 medical doctors, let alone researchers in the country to manage or survey the outbreak, according to the WHO. At that time, Dr. Soka Moses had just completed his medical degree at the University of Liberia and was volunteering at the John F. Kennedy Hospital in Monrovia. “There was so much panic,” said Moses. “Health facilities were closed, and many doctors were getting infected.” That initial outbreak lasted until 2015 and led to more than 5,000 deaths in the country.

Since then, Liberia has been focused on rebuilding its medical and research infrastructure with support and funding from the NIH, CDC, USAID, and other institutions. Two critical building blocks in that research infrastructure are the Training in Clinical and Epidemiological Research (TRACER) program, in which Dr. Moses is currently a research scholar, and the Boston University and University of Liberia Partnership to Enhance Emerging Epidemic Virus Research (BULEEVR).

TRACER is a collaboration between the University of California San Francisco (UCSF), the National Public Health Institute of Liberia, the University of Liberia, and the Partnership for Research on Vaccines and Infectious Diseases in Liberia (PREVAIL), a U.S.-Liberia project managed by the National Institute of Allergy and Infectious Diseases (NIAID).

TRACER provides emerging researchers in Liberia with lecture-based, mentored, and experiential training in clinical and epidemiological research targeting Ebola, Lassa fever, malaria, and other infectious diseases. Trainees work on research projects happening in-country while working on their master’s in clinical research at UCSF, taking the knowledge learned in the classroom to inform their protocols.

BULEEVR is fostering a culture of science in Liberia by increasing human capacity in the country to support new and existing research initiatives focused on emerging pathogens. Through training boot camps and mentorship for health care professionals, technicians, educators, and future researchers, leaders of the BULEEVR partnership



*Dr. Soka Moses poses with volunteers as they prepare to discharge Ebola-negative patients at Ebola treatment unit one at John F. Kennedy Memorial Hospital in Monrovia, Liberia in 2014.*

Photo courtesy of Dr. Soka Moses

are identifying candidates for doctoral-level training in translational research, public health, and basic sciences.

TRACER currently has three trainees, Dr. Cozie Gwaikolo, Dr. Soka Moses, and Mr. Moses Badio, all of whom are participating in PREVAIL projects during their training. Dr. Gwaikolo and Mr. Badio are both engaged in a PREVAIL project studying short- and long-term symptoms associated with COVID-19. Dr. Moses has been involved in several Ebola-related research projects, including a study funded by the National Institute on Minority Health and Health Disparities (NIMHD), which found that age was one of several risk factors contributing to Ebola persistence in semen.

He and his colleagues exemplify what the future could hold for TRACER and similar programs in Liberia. “I am learning skills that strengthen my research abilities with this program for the first time,” said Moses. “It has given me the skills I need to conduct rigorous high-quality research that holds up to the international standard.”

Training programs like TRACER, though small, are essential to ensure there are trained researchers and medical research infrastructure in those countries hardest hit by the ever-growing risk of viral diseases and to prevent future endemics and pandemics.

Dr. Jeffrey Martin is a principal investigator on the TRACER program and Chief of the Division of Clinical Epidemiology and Health Services Research at UCSF, co-directing TRACER alongside his UCSF colleague Dr. Krysia Lindan, a professor of epidemiology and biostatistics. Dr. Martin says, “If our ultimate goal is to promote equity in education and develop a workforce of independent investigators and researchers who can study the issues in countries like Liberia, we need to ensure that local emerging scientists have access to the same level of training that we have in the U.S. It is our responsibility as scientists in the U.S. to give back to our profession and train others who do not have the same infrastructure and opportunity.”

# Partnering to fight viral diseases in West Africa

The first case of the 2014-2016 Ebola outbreak was traced back to a child in Guinea who was infected with the virus three months before an outbreak was declared. Guinea was one of the countries hardest hit by the virus. Another West African nation, Mali, was able to contain the virus much faster than their neighbors to the north.

Between the two nations, there were over 3,800 confirmed cases of Ebola and almost 2,600 deaths. Of these, only eight cases (and six deaths) occurred in Mali, according to the CDC. During the Guinea outbreak, Mali supported Guineans wherever possible, forging a collaborative partnership between the two nations.

The Mali-Guinea Emerging Infectious Disease Research Training Program (Mali-Guinea EID-RTP) is a new program funded by Fogarty and the National Institute of Allergy and Infectious Diseases (NIAID) that will strengthen this ongoing South-South collaboration between the University of Science, Techniques, and Technologies of Bamako (USTT-B) in Mali and the University of Conakry in Guinea. The program will also draw on the expertise of researchers from NIAID, Johns Hopkins University, and Northwestern University. The program will be run by principal investigators (PIs) who worked on the front lines of the Ebola outbreak.

“A unique factor of this program is that we will be performing genomic surveillance of emerging infectious pathogens, something we have not been able to do with previous grants,” said Dr. Seydou Doumbia, a PI in the training program. Doumbia is the Dean of the Faculty of Medicine and Odontostomatology at USTT-B. He is also

*Dr. Seydou Doumbia working in the UCRC laboratory, an initiative of the Malian government, the University of Science, Techniques, and Technologies of Bamako, and NIAID.*

the Director of the University Clinical Research Center (UCRC) at Bamako.

This partnership came to fruition through the Fogarty-funded planning grants established in 2016. Because of the geographic and cultural proximity of the two nations, it was a natural fit. Culturally Mali and Guinea have many similarities as both are francophone nations in a region where English is the predominant language in academia. The program anticipates that the research landscape for the next disease outbreak will look very different in Guinea by building up the research infrastructure there. Mali is a prime example of how that could look.

“After years of intentional investment in the region, Mali has become a scientific powerhouse in terms of malaria research,” said Elizabeth Higgs, a Global Health Science Advisor with NIAID, who was part of the team who initially launched the Partnership for Research on Vaccines and Infectious Diseases in Liberia (PREVAIL) study. “Fogarty programs like these [planning grants] are essential to building capacity and developing this cadre of scientists, prepared to fight future outbreaks.”

Mali fared far more favorably during the Ebola epidemic in comparison to its neighbors due to almost 30 years of investment into malaria research and the establishment of the Malaria Research and Training Center (MRTC) at the National School of Medicine and Pharmacy, which has facilitated research with NIAID and other international partners. “Having the NIH lab there allowed us to avoid delays in diagnosis, prevent the spread of disease, and prepare for future cases,” said Doumbia.

The UCRC laboratory was initially established to study malaria and tuberculosis. However, because of the existing infrastructure, they could quickly switch gears to test and isolate Ebola cases and conduct contact tracing, further discouraging the spread of the disease in the country.

The Mali-Guinea Emerging Infectious Disease Research Training Program was met with enthusiasm from ministers of health across the region and aims to train six doctoral students and 15 master’s students over the next five years. Doumbia says, “This program will be a tremendous resource. Not only for Mali and Guinea but for West Africa and other francophone countries throughout the continent.”





# Developing a new generation of researchers in Sierra Leone

Sierra Leone, with an estimated 134 doctors for almost 7 million people at the time, severely lacked the infrastructure needed to fight a deadly virus like Ebola in 2014. Nearly 4,000 died of the disease before the country was declared Ebola-free in November 2015.

Fogarty developed a targeted planning grant during that initial outbreak to encourage increasing scientific capacity in Liberia, Sierra Leone, and Guinea. That planning grant revealed that one of the most significant issues beyond the lack of physical infrastructure to do research in the region was the absence of trained researchers. Dr. Troy Moon, a professor of pediatrics in the Division of Infectious Diseases at Vanderbilt University Medical Center, is a principal investigator (PI) in the Partnership for Research in Emerging Viral Infections-Sierra Leone, or PREVSL, program who has worked on capacity-building projects in Mozambique throughout much of his career. “The Ebola outbreak highlighted that Sierra Leone and much of West Africa had not benefited from the same health system strengthening activities that occurred in other African countries,” he said. “We were starting from scratch in many ways.”

The Fogarty-funded PREVSL program is a partnership between Tulane University, Vanderbilt University Medical Center, the University of Sierra Leone, and Kenema Government Hospital (KGH). The program aims to train a new generation of researchers in implementation science while strengthening clinical trial capacity. PREVSL also aims to advance clinical and translational research on delivering quality health services for endemic viral hemorrhagic fevers like Lassa fever while simultaneously building the knowledge and skills of trainees in-country to conduct higher-level clinical trial research during an epidemic like Ebola.

Dr. John S. Schieffelin, associate professor of pediatrics and medicine at Tulane University, is a co-PI on the project. He explains, “Programs like this are so important in a country where there just aren’t enough doctors, even the ones who are interested in research have so much clinical work it’s hard for them to find the time, and it’s understandably not a priority.”

So far, PREVSL has had two trainees, Dr. Foday Morovia and Dr. Robert Samuels, who has already received his



*Dr. Robert Samuels (second from left), a former PREVSL trainee, meets with patients as part of his study on preexisting immunity in Ebola and Lassa fever survivors.*

Photo of courtesy of Dr. Robert Samuels

master's in clinical investigations from Vanderbilt University School of Medicine along with a concurrent vaccine fellowship at the Vanderbilt Vaccine Research Program.

Dr. Morovia is currently involved in a project studying how antibiotics were prescribed to patients co-infected with malaria and Ebola during the 2014-2016 outbreak. Dr. Samuels, a physician-scientist at the Kenema Government Hospital (KGH), has completed a study looking at the prevalence of respiratory syncytial virus (RSV) and influenza in hospitalized infants and toddlers in Sierra Leone. He also recently completed another study on preexisting humoral immunity to human coronaviruses and/or SARS-CoV-2. Dr. Samuels says one of PREVSL’s biggest benefits was the mentorship. “Because of my mentors, I felt empowered to translate science, write proposals, and be an independent researcher.”

As of 2018, Sierra Leone had almost 600 doctors, and its public health system has been bolstered by investment in the region. While this is a positive change in the healthcare workforce since 2014, there is still plenty of work to be done to serve the almost 8 million people living in the country today.

PREVSL has enrolled another student on track to start the degree portion of their training in late 2022, along with several new staff members. Incremental progress from programs like PREVSL moves the needle and gets other physicians in the region excited and interested in research that can have a long-term impact. Dr. Samuels remarked, “I implore young researchers to consider these viral hemorrhagic fevers like Ebola and Lassa fever so that we can build researchers in this area and strengthen our knowledge. These outbreaks mostly affect low- and middle-income countries and can have devastating consequences.”

## Fogarty's support of Ebola research is a point of pride



The focus of this edition of *Global Health Matters* is the scientific lessons learned since the devastating Ebola outbreak of 2014–2016. Unlike the previous known occurrences of Ebola, the outbreak which began in 2014 struck countries recovering from conflict and lacking the health infrastructure and numbers of trained personnel to effectively deal

with the problem. When the epidemic ended more than two years later, suspected and confirmed cases rose above 28,600, while reported deaths topped 11,300.

The impact of this outbreak on West Africa was momentous. Initially, health officials and care providers in the hardest hit countries of Liberia, Sierra Leone, and Guinea were overwhelmed by the record numbers of people sickened by the hemorrhagic virus and could pay little attention to studying the epidemiology of the outbreak.

From the start, Fogarty recognized that the greatest contribution we could make would be a commitment to ongoing, long-term strengthening of research capacity and health systems in West Africa through training. We believe even a modest investment in training can provide the tools low-resource countries require to halt outbreaks and prevent the need for large-scale emergency efforts like the one assembled to fight Ebola. Fogarty understands that preparedness is always less costly than an emergency response.

In the years since the Ebola crisis ended—in the years when most others looked away—we have continued to support the development of West African health infrastructure through training. One Fogarty supported program unites Boston University (BU), University of Liberia (UL), and regional affiliates. The BU-UL Partnership to Enhance Emerging Epidemic Virus Research in Liberia includes a bootcamp to develop basic, translational, and clinical research skills in Liberia. From there, select candidates pursue an advanced degree at BU before returning to Liberia to conduct research projects that build sustainability while retaining intellectual capital in-country.

Another of our programs, the Partnership for Research in Emerging Viral Infections-Sierra Leone, forms a collaboration among the University of Sierra Leone College

of Medicine and Allied Health Sciences, Kenema Government Hospital, Vanderbilt Institute for Global Health, and Tulane University. This training partnership emphasizes clinical and translational research focused on the delivery of quality health services for endemic viral hemorrhagic fevers, like Lassa fever. The intention is to develop the capability to conduct clinical trial research during epidemics and outbreaks, as was done during the Ebola crisis.

University of Bamako in Mali, University of Conakry in Guinea, Johns Hopkins University, and the National Institute of Allergy and Infectious Diseases joined forces to create the Mali-Guinea Emerging Infectious Disease Research Training Program. This Fogarty-supported endeavor provides high-level training in field and laboratory epidemiology, translational clinical research, public health emergency management, and genomic characterization and surveillance of emerging pathogens.

Finally, our Training in Clinical and Epidemiological Research for Liberia program coalesces University of California San Francisco, the National Public Health Institute of Liberia, the University of Liberia, and Partnership for Research on Ebola Virus in Liberia, an NIH initiative. This four-part alliance trains Liberian early-career investigators who are focused on epidemiological research of Ebola, acute febrile illness, and malaria. The curriculum strengthens research skills in Liberia while improving the country's ability to respond to infectious disease threats.

West Africa's Ebola epidemic showed all the world the value of training scientists and research professionals who will then be capable of studying and responding to future emerging infectious disease outbreaks. Meanwhile, the ongoing COVID-19 pandemic has shown us that the training done in West Africa provided the foundation we hoped for. One example is Dr. Christian Happi, who, following the Ebola crisis, established a metagenomic platform that enabled his team to sequence the whole genome of the first SARS-CoV-2 in Africa. Global health security requires trained scientists and robust health and research systems across the globe. We at Fogarty are proud to contribute to this mission by continuously strengthening local health research through training.



## Vanderbilt names new Global Health Director

Dr. Muktar Aliyu has been named Director of the Vanderbilt Institute for Global Health. Aliyu, a renowned physician and epidemiologist born and raised in Nigeria, led several Fogarty-funded programs at Vanderbilt, including the Building Research Capacity in HIV/Non-communicable Diseases program in Nigeria.



## Sewankambo recognized for his work in global bioethics

Professor Nelson Sewankambo received the inaugural GLIDE Global Health Ethics Leadership Award in recognition of his contributions to global bioethics. Sewankambo, a long-time Fogarty grantee, helped build the THRiVE research capacity strengthening consortium and is director of the Fogarty-funded Makerere University International Bioethics Research Training Program.



## Long-time grantee receives PRIM&R service award

Professor Clement Adebamowo received the Jeff Cohen Service Award from Public Responsibility in Medicine & Research (PRIM&R) in recognition of his work in research ethics. He is the Director for Global Health Cancer Research at the University of Maryland School of Medicine and directs the Fogarty-funded Eastern Nigeria Research Ethics Training (ENRICH) Program.



## Fogarty grantee wins maternal health challenge

Dr. Bethany Hedt-Gauthier, Associate Professor of Global Health & Social Medicine at Harvard T.H. Chan School of Public Health, won first place in the NIH Maternal Health Diagnostics Challenge for mHealth tools developed by her Fogarty-funded project enabling community health workers to monitor postpartum recovery by women following cesarean delivery in Rwanda.



## Former CUGH chair to lead NY Academy of Medicine

Dr. Ann Kurth, an epidemiologist and Dean of the Yale School of Nursing, will lead the New York Academy of Medicine, the first nurse to hold the position. Dr. Kurth's research focuses on HIV/reproductive health and global health system strengthening in the context of pandemics, climate change, and other stresses. She also co-founded the Yale Institute for Global Health.



## El-Sadr to lead new global program

Former Fogarty board member Dr. Wafaa El-Sadr was appointed Executive Vice President for Columbia Global at Columbia University. This new umbrella program will bring together the university's global projects including Columbia's Global Centers. Dr. El-Sadr is Founder and Director of ICAP.

## CDC establishes global health diplomacy office

The CDC approved the establishment of the Office of the Associate Director for Global Health Diplomacy and Strategy (CAE) in July. The new office will advise and represent the CDC Director on agency-wide global health strategies and coordinate policies and priorities focused on achieving maximum public health impact in support of the agency mission.

## New center for Caribbean/Latin American health

The GW Milken School of Public Health launched a new center dedicated to addressing health disparities and improving public health in the Caribbean and Latin America. One of the center's goals is to provide training opportunities for students, scientists, and organizations serving Caribbean and Latin American communities.

## TB Partnership releases plan to end TB by 2030

The Stop TB Partnership unveiled their Global Plan to End TB 2023-2030 which outlines priority actions—including early diagnosis, scaling up prevention efforts, and developing a TB vaccine—and estimates financial resources needed to end TB as a global health threat by 2030.

## Pandemic led to less child HIV testing

HIV testing and case identification among children and adolescents in 22 PEPFAR-supported countries decreased by between 29% to 40% in October 2019–September 2020. The analysis, published in the CDC *Morbidity and Mortality Weekly Report (MMWR)*, suggests that progress toward UNAIDS targets has been negatively affected by the COVID-19 pandemic.

## WHO publishes mental health report

*The World mental health report: transforming mental health for all*, the WHO's largest review of mental health in 20 years, provides guidance for governments, academics, health professionals, and others; showcases examples of good practice from around the world; and outlines global threats to mental health.

Funding Opportunity Announcement	Deadline	Details
Fogarty HIV Research Training G11 Clinical Trials Not Allowed D71 Clinical Trials Not Allowed D43 Clinical Trials Optional	Aug 22, 2022	<a href="http://bit.ly/NIHGlobalHIV">http://bit.ly/NIHGlobalHIV</a>
Data Science for Health Discovery and Innovation in Africa (DS-I Africa) UE5 Clinical Trial Not Allowed U01 Clinical Trial Not Allowed	Sep 28, 2022	<a href="https://bit.ly/nih-dsiafrica-funding">https://bit.ly/nih-dsiafrica-funding</a>
Japanese Research Fellowships (JSPS)	Sep 30, 2022	<a href="http://bit.ly/JSPSforUS">http://bit.ly/JSPSforUS</a>
Fulbright-Fogarty Fellowships in Public Health	Oct 11, 2022	<a href="https://bit.ly/3jxRuX1">https://bit.ly/3jxRuX1</a>

For more information, visit [www.fic.nih.gov/funding](http://www.fic.nih.gov/funding)

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### Preventing road injuries saves countless lives



The risk of road traffic deaths is nearly three times higher in low-income countries than high-income ones.

The global toll of road traffic injuries is immense, causing more than 50 million injuries and disabilities and ending 1.35 million lives each year, according to a series of articles published in *The Lancet*.

The UN Sustainable Development Goals did not achieve its target of halving the number of road traffic deaths by 2020, explained the authors led by Fogarty grantee Dr. Adnan Hyder of the George Washington University Milken Institute School of Public Health. In fact, no low-income country and less than a quarter of middle-income countries have seen a decrease in the number of road deaths over the past decade.

Worse, 104 countries showed an increase in deaths during that period. The authors estimate that proven interventions—such as reducing speed limits and drunk driving incidents, along with using helmets, seatbelts, and child restraints—could prevent 25-40% of fatal road injuries. These measures would especially benefit low- and middle-income countries, where more than 90% of road traffic deaths occur. While prevention is the cornerstone for saving lives, improved post-crash care could also reduce mortality by 35%.

The study data include first-ever nation-specific estimates (for 185 countries) of the positive effects of addressing road safety. These estimates can be used as a starting point for public officials to change policies and shape priorities, the authors stated.

Photo courtesy: Kendra Helmer/USAID