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EXCHANGE

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MHRP
U.S. MILITARY HIV RESEARCH PROGRAM

Newsletter of the U.S. Military HIV Research Program at the Walter Reed Army Institute of Research

Public-Private Partnership Begins HIV Vaccine Efficacy Study In Sub-Saharan Africa

MHRP's Mozambique site was selected to participate in the new Imbokodo HIV vaccine trial.

A private public partnership, supported by MHRP, has launched a large clinical trial to assess whether an experimental HIV vaccine regimen is safe, tolerable and able to prevent HIV infection. A new Phase 2b proof-of-concept study, called Imbokodo, aims to enroll 2,600 HIV-negative women in sub-Saharan Africa. Of 1.8 million new HIV infections worldwide in 2016, 43 percent occurred in eastern and southern Africa, with women and girls disproportionately affected.

The study is sponsored by Janssen Vaccines & Prevention, B.V., part of the Janssen Pharmaceutical Companies of Johnson & Johnson, with co-funding from two primary partners, the Bill & Melinda Gates Foundation (BMGF) and the National Institute of Allergy and Infectious Diseases (NIAID).

HVTN is implementing Imbokodo, and MHRP at WRAIR, the U.S. Army Medical Materiel Development Activity, and the Ragon Institute of MGH, MIT and Harvard are also supporting the trial. In addition, MHRP's partner in Mozambique, CISPOC-INS, is one of the clinical trials sites for the efficacy study.

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Jordan Site Prepares for HIV Epidemiology Study

MHRP has begun site development and training activities for what will be the first observational HIV study conducted in the Kingdom of Jordan.

The upcoming study, RV505, will seek to understand the nature of the evolving HIV epidemic in Jordan; gathering information on HIV risk factors, outcomes, genotypes and drug resistance profiles. Study participants will be recruited through the country's only voluntary counseling, testing and treatment clinic in Jordan. The study, led by Dr. Paul Scott, MHRP's Chief of HIV Epidemiology and Threat Assessment, is expected to start in December 2017.

WRAIR's relationship with Jordan began in 2015 due to its strategic regional importance. Early efforts in the partnership between WRAIR and the Jordanian Royal Medical Services focused on training, improving biopreparedness and upgrading laboratories and equipment.

These activities are part of what is to be a larger regional infectious disease and vaccine research initiative, called the Partnership for Research In the Middle East (PRIME) and headed by Dr. Kayvon Modjarrad, WRAIR's Director of Emerging Infectious Diseases. Additional studies focusing on Middle East Respiratory Syndrome (MERS), survivors of locally reportable diseases and acute febrile illness studies are also in the planning stages for Jordan partner sites.

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Nigeria Biopreparedness Initiative Launches

In September, a multinational group of infectious disease physicians and laboratory experts, including those from Walter Reed Program-Nigeria (WRP-N) and the Nigerian Ministry of Defence's Health Implementation Program (NMOD-HIP), visited the 68th Nigerian Army Reference Hospital in Yaba, Lagos, to assess the hospital's capacity to handle highly contagious infectious diseases and conduct training on laboratory handling of especially dangerous pathogens, such as Ebola.

These activities, which were supported by U.S. Africa Command (AFRICOM), marked the launch of the Nigeria Biopreparedness Initiative (NBI). NBI collaborators aim to build a global consortium of infectious disease trainers and biocontainment facilities that can be leveraged to respond to outbreaks of highly communicable, dangerous infectious diseases in Nigeria and the sub-region.

The hospital assessment evaluated the facility's capacity for laboratory processing of highly contagious specimens and patient care during illness with dangerous infectious diseases. Members of the University of Nebraska Medical Center (UNMC) biocontainment unit team led a training modeled on the National Ebola Training and Education Curricula, modified for low-resource environments.

The NBI aims to develop resources to improve Nigeria's ability to identify, contain and treat emerging, highly communicable, dangerous infectious diseases. Identifying new threats early and implementing a well-informed response are critical to limiting disease impact.

JWARG Begins Infectious Disease Surveillance Study in Nigeria

Clinicians interview a mock patient during training for RV466.

The Joint West Africa Research Group (JWARG) began a study in September designed to identify cases of suspected severe infectious disease at medical centers in West Africa. The study is being led by MHRP with the Nigerian Ministry of Defence.

The multi-site study, called RV466, opened at the 68th Nigeria Army Reference Hospital in Yaba, Lagos, to be followed by three more sites in Nigeria. JWARG plans to expand this research activity into Liberia and Ghana in the coming months.

The study will enroll adult volunteers who present as severely ill with a suspected infectious source. In addition to receiving the usual care for their illness, they will be asked to provide samples for laboratory analysis and to complete a brief questionnaire that captures basic clinical, demographic and exposure data.

Several severe acute infectious diseases are endemic to West Africa, including malaria, yellow fever, Lassa fever and dengue. Others like Ebola virus have caused outbreaks in the region. By identifying and monitoring emerging cases, researchers will be able to characterize and compare patterns of illness and describe epidemiologic patterns of infection, associated exposures and patient outcomes.

Identifying new threats early and implementing a well-informed response are critical to limiting disease impact. Findings from this study will help clinicians better understand regional disease threats and inform response to future outbreaks.

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HIV Vaccine Efficacy Study

The vaccine regimen being tested in Imbokodo is based on "mosaic" immunogens—vaccine components designed to induce immune responses against a wide variety of global HIV strains. The vaccines were initially developed by the laboratory of Dan H. Barouch, M.D., Ph.D., at Beth Israel Deaconess Medical Center, together with Janssen and other partners, including MHRP.

This regimen differs from the one being tested in the Phase 2b/3 HVTN 702 study, an ongoing HIV vaccine efficacy trial sponsored by NIAID that launched late last year in South Africa with major co-funding from NIAID and BMGF. HVTN 702 is evaluating a newer version of the vaccine regimen tested in the Army-led RV144 Thai trial—the only HIV vaccine candidate ever shown to provide some protection against the virus.

In preclinical studies, regimens with mosaic-based vaccines protected monkeys against infection with an HIV-like virus. Findings from two early-stage human clinical trials—which MHRP participated in— suggest that these vaccines are well-tolerated and can generate anti-HIV immune responses in healthy adult volunteers. Based on results from an early-stage clinical trial called APPROACH, reported in July 2017, as well as findings from a second early-stage trial called TRAVERSE, researchers selected a lead candidate regimen for further evaluation in the HVTN705 trial.

World AIDS Day 2017 Celebrates Impact of Strong Global Partnerships

December 1 is World AIDS Day (WAD); a day dedicated to raising awareness about AIDS and HIV. The theme for WAD 2017 is "Increasing Impact through Transparency, Accountability, and Partnerships."

To mark the day, MHRP asked PEPFAR partners in Nigeria, Kenya, Uganda and Tanzania how collaborations with the U.S. Government and DoD to implement PEPFAR have contributed to the fight against HIV/AIDS in their native countries.

Hannah Kibuuka, MBChB, MMed, MPH
Kampala, Uganda

"Through the song partnership between Uganda and the U.S. PEPFAR program we are making sustainable progress towards controlling the HIV epidemic."

Yakubu Adumu, MD, FMCPH
Abuja, Nigeria

"The partnership between the U.S. Military and the Nigerian Military with support from PEPFAR is making great impact in our community through HIV prevention and provision of lifesaving antiretroviral drugs."

Emmanuel Bahemana, MD
Mbeya, Tanzania

The partnership between the government of Tanzania and U.S. MHRP/PEPFAR has improved care and treatment services in the Southern Highlands, especially focusing on HIV, and without this USG support, this would not be possible."

Fredrick Sawe, MBChB, MMED
Kericho, Kenya

"Starting from a disease whose diagnosis was a death sentence...What PEPFAR has been able to is to turn that problem upside down. Testing for HIV now and getting a positive diagnosis is actually a mark of life because what it tells you is that, if you didn't get the test, you wouldn't have known you have the disease, and you wouldn't have been able to get help."

VRC01 Antibody Prolonged Time to HIV Viral Rebound

A recent study showed that infusion of a broadly neutralizing antibody (bNAb) in virally suppressed, early treated volunteers was associated with a modestly delayed rebound of HIV after interruption of antiretroviral therapy (ART).

The study, called RV397 and led by MHRP and the Thai Red Cross Research Centre, is the first randomized, placebo-controlled trial to demonstrate this effect of VRC01.

MHRP research physician Dr. Trevor Crowell presented preliminary findings from RV397 at the 9th IAS Conference on HIV Science in Paris.

Researchers evaluated the use of VRC01 in a small cohort of Thai men who were diagnosed and initiated ART during acute HIV infection, and who had been virally suppressed for about three years.

"This is the first time that the VRC01 antibody has been evaluated in people who started ART during acute HIV infection," said Dr. Trevor Crowell, the MHRP research physician who presented the findings at the 9th IAS Conference on HIV Science in Paris. "We hypothesized these volunteers had a smaller HIV reservoir and less viral diversity, meaning they were less likely to have pre-existing resistance to the antibody."

There was a delay in viral load rebound in volunteers who received VRC01, which occurred at a median of 26 days versus 14 days in the placebo group. One participant who received VRC01 remained virally suppressed for 42 weeks post-treatment interruption.

"Although the delayed time to viral load rebound with VRC01 seen here is likely not clinically significant, it taught us two important lessons," said Dr. Jintanat Ananworanich, Associate Director for Therapeutics Research at MHRP. "It provides the basis for future studies in early treated people with combination bNAbs of higher potency, and we can now investigate the samples from this study to identify factors that might have contributed to the delay in rebound."

DREAMS Interviews Illuminate Benefits to Participants

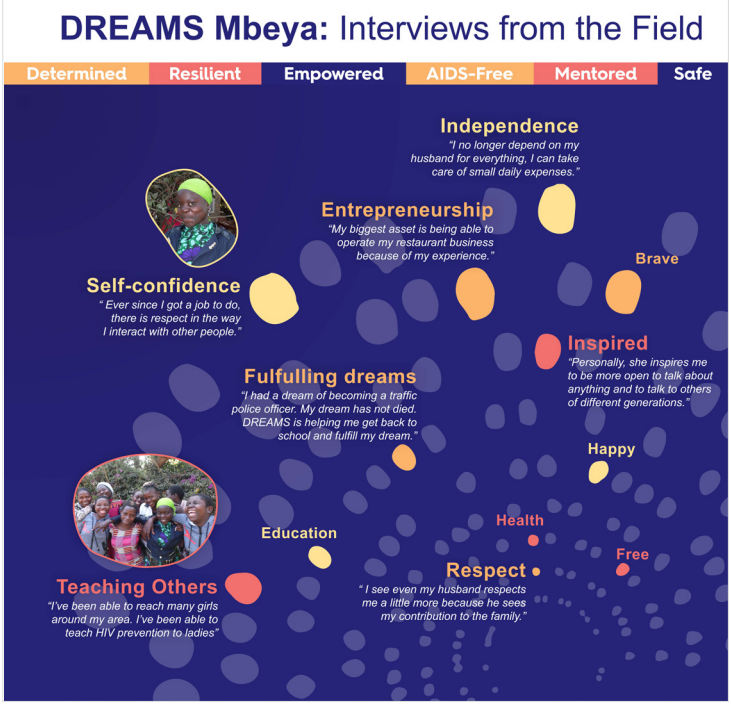
A PEPFAR team in Tanzania found that adolescent girls and young women participating in DREAMS activities described themselves as being more self-confident, inspired and independent as a result of the initiative.

The DREAMS project aims to give girls the skills they need to be Determined, Resilient, Empowered, AIDS-free, Mentored and Safe. The initiative was launched in Tanzania in June 2016 and targets girls and women ages 15-29. DREAMS program interventions include HIV education, community mobilization, vocational training, caregiver programs and domestic violence awareness.

A team of interviewers from Mbeya spoke with program leaders and participants and coded recurring themes. Some of the words interviewees commonly used to describe benefits of the program included "fulfilling dreams," "respect" and "self-confidence."

"I no longer depend on my husband for everything," said one participant who said that the DREAMS activities have helped her gain more independence. Another valued the skills she has learned that help her teach others in her community, explaining, "I've been able to reach many girls around my area...to teach HIV prevention."

Interviewees also made suggestions for program improvement, highlighting the need for safer, more convenient meeting spaces and expansion to reach beyond urban areas into surrounding villages.



Late HIV Vaccine Boost Elicits Higher Immune Response in Volunteers from the RV144 Thai Trial

The Army-led RV144 HIV vaccine trial provided the first evidence in humans that a safe and effective preventive HIV vaccine is possible. A new study has shown that boosting RV144 volunteers 6-8 years later with AIDSVAX B/E vaccine resulted in higher immune responses than were seen immediately after RV144.

RV144 tested an ALVAC-HIV prime vaccine boosted by AIDSVAX B/E. In the RV144 vaccine trial, the efficacy at 3.5-years was 31.2%; however, a higher early effect (60%) was seen at 12 months.

The new study, RV305, was a randomized, double blind, placebo-controlled trial. HIV-negative RV144- vaccinated Thai volunteers received a vaccine boost with ALVAC-HIV or AIDSVAX B/E, either combined or alone. Findings from RV305 were published in The Journal of Infectious Diseases.

The late-boost study, led by scientists from AFRIMS and the Thai Ministry of Health, found that vaccine boosts containing AIDSVAX B/E generated increased, but short-lived, humoral and CD4+ T-cell responses that did not rise further after subsequent boosting. Futhermore, RV305 volunteers who received AIDSVAX B/E produced significantly higher numbers of binding antibodies than those who did not receive the AIDSVAX B/E boost.

"We remain grateful to all of the volunteers who returned to participate in this study 6 to 8 years after the original trial. It is a testament to the long standing joint commitment between Thailand and the United States to ending the HIV epidemic."
- Sandhya Vasan, M.D., Science Director of the Department of Retrovirology at AFRIMS, HJF

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Please submit your questions and comments via email to communications@hivresearch.org. Editors: Lisa Reilly, Jamie Livengood

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