



FOGARTY INTERNATIONAL CENTER • NATIONAL INSTITUTES OF HEALTH • DEPARTMENT OF HEALTH AND HUMAN SERVICES

US-China renew commitment to global health security

Ebola and global health security were on the agenda at a meeting of U.S. and Chinese health officials held on the NIH campus in June. Both countries agreed to renew a longstanding commitment to collaborate on the prevention, detection and response to global infectious disease outbreaks.

“With each day, the distances between us shrink,” U.S. Health and Human Services Secretary, Sylvia M. Burwell, told participants. “Our world grows more interconnected. As we are seeing now with MERS-coronavirus, our borders will not stop diseases, and evolving health threats require coordinated responses. Our global health community needs global health solutions. And we know that none of us can operate in isolation, especially when it comes to the health of our people.”

The Chinese delegation was led by Vice Premier Liu Yandong and included Minister Li Bin, of the National Health and Family Planning Commission, and Dr. Wang Yu, Director of China’s CDC. NIH Director Dr. Francis S. Collins also participated.

Burwell thanked the Chinese visitors for the important contributions their country made to the Ebola response. The close partnership between U.S. and Chinese staff in the mobile lab China sent to Sierra Leone played an important role in saving lives and turning the tide of the epidemic, Burwell said.

The two countries were among the first to respond to the outbreak. The U.S. sent surveillance teams, established treatment facilities and deployed thousands of public health experts. China mounted its largest-ever overseas global health effort—delivering medical supplies, deploying clinical and public health experts, and building laboratory and clinical facilities. Both countries are committed to supporting the Global Health Security Agenda, an effort to accelerate progress toward a safe and

Photo by Emie Bronson for NIH



A high-level Chinese delegation visited NIH recently to discuss global health security. Minister Li Bin (left) also toured the Clinical Center, guided by NIH Director Dr. Francis Collins (center) and CC Director Dr. John Gallin (right).

secure world free from infectious disease threats. Burwell noted U.S. and Chinese scientists have also worked together to help stop the spread of SARS and bird flu, as well as to combat cancer, HIV/AIDS and other diseases. In addition, the NIH is currently hosting more than 700 Chinese scientists in its Bethesda labs.

Both sides agree it’s a priority to continue to build the global infrastructure for health, Burwell said. “Challenges will continue to threaten the health and security of our nations,” she said. “But with better strategies and a strong partnership, we can be ready to face whatever comes our way, and better deliver for the people we serve.”

FOCUS



National Institute on Drug Abuse marks 20 years of International Forum

- Scientists target at-risk groups to reduce drug use, disease spread in Kazakhstan
- Research provides evidence for tobacco policymakers in Argentina
- Interventions reduce HIV transmission among people who inject drugs in Vietnam

Read more on pages 6 – 9



Photo courtesy of Dr. Timothy Dye/University of Rochester

Researchers in Costa Rica will test ICT innovations in the field to assess their effectiveness in local contexts, with funding from a Fogarty eCapacity grant.

Fogarty awards \$1M to advance ICT for research

By awarding \$1 million in new grants through its eCapacity program, Fogarty is continuing to support innovative research education programs to better integrate information and communication technology (ICT) into research and training in low-resource settings. Funded projects vary widely and address a number of ICT needs—from studying social media to enhance mental health care, to advancing disease modeling skills to improve public health decision making, to incorporating ICT into cardiovascular research.

Nine grants, each for up to three years, will leverage capacity already established by Fogarty programs in several dozen low- and middle-income countries. Some grants involve individual countries, whereas others aim to expand regional capacity.

In one project, grantees in 11 Asia-Pacific nations will partner with experts from the U.S., Australia and Norway to develop a six-week ICT curriculum in social epidemiology. Trainees will learn to use Internet-based social media and mobile health to integrate mental health into primary care and women's health services. Meanwhile, grantees in Costa Rica and the Dominican Republic will develop informatics skills via a mentored program focused on maternal health. Researchers will test ICT innovations in the field to assess their effectiveness in local contexts and create a collaborative system for sharing new material.

A third multicountry project involves a collaboration among Ethiopia, Kenya and Tanzania. Grantees plan to create a tablet computer and mobile phone application for research data capture, crowd sourcing and analyses. Trainees will conduct mentored ICT projects on infectious disease topics and the team will hold webinars and e-workshops to encourage networking among East African and U.S. partners. In West Africa, 30 graduate students from Senegal and other Francophone countries will learn how ICT can convey health information and related

communication research methods. The project involves using digital hardware and software to collect and analyze data and leverage existing collaborations. Trained experts will stimulate innovation in new medical and health interventions.

Researchers in China, with its enormous population and decentralized health care, aim to build systems to store and analyze large quantities of health-related data and use the evidence to inform policymakers. With their U.S. collaborators, scientists at six Chinese institutions will create a model education program in research informatics and communication science, adapting it as appropriate for different settings.

In India, to enhance evidence-based, data-driven decision making, researchers will use modeling and simulation as they assess the health and economic impacts of disease control strategies. Indian and U.S. researchers will establish a new collaboration network and conduct two small modeling studies.

Zimbabwe has very limited ICT capacity, so a research team will train faculty and clinical investigators how to use technology, as well as establish a cohort of experts who can educate future trainees in basic and advanced research methods. The team will investigate additional avenues to integrate ICT tools, such as text messaging and mobile applications, into research activities.



Photo courtesy of Drs. Abu Abdullah and Yang Li

A Fogarty eCapacity grant will help researchers in China build skills and systems to analyze health-related data.

In Zambia, researchers will develop an intensive curriculum in applied public health informatics, including biostatistics, epidemiology, statistical software programming and research ethics. Trainees will receive hands-on mentorship as they acquire skills in data management, analysis and interpretation. Ghana will likewise develop a new curriculum that incorporates the use of ICT tools into cardiovascular research. Trainees will use iPad mini devices for their own research design and data collection, and will have continuous access to in-person or online ICT support.

RESOURCE

Website: <http://www.bit.ly/ecapacity>



NIH is at the forefront of research on the Middle East Respiratory Syndrome (MERS), which can be transmitted by camels.

Scientists aim to defeat Middle East respiratory virus

The recent outbreak of Middle East Respiratory Syndrome (MERS) in South Korea has emphasized the urgent need to understand and counteract this deadly disease. The NIH and global partners are supporting multiple studies to pave the way for treatments and vaccines.

MERS was first identified in 2012 in Saudi Arabia and has killed about 40 percent of the more than 1,000 people diagnosed there. Although occurring mainly in the Arabian Peninsula and linked to contact with camels, travelers have helped spread the disease to 25 countries, including South Korea, where hospital-driven or other close human-to-human contact has fueled contagion. MERS can produce severe pneumonia and is particularly threatening to people already weakened by diabetes or other medical conditions.

Researchers have identified the MERS pathogen as a new coronavirus. This family of viruses was regarded as relatively benign in humans, producing no more than the common cold, until a mutated version triggered the 2003 epidemic of Severe Acute Respiratory Syndrome (SARS). Although that disease disappeared the next year as abruptly as it arose, scientists have no idea when, or if, it will resurface. In the meantime, MERS is persisting and taking more lives. Coronaviruses can evolve quickly and have a history of shifting between animal species.

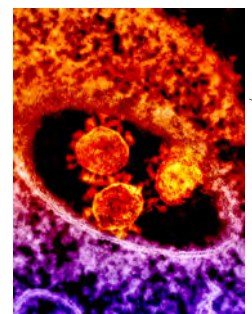
Many of the humans struck by MERS worked or lived near camels, and the live virus has been detected in the animals' nasal droplets, milk, urine and flesh. One study of camel samples stored since 1983 showed a high rate of MERS antibodies, suggesting the virus has circulated for some time. Researchers supported by the National Institute of

Allergy and Infectious Diseases (NIAID) created a test for antibodies to a key MERS virus protein and found high levels in a type of bat and in dromedary camels.

“What’s very unclear is what proportion of the human cases we know about have been directly infected from camels or through exposure to other humans,” said Dr. Andrew Rambaut, of the Institute of Evolutionary Biology in Edinburgh, who receives support from Fogarty’s Division of International Epidemiology and Population Studies and has studied MERS. “If we don’t understand how the human cases are being infected, and what their exposure is, it’s difficult to intervene in a way that will eradicate the virus.”

To create a treatment for the disease, researchers are testing compounds that could interfere or stop virus replication, including antivirals used for hepatitis C—ribavirin and interferon-alpha 2b—which were successful in monkey cells, and kinase inhibitors, which can stop specific enzymes from functioning. In an NIAID-University of Maryland collaboration, researchers screened 290 compounds to see if they could inhibit growth of MERS and SARS viruses in the laboratory. They identified 27 candidates, including those normally used to treat cancer and psychiatric conditions, and are following up in mouse studies. Other potential treatments include chemicals that disarm or cause genetic disruptions in coronaviruses.

NIAID researchers and grantees are collaborating on potential vaccines to prevent MERS. One such candidate blocks a protein the virus needs to enter cells and corrupt immune defenses. Two other candidates focus on boosting the immune response, one via a live but attenuated virus and another via the injection of viral DNA.



MERS-coronavirus

While researchers try to understand and thwart the spread of MERS, there is some small comfort it is less virulent than SARS, which rapidly infected 8,000 people from a single patient. “It seems unlikely MERS will spread successfully in the wider population,” Rambaut said. “It’s had plenty of opportunity to do so, but has stayed relatively confined; each introduction tends not to persist for that long.”

RESOURCE

Websites: <http://bit.ly/MERSupdate>

PROFILE

Fogarty Fellow documents drugs and HIV risk in Kenya

By Cathy Kristiansen

As a medical anthropologist, Dr. Jennifer Syvertsen was keen to immerse herself in local Kenyan culture. From the outset of her Fogarty fellowship in Kisumu, her intent was to learn and help, not judge and disrupt. Acceptance was key to gaining cooperation from the stigmatized communities of people who inject drugs and are at heightened risk for acquiring and transmitting HIV.

Syvertsen studied this population as part of her fellowship project for Fogarty's Global Health Program for Fellows and Scholars, which provides yearlong mentored clinical research experiences overseas for postdoctoral fellows and pre-doctoral scholars. Funding also came from NIH's National Institute on Drug Abuse. Kisumu, in the western Nyanza region, has the country's highest HIV prevalence at more than 15 percent. Until her project, no scientist had measured patterns of local drug injection and HIV risk.

Previously, Syvertsen had studied drug use and infectious disease along the Mexico-U.S. border, focusing on how social and emotional factors shape HIV risk among female sex workers and their intimate, noncommercial partners. In Kenya, she was conducting research in a different culture with the goal of clarifying who was injecting and how this practice might contribute to HIV spread. She and her Kenyan research assistants surveyed 151 injection drug users and interviewed 29 in-depth. The users overwhelmingly were young men, and half had spent time outside of Nyanza. Top factors linked to HIV infection were a history of sexually transmitted disease symptoms and needle sharing.

Syvertsen's study in this Kenyan community highlighted the need to clarify the various factors that influence people to inject drugs. For instance, the way drug markets operate may play a role in creating risk. In Nyanza, they are emergent and fragmented, unlike the more established markets in Mexico, which are often organized by cartels. Importantly, research is needed to clarify which drugs are commonly available in Nyanza; three-quarters of study participants reported injecting cocaine, although heroin has been the focus of attention



Jennifer L. Syvertsen, Ph.D., M.P.H.

Fogarty Fellow:	2013 - 2014
Fellowship at:	Impact Research and Development Organization, Kenya
U.S. partner:	University of California, San Diego
Research topic:	Emergent injection drug use/HIV risk in Nyanza Province

in Kenya. Another difference in Nyanza is the presence of peddlers, who sometimes inject clients. No one has assessed how they might drive drug-taking behavior and the spread of disease or if they use sterile needles. Syvertsen's study also identified the occurrence of a uniquely East African practice called "flashing," whereby someone who is high transfers some of their blood to another person to share the drug's effect.

After Syvertsen's findings were presented at a large stakeholder meeting, a Kenyan nongovernmental organization agreed to incorporate Nyanza into its syringe exchange program. Syvertsen hopes this will spur further interventions, such as more extensive education about drug use and HIV risks, addiction treatment and other support services.

There's a strong synergy between anthropology and global health, especially in research and interventions that take a community-based approach, Syvertsen observed. "Medical anthropologists look at how people get sick and experience their illness, their treatment and health care systems, and take a holistic approach to advancing health," she said. "In clinical trials, if you get results that don't make any sense, the anthropologist who is familiar with the community can talk to people and try to understand why things unfolded as they did."

Syvertsen has received two small grants from Ohio State University, where she now teaches, to build on her initial findings and provide additional pilot data to scale up her research. "I feel like this Fogarty project was just the beginning of something bigger, a long-term trajectory that will enable me to collaborate with people in Kenya and work on HIV prevention. I hope this is a focus for the rest of my career."

NELSON K. SEWANKAMBO, M.B.CH.B., M.MED.

Dr. Nelson Sewankambo is Principal of Uganda's Makerere University College of Health Sciences and Dean Emeritus of its School of Medicine. A longtime Fogarty grantee, he has played a key role in implementing capacity building under the U.S. Medical Education Partnership Initiative (MEPI). He co-founded Uganda's Rakai Health Sciences Program, which has produced key HIV/AIDS research findings, including that male circumcision reduces HIV transmission. His team has pioneered multidisciplinary education capacity, the use of information technologies and innovations, such as problem-based learning, as well as training that incorporates rural areas.



What has Fogarty's role been in Uganda?

We started from a low base, more than 15 years ago, after our country went through a very difficult decade-and-a-half of economic decline. Fogarty-supported programs contributed enormously to the recovery of the research platform. Initially, all Ugandans were trained overseas, but over time we established research training programs in Uganda all the way to Ph.D.s and postdocs—we have trained about 30 Ph.D.s now, attributable to Fogarty support overseas and at home. People trained in-country are less likely to remain overseas and it also costs less. We see high-caliber Ugandan scientists putting in applications as independent PIs [principal investigators] and they are winning grants, not only from NIH but also European countries. Researchers here are themselves training upcoming researchers and are collaborating with global groups, like the International AIDS Vaccine Initiative. Uganda now has five high-quality research labs. Local scientists are not just collectors, sending samples elsewhere, but are interpreting and analyzing the samples. Also, we are setting up sample storage facilities to keep biospecimens for research. Finally, through Fogarty's ethics program, we built a critical mass of well-trained people and are launching a master's program in international research ethics training at Makerere.

How has the MEPI changed the landscape?

MEPI has really excited many leaders of medical schools across Africa. The 13 recipients of grants have partnered with about 40 institutions. In Uganda, our five medical schools are all working together. Building medical capacity has enhanced research. Medical students conduct research as part of their training and some faculty are taking Ph.D. research training, which will strengthen the institutional capacity. Our MEPI linked award focuses on noncommunicable diseases (NCDs) and has contributed to strengthening research in that field. In addition, MEPI has heightened the application of e-learning and ICT [information and communication technology]. Although ICT was introduced mainly to strengthen medical education, obviously we are benefitting on the research front.

Is Uganda shifting toward NCDs?

NCDs are clearly on the rise here. We are seeing young people become increasingly overweight and you can't imagine the numbers of systemic hypertension. Also stroke, cardiovascular disease and diabetes. We are taking lessons learned from building capital for research on infectious diseases and are applying them to NCDs, for instance, the benefit of partnerships. And we are conducting cardiovascular disease training, initially through very strong partnerships with outside universities, with the intention that as we build local capacity and set up the required infrastructure, we will do much of our training locally, also with partner institutions in the region.

What are Uganda's key research priorities?

Of course, there are many infectious diseases here, like HIV, tuberculosis and malaria, and they remain priorities. We went through Ebola epidemics four times, so we need to be very alert and develop surveillance mechanisms for any emerging infectious diseases. But now NCDs are also a major national priority. If we don't start paying greater attention in that area, this country may find itself with a major epidemic of NCDs when it is too late. We also need to increase national funding for our research priorities instead of largely depending on external funding for which we have no control. The returns are great, but the challenge is that they are slow to be realized and the politician, who would like to show results in a short timeframe, needs to be convinced. But we are working on this. At the same time, we need to build our human resources. Multidisciplinary research is the way to go in solving our health problems, whether infectious or noncommunicable. A lot of innovations and developments in research depend on a strong basic science foundation. If we can ramp that up, it will allow us to do better translational research. Finally, we are faced with challenges in translating our research findings and need more implementation science. At the end of the day, the research that we do should be used to deliver programs in the country and make the greatest impact in society.

Drug abuse institute marks 20 years of global forum

From Pakistani heroin users sharing needles, to South African prostitutes agreeing to unsafe sex for money to buy methamphetamine, drug addiction is a global problem integrally linked to the spread of HIV and other diseases. To tackle these and other related problems, the NIH's National Institute on Drug Abuse (NIDA) supports international scientists as they make vital research discoveries and build much-needed expertise in low-resource countries. For 20 years, NIDA has hosted an annual International Forum to foster research collaborations and the exchange of scientific information by drug abuse researchers from around the world.

Scientific knowledge gained in the U.S. or elsewhere can deepen understanding of the drivers of drug use, but countless local factors also contribute to addiction—the culture, economic environment, educational opportunities, availability of health services and other influences. To design effective intervention programs and convince policy-makers to fund them, locally obtained evidence is key.

“No single country can solve these problems by acting alone,” according to NIDA Director Dr. Nora D. Volkow. “Through international collaboration and scientific exchange, we can translate our domestic successes in reducing the consequences of drug abuse to other countries, as well as allowing us to learn from their strides in disease prevention.”

NIDA, which was established in 1974, directs its \$1 billion annual budget toward research not only into psychoactive drugs—such as cocaine, heroin and amphetamines—but also into tobacco and a number of other addictive substances. NIDA's International Program works globally to form partnerships, promote new research initiatives, build research capacity and disseminate knowledge.

Drug addiction takes an enormous toll on people's productivity, quality of life and longevity, both directly and from related conditions such as HIV, hepatitis C and suicide, according to the WHO. Up to 7 percent of people aged 15-64 years reported using an illicit drug at least once the previous year, and between 16 and 39 million people worldwide suffer from problem drug use—yet only a sixth receive treatment, UN data show.



A man in Bahawalput, Pakistan, injects himself with drugs from a used syringe.

People who inject drugs have high rates of HIV infection for a number of reasons. They often share needles and syringes, which can contain remnant blood from an infected person, and are more likely to ignore safe sex precautions. Societal influences, such as stigma and the threat of incarceration, can discourage people who inject drugs from seeking HIV testing or treatment, and thereby raise the risk to themselves, others in their community and the wider population. The UN says about a third of HIV cases outside sub-Saharan Africa are spread by unsafe injecting practices.

NIDA's grantees have investigated previously neglected populations with high rates of HIV infection, including those who inject drugs, at-risk youth, sex workers and men who have sex with men. Their findings have helped shape unique interventions and strategies specifically tailored for each group. As well as injectable substances, NIDA supports global research into other forms of addiction, whether tobacco, khat, marijuana or other products that impair people's health over time, and its grantees study many related aspects, such as smoking in pregnancy, treatments to help wean people from heroin and the effect of addiction on the brain.

NIDA also places a high priority on training scientists around the world, partnering with Fogarty's Global Health Program for Fellows and Scholars (see article on page 4) and supporting a number of other research training programs for scientists at various stages of their careers.

“By investing in research capacity building in strategic world regions, we aim to develop self-sustaining scientific networks of addiction experts that will generate knowledge on the causes, prevention and treatment of drug abuse that will benefit us all,” said Volkow.

Photo from Amriti Welfare Society, Pakistan, courtesy of PhotoShare

Scientists tackle disease in Kazakhstan drug injectors

HIV and other sexually transmitted diseases are burgeoning health problems in Kazakhstan among people who inject heroin and practice unprotected sex. To intervene in this population and reduce ripple effects in the wider community, researchers supported by the National Institute on Drug Abuse (NIDA) have designed programs targeting couples, female sex workers and at-risk youth.

One harm-reduction study focused on couples in which one person or both injected drugs. Participants learned communication and negotiation skills, problem solving, joint goal-setting and practical tips about condom use and safe injection practices. Dr. Nabila El-Bassel, of the University of Columbia, who led the study, said a year later, sexual and drug risk behaviors were down and hepatitis C incidence had tumbled 69 percent.

Another at-risk group is drug-injecting women who participate in transactional sex; at least a third of them are infected with HIV and other diseases. El-Bassel found that many would prefer alternative jobs, so she and her team designed a

health promotion program that also teaches skills for occupations such as hairdressing or baking and develops financial literacy—including how to budget, conduct financial negotiations and build a bank account.

Since a quarter of young people exposed to drugs at home or in the community will take up substance abuse and/or risky sex at 15-17 years of age, this is a crucial stage to emphasize health protection. Dr. Leyla Ismayilova, of the University of Chicago, and her colleagues are testing a novel family-based multimedia intervention with youth and their caretakers. “In the Soviet Union, parenting was strict, more about setting rules, less about open dialogue,” Ismayilova said. “Parents would talk with the child about what you want for dinner, but not emotions, relationships or risk situations that adolescents are confronted with now. We need interventions that are appropriate for today’s culture.”

Avoiding didactic messages, which the adolescents hear in school, Ismayilova’s project builds communication and coping skills



NIDA researchers teach couples about safe needle use and sex practices.

via computer software that engages participants with storylines, quizzes, games and role playing. Teens identify five life goals and steps to achieve them, and practice resisting peer pressure to engage in drug use and unsafe sex.

By training scientists and funding research in Kazakhstan, El Bassel said NIH-supported programs are helping build a knowledge base about HIV and drug-use interventions that the government is incorporating in its decision making. “Kazakhstan has developed and expanded HIV evidence-based services and treatment for people who use drugs, which is valuable in our efforts to also reduce HIV.”

Photo courtesy of Columbia University

NIDA, Fogarty work to reduce smoking in Argentina

Argentines have a long history of smoking tobacco—and their health pays a price. To quantify the impact and study how best to encourage the population to kick the habit, the National Institute on Drug Abuse (NIDA) and Fogarty have funded several projects to produce data, test interventions and develop Argentine expertise in tobacco research.

The NIH efforts coincided with a shift in public opinion. The percentage of people using tobacco has fallen from 35 to 20 percent since 2002. “The reduction in smoking is huge progress,” said Dr. Eliseo Pérez-Stable, of the University of California, San Francisco, who led NIH investigations in Argentina. “We have seen

a transformation in attitudes and approaches to tobacco, which is good.”

To help provide policymakers with evidence, one analysis forecast heart health improvement if Argentina actually enforced its strict tobacco control laws. Using an established disease modeling system, Pérez-Stable and his team showed that between 2012 and 2020, the laws could protect the population from 7,500 coronary heart disease deaths, nearly 17,000 myocardial infarctions and 4,300 strokes. Those numbers would roughly double if higher tobacco taxes were implemented, the team demonstrated.

In time, the government has begun to

enforce its laws establishing smoke-free public environments and tobacco advertising bans in the mainstream media. But some cigarette firms have turned to the Internet instead. In a survey conducted by Pérez-Stable’s team, nearly 20 percent of respondents had been exposed to cigarette promotions online. Advertising restrictions should extend to Internet sites and social media, the researchers suggested.

Another long-term impact is the expertise that has been developed through support of graduate-level training of a number of Argentine scientists, as well as a course on treating tobacco addiction, modified to suit local population needs.

Researchers slow HIV spread among drug users in Vietnam

Early in the HIV/AIDS epidemic, fear was high in Vietnam that the virus would spread from drug injecting populations into the wider community. Health authorities had little scientific data to guide their prevention efforts, until researchers funded by the National Institute on Drug Abuse (NIDA) and Fogarty proposed studies to see what might work. Several decades and many discoveries later, HIV in Vietnam is considered to be under control.

“The prevalence of HIV was as high as 60 percent in some provinces among people who inject drugs, and there was not very much in the way of harm reduction interventions going on,” said NIDA grantee Dr. Theodore Hammett, of Abt Associates. This epidemic was driven by three key factors: the country’s location on a major heroin trafficking route from the Golden Triangle poppy growing region, rising income levels and strong social stigma that makes people who inject drugs harder to reach with prevention information and treatment options.

Hammett and his team targeted the Vietnam-China border region, implementing a peer outreach model in three high-risk communities. They recruited and trained former and current injectors, who then communicated with peers via discussions, meetings and brochures about safe injecting and sex practices. These peer educators distributed free needles, syringes, condoms and pharmacy vouchers for fresh supplies. They also collected discarded drug paraphernalia, protecting the community from accidental infection and softening their hostility toward drug users. The study documented dramatic declines in HIV prevalence, for instance, down from 51 to 18 percent in one province, with more modest drops in two others. The government then introduced versions of the program elsewhere in the country.

“The generalized epidemic in Vietnam never happened,” Hammett said. Latest UNAIDS data put HIV prevalence at 0.4 percent. He added, “It was not entirely a result of our project, but we helped.”

Other studies have likewise produced important findings to guide interventions in high-risk communities, such as that fear of social stigma can exacerbate risk-taking after an HIV diagnosis and the extent to which providing sterile syringes can help prevent spread of HIV and other pathogens.

Photo by Abdullah Amir, courtesy of WHO/SEARO



Prevention research helped Vietnam reduce the spread of HIV from drug users to the wider population, researchers report.

Local drug practices require study

Drug users sometimes develop local customs—designed to avoid detection or amplify their high—that can elevate risk. “The behavioral practices that are used to prepare and inject drugs vary much more widely than is commonly recognized in the public health literature,” reported Dr. Michael Clatts, of the University of Puerto Rico. “This kind of research can inform local prevention programming.”

In his NIDA-supported project to examine the influences driving drug use in Vietnam, Clatts and his colleagues discovered some users cultivate a bulge of elastic collagen, or sac, on their skin near a vein, using it as a portal to deliver injected drugs. In Vietnam, the penalty for repeated arrest for heroin possession includes mandated detoxification and extended incarceration, so injectors are anxious to prepare and insert the purchased dose quickly—via direct access to a vein. The injectors also claim that sacs protect their veins when they cannot obtain heroin and resort to the caustic substance Promethazine to ward off withdrawal symptoms. Female sex workers said portals are easier to conceal from their clients and police than puncture marks.



Some Vietnamese drug users create soft tissue sacs, like this one in a man’s groin, to facilitate quick injection.

Photo by Dr. Michael Clatts

The study showed injectors using sacs took heroin more frequently—two to five times daily—than before and although their rate of HIV infection was similar to injectors without sacs, they shared syringes more often and reported higher levels of hepatitis B infection and pneumonia. The habit is now fairly common in young injectors in Hanoi and has been observed as far away as London. Clatts urged further research to clarify how the sacs might promote the spread of HIV and other pathogens, develop new

approaches to deter the habit, and encourage community-based alternatives to the current policing system.

Investigating another serious disease among Vietnamese intravenous drug users, Clatts' team revealed it took drug users only 1.2 years, on average, from the time they started to inject until they acquired the hepatitis C virus. This discovery emphasizes the narrow window available for prevention measures. Currently, almost half the drug injectors harbor this initially symptomless virus and, aside from its health risks, co-infection with HIV raises the risk of poor health outcomes and can curtail HIV treatment options. Approaches should be developed targeting new heroin users, designed to delay onset of injecting and provide information on safe injection practices, Clatts suggested.

Scientists investigate stigma's role

Drug users, commonly subjected to stigma for their habit, face additional marginalization if they are also identified as having HIV. The fear of stigma can discourage them from seeking medical attention, exacerbate mental health problems and foster a number of infectious diseases, studies have shown. Dr. Vivian Go, of the University of North Carolina, found that in Vietnam, with its Confucian emphasis on the family's importance over the individual, the impact of stigma often is not only personal but extends to relatives. An HIV diagnosis might push a person to self-isolation and suicide as a means to protect family members.

“Men are supposed to support their family but when they inject drugs, they cannot. It is a huge part of marginalization, a huge loss of face. Much of the problem is internalized stigma, some real, some perceived. It can prevent them from seeking treatment.”

– DR. VIVIAN GO

To learn more about secondary stigma and how to intervene, Go and her team interviewed 25 male intravenous drug users on their thoughts and experiences after hearing they had HIV. Almost everyone cited concern about the emotional impact on their families. Many were also worried about economic well-being, for instance, if tenants of a family property decided to leave because of the association with HIV.

“Men are supposed to support their family but when they inject drugs, they cannot. It is a huge part of marginalization, a huge loss of face,” said Go. “Much of

Photo by Henrica Jansen, courtesy of Photohoare



A billboard for an HIV/AIDS prevention campaign in Vietnam promotes condoms and fidelity and discourages unsafe injections.

the problem is internalized stigma, some real, some perceived. It can prevent them from seeking treatment.”

Several men reported they had contemplated suicide to prevent the community learning about their disease, planning to time the act before they became visibly sick with an AIDS-related illness. They said these thoughts were not due to depression, but rather to protect their loved ones from stigma. They also withdrew as a protective step, although they craved family support. Self-isolation has been shown to undermine coping abilities and fuel unsafe injecting and sex behaviors.

“Secondary stigma is a profound concern,” the research team wrote in its report. Their analysis was part of a broader study on reducing high-risk injecting and sexual behaviors in Vietnam, funded by NIDA and Fogarty. The scientists suggested that successful HIV prevention interventions “must acknowledge the importance of family in individual decisions about HIV health-seeking behaviors and disclosure.”

Efforts to prevent new HIV infections continue to grow in Vietnam, with policymakers informed by findings from these and other global health studies. “The government has looked to research to provide the evidence base for guiding their policies,” Go said. Just in May, the government directed that all people who inject drugs or are otherwise part of a key at-risk population receive antiretroviral treatment as soon as they are diagnosed as HIV positive. “This is a great step,” Hammett noted. “We hope it will be fully implemented.

OPINION

By Dr. Roger I. Glass, Director, Fogarty International Center

Diplomacy: a powerful force to improve global health



Global health diplomacy is a powerful force that, when deployed effectively, can bring countries together to advance scientific discoveries, stimulate collaborations and ultimately relieve human suffering. Even when relations between countries are strained, health can be a compelling cause all parties can rally around. Ebola has been such an issue, drawing resources and experts from around the world

to help track the outbreak, study the disease and test possible vaccines or treatments to contain it. Although officials may have been slow to raise the alarm, the resources that were eventually mobilized were significant.

The Ebola outbreak has been a wake-up call to the international community and a reminder to us all that diseases know no borders. Global health security relies on strong surveillance and robust treatment and prevention systems. We cannot operate in isolation and we are all only as safe as our weakest link.

These issues were the main focus of the 68th World Health Assembly, held in May in Geneva, where as part of the U.S. delegation, I joined policymakers, administrators and scientists gathered to share lessons learned and consider how to strengthen global capacity. Health and Human Services Secretary Sylvia M. Burwell urged the community to prepare for the next health threat.

“Whether it’s a new outbreak of Ebola, the ongoing priority to fight AIDS, or our remaining struggle to conquer polio, each nation must be ready to act and have the infrastructure that makes action possible,” she said in her address to the Assembly. In addition to the valuable dialogue among health ministers, much was also accomplished on the sidelines, where connections made and relationships forged may generate benefits for years to come, advancing initiatives that are planned as well as responding to crises that are not. The forum enabled information sharing on a number of pressing issues, such as Middle East Respiratory Syndrome (MERS), antimicrobial resistance and tuberculosis transmission, in addition to the growing problem of noncommunicable diseases including cancer and heart disease.

The gathering also provided the opportunity for us to engage with some of our collaborators in the Medical Education Partnership Initiative. By improving training for health care workers and scientists, we are strengthening the care delivery platform developed for HIV/AIDS, and expanding the depth and breadth of health care services available across sub-Saharan Africa. By establishing better disease monitoring and more effective prevention and treatment, health security will improve for us all.

We’ll soon welcome to the NIH campus Rwanda’s health minister, Dr. Agnes Binagwaho, who has been at the forefront of implementing evidence-based strategies in her country. Health services now reach about 90 percent of the population and it’s notable that the vaccine to prevent cervical cancer has been more widely administered in Rwanda than in the U.S.

A high-level delegation from China, led by Vice Premier Liu Yandong, visited NIH in June to discuss ways to strengthen ongoing collaborations related to global health security, including infectious diseases such as SARS, MERS and Ebola. By renewing an agreement between the two countries to collaborate to prevent, detect and respond to outbreaks, we are ensuring the timely and transparent exchange of information that is so critical to public health.

Meanwhile, it was fortuitous that Cuba was the location for a recent WHO consultation on vaccine issues. While there, I had the opportunity to speak with several health officials and scientists and identified numerous shared interests that are ripe for collaboration. Despite its economic difficulties, Cuba has been very successful in improving the health of its citizens, increasing their longevity and contributing advances related to meningitis, hepatitis, diabetes and cancer. Cuban doctors are now working in more than 50 countries around the world. In Sierra Leone, they served in U.S. hospitals built especially to treat patients in the Ebola outbreak, a connection between our two countries that we haven’t witnessed for 50 years!

We know that Americans don’t hold a monopoly on great ideas—they can come from anywhere. Through science diplomacy, we can bring the world’s best minds to bear on Ebola and other complicated challenges. By working together, and inspiring each other, we are more likely to speed discoveries that will improve the health of all the world’s people.



Koroshetz is selected to direct NIH's NINDS

Dr. Walter J. Koroshetz has been chosen to direct NIH's National Institute of Neurological Disorders and Stroke, after previously holding the posts of deputy and acting directors. He is the NIH point person for traumatic brain injury research and serves as an *ex officio* member of Fogarty's Advisory Board.



NIH appoints minority, health disparities director

Dr. Eliseo Pérez-Stable has been named director of the National Institute on Minority Health and Health Disparities. A longtime NIH grantee, his support has included a grant through Fogarty's tobacco program. He is professor of medicine, internal medicine chief and director of the Center for Aging in Diverse Communities at the University of California, San Francisco.



Fogarty welcomes CDC's Kilmarx as deputy director

Dr. Peter H. Kilmarx has joined Fogarty as its new deputy director. Most recently the CDC country director in Zimbabwe, he has been involved with the U.S. President's Emergency Plan for AIDS Relief and the President's Malaria Initiative. He earlier held CDC positions in Botswana and Thailand and has been principal investigator on numerous clinical trials.



NIH's NIDA honors four global health scientists

The National Institute on Drug Abuse (NIDA) has recognized four researchers for their contributions to international drug abuse research and training. Named for Excellence in Mentoring was Dr. Robert E. Booth, at the University of Colorado Denver, who has studied intravenous drug users in Ukraine.

Dr. Robert Booth



Dr. Viviana E. Horigian, of the University of Miami, was recognized for Excellence in International Leadership. Her research has included drug abuse and problem behavior of minority youth in Argentina. Her current focus is family therapy for minority youth who abuse drugs and present problem behavior.

Dr. Viviana Horigian



For Excellence in Collaborative Research, NIDA named Drs. Hendrée E. Jones and Gabriele Fischer. Jones is executive director of Horizons at the University of North Carolina, and Fischer is a professor at the Medical University of Vienna. They have partnered on numerous studies in the U.S. and Austria, examining maternal and neonatal impacts of opioids. In one recent multisite trial, they showed that newborns of mothers taking the opioid treatment buprenorphine had diminished withdrawal symptoms after birth compared with newborns of mothers on methadone. These findings have set the stage for a re-examination of 40 years of advice that pregnant women dependent on opioids should receive methadone during pregnancy.

Dr. Hendrée Jones



Dr. Gabriele Fischer

NIH posts global aging research resource

Researchers can access and compare countries' data on aging, use online tools, as well as source materials, via the free "Gateway to Global Aging Data" website, funded by NIH's National Institute on Aging and run by the University of Southern California.

Website: <https://g2aging.org>

US State Department eyes science focus

A new U.S. government report, "Diplomacy for the 21st Century," recommends how the State Department can enhance the world's awareness of U.S. science and technology capabilities, including to maximize the benefit gained from exchange programs.

Full report: <http://bit.ly/AmSciTech>

WHO adds TB, cancer, hepatitis C drugs

The WHO has added drugs for hepatitis C, some cancers and multidrug resistant tuberculosis to its Model List of Essential Medicines, thereby raising the likelihood low-resource populations will gain access to these innovative, but costly, treatments.

Website: <http://bit.ly/WHOmeds2015>

Cancer cases rising globally, study says

Global incidence of prostate and breast cancer have increased significantly, with cancer posing a special challenge in developing countries where access to screening and treatment is rare, according to the "The Global Burden of Cancer 2013" report from the Institute for Health Metrics and Evaluation. In 2013, 8.2 million people died of cancer and almost 15 million cancer cases were diagnosed.

Press release: <http://bit.ly/GlobCancer>

New cookstoves study is released

"The State of the Global Clean and Improved Cooking Sector" is a new report outlining the health problems of indoor air pollution from cooking, and reviewing possible solutions. It was produced by the World Bank and Global Alliance for Clean Cookstoves.

Full report: <http://bit.ly/CleanCS>

Global sexual violence study published

Surveys in seven developing countries showed more than 25 percent of children had suffered sexual violence and received little in the way of care, according to a CDC report.

Full report: <http://bit.ly/CDCchild>

Funding Opportunity Announcement	Details	Deadline
Global Infectious Disease (GID) Research Training Program (D43) (D71)	http://bit.ly/GIDJlyD43 http://bit.ly/GIDJlyD71	July 29, 2015 July 29, 2015
Fogarty HIV Research Training Program for LMICs (D43) (D71) (G11)	http://bit.ly/FogHIVD43 http://bit.ly/FogHIVD71 http://bit.ly/FogHIVG11	July 30, 2015 July 30, 2015 July 30, 2015
Fullbright-Fogarty Postdoctoral Awards	http://bit.ly/FogFul2015	Aug 3, 2015
Fullbright-Fogarty Public Health Fellowships	http://bit.ly/FogFulPH	Oct 13, 2015
Emerging Global Leader Award (K43)	http://bit.ly/leaderK43	Dec. 16, 2015
Global Brain and Nervous System Disorders Research (R21) (R01)	http://bit.ly/BrainR21 http://bit.ly/BrainR01	Jan 5, 2016 Jan 5, 2016
International Research Scientist Development Award (IRSDA) (K01)	http://bit.ly/IRSDA2016	Mar. 2, 2016

For more information, visit www.fic.nih.gov/funding

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Fogarty International Center
National Institutes of Health
Department of Health and Human Services

Managing editor: Ann Puderbaugh
Ann.Puderbaugh@nih.gov

Writer/editor: Cathy Kristiansen
Catherine.Kristiansen@nih.gov

Writer/editor: Shana Potash
Shana.Potash@nih.gov

Web manager: Anna Pruett Ellis
Anna.Ellis@nih.gov

Designer: Carla Conway

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Trainee music video urges malaria prevention

“No Malaria” is a catchy rap video produced by NIH trainees in Cameroon to educate viewers about malaria and how to prevent infection. The three-and-a-half-minute video was planned as an educational and fundraising tool.

Among the lines they sing are, “Together, let’s fight against malaria,” “Mosquitoes fear no one,” and “Malaria plays you like a toy and before you know it, your life is destroyed.” These are interspersed with hard facts, such as 91 percent of the 2,000 daily malaria deaths occur in Africa, and with advice to use bed nets, cut back bushes near homes and drain standing water.

The trainees are developing research skills, with support from Fogarty’s Global Infectious Disease Research Training Program and an initiative targeting undergraduate training, supported by the National Institute on Minority Health and Health Disparities, as well as Fogarty.

The video can be viewed at <http://bit.ly/MalariaRap>