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Global Health Matters

FOGARTY INTERNATIONAL CENTER

Courtesy of the National Institute of Allergy and Infectious Diseases

Researcher working on ART

JULY/AUGUST 2026 | ISSUE 4

UNDERSTANDING HOW FLU SPREADS

Insights from a Fogarty collaboration

PHIRST team members prepare for community testing

Photo's courtesy of the National Institute for Communicable Diseases, South Africa

EVERY YEAR, SEASONAL FLU SICKENS YOUNG AND OLD IN COMMUNITIES ACROSS THE GLOBE. Meanwhile scientists have struggled to answer a deceptively simple question: What factors determine whether a person gets infected? A new study models the risk of flu infection using data from the Prospective Household cohort study of Influenza, Respiratory Syncytial virus, and other respiratory pathogens community burden and Transmission dynamics in South Africa (PHIRST).

The study, published in *Nature Communications,* is representative of the long and productive collaboration between Fogarty and the PHIRST team.

UNIQUE STUDY DESIGN

"This work touches on correlates of protection, which is an active area of flu research," says study co-author Cécile Viboud, PhD, Acting Director of Fogarty's Division of International Epidemiology and Population Studies.

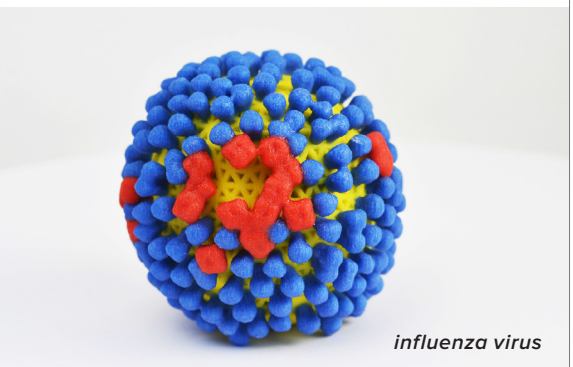
A correlate of protection is a measurable biomarker that indicates whether or not someone is protected against a disease. Most often it is measured in the blood, for example, antibody levels. For many illnesses, a certain level of antibodies would mean that an individual is protected against that sickness. This study, then, modeled the risk of influenza infections in South African households based on high-resolution PCR testing (a type of genetic test that can identify infections) and a pre-flu-season serology test (serum is the liquid component of blood) to measure each participant's existing antibody level. Specifically, the study serology testing "measured antibody responses to the main influenza surface antigen (hemagglutinin)," notes Viboud.

Most flu research relies on people visiting a doctor once they feel sick, yet the PHIRST studies take a very unusual, proactive approach. The PHIRST study design is the genius of Dr. Cheryl Cohen's team at the National Institute for Communicable Diseases in South Africa. To understand how respiratory infections spread, Cohen's team set up cohorts of people who get twice weekly PCR testing—whether or not they are showing symptoms—for influenza and RSV. This approach captures asymptomatic infections—cases where an individual carries and spreads the virus without ever feeling ill—that would never come to light in a study based on doctor's visits. In fact, in previous PHIRST studies of the flu, researchers found that asymptomatic infections and transmission are much more common than previously thought.

Here, the researchers tracked 1,518 people across 327 households in rural and urban South Africa for three flu seasons between 2016 and 2018. Specifically, they zeroed in on four flu types: two strains of influenza A (H1N1 and H3N2) and two lineages of influenza B (Victoria and Yamagata). Three major findings emerged.

First, they found that both household and community exposure were powerful, independent predictors of who got sick. So, if an individual was actively shedding a lot of virus, the risk of others in the household becoming infected jumped substantially—by roughly 65% to 95%, depending on the strain. (Shedding refers to when an infected person releases the virus into the environment through sneezing, coughing, or even speaking.) Separately, how much flu was circulating in the wider community, including at schools and workplaces, also drove up individual risk.

Second, pre-existing immunity offered some, but not total, protection. People with higher antibody



influenza virus

Courtesy of NIAID

levels prior to the start of flu season were 50% to 70% less likely to be infected with H1N1, H3N2, or B/Victoria; however, the antibody threshold that protected against these strains did not protect against B/Yamagata. When the researchers analyzed antibody levels on a continuous scale, some protective effect did appear, suggesting a standard threshold may not be the right benchmark for every strain.

The third finding was most striking: age influenced household dynamics a lot. Children, especially those under 5, were more likely to get infected and, when infected, shed the virus for several days longer than adults over 40. This held true even for children with seemingly protective antibody levels. The researchers suggest that the standard blood test doesn't capture everything relevant about a child's immune defenses. They speculate that other immune responses may play a bigger protective role in children than previously believed.

PHIRST team members swabs a member of the cohort

WHY THIS MATTERS

These findings have practical implications. Because young children are both more susceptible and more contagious for longer stretches, they likely play an outsized role in spreading flu within families and communities. The study also suggests that current blood tests used to gauge flu protection may be incomplete, particularly for children and for certain strains like H3N2. This points to a need for better tools to measure who is actually protected against flu, beyond the standard antibody test.

"Refining our understanding of influenza transmission is essential for identifying key risk factors for infection, characterizing protective immunity, and informing prevention strategies to reduce disease burden," stated the authors. By combining symptom-blind testing with sophisticated statistical modeling, this research contributes to the understanding of how flu moves through real households.

Research from Cécile Viboud, PhD, Acting Director of Fogarty's Division of International Epidemiology and Population Studies

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profile

The Centre for Infectious Disease Research in Zambia

Nutrition and weight gain in early HIV treatment outcomes

John R. Koethe, MD, chose the field of infectious diseases because it offers "breadth and possibilities" and opportunities for "patient-facing research." In particular, the HIV epidemic captured his interest. He'd seen how HIV infections and related deaths crested in the United States during 1995, and a few years later when he began medical school, "U.S. deaths were no longer going up… and new drugs were being developed." During his residency, he worked with HIV patients in Uganda at the Johns Hopkins Infectious Diseases Institute, which provided an introduction to the field of infectious diseases in an international setting.

After completing his education, he felt a hankering to return to Africa to study HIV. "For the first time, the Fogarty Fellows and Scholars Program [now called LAUNCH] was offering post-residency fellowships," says Koethe. He applied and won a spot in the transformative program.

Research challenges

"Zambia was one of the epicenters of the HIV epidemic in sub-Saharan Africa. HIV prevalence in Lusaka [Zambia's capital] was over 15% and rising," says Koethe. The country had few resources, yet it was "extremely stable" and "had a great deal of leadership interest in building a world-class health system." Zambia was establishing new clinics and expanding access to antiretroviral therapy (ART) to about 10,000 new patients each month. Koethe saw a rare opportunity "to have an impact and also be part of one of the largest health initiatives in recent history."

For his Fogarty project, he proposed a study at the intersection of malnutrition and HIV, which involved delivering food aid through Lusaka's HIV clinics, while looking at health outcomes in patients who'd initiated ART. In 2008, Koethe flew from the United States to Lusaka. Unfortunately, when he arrived, he found that his proposed Fogarty project had been canceled due to a lack of funds.

Koethe quickly pivoted to an analysis of the factors driving early mortality in HIV patients (after they began ART) using Zambia's National HIV Database. This idea was based on

John R. Koethe
MD, MSCI

Fogarty Fellow
2008-2009

U.S. institution:
Vanderbilt University Medical Center

Foreign institution
Center for Infectious Diseases Research, Zambia

Research topic
The nutritional factors contributing to excess mortality among people with HIV during the early years of antiretroviral therapy scale-up in Zambia

Current affiliation
Professor, Division of Infectious Diseases, Vanderbilt University Medical Center, and Director, Tennessee Center for AIDS Research

what he'd seen: half of patients with a body mass index of less than 16 (reflecting severe malnutrition) either died or were lost to follow-up (presumably dead) at 12 weeks after they started treatment.

His analysis of nearly 28,000 adults beginning treatment found the greatest improvement among people with a BMI of less than 16. Within this same group, those who failed to gain weight six months post-ART showed a nearly 10 times increased risk of dying compared to those who'd gained 10 kilograms (22 pounds) or more. In all BMI categories, individuals with a weight gain of at least 5 kilograms (11 pounds) after six months of treatment had better outcomes than those who didn't gain weight.

Fellowship benefits

Koethe's Fogarty project resulted in the publication of a number of peer-reviewed papers and provided him with "tremendous mentors," who helped him crystallize his area of interest. Arguably, the most important outcome of his project was that it evolved into a 1,800-participant clinical trial in Zambia ("NUSTART") funded by the European Union.

Returning home, Koethe "became interested in the obesity epidemic among individuals with HIV in the United States." Initially, he looked at large databases—building on analytical skills he developed during his Fogarty year—to understand the predictors of ART-related weight gain. He found that individuals starting integrase inhibitor-based ART gained more weight than individuals taking the older classes of HIV drugs. "We were one of the first teams to show this," he says. Similar reports from

Lusaka street corner, circa 2008.

different research groups "got the field interested in obesity and HIV and weight gain" while also opening a discussion on the real problem of weight gain during treatment: "It's where that weight is deposited that matters."

When an individual acquires HIV, there's a period of muscle loss and perturbations in the balance between lean muscle and adipose tissue (fat), says Koethe. This happens whether that person exhibits clinical signs of wasting (or is visibly malnourished) or not and "begins at the moment of HIV acquisition and may take different courses resulting in different phenotypes." Some people begin ART and "go back to exactly the body composition they started with—they're rare." By contrast other people's bodies collect fat or lipids around the heart, the liver, the muscles, and the viscera. "After a short period, they may develop signs of cardiovascular disease, diabetes, or other complications."

Koethe theorizes that "there's a very short window" where a modulation in diet, activity level, and rate of weight gain might help a person avoid an adverse phenotype after beginning ART.

A goal in sight

Koethe believes that "overseas work is critical to improving the health of Americans—and not just Americans with HIV." A lot of the lessons learned are valuable to the general population, particularly the aging population with high rates of overweight, obesity, and frailty. Working abroad in different contexts sheds more light on a research topic, says Koethe. In Zambia, for example, diets and activity levels are different than in the United States; people also encounter dissimilar environmental pollutants. Studying the same topic in two or three different countries helps researchers understand whether outcomes are due to a disease process and its direct effects on physiology and biology… or due to health habits or the environment. "If it's an environmental or dietary problem, then you modify that. But if it's a physiologic process, common to everyone across different countries, that requires deeper investigation to really understand the biological pathways."

Currently, the National Institute of Allergy and Infectious Diseases is supporting Koethe's work across a range of HIV topic areas through the Tennessee Center for AIDS Research (CFAR), a program that goes back almost four decades. Koethe says, "HIV was the great global pandemic of the late 20th century, and it's going to remain one of the great pandemics of the 21st century. We've had tremendous success over the last 40 years, but this requires continued investment, continued commitment, and continued attention."

Koethe served during the rapid scale-up of antiretroviral therapy in Zambia.

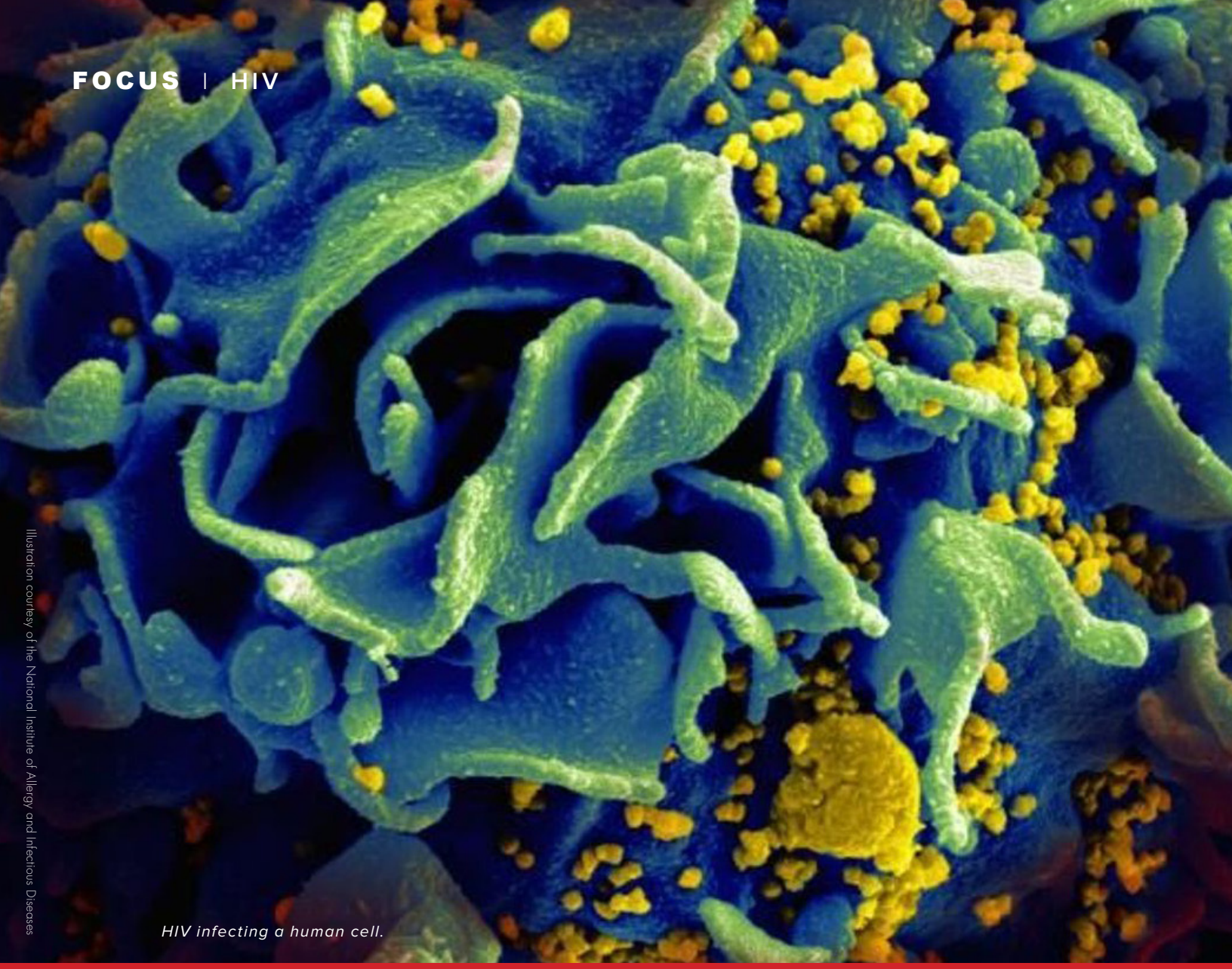


Illustration courtesy of the National Institute of Allergy and Infectious Diseases

HIV infecting a human cell.

An estimated **40.9 million** people globally are living with human immunodeficiency virus (HIV). HIV, first identified in the early 1980s, damages immune cells and harms the body's ability to clear infections and diseases. Early treatments were for the infections acquired by people living with HIV and these medications helped to prolong their lives in the advanced stage of HIV (acquired immunodeficiency syndrome or AIDS).

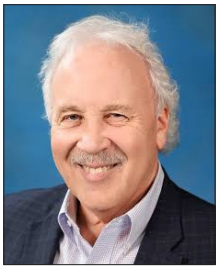
Remarkable scientific progress over four decades has led to the development of effective antiretroviral therapy (ART). ART has transformed HIV, once considered a death sentence, into a manageable chronic condition. When taken as prescribed, ART prevents people living with HIV from passing their infection onto others and allows people, if diagnosed and treated early, to live a normal lifespan. It's important to note that taking the medication reliably is critical.

A recent addition to the ART arsenal is lenacapavir, developed by Gilead Sciences, Inc. over nearly two decades based on early-stage science conducted by academic investigators funded by NIH. It is approved by regulatory authorities in the United States and other countries for the treatment of HIV (combined with other drugs) and for the prevention of HIV (pre-exposure prophylaxis or PrEP). As PrEP, lenacapavir is delivered as a twice yearly shot.

Many believe lenacapavir is a true "game changer," says Jared Baeten, MD, PhD, Gilead Sciences. "A twice-yearly option has the potential to change how people experience HIV prevention." What feels "paradigm-shifting" to Baeten, though, is not the "unprecedented science" but "the opportunity to expand choice and rethink how prevention can be delivered for people and communities that have not always been well served by existing options."

BEYOND ART ITSELF

"We've achieved remarkable success with HIV screening, getting people on ART, and monitoring them," says Fogarty Grantee Donna Shelley, MD, MPH, New York University. "People with HIV are living longer and developing noncommunicable diseases, which are becoming a primary cause of morbidity and mortality in this population. Now the focus is on longevity and a lifespan approach to HIV care," she says.



In response to effective treatments and strategies, health care systems have begun to change, says Fogarty Grantee Gene Morse, PharmD, FCCP, BCPS, University of Buffalo. He says, "What we're seeing now is the end of the specialized HIV care centers (everywhere, really), and the movement is toward primary care and mid-level practitioners." In short, people living with HIV, once considered "too complex" for primary care, are returning to that setting.

Fogarty Grantee Humberto Lopez Castillo, MD, PhD, University of Central Florida, says he hopes to see a cure for HIV in his lifetime. He adds that he "firmly believes the interventions we have can curb incidence rates at a faster pace than we're already seeing now ... both global and local research will get us there." Meanwhile, "the curve is flattening little by little," he says.

Gilead's Baeten, a former Fogarty trainee, says, "We have tools that previous generations of HIV researchers and advocates could only imagine. Now we have to do the harder work of making sure those tools reach people.

ADVANCING PHARMACOLOGY IN ZIMBABWE (& the United States)

The HIV Clinical Pharmacology & Therapeutics Research Training (HIVRT) program is "a personal story," built on the unique circumstances and long-standing friendship that created it, says Chiedza Maponga, PharmD, University of Zimbabwe (UZ) Faculty of Medicine and Health Sciences.

After Zimbabwe won its independence in 1980, Maponga studied clinical pharmacology at University of Buffalo (UB). He says, "The U.S. was helping Zimbabwe get on its feet and I was selected as one of the young people to get further education in the United States with the hopes that I would come back to Zimbabwe and become faculty." Gene Morse, PharmD, FCCP, BCPS, then

Chiedza Maponga

an associate professor and now the director of UB's Center for Integrated Global Biomedical Sciences, became his mentor. Following UB, Maponga returned to his country, where he became a trusted national leader in the HIV epidemic.

Despite the workload, he maintained ties with his mentor. Frequently, they discussed the evolving HIV pandemic. "When triple-drug therapy came along, there was need for pharmacologists to intervene because the medications were complex and patients found it difficult to take. It was like a call to action for us," says Maponga. Antiretroviral therapy (ART), the major advance in HIV treatment that began in 1996, typically combined three drugs, a protease inhibitor drug with two nucleoside reverse transcriptase inhibitor drugs; the different classes of antiretrovirals target different stages of the HIV lifecycle, so, when combined, they can suppress viral replication to undetectable levels. "We started collaborating and one thing led to another and eventually we applied for a Fogarty grant," says Maponga.

Partners in innovation The earliest version of what would become the HIVRT program was funded by Fogarty in 2007 as a supplement to an AIDS International Training and Research Program (AITRP) grant at the University of California, Berkeley. The supplement supported the team's first two trainees and paved the way for Maponga and Morse to submit a joint grant proposal from UB and UZ. They received their own Fogarty funding in 2008 and eventually renamed the program.

Though they originally trained only master's students, their subsequent proposals also included PhD and postdoctoral trainees. With each successive iteration of the HIVRT program, Morse and Maponga conducted a needs assessment to align their aims with Zimbabwe's evolving needs. Initially, for example, they developed clinical pharmacologists capable of conducting research, building a laboratory to provide drug assays, and contributing to both research and education projects in HIV drug development and clinical pharmacology.

"As HIV has evolved, the 'critical mass' began to include people who knew about immunology, virology, biostatistics, cancer, the microbiome, and noncommunicable diseases," explains Morse. Over time, then, the HIVRT program has built multidisciplinary teams, where the pharmacologists may be the central focus, yet collaborators are equally important, says Morse. In this way, they've laid a foundation for research within the Faculty of Medicine and Health Sciences at UZ, which in turn raises the competitive game of each individual scientist working there.

In addition to providing training, the HIVRT program aims to foster "academic-public-private partnerships" to address UZ's research goals. Partners include Waters Inc. (Milford, MA), Well Cell Global (Houston), and MTE Group (Atlanta). These biotechnology companies have agreed to contribute to planning and developing Health Galaxy Park, a health care innovation and biomedical research center located in Harare, capital of Zimbabwe.

This visionary project, based on infrastructure constructed by the

"I CAN TRACE SOME OF THE MOST DEFINING MOMENTS OF MY CAREER THROUGH THE NIH FOGARTY RESEARCH & TRAINING PROGRAMS. PERHAPS THE ACHIEVEMENT I AM MOST PROUD OF HAS BEEN HELPING TO ESTABLISH A CLINICAL PHARMACOLOGY LABORATORY FROM THE GROUND UP IN ZIMBABWE. MY INVOLVEMENT IN IT HAS BEEN INCREDIBLY REWARDING. FOGARTY PROGRAMS HAVE SHAPED ME AS A SCIENTIST AND A LEADER, WHO IS COMMITTED TO STRENGTHENING RESEARCH CAPACITY, MENTORING FUTURE INVESTIGATORS, AND ENSURING THAT RIGOROUS CLINICAL PHARMACOLOGY RESEARCH TRANSLATES INTO BETTER HEALTH OUTCOMES FOR COMMUNITIES THAT NEED IT MOST."

Testimonial from Takudzwa J. Mtisi, PhD, MS-CTT, MBA

Learning the ropes at UB

HIVRT program, has become a national initiative, says Maponga. "We were given 50 hectares of land in an area where the capital city is planning a business district." Morse adds, "There are 22 universities in Zimbabwe that can be linked to the network." He believes future collaborations will not be limited to HIV research, but will address pandemic preparedness, leverage digital platforms for telehealth, and develop research ethics applicable to data handling and cybersecurity.

Two-way street The HIVRT program undoubtedly benefits Zimbabwe, yet the United States reaps rewards as well, says Morse. For instance, it was in Zimbabwe that the team first embedded HIV researchers into organized support groups as a way to engage community members; later they translated this successful strategy to projects in the United States. The team working at UB also followed Zimbabwe's lead in sharing and coordinating limited resources, including instrumentation and data.

Importantly, practices established in Zimbabwe to accommodate the everyday use of traditional medicines paved the way for important new protocols in the United States. Maponga, chairman of the Natural Therapists Council of Zimbabwe, estimates that between 70-80% of Zimbabwe patients report using traditional medicines (often before trying 'western medicines'). It was natural, then, for the Zimbabwe trainees working in America to write up a complete history of all the non-prescription medications patients were taking, including over-the-counter medicines, vitamins, and supplements.

"What was going on in Africa was influencing the way we asked questions here," says Morse. "All of a sudden, if you enrolled in a protocol sponsored by the NIH, there was a questionnaire about what non-prescription medications you take." Soon, a database was built, which led to research projects examining how traditional or OTC medicines interacted with the antiretrovirals prescribed for people living with HIV. In addition, a whole new field evolved in the United States and Europe, where more sophisticated technology allowed for genomic sequencing and greater in-depth analysis of the mechanisms underlying drug interactions. "That led to knowledge of how grapefruit, for example, can interfere with statin metabolism, and prompted additional considerations for ART," says Morse.

The use of antiretrovirals in Zimbabwe also revealed unexpected differences in absorption rates, metabolism, susceptibility to toxicities, and penetration into the brain. This also contributed to American scientific knowledge, says Morse. "In the 1990s and early 2000s, a lot of the rapid drug development through pharma was occurring in the United States and Europe," so many of the new medicines were tested mostly in whites. Later, when the drugs became available in Africa, Southeast Asia, South America, people with different genetic makeups were evaluated to see if they reacted differently. Researchers identified differences in drug toleration related to genetics, nutrition (or malnutrition), lifestyle or environmental issues, and comorbidities, which led to better formulations and dosing protocols.

Looking to the future, Morse and Maponga believe Zimbabwe needs to develop leapfrogging strategies—bypassing the old in favor of the new—to get ahead. An example of leapfrogging would be the work of Admire Dube, an HIVRT postdoctoral fellow, who used nanotechnology to develop potent drugs, says Maponga. Dube's trainee research proved that Zimbabwe, though it lacked a history of drug research and development, could enter a new arena within that field and, with the help of technology transfer, gain ground swiftly.

A leapfrogging approach, where the latest HIV drugs are used instead of old drugs, might also increase Zimbabwe's ability to prevent HIV transmission and optimize patient outcomes, says Morse. The same strategy would be useful for complex diseases, such as tuberculosis, and chronic diseases, such as hypertension and diabetes. "A little bit of priority shifting is what needs to be done, and the application of resources needs to be considered to make leapfrogging happen," says Morse.

Photos courtesy of Chiedza Maponga

IMPLEMENTATION SCIENCE HELPS VIETNAM MERGE HIV AND NCD CARE

Donna Shelley, MD, Professor of Public Health Policy and Management at New York University, began her career as a health services researcher. When reading implementation science literature for the first time, she "was immediately drawn to the focus on context—the factors that facilitate or impede implementation. This was largely ignored at the time, despite being core to effectively translating research into practice," says Shelley, who co-directs NYU's Global Center for Implementation Science.

Other aspects of the discipline also attracted her. She appreciated the pragmatism of this science, which provides a set of rigorous interdisciplinary methods to close the evidence-to-research gap within a specific milieu. She also liked how it builds evidence around stakeholder engagement and has developed tools to measure the effectiveness of that engagement. Shelley says, "Early on, I'd centered stakeholder engagement in my research because I didn't know how not to—how do you go into someone else's house and start rearranging the furniture without asking their opinion?"

Yet what "really excited" Shelley is that implementation science acknowledges that health care improvement is a dynamic process. "Science isn't static, technology isn't static. Healthcare workers need the tools to become experts in continuous integration of new evidence, such as when a new clinical guideline replaces an old one." In this way, implementation science aligns with the emerging discipline of quality improvement science.

For all these reasons, Shelley finds implementation science particularly relevant when integrating HIV and noncommunicable disease (NCD) care, the focus of her current Fogarty project in Vietnam.

Early Research Shelley's initial implementation science projects focused on smoking cessation in the United States. In 2020, she received a five-year National Cancer Institute (NCI) grant for implementing tobacco use treatment guidelines in HIV clinics in Vietnam. The rising burden of NCDs among people living with HIV (PLWH) was becoming a priority in Vietnam. To address this growing epidemic, the U.S. Centers for Disease Control provided funding for the country to integrate screening for high cholesterol, diabetes, and high blood pressure in HIV outpatient clinics, says Shelley. Working with the national HIV program, her team launched the NCI trial which compared the effectiveness of three tobacco cessation interventions among PLWH. The outcomes of that study suggested national Quitlines, which are "available in 42 low-income and middle-income countries," could serve as a resource for integrating tobacco treatment into HIV care systems.

Over time, Shelley's research expanded beyond testing strategies for implementing smoking cessation to launching a Fogarty-funded program that trains researchers and health system leaders in Vietnam and Laos to use implementation science methods to integrate evidence-based NCD prevention and treatment interventions in HIV care settings. This five-year project, "Advancing Implementation Research Capacity in Vietnam," leverages Vietnam's investment in health system redesign to study models of care for PLWH. The country used to have a three-tier healthcare delivery model which included province, district and commune levels. As of 2025, the country eliminated the district level. Shelley

explains, “There were outpatient HIV clinics at that level, so now the goal is to implement a care model that integrates HIV screening and treatment along with strengthened NCD care within the commune-level primary care clinics.”

Shelley says, “Vietnam has a new vision for caring for HIV patients that is more integrated and centered in primary care, while improving convenience and continuity of care.”

Trainee influence Her colleagues at the Hanoi University of Public Health (HUPH) welcomed the opportunity to work together on the Fogarty funded project. Shelley says that with multiple P.I.s—two from HUPH and two from NYU—stakeholder engagement happens from the start of grant development. “As national leaders in implementation science our Vietnamese colleagues know what type of training matters most to their health care system leaders. We collaborate closely to adapt the curriculum to their needs, and that’s why it works so well.”

Surprisingly, the applicants for her Fogarty project were all high-level administrators with PhDs, even directors within the healthcare system. Her team is training “implementers to do implementation science…what could be more sustainable than that?” Based on these candidate profiles, a new model of her training program emerged, still it remains grounded in lessons learned from past projects in-country. Shelley says, “We often start our implementation science training at the healthcare system level, yet we always emphasize the importance of engaging the Ministry of Health to ensure alignment with national priorities and to share program components and results that can inform future training and resource allocation.”

“AS NATIONAL LEADERS IN IMPLEMENTATION SCIENCE OUR VIETNAMESE COLLEAGUES KNOW WHAT TYPE OF TRAINING MATTERS MOST TO THEIR HEALTH CARE SYSTEM LEADERS.”

The trainee projects adapt evidence-based programs to the Vietnam context and then test implementation strategies. “The trainees are working on a range of topics including hypertension management programs, mental health care, nutrition programs, and tobacco cessation interventions.” Based on interviews conducted by her team, the new plan to integrate HIV care within the mainstream primary care system will require training to make sure PLWH receive consistent, evidence-based care, says Shelley.

The first cohort of trainees are now submitting articles for publication while the team conducts an evaluation. “We plan to document changes in knowledge and skills to understand how this is affecting trainees’ trajectories as working professionals in the health system.” The fact that none of them are strangers to the real-world system doesn’t hurt. “Our first cohort actively engaged in this transformation of the Vietnamese healthcare system and now they’re trained as implementation scientists, so they’re well-prepared to make a real impact.”

Photos courtesy of Donna Shelley

Photos courtesy of Humberto Lopez Castillo

A FOGARTY PROJECT IN PANAMA AIMS TO THWART CARDIOMETABOLIC DISEASE AMONG ADULTS WITH HIV

Speaking other people's languages is central to Humberto Lopez Castillo's work as a researcher.

Scientists require data from different sources to conduct studies, so they "need to speak every language," says Lopez Castillo, MD, PhD. "I need to convince the clinician, so I need to speak their language. I also need to convince participants, so I need to speak their languages as well." Institutional review boards have their unique perspective... same for research assistants. "We also need to understand what's the point of view of administrators in the process of implementing a grant," says the associate professor at University of Central Florida who's also a certified Spanish English Medical Interpreter.

An expert communicator, Lopez Castillo put his skills to good use on a recent Fogarty project, *Cardiometabolic Status of Adults Living with HIV in Colon, Panama.*

Metabolic syndrome Adults living with HIV (ALWH) now enjoy longer, healthier lives, thanks to antiretroviral therapy (ART) and other public health interventions. Yet, recent studies of ALWH suggest that levels of metabolic syndrome and cardiometabolic disease are "through the roof," says Lopez Castillo. (Metabolic syndrome is a set of five conditions—high blood pressure, high blood sugar, abdominal obesity, high triglycerides levels and low 'good' cholesterol levels—that increase the risk of cardiometabolic disease, which includes heart attack, stroke, diabetes, and kidney disease.)

Unfortunately Panama, the country with the highest rate of HIV in Central America, does not routinely monitor cardiometabolic or other noncommunicable diseases among ALWH. So Lopez Castillo's Fogarty project addressed this scarcity of clinical, laboratory, and epidemiologic data on metabolic syndrome among ALWH in Colon, Panama. The study first aimed to quantify the rate of cardiometabolic disease among ALWH and track its "natural evolution, without an intervention, over the course of a year," explains Lopez Castillo. His team also hoped to describe and estimate the effect of different variables, including treatment, on the prevalence and course of cardiometabolic disease. Finally, they conducted two focus groups to gauge health care providers' and patients' responses to a metabolic syndrome intervention designed for ALWH yet integrated into the primary care system.

Findings Lopez Castillo and his team concluded the project last year. Of 659 total recruited participants, 495, "a solid longitudinal cohort," completed the entire study. The team estimated a 38.6% overall prevalence of metabolic syndrome among ALWH in Panama; 21.2% met three of the five diagnostic

Left: Workshopping ideas in Colon. Right: Humberto Lopez Castillo presents his work in a Colon clinic.

Photos courtesy of Humberto Lopez Castillo'

criteria, while nearly a fifth met four or all five criteria, signifying a pronounced risk of cardiometabolic disease.

"We also measured inflammation [a natural part of the body's immune response], so now inflammation is part of the story we're trying to tell," says Lopez Castillo. Specifically, his team looked at sensitivity to C-reactive protein, a standard measure of inflammation. His team found high sensitivity levels, which suggests chronic inflammation, despite many participants (80%) having undetectable HIV viral loads. ART itself, diet, stigma, chronic stress, and social determinants of health may all contribute to inflammation, explains Lopez Castillo.

Since the study's completion, the team has published a paper and presented their results at conferences in the United States and in Panama, including at the Colon clinic/project site. Meanwhile, his team continues to work on a sophisticated analysis of the data in the hopes of harvesting more precise insights. Lopez Castillo says this is important because more than half of the participants were Afro-Caribbean, an understudied group.

Unsurprisingly, the non-numerical project data made its own lasting impression on the researchers. Lopez Castillo learned from providers in the focus group that they'd like to provide ancillary services for ALWH, such as nutrition counseling, but they feel stretched to the limit. "They have one infectious disease specialist and four general practitioners who've had in-house training in HIV (but they're not certified specialists). One psychiatrist comes once a month for one day." By contrast, focus group patients told "a story of stigma," in which they're "singled out and taken last" in OBGYN offices, emergency rooms, and at the dentist. Lopez Castillo says, "The clinic is their safe space, a stigma-free environment."

Translating across cultures Today Lopez Castillo is crafting two new proposals for further research in Panama. "One is for the integration of cardiometabolic health care into HIV primary care at four sites." The second concerns the blood supply, which needs "a little bit of oversight and support." His team has already strengthened a local Colon lab with resources from his Fogarty grant and "now we want to build a database of metabolic markers…it's an opportunity to leverage the capacity that we've built." His team also is exploring the interaction of PrEP drugs (pre-exposure prophylactics that prevent HIV, a type of ART) with GLP-1 drugs (glucagon-like peptide-1 receptor agonists that treat type 2 diabetes and help with weight loss). "We're analyzing existing pharma datasets to understand the overall effect when you combine them…to see if it can flatten the curve of cardiometabolic disease that comes with HIV."

Additionally Lopez Castillo strives to transfer insights from his study in Panama to Florida. "For our project,

> **"THE TEAM ESTIMATED A 38.6% OVERALL PREVALENCE OF METABOLIC SYNDROME AMONG ADULTS LIVING WITH HIV IN PANAMA."**

One Heartbeat at a Time, we go to laundromats to meet people. They're a captive audience! Their clothes are in the washer or the dryer, so, if they want, they can listen to our spiel and get on-site testing for blood glucose, lipids, and inflammation." To accomplish this work, he's partnered with grassroots organizations in Florida.

Even the best communicators need partners, explains Lopez Castillo. This is another lesson learned in global settings that he applies here at home. "Sometimes researchers cannot be trusted right away, so having a community person say, 'Hey, these people are trustworthy, come join us' is what's needed."

Castillo serves as Associate Professor, Department of Health Sciences, at University of Central Florida.

Benjamin Chi, MD, MSc

Q&A

Why being in-country matters

Dr. Benjamin Chi holds appointments in the Department of Obstetrics and Gynecology and Department of Epidemiology at the University of North Carolina (UNC) at Chapel Hill. Between 2003 and 2015, he lived in Lusaka, Zambia, where he led a research portfolio focused on the prevention of mother-to-child HIV transmission, HIV care and treatment, and maternal and child health. Since returning to the U.S., he has expanded these activities to some of Zambia's neighboring countries. Dr. Chi leads multiple global health research training initiatives, including the UNC Global Women's Health Fellowship and Fogarty's UJMT Launching Future Leaders in Global Health Research Training Program (LAUNCH). Currently, he serves on Fogarty's advisory board.

Tell us about your 12 years in Lusaka, Zambia.

After I finished my OBGYN residency in 2003, I had a real interest in research and wanted to develop these skills overseas. I was connected to a program in Zambia and introduced to several faculty who would become life-long mentors. From the U.S., this included Drs. Sten Vermund, Robert Goldenberg, and Jeff Stringer, who remains a mentor and collaborator more than 25 years later. In Zambia, I was privileged to work with the late Dr. Moses Sinkala, who was the district director of health in Lusaka and a graduate of the Fogarty AITRP program. I joined the University of Alabama at Birmingham as a research fellow, with the idea that I might go to Zambia for two—maybe three—years for training.

That decision proved to be life-changing. Soon after our arrival, our group got its first award from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), which rapidly scaled up HIV care and treatment services nationwide. I had the opportunity to be part of this highly successful initiative, first in the capital city of Lusaka and soon after across four provinces across the country. I began to think about research more broadly, asking questions about how best to implement and optimize services and how to measure their impact at a population level.

The Fogarty International Center played an important role in my career development during this time. I applied for—and was successfully awarded—the K01 International Research Scientist Development award my first year in Lusaka. I designed and implemented a randomized controlled trial of adjunct single-dose emtricitabine/tenofovir disoproxil fumarate to reduce drug resistance associated with single-dose nevirapine use to reduce vertical HIV transmission. Eventually, this was published in The Lancet. The Fogarty K01 award allowed me to extend my time in Zambia and fostered my academic growth at a critical career juncture.

I consider myself very lucky to be in Zambia at that time. Seeing the direct benefit of our work was incredibly gratifying. Since moving back to the U.S. in 2015, I remain connected to UNC's ongoing work in Zambia. At the same time, I have expanded my research to other places in the region, including Malawi and Zimbabwe.

What was challenging during this time?

A period of such intense activity takes a lot of effort. There was real pressure to roll out services and get things done. It was a period where 'all hands were on deck,' with a lot of sleepless nights figuring out how to safely get the first thousand people on antiretroviral therapy (ART) in the first three months of the program. We were all anxious when the first government clinic started to provide HIV treatment, hoping that people would come and that all of aspects of care—from clinical exams to laboratory testing to chart documentation—would work as planned.

"I BEGAN TO THINK ABOUT RESEARCH MORE BROADLY, ASKING QUESTIONS ABOUT HOW BEST TO IMPLEMENT AND OPTIMIZE SERVICES AND HOW TO MEASURE THEIR IMPACT AT A POPULATION LEVEL."

We encountered our fair share of bumps along the way, but we learned from our experiences and successfully rolled out services in places that had never seen ART before. It was a real team effort, with lots of dedicated people making a difference.

What's your most significant lesson learned?

Being in Zambia full-time, I was able to forge relationships, many that I have to this day. Partnerships are stronger when people know that they can count on you—that you're willing to spend time in the field and make sure that the work gets done. Thankfully, this approach to global health is much more common now. However, when I first arrived in Zambia, you did not see it as much. More often, people travelled back and forth from the U.S., which can be slow, inefficient, and time-consuming. Opportunities come from being there.

What spurs your interest in implementation science?

For much of my academic career, I have studied aspects of program implementation, evaluating new services and measuring their impact at a community level. The formal discipline of implementation science is more focused, with frameworks and tools to foster more effective and efficient implementation across different settings. Unfortunately, getting an evidence-based intervention to routine practice is typically slow, often taking years or even decades. How do you shorten that time gap, so that you really deliver on these investments in science? Such implementation science work is exciting and really addresses a need—whether we're in Zambia or rural North Carolina.

Dr. Benjamin Chi and Dr. Margaret Kasaro, the current country director for UNC Global Projects Zambia and former Fogarty AITRP trainee.

Photos courtesy of Benjamin Chi.

Dr. Benjamin Chi with Dr. Lameck Chinula and Dr. Friday Saidi, alumni of the UJMT LAUNCH Program and NIH-funded, UNC Ob-Gyn faculty based in Malawi.

Do you see any new trends in global health research?

Significant changes in global health research are taking place. While immense and immeasurable good has come from US investments abroad, there is a renewed focus on how this work also benefits those in the U.S. This is especially true for rural and remote parts of the country, where people may have limited access to health services.

There is value in fostering connectivity between our work abroad and our work domestically, embracing the idea of what global truly means. We have been building upon the idea of "reciprocal innovation" and incorporating it into our research. We are more deliberate about how we think about shared needs and gaps in healthcare delivery. Importantly, we should consider how lessons learned abroad can improve health locally.

As part of the UJMT LAUNCH Program, we are working with others in this space to highlight how reciprocal innovation is already taking place. We will convene a panel at the annual meeting of the Consortium of Universities for Global Health (April 2026) to show how this has been done successfully across the country and across disciplines. We are also hosting a workshop for LAUNCH alumni—across all seven sister programs—to help these individuals thoughtfully adapt and implement evidence-based interventions from international settings to those in the U.S. Reframing global health in new ways is important and could enhance the impact of such work in the years to come.

To reach its full potential, lenacapavir requires additional global health research

HIV IS ONE OF THE WORLD'S MOST SERIOUS HEALTH CHALLENGES and scientists have worked unstintingly to treat, prevent and cure it since the early 1980s. "The field has moved from crisis response to effective treatment, to treatment as prevention, to oral PrEP (pre-exposure prophylaxis), and now to long-acting prevention options. Each step has expanded what we believed was possible," says Jared Baeten, MD, PhD, Senior Vice President, Clinical Development, Virology Therapeutic Area Head, Gilead Sciences.

Long-acting PrEP options now include lenacapavir, widely considered an exceptional drug. Lenacapavir was developed by Gilead Sciences, Inc. based on early-stage science conducted by academic investigators and research networks funded by NIH. It is an antiretroviral delivered as a shot just twice-a-year.

One of the researchers that led the clinical trials for the evaluation of lenacapavir as PrEP is Linda-Gail Bekker, MBChB, PhD, director of the Desmond Tutu HIV Center at South Africa's University of Cape Town; her early training was supported by Fogarty while her current research projects are backed by Fogarty, the National Institute of Allergy and Infectious Diseases, and other organizations. Bekker led the PURPOSE 1 trial that evaluated the safety and efficacy of lenacapavir as PrEP in young women in Uganda and the Republic of South Africa. The PURPOSE program, funded by Gilead, included a PURPOSE 2 trial that enrolled geographically diverse populations of men across multiple countries. The combined enrollment was nearly 10,000 people on five continents.

Bekker's PURPOSE trial results exceeded expectations. "No adolescent girls or young women receiving twice-yearly lenacapavir acquired HIV infection," she and her co-authors noted in a 2024 paper published in *The New England Journal of Medicine*. A companion piece, also authored by Bekker's team and published in *Science*, reported "zero HIV infections" among participants who received the drug during pregnancy. When she presented these results at the 2024 International AIDS Conference, Bekker brought the audience to its feet. Diana Finzi, PhD, Acting Director of NIH's Office of AIDS Research (OAR) at that time, said that lenacapavir is a "remarkable achievement" and "a testament to the value of NIH-supported basic science."

Research & development

"Scientifically, lenacapavir is a first-in-class HIV capsid inhibitor with a mechanism that is distinct from other approved HIV medicines," says Baeten, a former Fogarty fellow.

Finzi explains that early HIV science, funded by NIH, aimed to understand

Gilead researchers at work

Courtesy of Gilead Sciences, Inc.

"the 3D structure of viral proteins and their interactions within infected cells." Inside the structure of human immunodeficiency viruses is a capsid core, a cone-shaped container that is composed of individual capsid (CA) proteins. The capsid core transports the virus' genetic information across the host (patient's) cell and into the nucleus. During this process, the core protects the virus from any defense mechanisms mustered by the cell. In this way, the capsid core enables HIV to replicate, proliferate, and ultimately cause disease.

Once these processes and interactions were understood, scientists began developing approaches to disrupt them, explains Finzi. "Lenacapavir binds two neighboring CA proteins and creates improperly shaped core structures that are unable to enter the nucleus [of a cell] or produce new virus particles." In short, the drug works because "it interferes with multiple steps in the HIV life cycle." It's important to note that Gilead developed and screened more than 4,000 molecules, starting

Gilead researcher at work.

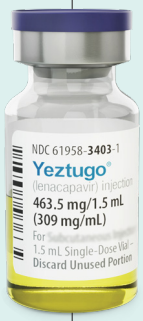
in 2006, before identifying the final molecule that would become known as lenacapavir. Then it went into trials, which took more than five years, to prove efficacy and safety for both treatment and prevention.

While teams of scientists rightfully take credit for lenacapavir, Baeten notes that HIV drug development progress has always been driven by partnerships that extend far beyond the lab. "The advances we are seeing today are the result of decades of work by communities, advocates, clinicians, researchers, public health leaders, governments, and industry." Similarly, extensive engagement with communities helped shape Gilead's PURPOSE program.

Inclusion and access

Gilead wanted countries and communities most affected by HIV—many that have "historically been underrepresented in clinical research"—to participate in its clinical trials to test the drug, Baeten explains. The earliest trials, then, were conducted in South Africa, Uganda, Argentina, Brazil, Mexico, Peru, Thailand, and the United States. Within a year after the announcement of the earliest results, the U.S. Food and Drug Administration, the European Medicines Agency, and the South African Health Products Regulatory Authority approved lenacapavir for PrEP. Drug regulatory agencies in Brazil and Australia soon followed.

While additional approvals are pending, it is now available in 10 countries in sub-Saharan Africa, which Baeten says represents the fastest access in the region for any HIV medication. The rollout is "just getting started," says Baeten. Gilead has "designed a broader global access strategy that includes voluntary licensing agreements and partnerships with organizations, including the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund." Through these agreements, Gilead aims to accelerate access to lenacapavir in "high-incidence, resource-limited countries," where local regulatory approvals and access pathways are in place.



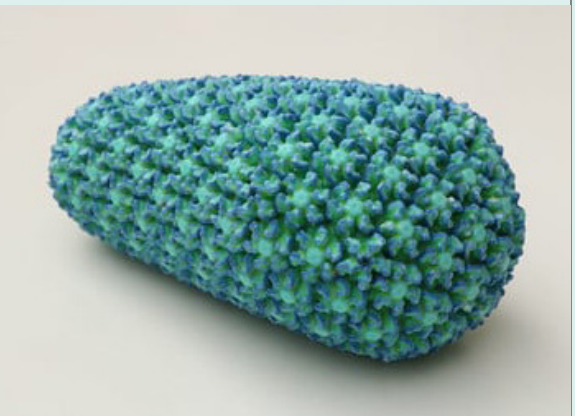
"Scientific breakthroughs only matter if they reach the people who need them," says Baeten. He notes that, despite the availability of highly effective prevention tools, new infections still occur. "People need prevention options that fit their lives, their circumstances and their preferences."

Preventing infections

Access to lenacapavir is undoubtedly significant when it comes to preventing new infections, yet another factor is equally essential: people using it. In most cases, studies that examine how people will use a new medical discovery are needed to achieve public health impact, writes Geri R. Donenberg, PhD, the current director of NIH's OAR, in a blog post. As a young scientist she decided to center her work around an emerging discipline: "implementation science—the study of methods to promote the adoption and integration of evidence-based interventions into real-world settings to impact public health."

Implementation science is emphasized within Fogarty's HIV programs in low- and middle- income countries. Fogarty-supported scientists seek to learn how long-acting prevention can be delivered in ways that are both practical and responsive to community needs. Unfortunately, uptake of daily PrEP pills has not been immediate or universal. As Bekker noted in her Science study, "PrEP use remains suboptimal among women, particularly in populations with disproportionate HIV incidence, including young women, women in Africa, women of color in the United States, and migrant women in multiple geographic areas." Bekker says, given that a twice-yearly shot of lenacapavir could be dispensed to women during routine (and private) OBGYN visits, lenacapavir represents "a highly efficacious and discreet choice to potentially improve PrEP use among women."

Meanwhile, researchers across the globe continue to investigate lenacapavir. Baeten says that ongoing PURPOSE trials seek to answer how lenacapavir can be implemented effectively in different healthcare settings.



Courtesy of NIAID

3D-printed model of the HIV capsid, the protein shell that encloses the virus' genetic material.

ILLICIT DRUGS ACROSS THE AMERICAS:
An era of synthetic drugs

Important global research is supported throughout the National Institutes of Health. In early June, the National Institute on Drug Abuse (NIDA) presented its 2026 International Forum. The scientific meeting highlighted the range and quality of substance use and addiction research that is conducted around the world with support from NIDA.

Of particular concern to Americans, one discussion examined The Rise of Drug Mixtures: From "New Substances" to "New Combinations." Chaired by Marya Hynes, MPH, Head of the Inter-American Observatory on Drugs (the research and analysis branch of the Inter-American Drug Abuse Control Commission), she presented an overview of emerging illicit drug trends in Latin America and the Caribbean, in particular the evolving challenge posed by synthetic drugs and new psychoactive substances. These substances, often called 'designer drugs,' 'herbal highs,' and even 'legal highs' by users, mimic the effects of both illicit and prescription drugs, including cannabis and opioids. Generally, synthetics introduce slight modifications to the chemical structure of controlled substances to circumvent drug laws, Hynes explained.

An important shift in the global illegal drug landscape is happening now, Hynes said. Mixtures, adulterants, and combinations of drugs are becoming increasingly accessible to users with implications for both public safety and public health. Given that synthetic drugs are not dependent on cultivation cycles, criminals can swiftly create new substances and adjust supply to changing demands as they expand across multiple markets. "Illicit drug markets are rapidly evolving and becoming more dynamic and difficult to predict," noted Hynes.

The challenge for governments, then, is not the danger caused by one or two individual substances, but an all-encompassing threat posed by this transformation in how drug markets operate.

Meth seized by U.S. Border Control

> **"THERE'S A PERCEPTION THAT THESE SYNTHETICS ARE LEGAL AND SAFE BECAUSE THEY CAN BE BOUGHT ONLINE OR BY CREDIT CARD."**

WHAT'S IN THIS PILL?

Based on data gathered from national systems, the Americas' early warning system (known as SATA) compiled its 'top 10' list of most reported substances for 2019-2026:

MDMA
(3,4-Methylenedioxymethamphetamine, known as 'ecstasy' or 'molly,' acts as a stimulant and hallucinogen)

2C-B
(4-Bromo-2,5-dimethoxy-phenethylamine, a psychedelic)

FENTANYL
(an opioid)

XYLAZINE
(a veterinary sedative sold to users as 'tranq')

KETAMINE
(a dissociative anesthetic)

METH
(methamphetamine, a type of stimulant)

THC
(tetrahydrocannabinol, the main compound in cannabis)

MDA
(3,4-Methylenedioxyamphetamine, acts as a stimulant and psychedelic)

251-NBOH
(a phenethylamine psychedelic and stimulant derived from 2C-B)

2C-E
(4-ethyl-2,5-dimethoxy-4-phenethylamine, an hallucinogenic)

Ecstasy seized by U.S. Border Control

Photos courtesy of U.S. Customs and Border Protection

UNKNOWN COMPOSITION MEANS UNKNOWN TOXICITY, WHICH RAISES THE RISK OF OVERDOSE AND INCREASES UNCERTAINTY ABOUT APPROPRIATE MEDICAL INTERVENTIONS.

Detection of different types and blends of substances has increased over the last several years, according to the SATA report. Unknown composition means unknown toxicity, which raises the risk of overdose and increases uncertainty about appropriate medical interventions. Greater unpredictability also complicates forensic identification.

K-HOLE COMPLICATIONS

Following Hynes' overview, Dr. Felipe Ferreira Vidaurre of the Public Health Institute of Chile discussed ketamine, which involves a complex chemical process that starts with cyclohexanone and was approved for use by the U.S. Food and Drug Administration in 1970. It possesses both analgesic and anesthetic properties and was used as a battlefield anesthetic in the Vietnam War. A 'K-hole' is the drug's signature experience—an hallucinogenic event that usually renders users completely immobile, though in some cases causes violent reactions.

From 2020 to 2024 the number of seized and analyzed samples increased six-fold in Chile. Recreational use of ketamine is now widespread with users risking long-term cognitive impairments, gastrointestinal effects, and cystitis (inflammation of the bladder), according to Ferreira Vidaurre. Recreational users (17 grams per week) will experience urinary effects within three to six months. Urinary toxicity is of particular importance, given that ketamine-associated cystitis is a chronic, progressive, and disabling condition.

Dr. Michelle Nasseir of the Trinidad and Tobago Forensic Science Centre said that her West Indies island nation classifies ketamine as a 'drug of most concern,' given its use in sexual assaults and human trafficking activity. Seizures of this drug have surged in recent years.

The drug landscape in Trinidad and Tobago generally consists of cannabinoids (cannabis plant, edibles, and powders); cocaine; MDMA/molly; ketamine; and meth. Prevalence of illicit drug use has escalated since 2018.

A report covering the years 2018 to 2025 found MDMA, sold as pills, powders, capsules, and rock-like substances, to be the most commonly seized drug in Trinidad and Tobago, noted Nasseir. "Now we are seeing MDMA combinations with pharmaceutical drugs... with some containing more than two."

Meanwhile, more than 9,000 meth pills have been seized to date, a rising trend that peaked in 2023 when a clandestine lab (capable of producing both pure crystals and pills) was discovered and dismantled. Disconcertingly to public health authorities, drug dealers began selling meth in the same pill-shape as ecstasy beginning around 2021.

Nasseir wants to increase awareness of synthetics, which have gained mainstream acceptance and popularity in Trinidad and Tobago, due in part to a recent hit song. Public health officials need to distribute photos of the pills, so parents and teachers recognize these drugs and understand when kids are using them, she said. "There's a perception that these synthetics are legal and safe because they can be bought online or by credit card. We've had to push awareness that these substances are toxic, harmful, and illegal," concluded Nasseir.

A LAUNCH Orientation 'chat' reveals another side of Fogarty's leader

Once again Fogarty's global health research trainees gathered for the annual LAUNCH orientation. The Launching Future Leaders in Global Health (LAUNCH) Research Training Program supports one-year mentored research training in global health at established biomedical and health research institutions and project sites in low- and middle- income countries. The 2026 orientation took place within a stone's throw of the NIH campus at the Bethesdan Hotel in July. Trainees attended workshops, presentations, lectures, and panel discussions featuring global health experts.

NIH Director Jay Bhattacharya, MD, PhD, kicked off his fireside chat with Fogarty's Director Steven Schiff, MD, PhD, by asking how Schiff came by his deep expertise in global health issues. "By accident," said Schiff with a smile. As a boy, he'd spent time in Africa with his family and thought then that he'd like to return someday and "do something useful." Years later, when heading a neural engineering center at Penn State University—"my life's dream" —he ran into an old friend, Benjamin Warf, MD, a Fogarty grantee who'd built a small neurosurgical hospital in eastern Uganda. "I was absolutely riveted by his description of what he was doing."

Schiff visited Warf's clinic in Uganda, where "every night, one or two babies were carried in." The infants shared a common history: Normal at birth, they became feverish with shaking and jerking of the limbs a couple weeks later. Many died, but those who lived often developed hydrocephalus, an abnormal buildup of cerebrospinal fluid within the brain enlarging the head. Warf, a pediatric neurosurgeon and professor of neurosurgery at Harvard Medical School, asked if Schiff wanted to help figure out what causes this.

Schiff says, "I thought, 'How hard can that be?' That started the next 20 years of my focus. And I just hurled myself into it, because this was a huge problem." Schiff estimates roughly thousands of cases a year in sub-Saharan Africa (and a much smaller number of cases now recognized in the United States). "The loss of life around the planet of newborn infants dying of preventable infections is massive and it takes place without any political voice, without recognition."

Next, the NIH Director asked why Schiff chose an interdisciplinary approach to his career. "If there's one thing I hope I can start to accomplish at NIH, it's to break down some of the disciplinary silos," said Schiff, who used the word 'anti-disciplinarity' when describing this aim. "The problems we face in global health and many other areas of medical science aren't restricted to any one domain. If they were, those problems would have likely been solved long ago."

LAUNCH 2026 attendees pose for the camera

FIC Director Dr. Steven Schiff (left) answers NIH Director Dr. Jay Bhattacharya's questions.

SCHIFF SAID, "LOOK AROUND FOR PROBLEMS WHICH NO ONE TOLD YOU EXISTED. THEY'RE OFTEN RIGHT IN FRONT OF YOU. LOOK FOR PROBLEMS REALLY WORTH YOUR TIME AND MANY OTHER PEOPLE'S TIME."

Bhattacharya asked, "What scientific areas excite you most?" Schiff responded: "If I pick one area that cuts across all of NIH, it would be the genome and how it relates to our biology and when our biology goes wrong." He added that scientists are becoming capable of applying this new knowledge of genetics and population differences to health and well-being. "After my lifetime, we'll be able to drive that knowledge down to the individual."

Schiff concluded with advice for trainees. "Find what fascinates you most... and don't let people talk you out of it. Also realize you're going to have to deal with a lot of failures." Resilience and relentlessness are required. "What taught me the most were my failures, whether as a surgeon or a scientist or how I related to other people."

Bhattacharya interjected, "I can wallpaper my office with all the rejection letters I have."

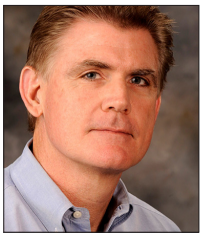
people

Roger Detels, a giant in the field of public health, passes

Roger Detels, MD, distinguished professor of epidemiology in the UCLA Fielding School of Public Health, passed away on July 25. Detels conducted research on air pollution, neurologic diseases, hypertension, and several infectious diseases, though he's best known for his research on HIV/AIDS. In 1981, he initiated a natural history study of AIDS in young homosexual men in Los Angeles and shortly after became the principal investigator of the Los Angeles Center for the Multicenter AIDS Cohort Study (MACS), which has followed 6,972 gay and bisexual men since its start, making it one of the largest natural history studies of HIV/AIDS in the world. His landmark study showed that some men were resistant to HIV infection. In 1988, Detels founded the UCLA/Fogarty AIDS International Training and Research Program.

Fogarty taps Greenwood for top grants management spot

Lennin Greenwood, MBA, joined Fogarty in late June as Chief Grants Management Officer (CGMO). In this role, she will provide leadership and oversight for grants management activities, supporting Fogarty's global health research portfolio and ensuring effective stewardship of federal funds and compliance with all relevant policies and regulations. Greenwood brings more than 18 years of federal grants management experience and supervisory leadership within NIH.



NIH selects Casey to lead new office

Warren Casey, PhD, is the inaugural Director of the new Office of Research Innovation, Validation, and Application (ORIVA) in the NIH Office of the Director. ORIVA will coordinate NIH-wide efforts to develop, validate, and scale human-based science and technology, including 3D human tissue models, computational tools, and other animal-free methods that can better reflect human biology. He will also oversee ORIVA's work as a hub for interagency coordination and regulatory translation. Prior to this appointment, Casey served as acting Chief of the Biomolecular Screening and Predictive Toxicology Branches at the National Institute of Environmental Health Sciences.

European partnership highlights Fogarty Grantees Mmbaga, Nachega

Ten researchers supported by the European & Developing Countries Clinical Trials Partnership (EDCTP) are highlighted in a recent article for their work in sub-Saharan Africa. Two are long-time Fogarty grantees. **Blandina Mmbaga, MD, PhD,** is Director of the Kilimanjaro Clinical Research Institute (KCRI) in Tanzania; under her leadership, KCRI has become an important hub for research on tuberculosis, HIV, malaria and other infectious diseases. She also serves as Deputy Coordinator of the Eastern Africa Consortium for Clinical Research (EACCR) Network of Excellence and has overseen clinical study sites and mentored Master's and PhD students across East Africa. Mmbaga serves as an Adjunct Associate Professor of Global Health at Duke University.

Jean B. Nachega, MD, PhD, is a leading researcher in HIV/AIDS and tuberculosis and has played a key role in strengthening research capacity across Africa. During the COVID-19 pandemic, he contributed to multi-country analyses of the pandemic virus and its interaction with other endemic infections. Nachega is currently focusing on mpox research, continuing his commitment to addressing emerging and re-emerging infectious diseases. He serves as Associate Professor of Epidemiology at the University of Pittsburgh; Associate Professor at Johns Hopkins Bloomberg School of Public Health; and Professor Extraordinary of Medicine at Stellenbosch University, South Africa.

Fogarty Awardee Kiyonga becomes Uganda's Second Deputy Prime Minister

Uganda President Yoweri Museveni has appointed Crispus Kiyonga, MD, as his Second Deputy Prime Minister. Kiyonga began his political career in 1980 as a Member of Parliament, and has since served in several cabinet positions. He also held the position of Uganda's Ambassador to the People's Republic of China, and, in 2024, he was appointed Chancellor of Makerere University. He obtained a Master of Health Science in 2004 in Population Dynamics from the Johns Hopkins Bloomberg School of Public Health through a scholarship funded by Fogarty.

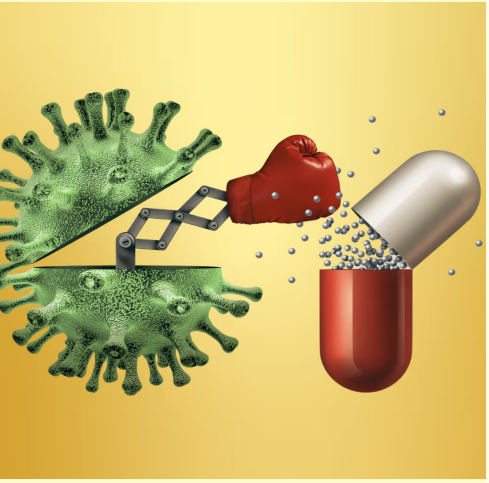
Global HEALTH Briefs

New modeling study looks at respiratory viruses

A new study looks at trends in hospitalizations and deaths (by age and year) caused by flu, COVID, respiratory syncytial virus (RSV), human metapneumovirus (HMPV), and rhino/enteroviruses (RV/EV). The study found respiratory viruses account for an estimated 1.7 million hospitalizations and 110,000 deaths in the United States each year. RSV was the dominant viral cause of hospitalizations among infants, with an average of nearly 1,271 hospitalizations per 100,000 (roughly 50,000 hospitalizations each year). Among children ages 1 to 4 years old, RSV also accounted for an average of about 212 hospitalizations per 100,000, while HMPV accounted for more than 130 hospitalizations per 100,000 among infants and children younger than age 5. More than half of flu hospitalizations (57%) and most flu deaths (83%) are among adults ages 65 and older. Published in the *Journal of Infection,* the study's first author is former Fogarty scientist Chelsea Hansen, PhD, Roskilde University, Denmark, and its senior author is Cécile Viboud, PhD, Acting Director of Fogarty's Division of International Epidemiology and Population Studies.

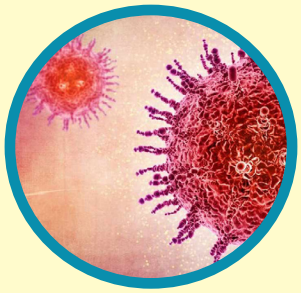
Clinical trials begin for new leishmaniasis vaccine

Ohio State researchers have developed a first-ever vaccine against leishmaniasis, a disfiguring skin disease caused by tiny parasites that are spread through the bite of an infected female sand fly. Last year the U.S. Food and Drug Administration approved the vaccine as an investigational new drug. Clinical trials are expected later this year. The Ohio State University's Abhay Satoskar, MD, PhD, developed the vaccine using CRISPR gene-editing technology with support from the National Institute of Allergy and Infectious Diseases. Previously, leishmaniasis was found in tropical regions like Africa, the Middle East and South America. Today, it occurs in the United States and Europe due to deforestation and extreme weather, according to a recent review by Satoskar published in the *New England Journal of Medicine*.



Identifying an antibiotic helper to thwart resistant bacteria

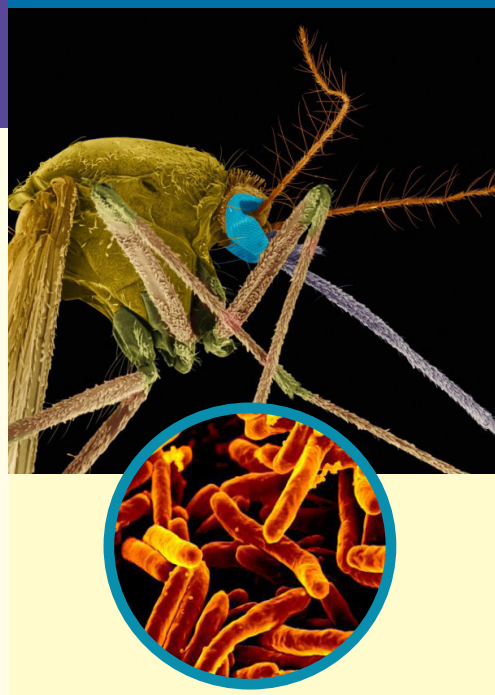
Antibiotic resistance occurs when bacteria change over time until they become capable of withstanding the drugs (antibiotics) that would normally kill them. Antibiotic resistance is linked to an estimated 4.7 million annual deaths worldwide. Scripps Research scientists and colleagues at Cold Spring Harbor Laboratory (New York), and the University of Pittsburgh School of Medicine investigated ways to restore the power of vancomycin (a potent antibiotic) against resistant *Enterococcus faecium* (VREfm), an increasingly common hospital-acquired infection. First, the scientists genetically deleted a particular enzyme in VREfm which rendered the bacteria susceptible to vancomycin once again. Then they screened a chemical library and identified a class of compounds that could chemically disable this same enzyme in VREfm. This research, supported by the National Center for Complementary and Integrative Health, was published in *Nature Communications.*



NIH supported study looks at Oropouche virus transmission drivers

The 2023 Oropouche virus outbreak in Brazil drew attention because of its scale—more than 30,000 cases. Transmitted by biting midges and mosquitoes, Oropouche virus causes fever, severe headache, chills, and other symptoms, and can lead to serious complications including meningitis and microcephaly (when mother-to-fetus transmission occurs). A National Institute of Allergy and Infectious Diseases-supported study in *Nature Health* investigated determinants of Oropouche fever in Brazil between 2014 and 2025. The researchers noted 30,086 confirmed cases across 16.1% of 5,570 municipalities in all 26 states during the study period. Incidence in rural municipalities was 11.3 times higher than in urban municipalities.

Global HEALTH Briefs

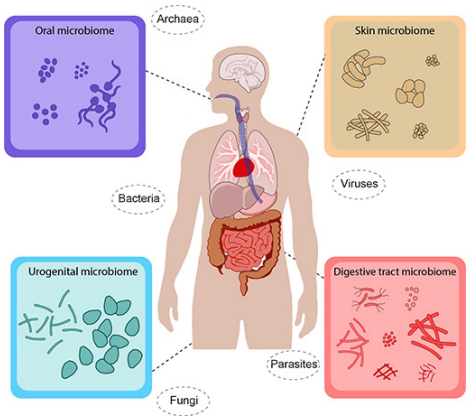


What shapes the spread of Buruli ulcer across the tropics?

Buruli ulcer is a disfiguring skin disease caused by the bacterium *Mycobacterium ulcerans.* Researchers from Michigan State University, Mississippi State University and several international institutions analyzed 110 different variables and used this data to model where both the bacterium and the disease it causes tend to occur. Then they created global maps to visualize their findings across tropical and subtropical regions worldwide. The research indicates that the spread of Buruli ulcer isn't driven by a single cause but by a complex fusion of natural and human-related factors. The study, published in the journal *Communications Medicine,* was supported in part by the NIH-National Science Foundation Ecology and Evolution of Infectious Disease program.

Mapping microbiomes in South Asia

Most of the world's population has shifted from traditional, foraging or farming-based diets to industrialized lifestyles, and this transition has reduced the diversity of microbes found in people's guts. South Asia, home to roughly a quarter of the world's people and an extraordinary range of cultures, has been underrepresented in global gut microbiome research. To address this gap, University of Chicago researchers created the South Asian MicroBiome Array (SAMBAR), a dataset built from fecal samples collected across 10 Indigenous and rural communities in India and Sri Lanka and paired with samples gathered from urban migrants with the same genetic and cultural background. Their results revealed regional signatures: certain bacteria linked to South Asian diets were enriched (compared to global populations), yet other microbes tied to urban living that are associated with obesity and poor health outcomes were also present. The journal *Gut Microbes* published this research.



India's national vaccine program reduced deaths, altered school rates

India's national childhood immunization program, launched in 1985 and reaching full coverage five years later, substantially reduced childhood deaths yet had mixed effects on educational attainment, according to research published in the *Journal of Population Economics*. Analysis of a national survey of nearly 900,000 children showed that the inoculation program reduced infant mortality by 0.4% and mortality in children under 5 by 0.5%. Gains were seen mostly in rural areas and among the poor and disadvantaged caste groups. Children from wealthier, urban, or higher-caste households saw little change, likely because they already had access to vaccines. The vaccine program also reduced primary school completion rates while increasing secondary school completion rates, according to University of Notre Dame economist Santosh Kumar Gautam, the author of the study.

Experimental Ebola drug trial begins in DRC

In mid-July, the National Institute for Biomedical Research in Kinshasa and partners began to enroll participants to test an experimental antiviral drug as post-exposure prophylaxis (PEP) to prevent Bundibugyo Ebola. Currently there are no vaccines or targeted treatments for this strain of Ebola. Participants in the trial for the antiviral developed by Gilead Sciences are being recruited in Ituri province of the Democratic Republic of the Congo (DRC), the epicenter of the outbreak. Each participant will be monitored daily for 21 days with a final visit at 42 days. As of July 29, the U.S. Centers for Disease Control and Prevention reported 3532 confirmed cases and 1,556 confirmed deaths, mostly in DRC. This outbreak is the third largest Ebola outbreak on record.

FUNDINGNEWS

SCAN
TO READ MORE

On behalf of the Fogarty International Center at the U.S. National Institutes of Health (NIH), the following funding opportunities, notices, and announcements may be of interest to those working in the field of global health research.

Funding Announcement	Deadline	Details
Emerging Global Leader Award (K43 Independent Clinical Trial Required) (PAR-24-295)	December 3, 2026	https://grants.nih.gov/grants/guide/pa-files/PAR-24-295.html
Emerging Global Leader Award (K43 Independent Clinical Trial Not Allowed) (PAR-24-296)	December 3, 2026	https://grants.nih.gov/grants/guide/pa-files/PAR-24-296.html

Since 2012, FIC research training (D43, D71, U2R, G11) and foreign career development (K43) awards have been restricted to exclude upper-middle income countries that are also members of the G20. South Africa has been the single exception to this rule. **After December 5, 2026,** South African institutions will no longer be eligible to apply for new training and career development grants. Active awards and applications submitted **before** December 5th are not impacted by this policy update.

NIH Fogarty

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