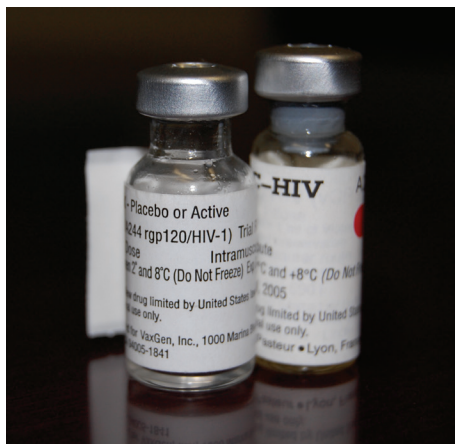




## HIV Research Success

*The U.S. Military HIV Research Program (MHRP) is at the forefront of the battle against HIV to protect U.S. troops from infection and reduce the global impact of the disease.*

Since its inception in 1986, MHRP has emerged as a world leader in HIV vaccine research, threat assessment and epidemiology, HIV diagnostics and cure research. The integration of prevention and treatment has helped MHRP build strong and trusting relationships within the communities where research is conducted, and provides an ethical framework to conduct HIV clinical research.



### RV144 HIV Vaccine Trial

MHRP's 2009 landmark Thai Trial (RV144) was the first clinical trial to show a vaccine regimen was safe and modestly effective in preventing HIV transmission.

### HIV Vaccine Development

#### Developing and Testing Next Generation Vaccines

MHRP played a key role in animal studies and early clinical testing of a novel vaccine strategy using Ad26/MVA/protein vaccine candidates aimed at global protection from HIV. This collaboration led to a Phase II study, which our partner sites in Thailand and Uganda participated in, called the APPROACH trial.

APPROACH showed promising immune responses and helped lead to a new efficacy study that HVTN launched in 2017 called Imbokodo (HVTN705). The study vaccines are Ad26.Mos4. HIV (Ad26 vaccine) and Clade C gp140 (protein vaccine), produced by Janssen Vaccines & Prevention B.V., part of the Janssen Pharmaceutical Companies of Johnson & Johnson.

MHRP researchers are also developing and testing innovative vaccine strategies, including new adjuvants and improved protein constructs aimed at subtype B, which is most relevant to U.S. service members. New clinical trial sites and partnerships are in development for future HIV vaccine studies in Germany that will focus on subtype B.

### An HIV Vaccine is Possible

In 2009, MHRP announced results of an Army-sponsored clinical trial in Thailand that demonstrated, for the first time, a modest ability to protect against HIV infection, reducing the number of infections by 31.2 percent.

This Thai HIV vaccine trial, known as RV144, tested the "prime-boost" combination of two vaccines: ALVAC<sup>®</sup> HIV vaccine (the prime) and AIDSVAX<sup>®</sup> B/E vaccine (the boost). The vaccine combination was based on HIV strains that commonly circulate in Thailand.

Since then, researchers have detailed clues to why the vaccine tested in RV144 protected some volunteers. RV144 and subsequent research has transformed the HIV vaccine field and dominates the research framework to develop a successful HIV vaccine. A new efficacy study, HVTN702, which is based on RV144, began in November 2016 in South Africa.

# Soldier Health. World Health.



## Force Readiness

Today, with nearly 37 million infections worldwide, HIV continues to pose a significant and persistent threat to force protection, military readiness and national security. The Army is a critical partner in the whole of government approach to deal with the most devastating pandemic of our time. MHRP at the WRAIR:

- Oversees all HIV-1 testing for the Army, and serves as the Tri-Service HIV Reference Laboratory
- Tracks the HIV epidemic in active-duty forces and assesses the risk of HIV exposure to deployed U.S. and allied forces overseas
- Evaluates rapid tests to ensure battlefield blood safety

[www.hivresearch.org](http://www.hivresearch.org)  
[@MHRPinfo](https://www.facebook.com/hivresearch)



## HIV Therapeutics and Cure Research

To better understand how the immune system responds during the acute (early) stage of HIV infection and explore genetic changes in the virus, MHRP launched two innovative cohort studies in Thailand and East Africa—RV217 and RV254.

Recently, MHRP is conducting functional “cure” studies within these acute infection cohorts. These small studies are evaluating strategies aimed at inducing HIV remission (controlling the virus without the need for long term anti-retroviral treatment). Interventions include strategies to give HIV vaccines or antibody against HIV.

## Threat Assessment and Diagnostics

Our Threat Assessment team provides knowledge products that help inform public health policy in the military to decrease HIV infection and other related sexually-transmitted diseases.

MHRP’s HIV Diagnostics and Reference Laboratory (HDRL) serves as the final DoD authority for HIV infection status in the Army and the military’s Tri-Service Reference Laboratory. The diagnostics team is a leader in defining operational parameters for HIV and related disease diagnosis and also establishes critical laboratory monitoring parameters utilized by Military Health Care Providers for therapeutic management of a wide variety of infectious diseases.

## President’s Emergency Plan for AIDS Relief (PEPFAR)

Since 2004, PEPFAR has helped save the lives of countless people suffering from HIV/AIDS by providing HIV prevention and treatment services around the world. The integration of PEPFAR activities at our research sites has helped MHRP build strong and trusting relationships within the communities where research is conducted and provides an ethical framework to conduct HIV clinical research.

MHRP implements PEPFAR activities with both civilian and military populations in Africa. Through PEPFAR, MHRP and local partners are building sustainable systems and empowering individuals, communities and nations to battle HIV in the part of the world hit hardest by this devastating disease.



## MHRP Contributions

| 1980s                                                    | 1990s                                                          | 2000s                                                                                                       | 2010s                                             | Today                                                                        |
|----------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------|
| The first to identify heterosexual transmission of HIV-1 | Characterized more than half of the known HIV genetic subtypes | Led the first vaccine clinical trial that showed a reduction in the risk of HIV infection to humans (RV144) | Conducted the first Ebola vaccine trial in Africa | Is a leader in the study of acute HIV infection and functional cure research |

*This informational flyer was developed by HJF. The views expressed are those of the authors and should not be construed to represent the positions of the U.S. Army or the Department of Defense.*