



amfAR™

MAKING AIDS HISTORY

INNOVATIONS

APRIL 2021

Countdown to a Cure for AIDS: *Our Impact*

Also Inside:

**New amfAR Grants
Target Intersection
of HIV and COVID-19**

**amfAR Study Wins
Elsevier Atlas Award**

**Important New Study of
Young Adults with HIV**

APRIL 2021

The biannual newsletter of amfAR,
The Foundation for AIDS Research

120 Wall Street, 13th Floor
New York, NY 10005-3908
T: (212) 806-1600
F: (212) 806-1601

1100 Vermont Ave. NW
Suite 600
Washington, DC 20005
T: (202) 331-8600
F: (202) 331-8606

TREAT Asia
Exchange Tower
388 Sukhumvit Road
Suite 2104
Klongtoey, Bangkok 10110
Thailand
T: (+66) 2 663-7561
F: (+66) 2 663-7562

www.amfar.org

Innovations Staff:
Andrew McInnes, Editor
Adam Winters, Senior Staff Writer
Raoul Norman-Tenazas,
Creative Director
Yolande Hunter-Johnson,
Creative Coordinator



bbb.org/charity

amfAR meets the BBB
Wise Giving Alliance's
Standards for Charity
Accountability

COVER STORY

8-9

Countdown to a Cure for AIDS: *Our Impact*

Reflecting on what we have accomplished
and the way forward for HIV research

POLICY

- 4 amfAR Study Wins Elsevier Atlas Award
- 4 HIV-Related Deaths Drop by Half in U.S.
- 5 FDA Approves Long-Acting Injectable to Treat HIV
- 5 Long-Acting Injectable Prevents HIV in Women
- 6 In South Africa, a Community Effort to Improve Treatment Delivery
- 6 People with HIV Should Be Prioritized for COVID Vaccine

PEOPLE

- 7 amfAR Welcomes New Trustees

RESEARCH

- 10 amfAR Invests in 'Next Generation' HIV Cure Intervention
- 10 HIV Study Among Top Ten Breakthroughs of 2020
- 11 New amfAR Grants Target Intersection of HIV and COVID-19
- 11 amfAR Partners with CytoDyn to Expand HIV Cure Strategy
- 12 "Bold and Imaginative:" 2021 Krim Fellows

GLOBAL

- 13 Important New Study of Young Adults with HIV
- 13 Global Gag Rule Rescinded

IN MEMORIAM

- 14 Remembering Dr. Joseph Sonnabend, Early Pioneer on AIDS

EVENTS

- 15 A Gala for Our Time



Photo: Kevin Tachman

A Great, Broad Benefit

Much has been written about COVID vaccine skepticism. Having been told that vaccines typically take 10 years or more to develop, there are those who believe that corners were cut, testing was rushed, or that the astonishingly fast vaccine development process was driven by political calculations rather than public safety. These concerns are understandable.

Yet there's a very good reason for this extraordinary achievement, and it bears repeating. As *The Wall Street Journal* wrote in December 2020, "many of the new technologies and approaches employed to create potent Covid-19 vaccines and therapies trace their origins to the desperate search, starting in the early 1980s, to slow the spread of HIV."

Four decades of HIV research has given rise to technologies, infrastructure, platforms and strategies that were quickly adapted to SARS-CoV-2—the coronavirus. The mRNA technology used by Moderna for its COVID vaccine, for example, was earlier tried against HIV. The irony, of course, is that after 40 years we still don't have an effective HIV vaccine—principally because HIV has multiple strains and mutates rapidly and constantly, making it an extremely elusive target.

At amfAR, we often talk about the broad benefits of AIDS research. These are the spin-offs—the treatments and technologies developed for HIV that have lifesaving applications for other conditions and diseases. COVID vaccines could well be the greatest broad benefit of all.

As the COVID-19 pandemic recedes, we will do two things. First, we'll pay tribute to the brilliant and dedicated HIV researchers—many of them amfAR grantees—who suddenly, and without fanfare, switched gears at the beginning of 2020 to confront the deadly new threat of COVID-19. Along with our heroic front-line healthcare workers, we are deeply indebted to them.

Second, we will pursue a cure for HIV with renewed vigor, regaining the momentum we've lost over the past 16 months. We hope our researchers can quickly return to focusing exclusively on HIV, perhaps applying new lessons learned from COVID-19.

I want to thank you personally for staying with us through these difficult months. As the economy improves and lives get back on track, I hope that with your continued support, we can consign HIV, along with SARS CoV-2, to the history books.

amfAR Study Wins Elsevier Atlas Award

Study was first to rigorously quantify effects of coronavirus in Black communities nationwide

In December, an amfAR [study](#) that showed the disproportionate impact of COVID-19 on Black communities won the Elsevier Atlas Award. The study was selected from among thousands of recent publications for its potential to significantly impact lives. Greg Millett, amfAR Vice President and Director of Public Policy, accepted the award on behalf of his team of study investigators.

Published in *Annals of Epidemiology*, the study revealed that disproportionately Black counties—representing about one in five U.S. counties—accounted for 52% and 58% of COVID-19 cases and deaths, respectively.

Over 70% of COVID-19 data by race were unknown in May 2020. The amfAR study was significant because it offered the first national glimpse of COVID-19's impact on the Black community in the U.S. The study was also important because it countered the narrative

that underlying health conditions (e.g., diabetes, cerebrovascular disease) were responsible for disparate rates of SARS-CoV-2 diagnoses among Black Americans. Instead, social factors such as high rates of uninsured and crowded households in Black counties were responsible for greater rates of COVID-19.

As the first study to assess the impact of COVID-19 on Black communities nationally, the study generated significant media, including mentions in the *Washington Post*, *Bloomberg*, *NPR*, *CNN*, *MSNBC*, and other outlets. It was also mentioned by Governor Andrew Cuomo during a televised daily COVID-19 update; highlighted by the directors of the National Institutes of Health and the Centers for Disease Control and Prevention; and has been cited by over 200 scientific publications since its release.

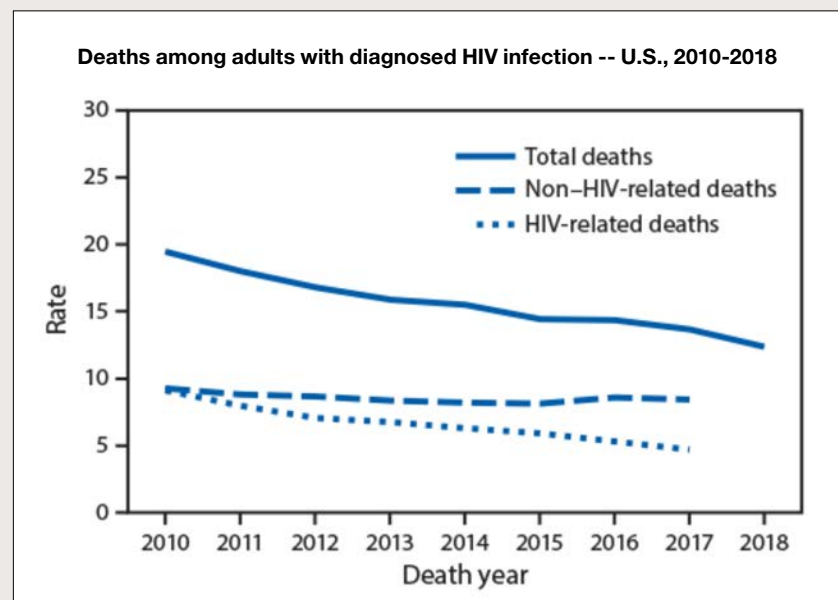
amfAR shares the honor and award with investigators from partner institutions who



Study lead author Greg Millett, amfAR VP and Director of Public Policy

worked collaboratively with amfAR staff to complete the groundbreaking study, including: The Rollins School of Public Health, Emory University, Atlanta, GA; Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD; The O'Neill Institute for National and Global Health Law, Georgetown University, Washington, DC; John D Bower School of Population Health, University of Mississippi Medical Center, Jackson, MS; Center for Vaccine Innovation and Access, PATH, Seattle, WA.

HIV-Related Deaths Drop by Half in U.S.



Source: CDC

Deaths due to HIV-related causes fell by 48.4% from 2010 to 2017, according to the U.S. Centers for Disease Control and Prevention (CDC). This highly encouraging finding was the result of successes in HIV testing, treatment for people diagnosed with HIV, and achieving viral suppression, according to the CDC.

Analyzing national HIV surveillance data for adults and young people 13 and older who had been diagnosed with HIV, researchers found more worrisome trends for certain groups and geographic regions. From 2010 to 2018, rates of HIV-related deaths among women, multiracial, and Black people saw less significant drops. In 2017 the rate in Southern states was about twice that of the Northeast.

“Expanded efforts to address these and other structural barriers are critical to improving health outcomes, including reducing differences in HIV-related death rates, especially among Black persons and persons in the South,” the authors noted.

Read the full report [here](#).

FDA Approves Long-Acting Injectable to Treat HIV

Monthly regimen can replace daily pills for individuals on treatment with undetectable virus



Cabotegravir and rilpivirine are administered in two separate shots. (Photo: Business Wire)

A long-acting HIV treatment consisting of two shots monthly was approved in January by the U.S. Food & Drug Administration (FDA) for adults with suppressed virus currently on a stable antiretroviral regimen.

Cabenuva, a combination of cabotegravir and rilpivirine administered in two separate shots, is the first FDA-approved injectable, complete regimen given once per month for people with HIV. Patients receive the two shots during the same visit to a physician.

The approval follows clinical trials that demonstrated the new treatment was as effective as the current standard of care: once-daily oral antiretroviral therapy (ART). More than 90% of study participants who were offered to switch to Cabenuva expressed an interest in the monthly injectable over a daily pill.

“We’re encouraged that many people with HIV will now have an option of highly effective monthly shots rather than taking a pill every day,” said Greg Millett, amfAR Vice President and Director of Public Policy. “Still, obstacles remain including high cost and the fact that people with HIV not currently on a stable ART regimen who have unsuppressed virus won’t directly benefit from this news. There is more work to do to help everyone.”

Vocabria, a tablet form of cabotegravir, was also approved by the FDA. The drug is intended for use along with Edurant—oral rilpivirine—for one month prior to starting Cabenuva to ensure the medications are well tolerated.

“We’re encouraged that many people with HIV will now have an option of highly effective monthly shots rather than taking a pill every day.”

ViV Healthcare, which was granted the approvals for Cabenuva and Vocabria, has clinical trial data showing that a once every other month dose of the long-acting injectable is equally effective. The pharmaceutical company is seeking FDA approval for use every two months.

Read amfAR’s [series of reports](#) on the critical issues that must be navigated as long-acting antiretrovirals advance to market.

Long-Acting Injectable Prevents HIV in Women

A shot administered every two months is more effective at preventing HIV in women than the daily oral pill currently on the market, according to clinical trial results announced in November.

Researchers report that the long-acting antiretroviral cabotegravir (CAB-LA) used as pre-exposure prophylaxis (PrEP) against HIV infection was safe and 89% more effective at preventing HIV acquisition than the current standard of care, daily oral TDF/FTC, known by the brand name Truvada.

The clinical trial HPTN 084 enrolled more than 3,200 participants across seven countries in sub-Saharan Africa.



After an interim analysis of the randomized, controlled, double-blind study by an independent Data and Safety Monitoring Board (DSMB) found that injections of CAB-LA every two months provided “superior efficacy” against HIV, the DSMB recommended unblinding participants and announcing the results.

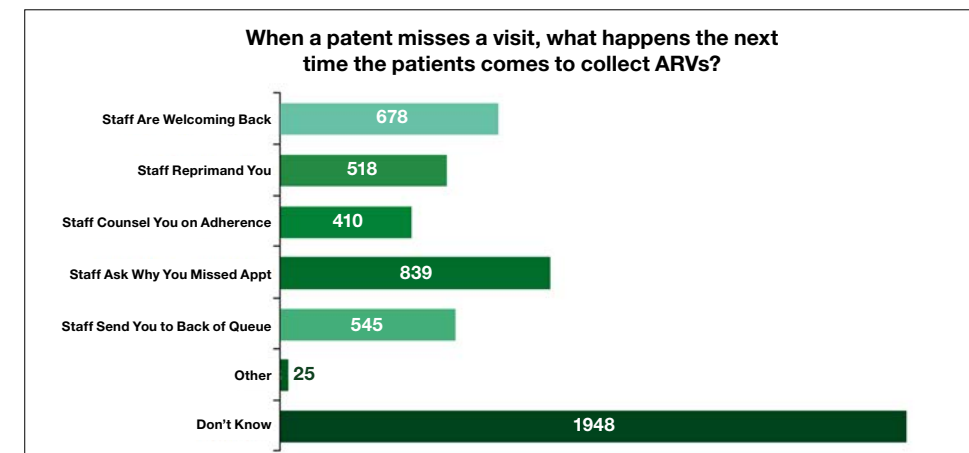
A companion study, HPTN 083, previously reported the drug is as or more effective than once-daily PrEP for cisgender men and transgender women who have sex with men.

In South Africa, a Community Effort to Improve HIV Treatment Delivery

While HIV treatments have improved dramatically in the past decade, the uneven quality of health care services that deliver treatment to people continues to undermine successful treatment outcomes. The Ritshidze Project—meaning “Saving Our Lives” in TshiVenda, one of South Africa’s official languages—is working to understand the causes and develop solutions to this complex problem.

The project was developed in 2019 by a group of organizations in South Africa called the PLHIV Sector to gather data on the quality of health services, propose solutions, and hold leaders responsible for improving the care provided to people living with HIV. The project monitors over 400 clinics, assessing the quality of care through interviews with facility staff and more than 6,400 patients conducted by trained community monitors who are themselves users of the health facilities.

Ritshidze closes the gap between simply knowing about persistently poor outcomes for patients in these clinics and explaining why people fall out of care. Findings from Ritshidze show persistent staffing shortages, wait times at clinics of over five hours, shortages of HIV



and TB medicines and contraceptives, and TB infection control concerns. In addition, staff attitudes can create disincentives for patients to return to care—such as sending individuals to the back of the line if they miss an appointment.

“What distinguishes Ritshidze from other quality assurance monitoring programs is that the indicators and surveys themselves were developed by community members and activists,” said Brian Honermann, amfAR’s deputy director of public policy, who helped develop the data dashboard and analytics system to aid in the processing of Ritshidze data. “So the data gathered are specific to

the problems being experienced by users of the health system.” By focusing on these issues, Ritshidze is able to zero in on the root causes that drive people away from clinics and undermine HIV and TB treatment goals.

amfAR’s Public Policy Office supported the development of the survey tools with the PLHIV Sector partners: Treatment Action Campaign, the National Association of People Living with HIV, Positive Action Campaign, Positive Women’s Network, and the South African Network of Religious Leaders Living with and Affected by HIV/AIDS (SANERELA+).

People with HIV Should Be Prioritized for COVID Vaccine

As coronavirus vaccine distribution gathers pace across the U.S., there is limited consensus and some confusion as to which populations should be prioritized for the vaccine. In many cases, vaccine eligibility is determined by states or local health authorities. At the federal level, the U.S. Centers for Disease Control and Prevention (CDC) develops guidance on coronavirus vaccine distribution based on the recommendations of its Advisory Committee on Immunization Practices.

While early studies suggested that people living with HIV were at no greater risk for serious illness and death from COVID-19 than other groups, subsequent research has produced compelling evidence to the contrary. Larger analyses from studies in the United Kingdom,

South Africa, and the U.S. have all found evidence of increased risk of hospitalization and mortality. In fact, data from these studies now suggest that people living with HIV are at approximately double the risk of hospitalization and death from COVID-19 compared to those who are HIV negative. Additional smaller multicenter studies in the U.S. and Europe confirm this increased risk of severe illness, hospitalization, and mortality in people living with HIV.



The precise reasons for this elevated risk are not entirely clear. But rather than spend precious months trying to clarify their underlying causes, amfAR believes that the available data persuasively demonstrate the need to prioritize access to the vaccine for all people living with HIV without further delay.

amfAR Welcomes New Trustees

amfAR is delighted to welcome three new and one returning member to its board of Trustees. Amy Andelson, Larry Milstein, Billy Porter, and Dr. Mervyn F. Silverman were elected at a virtual board meeting on October 2, 2020. Dr. Silverman, a former amfAR President and current chair of amfAR's Program Advisory Council, returns to the board after rotating off in 2018.



AMY ANDELSON is a Los Angeles-based author and Emmy Award-winning screenwriter and producer. The niece of founding board member Sheldon Andelson and daughter of amfAR Trustee Arlen Andelson, she has long been an ally in the fight against AIDS and is committed to continuing her family's mission to find a cure for the disease.

“I am so honored to join the distinguished board of amfAR to continue my family's mission of finding a cure for this disease. I look forward to helping reenergize a new generation to make AIDS history!”



BILLY PORTER is an American actor and singer and star of Broadway and television. He won the Best Actor in a Musical award for his role in *Kinky Boots* at the 2013 Tony Awards and a Grammy for Best Musical Theater Album in 2014. He currently stars in the television series *Pose*, for which he won a Primetime Emmy, becoming the first openly gay black man to be nominated and win in a lead acting category at the Primetime Emmys.



MERVYN F. SILVERMAN, M.D., MPH, was director of health for San Francisco from 1977 to 1985, where he was instrumental in the launch of a citywide program to combat the growing AIDS epidemic, a model that was replicated nationwide. Since first joining the amfAR board in 1986, Dr. Silverman has held numerous leadership positions including president from 1986 to 1996, national spokesperson, and secretary.

“For over 30 years amfAR has been an important part of my life. It is exciting to be back on the board with such outstanding members and the terrific staff. Especially challenging is to deal with all of the aspects of HIV/AIDS and the impact of the ongoing pandemic.”



LARRY MILSTEIN is the co-founder of PRZM, the leading Gen Z consultancy that advises nonprofit clients and Fortune 500 companies on next gen engagement and social media communication. He is the co-founder of ZOOMTOPIA, the first-ever virtual gala held for COVID-19 relief efforts, and was recently named a Forbes 30 Under 30 for the Class of 2021.

“I am most excited about helping amfAR share its commitment to scientific excellence and relentless advocacy with a new generation of supporters. From innovative digital strategies to creative in-person engagements, amfAR is pioneering non-profit leadership for today's world—and I am committed to supporting this effort by lending a next gen perspective.”

Countdown to a Cure for AIDS: *Our Impact*

The Countdown to a Cure for AIDS is an amfAR research initiative aimed at developing the scientific basis for a cure.

The Countdown has enabled researchers to answer many of the key questions standing in the way of a cure. Highlights include:

How important is the co-receptor CCR5 in curing HIV?

BEFORE THE COUNTDOWN

Timothy Ray Brown —“the Berlin patient”—had been cured of HIV through a stem cell transplant. For years, this remained the only case of a cure. Was it just a one-off—or could such a cure be replicated?

COUNTDOWN BREAKTHROUGH

amfAR researchers confirmed the cure of a second stem cell transplant recipient—“the London patient.” They also confirmed that a rare genetic mutation known as CCR5-delta-32 played a critical role in both cases.

THE WAY FORWARD

amfAR researchers are currently testing an experimental anti-CCR5 therapeutic called Vyrologix to see if it can mimic the mutation when given as part of a stem cell transplant. The strategy could greatly increase access to this type of HIV cure.

Can a boosted immune system eradicate HIV?

BEFORE THE COUNTDOWN

Immune interventions, such as therapeutic vaccines and TLR agonists, had been tested alone and produced detectable but insufficient outcomes.

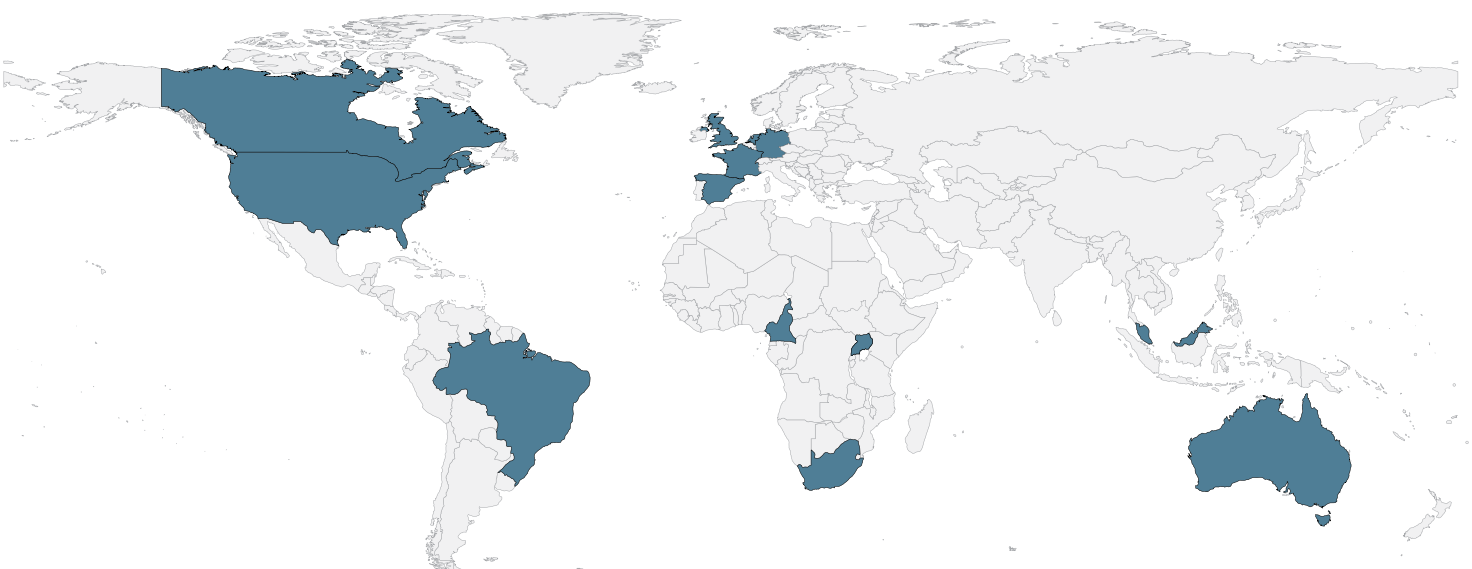
COUNTDOWN BREAKTHROUGH

amfAR researchers successfully cured HIV in monkeys in two studies. One study tested a combination of a TLR agonist and broadly neutralizing antibodies; the other used a TLR agonist and a vaccine.

THE WAY FORWARD

In August 2020, the amfAR Institute for HIV Cure Research began enrolling patients in a pioneering clinical trial of a combination of all three of these therapies—a TLR agonist, antibodies, and a vaccine.

amfAR's Countdown Investments Have Supported Research Teams Worldwide



Could gene therapy produce a viable cure?

BEFORE THE COUNTDOWN

CAR T cells—T cells that have been genetically engineered to target and destroy specific cells—had successfully been used to treat cancer but not HIV.

COUNTDOWN BREAKTHROUGH

amfAR researchers engineered CAR T cells that could both resist HIV infection and destroy the virus far more effectively than naturally occurring T cells.

THE WAY FORWARD

Through its ARCHE-GT initiative, amfAR is combining these CAR T cells with other promising gene therapies in an effort to develop an intervention that can eradicate HIV from the body with a single injection.

Why can some people control HIV without treatment?

BEFORE THE COUNTDOWN

Researchers had long known that rare individuals can control HIV without antiretroviral therapy (ART). But the rarity of these individuals hindered the study of the mechanisms behind their unusual ability.

COUNTDOWN BREAKTHROUGH

amfAR researchers showed that one mechanism of control involves HIV integrating into “gene deserts” where it remains tightly locked down.

THE WAY FORWARD

amfAR’s Project-PTC is bringing together ART-free controllers from around the world into one study. The researchers aim to understand how and if this natural control of the virus can be replicated in all people living with HIV.

How do we know if there’s no viable virus left?

BEFORE THE COUNTDOWN

An amfAR research consortium had studied multiple assays with the potential to detect the hidden HIV reservoir that presents the main obstacle to a cure. All had drawbacks.

COUNTDOWN BREAKTHROUGH

amfAR researchers developed a new assay that can, in one simple step, sort reservoir viruses that can reproduce from those that cannot.

THE WAY FORWARD

The cure research field recognizes this assay, called IPDA, as the gold standard for efficiently detecting the HIV reservoir. It could play an important role in determining whether a person has been cured.

Since launching the **Countdown in 2014**, amfAR has awarded:

\$50 million to
300 researchers at
99 institutions in
16 countries

We maximize the impact of every dollar:



To date, Countdown studies have resulted in **184** published papers.



Compared to others in the HIV cure field, papers by amfAR scientists generated **2.5** times as many citations and were approximately **30%** more likely to translate into clinical research.



Of the top **10** most published cure researchers, **seven** are amfAR grantees.

amfAR is one of the **largest funders of HIV cure research in the world**. In 2018, we were the second largest funder—after the U.S. National Institutes of Health—and in 2019 we were third.

We harness expertise from beyond the HIV field. From data scientists to bioengineers, we have recruited top-level talent to work on some of the most difficult cure-related challenges.

We invest in diversifying:



Approaches – From gene therapy to “shock and kill” to immunotherapy, amfAR is pursuing every promising path to a cure.



Populations – Too often, studies only include a very small slice of the populations impacted by HIV. amfAR includes women and people from every continent in its clinical trials and/or cohorts.



Scientists – amfAR supports both young scientists with creative new ideas and stalwarts in the field with decades of knowledge and expertise. We also fund research teams in both higher- and lower-income countries.

amfAR Invests in ‘Next Generation’ HIV Cure Intervention

New grant initiative seeks out novel ideas and technologies, borrows from cancer research

amfAR has awarded funding to researchers exploring an HIV cure approach that has previously shown promise in cancer therapy.

The only known cases of HIV cure to date occurred in people living with HIV—the Berlin and London patients—whose blood cancer was treated with a stem cell transplant. Both received stem cells from donors with a genetic mutation that left them with no functional CCR5 protein—the main gateway that enables most types of HIV to enter and infect cells.



Dr. Jerome Zack

“While we learned a great deal from these cases, it just isn’t possible to apply or adapt this type of procedure to cure everyone who’s

living with HIV,” said amfAR Chief Executive Officer Kevin Robert Frost. “Though a number of different avenues are currently being pursued

in the search for a cure, we sought research projects that could seed the next generation of potential interventions.”

Veteran HIV researcher and former amfAR grantee Jerome Zack, Ph.D., of the University of California, Los Angeles, will employ a new intervention attempting to rid the body of the persistent reservoir of HIV—the ultimate barrier to a cure. Dr. Zack and colleagues will use natural killer (NK) cells in an effort to eliminate cells harboring reservoir virus from

the body. NK cells are the foot soldiers of the innate immune system, delivering an immediate and potent counterattack against infectious agents such as HIV.

HIV Study Among Top Ten Breakthroughs of 2020

Science magazine’s annual research list includes landmark study of elite controllers

A groundbreaking study of elite controllers—the small group of people who can control their HIV without medications—has been included by the journal *Science* in the top ten breakthroughs of 2020 among all fields of scientific research, including biology, physics, chemistry, geology, astronomy and so on.



Lead author of the study, Dr. Xu Yu

The research, led by investigators at the Ragon Institute and Brigham and Women’s Hospital in Boston, included several co-authors who are members of the amfAR Institute for HIV Cure Research.

Wanting to determine whether the genetic environment into which HIV inserts itself differs between elite controllers (ECs) and others, the

researchers compared 64 ECs with 41 HIV-positive people on treatment. They found that the virus in ECs is more likely to be found in “gene deserts,” regions where the HIV remains tightly locked down, unable to replicate.

In a report on the study, amfAR Vice President and Director of Research Dr.

Rowena Johnston concluded: “Armed with this new vision of what one kind of cure might look like, researchers will now aim to induce the immune systems of non-controllers to bring about the same result.”

The research was originally published in August in the prestigious journal *Nature*.

“CAR-NK cells ... have the potential to be designed for off-the-shelf use, vastly simplifying their broad application.”

These cells can be administered either in their naturally occurring form, or they can be engineered as CAR-NK cells to enhance their ability to kill their targets. To compare the ability of unaltered and CAR-NK cells to affect the rebound of virus when antiretroviral therapy is withdrawn, the researchers will employ several novel technologies developed by Dr. Zack. These include the insertion of a barcode into viruses so that the fate of each individual virus can be tracked, and use of a latency reversing agent developed in his lab.

“An important advantage of this approach is that CAR-NK cells—unlike CAR-T cells—have the potential to be designed for off-the-shelf use, vastly simplifying their broad application,” said Dr. Rowena Johnston, amfAR Vice President and Director of Research.

New amfAR Grants Target Intersection of HIV and COVID-19

In January, amfAR awarded approximately \$700,000 in funding to researchers aiming to answer two key questions at the intersection of HIV and SARS-CoV-2, the virus that causes COVID-19. First, what are the risks for COVID “long-haulers”—those who continue to experience debilitating symptoms long after clearing infection—who are living with HIV? And second, what, if any, effect does SARS-CoV-2 have on the HIV reservoir?



Dr. Annukka Antar



Dr. Michael Peluso

A recent UK study suggests that as many as 10% of people diagnosed with COVID-19 experience symptoms for three months or more after contracting the infection. But little is known about “long COVID” beyond the fact that common symptoms such as fatigue, muscle weakness, brain fog, sleep difficulties, anxiety, and depression can be extremely debilitating.

Annukka Antar, M.D., Ph.D., of Johns Hopkins University, along with Michael Peluso, M.D.,

of the University of California, San Francisco, will compare this phenomenon across three groups of study participants from across the U.S. People living with HIV (PWH) who have survived COVID-19 will be compared to PWH with no history of COVID and survivors who are HIV negative. Using a mobile phlebotomy service, Drs. Antar and Peluso will also collect blood samples and study vital signs to aid in understanding the biological underpinnings of long COVID.

Currently there are no data on the effect of coronavirus infection on the nature or size of the HIV reservoir. The strong immune responses associated with infection may impact the size of the HIV reservoir. This depends on how these immune responses affect T cells, the main target of HIV infection, and the effectiveness of antiretroviral therapy at preventing infection of previously uninfected cells.

Mathias Lichterfeld, M.D., Ph.D., of Massachusetts General Hospital, and colleagues plan to assess the size and nature of the reservoir in PWH before and after coronavirus infection. The researchers will compare the percentage of cells that are HIV-infected with samples stored before the COVID-19 pandemic. They will also look for any effect of the site of HIV integration within the human DNA on reservoir size and assess the likelihood of activation by COVID-associated immune responses. Understanding these changes will help inform future HIV curative interventions.

amfAR Partners with CytoDyn to Expand HIV Cure Strategy

Partnership will explore blocking key protein in stem cell transplant recipients

amfAR has signed an agreement with CytoDyn, a late-stage biotechnology company developing Vyrologix (Ierolimab-PRO 140), a compound that blocks the CCR5 protein. The partnership will support testing the ability of Vyrologix to contribute to an HIV cure in stem cell transplant recipients.

The study is based on earlier amfAR work that provided evidence of the cures of the Berlin and London patients, Timothy Ray Brown and Adam Castillejo. Each was cured after being transplanted with donor cells lacking the CCR5 protein, the main doorway through which HIV enters and infects cells.

In 2007, Timothy Ray Brown was living with HIV and received a stem cell transplant to treat his leukemia. The cells came from a donor with the CCR5 delta-32 mutation. amfAR researchers declared in 2013 that they were

unable to find any remaining HIV in Mr. Brown, supporting the notion that he had been cured.

“We are very excited to be supporting this project, and to be a part of this groundbreaking endeavor with amfAR,” said Nader Pourhassan, Ph.D., President and Chief Executive Officer of CytoDyn.

“The study is based on earlier amfAR work that provided evidence of the cures of the Berlin and London patients, Timothy Ray Brown and Adam Castillejo.”

In 2014, amfAR established the ICISTEM research consortium to attempt to repeat the Berlin patient case, a challenge due to the rarity

of donors with the CCR5 mutation. ICISTEM contributed to the 2019 report of the London patient cure. Further ICISTEM work supports the idea that blocking CCR5 is critical to a curative outcome.

“Using Ierolimab to pharmacologically copy a CCR5-deficient transplant to cure HIV is an

exciting next step in our journey towards a cure for the 38 million people living with the virus,” said Kevin Robert Frost, amfAR’s Chief Executive Officer. “While a stem cell transplant is unlikely to be rolled out as an HIV cure, demonstrating that Ierolimab

can functionally phenocopy CCR5 deficiency and replicate the London and Berlin patients would be a major advancement.”

“Bold and Imaginative:” 2021 Krim Fellows

New research fellows harness powerful technologies in support of HIV vaccine and latency studies

The 2021 Mathilde Krim Fellowships will support an HIV vaccine study by Aleksandar Antanasijevic, Ph.D., of The Scripps Research Institute, La Jolla, CA, and a study of the genes involved in maintaining HIV latency by Ujjwal Rathore, Ph.D., of the Gladstone Institutes, San Francisco, CA. The awards were announced in February and the researchers were each awarded \$150,000 over two years.

Named for amfAR’s Founding Chairman Dr. Mathilde Krim, the Fellowship program addresses the gap created by the dwindling sources of support available to young scientists. “These young researchers are often the ones with the most innovative and daring ideas – ideas with breakthrough potential,” said Kevin Robert Frost, amfAR’s Chief Executive Officer. “Krim Fellows address unmet research needs across HIV, from developing new drug treatments, to optimizing vaccine design and searching for a cure.”

The relative ease with which researchers have developed a raft of vaccines for the coronavirus contrasts sharply with HIV, a complex and wily virus that has defied all attempts at a vaccine for the past four decades. Dr. Antanasijevic is using a sophisticated imaging technology called cryoEMPEM to address the obstacles that make developing an HIV vaccine so challenging.

CryoEMPEM allows researchers to examine biological structures at a resolution equivalent to just a couple of millionths the width of a human hair. Dr. Antanasijevic will use it to characterize interactions between antibodies and different regions of the HIV spike protein. Using this information, he will attempt to devise vaccines that force the exposure of those spike protein regions that would generate the most useful immune responses, and will test how well they generate antibody responses that would cover a wide range of HIV strains.



Dr. Aleksandar Antanasijevic



Dr. Ujjwal Rathore

Dr. Rathore’s research seeks to understand how human cells help maintain HIV latency, a main barrier to a cure. Using a newly developed CRISPR-Cas9 gene-editing system, Dr. Rathore plans to identify which human genes regulate HIV latency in CD4+ T cells. He will systematically disrupt genes in CD4 T cells and observe the effects that the removal of each gene has on the ability of HIV to reactivate from infected cells. Knowing which genes contribute to locking down HIV into a permanently persisting state will guide efforts to develop drugs that disrupt HIV persistence.

Dr. Rathore conducted his early scientific work in India, where he performed in the top one-quarter percent of all Indian students in biotechnology. Working in San Francisco when the coronavirus hit, Dr. Rathore recognized the need to apply his virology expertise to this new global health emergency and he participated in a number of important coronavirus studies and international collaborations. Some of this

research was recognized by the U.S. House Committee on Oversight and Reform.

“Our new Mathilde Krim Fellows exemplify the talent, intellect, and drive needed to overcome the complex scientific challenges that stand in the way of a cure and a vaccine for HIV,” said

“These young researchers are often the ones with the most innovative and daring ideas – ideas with breakthrough potential.”

Dr. Rowena Johnston, amfAR Vice President and Director of Research. “As bold and imaginative young investigators, they are quick to embrace these innovative and powerful new technologies and to recognize their potential for unmasking HIV’s hidden vulnerabilities.”

Important New Study of Young Adults with HIV

amfAR's TREAT Asia program partners with ViiV Healthcare in addressing key questions on transition from pediatric to adult care

There are more than five million adolescents and young adults living with HIV worldwide, many of whom acquired the virus as infants and must navigate the complex transition from pediatric to adult care. The study of pediatric and adolescent HIV has long been a focus of amfAR's TREAT Asia program, whose pediatric HIV database, launched in 2006, today includes clinical data on more than 6,400 children and adolescents across the region.

The database will underpin a new 18-month study being supported by a grant from ViiV Healthcare.

Thai-PAPAYA (Program to Actively follow Perinatal Adolescents and Young Adults living with HIV) will document long-term HIV treatment outcomes for Thai young adults aged 18-25 as well as mental health, sexual and reproductive health, behavioral outcomes, and risks of age-related non-communicable diseases, such as hypertension and diabetes.

"We are excited for this opportunity to better understand the care and outcomes of young adults who have grown up with HIV after



Photo: Kevin Tachman

they transition to adult care," said Dr. Annette Sohn, amfAR Vice President and Director of TREAT Asia.

Co-led by Principal Investigators Dr. Linda Aupibul, of the Research Institute for Health Sciences at Chiang Mai University, and Dr. Sohn, the Thai-PAPAYA study aims to build a comprehensive platform linking treatment outcome data across national-level data sources. Results will inform care and policy to

more effectively address the unique needs of these young adults.

"There are limited data on the challenges adolescents face as they transition into adult care," said Dr. Serufusa Sekidde, Global Medical Lead – Paediatrics, ViiV Healthcare. "We are delighted to support this Thai-PAPAYA cohort, which offers a unique opportunity to develop this data in the Asia region and shape future care and management."

Global Gag Rule Rescinded

Move marks victory for global reproductive health

President Biden signed an executive order on January 28 revoking the previous administration's enforcement of the expanded Mexico City Policy (EMCP), a move widely anticipated and welcomed by global public health advocates.

The "global gag rule," as the policy is sometimes called, prohibits the provision of U.S. global health funding to non-U.S. nongovernmental organizations that advocate, provide, counsel, or refer patients for abortions, even if using the organization's own funds for these activities. Public health experts and advocates contend that the policy has substantial negative impacts on the availability of sexual and reproductive health services.

Since its inception in 1984, the policy has been rescinded and reinstated by Democratic and Republican administrations, respectively. In 2017 the EMCP was reinstated and expanded to apply to nearly all U.S. global health assistance, including for the first time, HIV funding through the President's Emergency Plan for AIDS Relief (PEPFAR).

In a recent study published in *Health Affairs*, amfAR Public Policy Manager Jennifer Sherwood and colleagues from amfAR and the Johns Hopkins Bloomberg School of Public Health analyzed the impacts of the EMCP on PEPFAR-funded HIV service organizations.

The study showed that out of nearly 200 organizations surveyed, more than one quarter reported having stopped or reduced at least one service in response to the EMCP. Organizational reports of service reductions include outreach programs delivering sexual and reproductive health information, pregnancy counseling for women living with HIV, contraception provision, and HIV testing and counseling.

"The EMCP is bad health policy," said Sherwood. "Its detrimental effects extend well beyond reproductive health to damage U.S. investments in HIV and wider delivery of health services."

The study, which was built on earlier amfAR-led analyses, consists of surveys conducted from May to September 2018 and in-person interviews in November 2018. It was supported by the Open Society Foundations.



Remembering Dr. Joseph Sonnabend, *Early Pioneer on AIDS*

Dr. Sonnabend was a co-founder of the AIDS Medical Foundation, amfAR's predecessor

One of the first to sound the alarm on AIDS in New York City, Dr. Joseph Sonnabend, a pioneering South African AIDS researcher and clinician, died in London on January 24. He was 88.

In 1983, the two friends, along with Michael Callen and others, co-founded the AIDS Medical Foundation, which would join forces with Elizabeth Taylor's National AIDS Research Foundation to form amfAR in 1985.

year, with Michael Callen and Richard Berkowitz, he produced the first safe-sex guidelines, *How to Have Sex in an Epidemic: One Approach*. He also co-founded the PWA Health Group and the Community Research Initiative (CRI) in 1987.

Joseph Sonnabend, M.D., opened a medical practice treating mostly gay men in New York's Greenwich Village in 1978. Almost immediately he began to see the constellations of symptoms in his patients that would come to be known as AIDS.

"We owe Joe Sonnabend a colossal debt of gratitude for his courageous and indefatigable leadership early in the epidemic."

Reflecting on his work, Dr. Sonnabend said, "I think everything that I've done with respect to AIDS has been predicated on a "do it yourself" principle—since we can't rely on the government, we'll do whatever we need to do ourselves."

Before there was any organized AIDS research effort, Dr. Sonnabend initiated several research projects with colleagues as far away as Kyoto, Japan, and went to work—for no pay—in the lab at New York University. In an interview with amfAR in 2000, Dr. Sonnabend said, "My feeling at this point, in 1981 and 1982, was that this was an emergency. I had no doubt."

"I was in a unique position because of my clinical and research background," he said. "I was trained as a microbiologist, and my entire career, up until this point, had been in academic research in virology and infectious diseases. It wasn't just that I had a passing familiarity with the research methodology—this was my life."

Paying for the research out of his own pocket, both his personal finances and his medical practice began to suffer. "It got to the point where Mathilde [Krim], who was a personal friend, was keeping me afloat," he said.

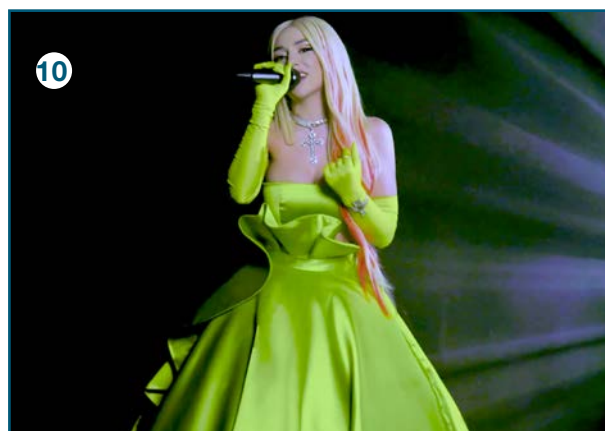
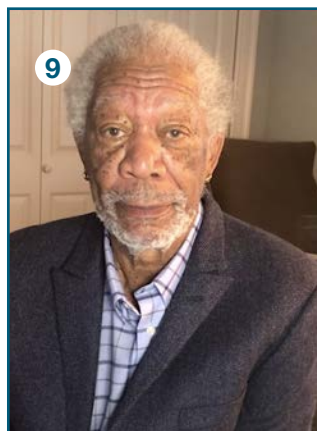
Dr. Sonnabend's contributions to the AIDS response were wide-ranging. He designed community-based clinical trials when there were few precedents for such research. He was the founding editor of the journal *AIDS Research*, which began publication in 1983, and in the same

In 2000, amfAR honored Dr. Sonnabend with its Award of Courage for his pioneering leadership. In 2005, he retired from his medical practice in New York and moved to London. On World AIDS Day that year, he was awarded a Red Ribbon Leadership Award from the National HIV/AIDS Partnership.



"We owe Joe Sonnabend a colossal debt of gratitude for his courageous and indefatigable leadership early in the epidemic in the face of widespread skepticism and government inaction," said Kevin Robert Frost, amfAR's Chief Executive Officer. "He will be remembered by many for his compassion and kindness as a physician. And we will honor his memory by advancing and achieving our mission to end the global AIDS epidemic through innovative research."

*Dr. Sonnabend with
Dr. Mathilde Krim*



A GALA FOR OUR TIME

A FREE VIRTUAL GALA TO BENEFIT | amfAR

amfAR honored Glenn Close and Dr. Anthony Fauci with its Award of Courage for their contributions to the fight against AIDS and COVID-19 at its virtual Gala for Our Time, March 4. Eloquent and heartfelt presentation remarks were delivered by Bette Midler and Julia Roberts, respectively. The Gala also featured luminous performances by Rita Ora, Kelly Clarkson, and Ava Max, and special guest appearances by Heidi Klum, Morgan Freeman, Nathan Lane, Magic Johnson, Catherine O'Hara, Iman, Boy George, and other celebrities. Newly elected amfAR Trustee Billy Porter opened and closed the Gala, with additional remarks by amfAR Co-Chairs Kevin McClatchy and T. Ryan Greenawalt and by amfAR CEO Kevin Robert Frost.

The free benefit garnered more than 12,000 views on YouTube, and raised \$200,000 to benefit the amfAR Fund to Fight COVID-19.

1. Presenter Julia Roberts and Honoree Dr. Anthony Fauci
2. Honoree Glenn Close
3. Bette Midler 4. Kelly Clarkson
5. Rita Ora 6. amfAR Co-Chair Kevin McClatchy 7. Magic Johnson
8. amfAR Co-Chair T. Ryan Greenawalt
9. Morgan Freeman 10. Ava Max



Since 2015 Boroli Wine has been a dedicated supporter of amfAR. Providing the wine at major galas has been a pillar of support to marquee events.

Because of partners like Boroli Wine, amfAR is able to continue leading the way toward the scientific breakthroughs necessary to end AIDS.

"Supporting amfAR's lifesaving HIV research is a privilege, a pleasure, and a responsibility. Boroli is thrilled to be a part of the fight to make AIDS history."

– Achille Boroli, winemaker in Barolo

BOROLI
BAROLO



SUBSCRIBE

Not a subscriber to *Innovations*? Sign up today for this free twice yearly digital newsletter.

[Click here](#)



DONATE

Support our critical work with a one-time or recurring monthly donation.

[Click here](#)



SHOP

amazonsmile

If you shop at AmazonSmile, you can benefit amfAR with every purchase – at no cost to you!

[Click here](#)

amfAR, The Foundation for AIDS Research
120 Wall Street, 13th Floor, New York, NY 10005-3908
www.amfar.org