

WRAIR Walter Reed Army Institute of Research
Soldier Health • World Health

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, epidemiology 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.



Army Liposome Formulation (ALF)

MHRP scientists developed a family of new adjuvants called the Army Liposome Formulation (ALF). The ALFQ type was awarded a patent in 2019. ALF is being tested in several ongoing clinical trials with malaria, HIV, and COVID-19 vaccines.

HIV Vaccine Development

Developing and Testing Next-Generation Vaccines

MHRP is engaged in advancing next-generation vaccine concepts and evaluating novel strategies such as rapid dose administration, late boosting and fractional dosing.

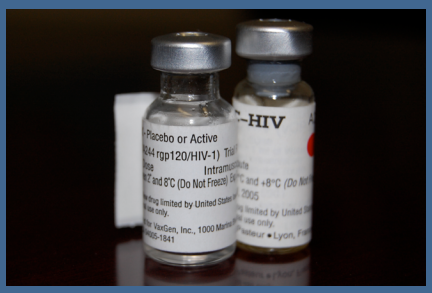
Our researchers are developing and testing new antigens and we plan to harness the power of novel platforms – such as mRNA – to generate more potent immune responses.

These new immunogens and delivery platforms, combined with a more powerful adjuvant the Army has already developed—ALF—have the potential to generate broadly neutralizing antibodies to effectively prevent HIV.

MHRP began a comparative adjuvant HIV vaccine trial in 2021 in Kenya that will also provide insight into the role of adjuvants in priming versus boosting.

Another clinical study will examine fractional dosing of a candidate HIV vaccine to determine whether smaller doses of valuable antigen will induce effective immune response. MHRP researchers are also working on a dose escalation strategy they call RapidVax.

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® HIV vaccine (the prime) and AIDSVAX® 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.

Soldier Health. World Health.



Epidemiology and Threat Assessment

Our Department of Epidemiology and Threat Assessment (DETA) conducts research on the epidemiology of HIV and other infectious diseases that threaten the readiness of U.S. and allied military forces. This includes domestic and international observational studies of both military and civilian populations.

DETA research directly informs military policies to ensure high clinical standards for HIV prevention and treatment, align clinical care policies and procedures across the military services, and harmonize administrative processes and procedures related to care of active duty Service Members at risk for or living with HIV and other STIs. International collaborations provide opportunities to influence local and international guidelines for decreasing transmission, morbidity, and mortality associated with HIV and other STIs.

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MHRP
U.S. MILITARY HIV RESEARCH PROGRAM

Acute HIV 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.

MHRP is conducting functional "cure" studies within these acute infection cohorts. These small studies are evaluating strategies aimed at inducing HIV remission and seek to find an effective tool that will allow people living with HIV to be able to control the virus without the need for long term anti-retroviral treatment (ART). Interventions are wide-ranging and include therapeutic HIV vaccines and broadly neutralizing antibodies.

Global Research

Since the onset of the HIV epidemic, MHRP has cultivated an international network of state-of-the-art labs and clinical trial centers in Africa and Asia. Our dedicated researchers, staff and partners are committed to halting the spread of HIV around the world. This infrastructure provides a unique and effective platform to conduct research and assess candidate vaccines in endemic settings around the globe. It has also been leveraged to fight emerging infectious diseases including Ebola, Marburg and COVID-19.

President's Emergency Plan for AIDS Relief (PEPFAR)

Since 2003, PEPFAR has helped save the lives of over 20 million 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 provides a range of life-saving services including HIV counseling and targeted testing including index testing, provision of antiretroviral treatment, pre-exposure prophylaxis, voluntary medical male circumcision, prevention of mother to child transmission, early infant diagnosis, and viral load testing, among other areas. Our PEPFAR programs support services for vulnerable populations including children, adolescent girls and young women (AGYW), men and other key populations.

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.

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