Where’s The Cure?

A Look At Research Across the U.S.

by Stephen LeBlanc

In 2009, Martin Delaney, a leading AIDS activist and the founder of Project Inform, co-authored an article in Science calling for a new “HIV Collaboratory” to focus on cure research. The Collaboratory would be designed “to accelerate basic discovery and the clinical translation of these discoveries.” Sadly, he died before the article was published.

The article echoed at least two decades of calls from AIDS activists for the U.S. to take a new approach to finding a cure for AIDS. In 1994, under pressure from ACT UP, U.S. Representative Jerrold Nadler introduced the AIDS Cure Project (HR 4370) in Congress. It would have changed the way AIDS research was conducted by bringing together a team of researchers from diverse disciplines at a primary location. Supporters claimed that the structure and bureaucracy of the NIH worked against innovative, creative research, and that NIH granting procedures drastically slowed research and diverted money to university overhead costs, rather than to the search for a cure. Proponents estimated a budget for the AIDS Cure Project of $1.84 billion over five years.

The Delaney Collaboratories

Nothing like the HIV Collaboratory or the AIDS Cure Project ever emerged, either in the amount of funding or in the coordination of the research efforts. The NIH has, however, funded three teams devoted to AIDS cure research under the name “Martin Delaney Collaboratories”.

Each of the teams includes academic researchers with long experience in HIV research or clinical care, along with at least one industry partner, and will study three areas: First, basic science, such as understanding why HIV reservoirs persist in people even after decades of undetectable viral loads, why a small handful of people have undetectable viral loads.
many years after infection without taking HIV drugs, and whether persistent inflammation plays a role in viral persistence. Second, core technology components like developing effective models (animal and test tube) for testing different therapies, finding ways to measure the viral reservoir, and developing treatment technologies such as stem cell expansion and genetic transformation. Finally, each team will move toward testing new approaches in people.

The defeatHIV Collaboratory (defeathiv.org) at the Fred Hutchinson Cancer Research Center in Seattle includes five projects to develop proteins that attack HIV reservoirs. They will also study whether CD4 cells can be made resistant to the virus. Its industry research partner is Sangamo Biosciences, which holds the patent on zinc finger nucleases (ZFNs), a type of “genetic scissors” that can precisely target genes and change them. DefeatHIV was awarded $20 million in funding by NIH over 5 years.

Cellular therapies for HIV generally involve removing white blood cells or stem cells from a patient, genetically modifying the cells, expanding them (which can take a few weeks to a couple of months), and then infusing them back into the patient. This is known as an autologous transfusion or transplant. While the procedure is complex, the basic steps (other than the genetic modifica-
tion) are performed tens of thousands of time a year in people with leukemia and myeloma. The modified cells are either mature CD4 cells or stem cells (young blood cells that have not yet matured into a specific type of white blood cells).

DefeatHIV is developing two types of genetic modifications, which could be used together, separately, or in combination with other genetic modification approaches. One is modeled on the “Berlin Patient”, Timothy Ray Brown. It uses autologous transfusion and ZFNs to “knock out” the gene that makes the CCR5 receptor that HIV needs.

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The other approach is more experimental and uses ZFN or other “genetic scissors” to target the HIV that has already integrated itself into the DNA of infected cells. While the possibility of actually chopping HIV out of infected cells is exciting, in one form this strategy requires introducing the genetic scissors directly into a patient’s body, which is less studied than the genetic modification of cells outside of the body. This technique could also possibly be used in combination with other genetic modifications to purge HIV from infected cells removed from patients before transplanting them back into the body.

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DefeatHIV is focusing on techniques to address three problems common to all genetic modification therapies: genetic transformation efficiency, cell expansion, and conditioning as mentioned above. Because all of these techniques are new and involve risk, the team is putting substantial effort into developing a non-human primate model to test the techniques for safety and effectiveness.

Genetic transformation efficiency refers to the percent of cells that are actually transformed by the genetic agent or vector. Of all the cells exposed to the modification agent, only a portion of them will be genetically modified.

Cell expansion describes the ability to multiply the modified cells outside the body. Since the total number of transformed cells returned to the body will greatly affect their benefit, both high efficiency and expansion are needed to give a patient the greatest number of modified cells.

Conditioning refers to drugs taken to “make room” for the new cells. Earlier experiments have shown that just infusing stem cells does not allow the cells to engraft into the bone marrow. Conditioning drugs are cancer-chemotherapy drugs that kill off or suppress parts of the immune system. Researchers are studying whether mild versions of chemotherapy will be enough to allow the new cells to engraft.

Independently of defeatHIV, Sangamo is conducting a Phase II clinical trial using autologous transplantation to remove the CCR5 receptor on CD4 cells. Company spokesperson Elizabeth Wolffe states, “Our goal as a company in this research is to give people a therapy that will allow a patient to keep HIV under control without drugs – in other words a functional cure.” Sangamo reports that the Phase II trials are progressing well and expects to present preliminary data early in 2013.

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The cells to die either because of their HIV infection or because the cells are recognized and killed by the immune system. CARE includes 15 scientific projects at four facilities.

One approach for activating these cells in order to remove their latent HIV is the use of “small-molecule” drugs that will activate resting cells and reverse HIV latency. The benefit of using small molecules over the cellular therapies described above is that they are cheaper and much easier to implement across the globe.

Several existing drugs approved for other uses have been shown to activate resting HIV-infected cells in test tubes, but it’s been difficult to replicate this in people.

In July 2012, CARE team leader David Margolis of UNC and Daria Hazuda of Merck published results of a study they said was the first to demonstrate that a drug can reverse HIV latency in humans. The team used the drug vorinostat, a drug used to treat lymphoma. In the trial, eight men on HIV drugs took vorinostat and within hours all eight had a significant increase in HIV RNA in their latently infected cells – indicating that the HIV in those cells had become active.

“This work provides compelling evidence supporting a strategy to directly attack and eradicate latent HIV infection, a critical first step towards curing HIV infection” said David Margolis, MD of UNC at Chapel Hill, who led the study.

Robert Siliciano, another CARE researcher and a professor at Johns Hopkins, released data showing that the infected CD4 cells survive even after latent virus is activated and are killed only when other immune cells are primed before reactivation. In the lab, he tested a model of a vaccination strategy using short pieces of HIV proteins to stimulate the anti-HIV response of CD8 cells just before activation of the latently infected CD4 cells. This produced enough cell-killing CD8 cells to attack and kill the latently infected cells.

Other drugs that could potentially activate and kill latent HIV infection are being identified by scientists. Gilead Pharmaceuticals plans a clinical trial using romidepsin, another lymphoma drug, and an activator.

The DARE Collaboratory at the University of San Francisco and at the Vaccine & Gene Therapy Institute of Florida (delaneydare.org) is also working on viral persistence, but with a focus on understanding and modifying the body responses that contribute to HIV persistence, such as cell-to-cell interactions and inflammation. It includes seven projects and three core facilities, and works with industry partner Merck Research Labs. DARE has three broadly defined objectives for reversing latency: first, defining the reservoirs in the body where HIV persists; second, investigating the body’s mechanisms that contribute to HIV latency, such as cell-to-cell interactions that may silence HIV transcription; and finally, testing interventions to reverse HIV latency without broadly activating the immune system. DARE is performing some studies of SIV infection in rhesus monkeys. The team will also study the effects of certain anti-inflammatory compounds on the HIV reservoir.

The California Cure Rush

The California Institute for Regenerative Medicine (CIRM) was established by Proposition 71, passed by California voters in 2004, which provides $3 billion in grants over ten years for stem cell research. The CIRM board includes California patient representatives, one of whom is Jeff Sheehy, a long-time HIV activist. CIRM grants support teams of researchers preparing to move a research project to the clinic within four years and require teams to collaborate, speeding the path to the clinic.

When Proposition 71 passed, it was not clear that stem cell research was directly relevant to AIDS, but the Berlin Patient’s case suggested that modified stem cells could have a role in treating or curing HIV infection. CIRM funded two disease teams, and one or both teams may be starting clinical trials in people by the end of 2013.

City of Hope

In the 1990s, The City of Hope Medical Center near Los Angeles pioneered using stem cell autologous transplants (also known as bone marrow transplants) to treat people with AIDS-related lymphoma. These transplants were routinely denied to AIDS lymphoma patients at the time. City of Hope demonstrated that the transplants could be done in people with HIV and forced insurance companies to pay for the therapy.

One technique tested uses “nanoparticle” lipid bubbles containing antibodies that match up with CD4 cells. They deliver two drugs to the cell: bryostatin, to activate the cell, and a protease inhibitor to prevent HIV from assembling more virus.

The CIRM disease team, lead by Dr. John Zaia, is working to develop a therapy using Sangamo’s ZFNs to target the CCR5 gene in a way similar to the approach that led to a cure in the Berlin patient. Paula Cannon of the Keck School of Medicine of USC has shown that this therapy appears to work effectively to clear HIV from mice that have been modified to have a human immune system.

The team will further refine the therapy to improve its effectiveness in creating stem cells that can produce HIV-resistant CD4 cells and is developing manufactur-
Researchers are looking for people with HIV who want to take part in trials that may someday lead to a cure.

To find them, search for HIV gene therapy or HIV reservoirs at the NIH clinical trials database: clinicaltrials.gov. You can use the Advanced Search feature to find only trials that are open near you. TAG maintains a list of trials and other HIV cure information at: treatmentactiongroup.org/cure. The University of Pennsylvania has an active info line for HIV-related gene therapy research at (215) 349-8092, and anyone within a two-hour drive to Philadelphia is encouraged to contact them. UCLA also has an HIV gene therapy information line at (310) 557-9062. The Delaney Collaboratories will post information about clinical trials as they open for enrollment.

Calimmune states that its “singular purpose” is to “provide HIV-positive patients with a similar type of genetic resistance to HIV that occurs naturally in 1% of the European population. By treating a patient’s own stem cells and T cells, we aim to protect patients from the ravages of AIDS and eliminate the need for daily medication.”

Calimmune plans to begin Phase 1 human trials of a dual gene therapy in 2012 and expand those trials eventually to comprise multiple studies at different locations worldwide. This trial will genetically modify both stem cells and CD4 cells by adding two genes using autologous transplants. One gene blocks the creation of CCR5 receptors through RNA interference. The other gene instructs the cell to create a molecule (C46) that acts as an HIV fusion inhibitor, similar to the drug Fuzeon.

Other Efforts
In addition to the five teams discussed above, many other researchers are conducting AIDS cure research, including clinical trials. The ACTG has also recently expanded its efforts toward finding an AIDS cure, and a handful of its sites are either recruiting subjects or are planning to do so soon.

One technique tested uses “nanoparticle” lipid bubbles containing antibodies that specifically match up with CD4 cells. The nanoparticles deliver two drugs to the cell: bryostatin, to activate the cell, and a protease inhibitor to prevent HIV from assembling more virus once the cell is activated. Jerome Zack, director of the UCLA Center for AIDS Research, led the research and reported that the nanoparticles did not trigger toxic inflammation, a concern in all activation strategies. Scientists are also working on liposomes that bind only to CD4 cells that are latently infected with HIV.

The Money To Get There
But funding for AIDS cure research remains extremely low. The AIDS Policy Project (aidspolicyproject.org), a group of activists focused on promoting AIDS cure research, documented in 2010 that NIH spends only about $75 million on cure research annually, less than 3% of total NIH AIDS research spending. By way of comparison, NIH spends $625 million annually for HIV vaccine research and $692 million annually for HIV drug development.

The AIDS Policy Project has called for a substantial increase in NIH AIDS cure funding to at least $240 million annually. Other treatment and research activists groups, such as Project Inform (projectinform.org), TAG (treatmentactiongroup.org), amfAR (amfar.org), the International AIDS Society (iasociety.org), and ACT UP have also long pushed for substantial increases in AIDS cure research funding. People concerned about an HIV cure should continue to push for a dramatic expansion in funding so approaches that can lead to a cure will quickly be identified and tested.

As described above, the complexity of the cure approaches taken, the substantial overlap in work done by different research groups, and the large number of different ways to solve common problems, suggest that there is still a need for a centrally coordinated, fully funded Manhattan/Apollo-type project to cure AIDS as envisioned by Martin Delaney and by the ACT UP AIDS Cure Project. The early science is promising enough that it is reasonable to think that an intensified effort could produce some type of cure in five years, rather than the 20 years currently predicted. Some people are saying that President Obama needs to put forth a “grand vision” for his second term. I have a suggestion.
Changing My Genes

by Octavio J. Vallejo, MPH

Living with AIDS for more than 22 years is a personal accomplishment – one that I celebrate with my healthcare provider. This achievement has also been a journey that gave me the opportunity to learn more about myself, HIV, my immune system, and other possible treatments through my participation in clinical trials.

I have been very fortunate to receive my HIV care for the last 17 years at the UCLA CARE Clinic. It is not only a clinic that provides the best HIV care in Southern California, but also a research center that conducts trials on HIV treatment, including gene therapy.

When I was diagnosed with AIDS in 1990, like many people I faced the disease with fear and very low expectations of survival. I learned to live one day at a time, and every day I lived was a major achievement. Adding or changing an HIV drug was a way of buying time in the hope that something better would come along. At that time in the epidemic, we did not have long-term goals or dreams to accomplish – we just worked hard to survive and cope with the severe side effects of the old HIV medications. Since I had nothing to lose but a lot to give, I started participating in clinical trials under the close supervision and advice of my doctor.

In early 2010 I heard about a study of a new treatment called SB-728T being developed by Sangamo BioSciences. It was a Phase I trial – the earliest study of a new treatment – designed to examine the safety and tolerability of the treatment. I was told that some of my CD4 cells would be removed and multiplied outside of my body. They would then be treated with a “zinc finger” nuclease that would change their DNA so that they no longer had any CCR5 receptors on their surface (HIV uses CCR5 receptors to enter a cell). With a now different set of genes, these modified CD4 cells would be reinfused into me. The idea was to remove the CCR5 receptor to make these modified CD4 cells resistant to the invasion of HIV.

It is important to note that my CD4 count when I was diagnosed was 90, and it never went above 120 in the decade after my diagnosis. It wasn’t until 2005 that it went up to 373. The persistent low count, even after years of standard HIV treatment, was a key factor in helping me decide to enroll in this study.

Whenever I have been involved in a clinical trial, I’ve always been fully aware that uncertainty is the key word to keep in mind. The fact is, you never know if the results will be good or bad for you. You lend your body to science and hope for the best.

The process started with a long interview with the study coordinator. She made me aware of all the pros and cons of the study, what to expect, and the exact protocol and timeline of the procedures. The study involved several risks that were explained in detail by the principal investigator. The main risks were side effects as a result of allergic reactions to the chemicals involved in the transfusion of the modified cells. Also, I was told I might have a garlicky body odor for a day or so after the infusion.
Whenever I have been involved in a clinical trial, I've always been fully aware that uncertainty is the key word to keep in mind. The fact is, you never know if the results will be good or bad for you. You lend your body to science and hope for the best. But I do my homework before joining a trial to make sure I think the risks are worth it.

This study is a long-term commitment – I will be followed for three years. The first battery of tests involved a blood draw of almost twenty tubes for a large number of lab tests. It was like being the drink dispenser at the bar of the “True Blood” TV show! The second visit involved a physical examination and the start of the treatment process. I was there for four hours while blood was removed from my body through an IV, my CD4 cells were separated from my blood, and the remaining blood was re-infused back into me.

The procedure required strict monitoring of my vital signs (temperature, pulse, and breathing). I felt quite tired for a few days afterwards since some of my red blood cells were destroyed in the process of removing my CD4 cells. The next step was a long wait for the laboratory to modify my collected CD4 cells and multiply them in vitro (in the lab). It sounds easy, but imagine the amount of time and resources needed to develop these highly technological procedures.

Finally, the day of the infusion arrived. After eight weeks of anxious waiting, everything was prepared for me to receive my modified CD4 cells, in a sterilized room of the brand-new UCLA hospital – which is so nice it reminded me of a W hotel. I was excited but also apprehensive and a little fearful. I was welcomed by a group of representatives of Sangamo and the UCLA nursing staff. One Sangamo employee commented on my lab results and how fast my CD4 cells grew. I joked, “Of course they grew fast! They’re Mexican CD4 cells, and we Mexicans multiply fast!”

This was an open-label single-dose study (no one got a placebo), so we all knew what we were getting. The trial was designed to look at changes in the CD4 count, and CD4/CD8 ratio, and to see how many of the modified CD4 cells stayed in the body. Nine of us

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In short, many of my immune system counts are near normal. The modified CD4 cells successfully transplanted into my immune system, and they expanded and persisted in my blood. In addition, every four months I have rectal biopsies taken to determine if the modified CD4 cells migrated to the gut. According to the researchers, the modified CD4 cells transplanted and persisted in my rectal mucosa.

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<th>Normal range</th>
<th>Before infusion</th>
<th>1 week after infusion</th>
<th>1 month later</th>
<th>2 months later</th>
<th>21 months later</th>
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<tr>
<td>CD4 count</td>
<td>500 - 1500</td>
<td>373</td>
<td>693</td>
<td>549</td>
<td>770</td>
<td>520</td>
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<tr>
<td>CD4 %</td>
<td>30 - 60%</td>
<td>29%</td>
<td>39%</td>
<td>42%</td>
<td>37%</td>
<td>34%</td>
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<tr>
<td>CD4/CD8 ratio</td>
<td>1.0 - 3.7</td>
<td>0.81</td>
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pulse were normal and that I wasn’t having any sudden unexpected side effects. The nurses did a great job of keeping me informed about each step in the process, making sure that each bag was infused completely and that I stayed well. I was again warned that I might have a weird garlicky body odor in the next few hours due to the fluids in which the modified CD4 cells were kept.

I’m trying to remember my emotional state at the end of the process. I remember how brave I was. I showed up alone and walked away alone from that experience. Also, I remember thinking, “You are participating in cutting-edge research in the search for the cure, after 20 years of surviving AIDS. Way to go, little Mexican!” It was a weird combination of feelings of achievement and wonder. Why I have been so lucky as to still be here? Thank God I am healthy, productive, and a proactive participant in the search for a potential cure against this stupid virus.

There were ZERO side effects afterwards. The garlic smell was almost nonexistent. In order to help you understand the changes that occurred in my immune system, I’ll share my lab results (above). Being in this study has been a very intense, yet very positive learning experience. Being part of something as big as the search for the cure is a humbling experience. I am extremely lucky to have a group of HIV service providers who are a source of constant unconditional support and whom I trust 100%. And I am fortunate to have a doctor who recognizes the importance of listening to the community and who empowers patients to be active participants in cutting-edge research by educating them about the risks and benefits.

I understand that this study is just the beginning of research about the benefits of modified CD4 cells. I strongly recommend that people with HIV ask their doctors about future clinical trials of this technology. I don’t know what the future holds for me, but if I can keep participating in this kind of study, I will. I am convinced that I have been blessed to have more than 20 years of survival with AIDS. Now it’s my turn to give back what I have received and hope that we will be able to conquer HIV and defeat AIDS. ■
Recent advances in HIV prevention have many people optimistic about ending the AIDS epidemic. These advances include voluntary medical male circumcision in sub-Saharan Africa and the use of HIV meds for prevention in both HIV-positive and -negative people. These newer options have the potential to dramatically reduce new infections. Why then does the world still need an AIDS vaccine?

The history of disease control shows that trying to end an epidemic without one of the world’s most powerful public health tools – a vaccine – is a tall order. This was underscored recently at the AIDS Vaccine 2012 Conference, where NIAID Director Anthony Fauci said we have the tools to control the epidemic but need a vaccine to maintain control and eventually end it.

There has been progress on many fronts in the search for an AIDS vaccine. In fact, evidence from a large-scale AIDS vaccine trial has shown that a protective vaccine is possible. Researchers are working to improve its effect while also looking into how it worked. Furthermore, the past two years have also seen amazing discoveries in antibody research. These combined efforts give hope that it may be possible to find an effective vaccine – and make it important to sustain funding for this effort.

A Knockout Punch?

Vaccines are designed to teach the body’s immune system to fend off an attack from a particular disease or pathogen. One way to do this is through antibodies, which are produced by the immune system to block a pathogen. Scientists have studied antibodies against HIV for some time. Recently, however, they have identified many broadly neutralizing antibodies, or BNabs, that are effective against a whole range of types of HIV (HIV is highly variable, and one of the challenges for an AIDS vaccine is developing a strategy that is effective against all HIV types.)

Antibodies bind to proteins on the coat of HIV and then either signal other cells to destroy the virus or disable the virus themselves. The great interest in HIV-specific BNabs comes from the fact that most effective vaccines against other diseases induce a potent antibody response. BNab activity against a broad range of HIV strains is also key.

For years, scientists were unsure if the human body could create BNabs to fight HIV. But in September 2009, researchers announced the discovery of two very effective BNabs. Since then, other BNabs have been identified that are even more effective and are capable of blocking over 90% of strains of HIV in lab tests. Using highly efficient robotic systems to analyze thousands of blood samples from people with HIV, scientists identified BNabs in 15-20% of these samples.

Inching Toward a Vaccine

Recently, scientists have identified many broadly neutralizing antibodies that are effective against a whole range of types of HIV.
A BNAb isn’t born overnight. It goes through a set of specific alterations to get to its mature state. So the challenge for researchers is to design a vaccine that teaches the body to create mature, effective BNAbs that block HIV infection. As one researcher described it, “We want to use a series of vaccines to drive a shortened version of the body’s journey to create broadly neutralizing antibodies.” Steady progress is being made to understand the steps on this journey.

In addition, scientists are looking to “grow” BNAbs in the lab and give them directly to people as part of a process called “passive immunization”. This could be a “proof of concept” that these antibodies work to prevent HIV in HIV-negative people. To date, BNAbs against HIV have been seen in people with HIV and studied in lab and animal studies. No trials have yet taken place in the HIV-negative population.

**Ongoing Research**

There are over two dozen small-scale HIV vaccine trials currently under way (for a complete list visit avac.org/pxrd) and one large-scale efficacy trial: HVTN 505. This trial of a two-vaccine regimen is being tested in over 2,000 men who have sex with men (MSM) and transgender women in the U.S. Launched in 2009, the trial was originally designed to study only whether the vaccine regimen reduced viral load in people who were HIV negative when they received the vaccine but who later acquired HIV through sex or other risk behaviors. In 2011, the study was modified to study whether the vaccine regimen can also reduce the risk of HIV infection. Results are expected in late 2013.

HVTN 505 has had to evolve and adapt to the changing prevention landscape. Since the trial was launched, data and the fact that they could get a prescription for it from their personal physicians. Now that Truvada for PrEP is FDA-approved, trial sponsors are informing all trial participants about the regulatory approval and providing information about where it can be obtained.

Another area of research includes studying whether PrEP could provide protection long enough to allow a vaccine to assist the body in creating a protective immune response. This could close the “window of vulnerability” – the time between HIV exposure and the body’s protective immune response. HVTN 505 won’t answer this question, so the field will have to wait for future trials.

**The RV144 study showed**

**a modest 31% reduction in HIV risk 3.5 years after the vaccines were given. But a later analysis suggested that the vaccines offered a 60% reduction in risk a year after they were given.**

**The First Hope**

It has been three years since the RV144 study showed that a vaccine could reduce the risk of HIV. It studied a combination of two vaccines, ALVAC and AIDSVAX, in over 16,000 HIV-negative men and women in Thailand and showed a modest 31% reduction in HIV risk 3.5 years after the vaccines were given. But a later analysis suggested that the vaccines offered a 60% reduction in risk a year after they were given.

Shortly after the iPrEx results were announced, HVTN 505 investigators amended the protocol to include counseling about PrEP and monitoring PrEP use by participants, given the positive iPrEx data and the fact that they could get a prescription for it from their personal physicians. Now that Truvada for PrEP is FDA-approved, trial sponsors are informing all trial participants about the regulatory approval and providing information about where it can be obtained.

Another area of research includes studying whether PrEP could provide protection long enough to allow a vaccine to assist the body in creating a protective immune response. This could close the “window of vulnerability” – the time between HIV exposure and the body’s protective immune response. HVTN 505 won’t answer this question, so the field will have to wait for future trials.

The first step in understanding this protection and why it waned over time, has been to study blood samples from trial participants to identify “correlates.
of risk”. Scientists tested the samples and measured various immune responses to the vaccines and have been able to identify immune responses that were related to both lower and higher rates of infection in those who received the vaccine. The data currently available can’t prove whether these responses had a direct role in protection from HIV infection. But they are important signals to follow in future trials.

Follow-up to the RV144 study is being organized by the Pox Protein Public-Private Partnership (the P5) to attempt to improve on the trial’s results. One study is a specific follow-up of people who were in the trial. Additional studies are testing a vaccine regimen based on the one tested in RV144. These studies will focus on new groups, including MSM in Thailand and heterosexual men and women in South Africa. Yet another study will look at the effect of an additional booster vaccine along with a different adjuvant (a substance used to help enhance the immune response to the vaccine). The hope is that this combination will improve the durability and magnitude of the effect seen in RV144. Scientists are also studying the antibodies found in RV144 vaccine recipients that were linked to decreased risk of infection.

These studies are scheduled to begin in 2014-15 with results expected several years later. Based on the trial timelines presented by the P5 at AIDS 2012, this could lead to approval of the vaccine by 2022. Epidemiologists have tried to predict what the impact of a partially-protective vaccine might be. In some scenarios, a vaccine that is 60% effective could lower HIV infection rates by up to 60% if annual booster shots were given.

New trial designs and an evolving standard of prevention will mean these trials will be some of the most complex yet. Careful planning and community engagement will be critical to their success.

**Vaccines and HIV Prevention**

At the AIDS Vaccine 2012 Conference, Global HIV Vaccine Enterprise Director Bill Snow acknowledged that the AIDS vaccine field may not be able to promise a vaccine by a certain date. But he did urge those in the field to keep working to ensure that the many intermediate questions are answered quickly.

In a conference plenary lecture, NIAID Director Fauci put AIDS vaccine research in the context of “combination HIV prevention” using proven and newer tools. This includes treatment as prevention, PrEP, microbicides, and voluntary medical male circumcision. He made a compelling case for the need to pursue an AIDS vaccine even as these other strategies help to reduce rates of new infections. He acknowledged that current and new prevention options may be enough to control the epidemic if implemented effectively. But Fauci reiterated that it will be virtually impossible to get to true control and elimination of HIV without a vaccine. He closed by answering a question he opened his talk with: Do we need a vaccine?—and responded emphatically, “The answer is absolutely yes, but the HIV prevention strategy will in fact be a unique paradigm of non-vaccine combination prevention modalities together with a safe and effective vaccine, and then and only then, will we see a durable end of HIV/AIDS.”

Deirdre Grant is a Senior Program Manager at AVAC: Global Advocacy for HIV Prevention (avac.org).
Three decades into the HIV epidemic, the number of new infections remains distressingly high. In the U.S. the number has held steady at about 50,000 for several years. On a global level, UNAIDS estimates that there were 2.7 million new HIV infections in 2010.

While most groups have seen declines in HIV incidence, rates are rising among men who have sex with men (MSM). This is largely driven by a steep upswing among young black gay men − a 48% jump between 2006 and 2009, according to the CDC. MSM are at greater risk for HIV infection both because they are more likely to encounter potential partners who are HIV positive and because receptive anal sex is conducive to transmission. In *The Lancet*, Chris Beyrer calculated that if anal sex were no more risky than vaginal sex, HIV rates among gay men would be at least 80% lower.

**Treatment as Prevention**

It has long been known that having a low HIV viral load reduces the likelihood of transmission. As early as 2006, Julio Montaner presented findings from a mathematical model suggesting that if all people with HIV worldwide started treatment, the rate of new infections could drop by as much as 70% over 45 years, effectively ending the AIDS epidemic.

In 2008, the Swiss Federal Commission for HIV/AIDS stated that an HIV-positive person on HIV treatment with fully suppressed viral load for at least six months and no other sexually transmitted diseases (STDs) “is not sexually infectious.” The Commission stressed, however, that the statement applied only to heterosexuals in stable relationships.

More definitive information came from the HPTN 052 trial, which assigned the HIV-positive partners in more than 1,700 couples either to start HIV treatment right away or to wait until their CD4 count fell to 250. Co-Principal Investigator Myron Cohen got a standing ovation at the 2011 International AIDS Society Conference when he announced that early treatment reduced the risk of HIV transmission by 96%.

There are also hints that treatment is having a prevention effect on a larger scale. Researchers from San Francisco, Washington, D.C., France, Uganda, and elsewhere have reported correlations between earlier or more widespread treatment, lower community viral load, and reduction in new HIV infections.

But often lost in the excitement around treatment-as-prevention is the understanding that transmission can still, if rarely, occur even when an HIV-positive person is on effective treatment and has a very low viral load. People on treatment sometimes experience “blips”, or temporary spikes in viral load. Co-infection with STDs can raise the likelihood of both HIV transmission and acquisition. And even people with undetectable viral loads in their blood can have HIV in their semen or vaginal fluid.

A French study reported in AIDS found that about 7% of men in couples seeking assisted reproduction had detectable virus in their semen even though it was undetectable in their blood. Another French study found intermittent shedding of HIV in semen from 13% of gay men with suppressed blood viral load.

“Test-and-treat” remains controversial. Skeptics think it is too soon to recommend HIV meds for all people with HIV in the absence of data showing that early therapy is beneficial.

**Universal Treatment**

The trend toward earlier treatment was already under way by the time the HPTN 052 results hit the headlines. Part of the reason for this change was the growing body of evidence suggesting that chronic HIV infection causes persistent inflammation and problems throughout the body long before CD4 counts fall to a dangerous level.

In early 2010, the San Francisco Department of Public Health recommended that all people with HIV should be offered treatment...
regardless of their CD4 count. “We now know that from the start HIV is causing damage to more than just the immune system,” explained Diane Havlir, chief of SFGH’s Positive Health Program. “The virus is causing damage to multiple organs – including the heart, liver, kidneys, and probably the brain – even when a person has high CD4s and feels fine.”

This past March, federal DHHS guidelines followed suit, stating that all people with HIV are eligible for treatment, removing the CD4 threshold of 500 set in 2009. The guidelines stressed that the primary reason for starting treatment early was to protect the health of people with HIV, but they also acknowledged the public health benefit of reduced transmission.

The CDC and several local health departments have recently shifted toward a “test-and-treat” approach that emphasizes routine HIV testing, linkage to care, and universal treatment. On a global level, advocates have embraced treatment-as-prevention as an added incentive for governments to increase funding to get more people in low- and middle-income countries on treatment.

But test-and-treat remains controversial in some quarters. Skeptics think it is too soon to recommend HIV meds for all people with HIV in the absence of data from trials showing that early therapy is beneficial. Such studies may find that the side effects, cost, and “treatment fatigue” associated with universal treatment outweigh its benefits. The START trial could answer many of these questions, but it is not set to report results until 2016.

**PrEP: From Trials to the Real World**

Pre-exposure prophylaxis (PrEP) refers to HIV-negative people taking HIV meds to prevent the virus from taking hold in the body if they are exposed. In the iPrEx study, Truvada reduced the risk of infection by 42% overall, rising to 92% for people who had drug levels in their blood indicating good adherence. “No one in iPrEx acquired HIV infection with a drug level that would have been expected with daily dosing,” said Principal Investigator Robert Grant. But results were not as good for the male-to-female transgender people in the trial, showing no evidence of risk reduction. Researchers are still investigating the reasons for that difference.

Further analysis suggested that men may be able to reduce their infection risk by 90% or more if they take Truvada four times a week, with daily use providing nearly 100% protection.

Two other trials in Africa showed that PrEP also reduces the risk of HIV infection in heterosexuals. The Partners PrEP study of 4,700 heterosexual couples saw infection rates fall by 75% with Truvada, while the TDF2 trial showed a 62% risk reduction.

“PrEP is not a home run and not everyone was protected,” said Susan Buchbinder, director of the San Francisco Department of Public Health, at a recent forum to launch the city’s PrEP demonstration project. “If you were to take it perfectly every day, would it always work? We don’t know the answer.”

Like test-and-treat, PrEP has its skeptics. Some have raised concerns about adherence, drug resistance, side effects, decreased condom use, and cost and access issues. If even a majority of study participants who received intensive adherence support in clinical trials could not manage to take PrEP consistently, they ask, how likely is it that healthy HIV-negative people will take a daily pill?

“[PrEP] studies included mostly young, healthy people, but we see people who are older and at higher risk of kidney disease and bone loss,” Harry Lampiris of the San Francisco V.A. Medical Center explained. “If they are hepatitis C coinfected they may be at higher risk of kidney problems, and smokers or drinkers are more at risk of bone loss.” He added, however, that “being more predisposed to bone or kidney [problems] doesn’t mean you can’t take PrEP – it just means you need to take more precautions.”

The only way to answer such questions is to try PrEP in the real world. To this end, demonstration projects are starting in several cities. First out of the gate are San Francisco and Miami, which launched projects for MSM and transgender women in September. Similar efforts are under way in Chicago, Los Angeles, New York City, Oakland, and Washington, D.C.
“So far everything we know comes from clinical studies in which people didn’t know whether they were taking PrEP or placebo,” said Stephanie Cohen, Medical Director at San Francisco City Clinic where the demonstration project will take place. “There’s still a lot to learn: Who will take it and how? Will risk factors change? How do we get PrEP out there safely? And can we provide PrEP in the busy environment of an STD clinic?”

Issues of cost and access also must be addressed. Could PrEP become a “boutique” intervention available only to people with money or good health insurance? Some private insurance companies are already covering Truvada PrEP, recognizing that for high-risk individuals it can be cost-effective compared with lifelong HIV treatment.

But with a price tag of approximately $1,000 per month, PrEP could further strain local prevention budgets and programs like Medicaid and Medicare. Acknowledging that the low-income and minority populations most heavily affected by HIV are more likely to rely on public programs, HIV Medicine Association Chair Judith Aberg stressed that PrEP “must not contribute to HIV-related health care disparities.”

Most experts do not expect that large numbers of HIV-negative people will want to use PrEP for life. Rather, as Montaner explained at the 2012 International AIDS Conference, it is likely to be a “time-limited niche intervention for selected individuals at high risk for infection.”

**Future PrEP**

Daily Truvada may turn out not to be the best PrEP regimen. The IPERGAY study and the ADAPT trial are testing intermittent Truvada taken on a regular but less frequent schedule, or “event-driven” PrEP taken just before or after sex.

Other drugs may offer equal or better protection, and a drug less widely used for HIV treatment could allay concerns about resistance. Long-lasting drugs, such as an experimental once-monthly injectable form of the HIV med Edurant, could help with adherence.

The HIV meds Isentress and Selzentry may be useful for PrEP, and the ongoing NEXT-PrEP trial is testing Selzentry in gay men. But disappointing findings presented at this year’s International AIDS Conference showed that oral Selzentry did not protect monkeys from rectal infection.

Taking pills might not be the answer. Another kind of PrEP is applied where it’s needed — in the vagina or rectum. Researchers have studied a large number of gels, creams, and films, looking for a microbicide that can both provide a physical barrier against HIV entry and disable the virus with antiretroviral drugs.

The CAPRISA 004 trial showed that a tenofovir vaginal gel applied before and after sex (using the applicator below) reduced the risk of infection by 39% overall, and by 54% for those with the best adherence. Though this level of effectiveness pales in comparison with the oral Truvada PrEP studies, it was considered the first real biomedical prevention breakthrough when findings were announced at the 2010 International AIDS Conference.

The same gel was also tested for rectal use. While it was found to be safe, it wasn’t very well tolerated, causing gastrointestinal side effects and bloating. Fortunately, a reformulated gel containing less glycerin has been found to be much more tolerable. The new gel is being tested in the MTN-017 trial, which compares daily oral Truvada, daily tenofovir gel, and tenofovir gel applied before and after receptive anal sex.

Different PrEP formulations may work better for specific groups. For example, a small study published in Science Translational Medicine showed that tenofovir gel produced drug levels in vaginal tissue 100 times higher than those seen with oral dosing.

Researchers are also looking at vaginal rings that release drugs slowly over time. One recent study showed that a ring containing MIV-160 protected monkeys against vaginal exposure. Further along in the pipeline, the Phase 3 ASPIRE trial is testing a vaginal ring containing dapivirine in more than 3,000 women in five countries.
“We’re trying to give people as many options as possible,” Buchbinder said at the recent San Francisco PrEP forum. “For some, a monthly injection is the best option, for some using [an antiretroviral] lube during sex is a great option, and some would rather take a daily pill.”

One of the major concerns surrounding treatment-as-prevention and PrEP is that taking a protective pill might lead people to abandon other risk-reduction strategies. But most studies have seen the opposite effect. In trials of early treatment, PrEP, microbicides, and vaccines, risky behavior decreased and HIV infection rates fell in both the active and placebo arms. In iPrEx, for example, participants across the board reported more condom use and fewer sex partners.

**Behavior Still Matters**

While public health officials insist that condoms, monogamy, and abstinence are the only 100% sure means of protection, gay men are voting with their dicks and taking a harm-reduction approach. An informal poll taken at a recent serosorting forum in San Francisco revealed that 97% of respondents sometimes had condom-free sex and most thought condom use was not the norm in the community.

Given this reality, serosorting and other strategies based on HIV status have become a mainstay of risk reduction for MSM – even though they are not as effective as many people seem to think (see the previous issue of *Acheive*).

Overall, studies show that serosorting is more effective at preventing HIV than no risk-reduction strategy at all, but far less effective than using condoms. An analysis by Matthew Golden and colleagues found that serosorting did not lower the risk for black gay men – the group with the highest rate of new infections.

The Achilles heel of serosorting, of course, is incomplete or incorrect information. The CDC estimates that 20% of people with HIV are not aware they are infected. Some have never been tested, but even people who get tested regularly may have been infected recently, before they produce enough antibodies to show up on a standard HIV test (several weeks to a few months after infection). Viral load can be very high during this period, and experts estimate that at least half of all new infections are transmitted by people recently infected.

Because HIV meds are so effective at preventing transmission, having unprotected sex with an HIV-positive person on stable treatment with an undetectable viral load may actually be less risky than doing so with a random person you think is HIV negative. But not everyone with HIV is fully suppressed. According to the CDC, only 28% of people with HIV in the U.S. (about 75% of those on treatment) have an undetectable viral load.

**Superinfection**

What about condom-free sex between people who are already HIV positive? Regardless of HIV status, unprotected sex can also spread other STDs. Some public health officials blame serosorting for rising rates of chlamydia, gonorrhea, and syphilis among gay men in several cities. Equally worrisome are outbreaks of sexually transmitted hepatitis C among HIV-positive gay men. The emergence of multidrug-resistant gonorrhea illustrates that treatment is not always a simple matter of a shot or a few pills, and some infections like herpes and HPV cannot be cured.

And what about superinfection? Public health campaigns that discourage condom-free sex between HIV-positive men often warn about the risk of becoming infected with additional HIV strains that might be more aggressive or drug-resistant. Study data, however, are wildly inconsistent.

Several analyses over the years have found that superinfection occurs rarely, and typically happens only in people with a recent initial infection. But rarely doesn’t mean never. Superinfection may go unrecognized if it does not have clinical consequences such as rising viral load or worsening symptoms, and most people do not undergo the sensitive genetic sequencing needed to reveal multiple viral strains.

The first widely reported cases of superinfection came to light in 2002. Stephanie Jost from the University of Geneva described a 38-year-old gay man who became infected with two different HIV subtypes on two separate occasions more than two years apart. That summer, Bruce Walker from Massachusetts General Hospital reported a case of a man who was infected a second time with a new HIV strain within the same subtype.

Fears about superinfection increased in 2004 when Geoffrey Gottlieb described a man who experienced rapid progression to AIDS after a more aggressive HIV strain, acquired more than a year after his first infection, overtook his original virus. And Davey Smith reported on a gay man in San Diego who was superinfected with a second HIV strain that was resistant to two classes of antiretroviral drugs, leading to a jump in viral load.

The U.S. and Europe have generally seen very low rates of superinfection, with only about 50 confirmed cases (some from studies and some from case reports). A 2004 analysis of stored blood samples from 78 recently infected people in Southern California who were not taking HIV treatment showed a superinfection rate of 5%, all occurring within a year after initial infection. But a 2011 study of 15 gay men in Amsterdam who had not yet started treatment found no evidence of superinfection, despite unprotected sex.

Superinfection is even less common in people taking HIV treatment. Matthew Gonzales of UCSF found no cases of superinfection in an analysis of HIV sequences from 718 people with HIV who were mostly on treatment. The Positive Partners study, which looked at long-term couples in which both partners were HIV positive but carrying different strains, likewise saw no evidence of superinfection.
Hepatitis C virus (HCV) is perhaps one of the most overlooked viral infections worldwide, despite being very common and preventable. Recently, it has become apparent that the risk of transmitting HCV during sex had been underestimated because earlier studies included mostly monogamous, heterosexual, HIV-negative couples. Outbreaks of sexually transmitted HCV among HIV-positive men who have sex with men (MSM) have been reported in many parts of the world in the past decade, proving that the risk of sexual transmission of HCV may be higher in certain groups.

HCV is a serious threat to the health and well-being of those who become infected, but recent advances in testing and treatment have greatly improved the situation for those who are at risk or diagnosed.

What is HCV?
HCV is transmitted by contact with HCV-infected blood. It is an extremely efficient virus, meaning people who are exposed to it are very likely to become infected. The virus can live for over two weeks in a speck of dried blood! Blood-to-blood contact remains the most likely method of transmission, whether during sex or through sharing needles. The virus has also been found in semen, but it remains unknown how efficient that route of transmission is. Without treatment, HCV viral loads can increase to levels that make transmission even more likely.

In the U.S., about 3 million people have HCV, and over 80% of these cases are chronic. Fortunately, chronic HCV infection usually progresses slowly and may not lead to liver disease in many patients - especially if the infection is acquired later in life. Approximately 20 to 30% of people who are chronically infected develop cirrhosis over 20 to 30 years. In 2007, HCV was the cause of approximately 15,000 deaths, surpassing the annual mortality rates of HIV. HCV is a common co-infection in people with HIV, but it often goes undiagnosed for many years, and 73% of deaths are in people aged 45 to 65. Chronic HCV infection is also associated with high rates of liver disease and cirrhosis, which can lead to expensive and invasive liver transplants. The average cost of HCV-related care for one person over their lifetime exceeds $100,000.

Past HCV prevention efforts focused on people who inject drugs. It is now widely accepted that HCV is a sexually transmitted infection, and that HIV-positive MSM are especially vulnerable.

Why should LGBT people be concerned about HCV?
Past HCV prevention efforts focused on people who inject drugs. Whether for recreational drugs, hormones, or cosmetic products, LGBT populations are more likely to report having used syringes than the general population. The large number of new cases of HCV among HIV-positive MSM in Europe added a new cause for concern since the vast majority of these men reported no history of injecting drugs. Studies later confirmed that there was a network of sexual transmission in several countries by showing...
the strains of HCV believed to be sexually acquired were not the same as those commonly passed between injection drug users. In Amsterdam, it was estimated that 1 to 4% of HIV-positive MSM were co-infected with HCV in 2000. By 2008, nearly 21% of HIV-positive MSM in one study sample were co-infected, and most of the infections happened between 2005 and 2007. Since the early 2000s, HIV-positive MSM in Belgium have experienced a 3% increase in co-infections annually. It is now widely accepted that HCV is a sexually transmitted infection, and that HIV-positive MSM are especially vulnerable.

Rapidly increasing rates of sexually transmitted HCV have now been documented in cities in Europe, Asia, and North America. In the U.S., it appears that HIV-positive MSM in New York City are experiencing the highest rates of HCV co-infection, at around 12%. North America has not yet experienced the dramatic rates of HCV that have been seen in other parts of the world. Therefore, better prevention initiatives and increased testing could help avoid such a situation from developing.

HIV/HCV co-infection is a major concern, because it can mean faster progression to serious liver problems and can increase the likelihood of death from either virus. It is important to note that HCV has been found in HIV-negative MSM who reported only sexual risk behaviors. This could mean that sexually-transmitted HCV could become a serious issue even for MSM who are HIV negative.

How can I protect myself?
Past recommendations for avoiding HCV were simple: don’t inject drugs – and if you do, use clean needles. Unfortunately, the ways in which HCV transmission occurs during sex are not as well understood, and may include a number of biological and behavioral factors. Several studies of HIV-positive MSM found that recent HCV infection was associated with:

- Past or current STIs
- Many sex partners
- Unprotected anal sex
- Sex practices that increase contact with blood
- A partner with a history of injection drug use
- Stimulant drug use
- Sharing straws to snort drugs
- Drug use – especially methamphetamine – along with sex

HCV cannot be transmitted by sweat, tears, or saliva. Ways to lower the risk of HCV transmission include:

- Reducing or stopping drug use
- Not sharing equipment to snort or inject drugs
- Using condoms consistently and correctly
- Having fewer sexual partners
- Not combining sex and drugs
- Avoiding sexual practices that increase the chance of contact with blood

Some of these recommendations are vague. This is because there are not enough data to make specific statements about what behaviors carry the highest or lowest risk of HCV transmission. A few studies have found particular sexual acts to be associated with HCV transmission, but these findings remain controversial. For example, some studies looked specifically at “fisting” as a risk for HCV transmission. This is based on the idea that the act of fisting is more likely to result in contact with blood than anal sex because it can cause more trauma to tissues in the anus.

In real life, however, sex and drugs are complicated topics. It’s difficult to calculate the exact risk for any one behavior when there are endless combinations of sex acts that can occur during a single encounter. The overlap between sex and drug use certainly complicates the equation. Likewise, those acts labeled as “dangerous” can be done in ways that reduce the likelihood of transmission. As with many other STIs, the overriding message is to avoid contact with bodily fluids that may carry pathogens. Condoms, medical-grade gloves, or dental dams are a good place to start if there is a chance of contact with the bodily fluids of another person.

How do I know if I have it?
There are no obvious symptoms of HCV, but some people may experience chronic fatigue, jaundice (yellowing of skin), nausea, and joint pain. The majority of people with HCV will have no symptoms for many years and may go undiagnosed until the effects on liver function become more prominent. Luckily, HCV can be detected with a simple test.

A conventional HCV test requires a blood draw and, in most cases, a waiting period. However, OraSure received FDA continued on next page
approval for a rapid HCV test in 2010. The test requires only a finger stick to draw a drop of blood and twenty minutes for results. It is expected that the same device will be approved for testing with an oral swab in the future. As with other antibody tests, confirmatory viral load testing should be performed if the antibody test is positive, since some people can clear the virus without treatment. If a diagnosis of chronic infection is confirmed, a healthcare provider should also perform liver function tests.

Unfortunately, not many community providers have been able to add HCV testing to their services because many states do not yet have an oversight process for rapid HCV testing. Likewise, there is little funding for HCV testing or education, though this is changing. Many federal agencies have turned their attention to the issue and some pharmaceutical companies have committed to expanding existing testing efforts. The Department of Health and Human Services now encourages HCV testing and care to be added to existing Ryan White CARE Act initiatives. The CDC has also expanded its recommendations to state that all “Baby Boomers” (those born between 1945 and 1965) should receive at least one HCV test in their lifetime. Hopefully, these new guidelines will help to increase the detection of HCV infection and referrals to treatment.

What are the treatment options?
Unlike HIV, it’s possible to cure HCV disease – to completely eliminate the virus from the body. But the first HCV medications (alpha interferon and ribavirin) had cure rates well below 50% for people co-infected with HIV and HCV. Those who underwent the long and difficult treatment often had harsh side effects, so the next generation of HCV meds has been eagerly anticipated.

The first new drugs to receive FDA approval – the protease inhibitors Incivek and Victrelis – more than doubled the likelihood of curing HCV while shortening the treatment duration by half. These meds improved cure rates both for those who had never taken HCV treatment and for those who had experienced a prior treatment failure. Data released earlier this year showed that these drugs also improved cure rates in co-infected people, although the improvements were less than those seen in people with HCV only.

Unfortunately, treatment with these two new drugs proved to be more challenging than expected. First, clinical trials can’t recreate the real-world situations of people with HCV. Studies select participants with few physical or psychosocial health issues, and provide much interaction with experts. In reality, these new drugs require very knowledgeable doctors, committed patients, and perfect adherence to even begin to replicate the successes seen in the clinical trials. In addition, the drugs must be taken with interferon, adding more side effects to this already difficult regimen. Dr Mark Nelson of London’s Chelsea and Westminster Hospital told Aidsmap that the two new drugs were similar to the first-generation HIV protease inhibitors: “Incivek and Victrelis are relatively difficult to take and relatively toxic compared to the second generation. If you have minimal liver disease, probably the best option is to wait.”

What’s in the pipeline?
The need for more HCV treatment options is clear, and new research offers great hope of increasing cure rates and reducing side effects. These experimental meds take a variety of approaches to clearing the body of HCV, including combinations of protease inhibitors and other classes of drugs such as polymerase inhibitors and NS5A inhibitors, often in interferon-free regimens.

One of the most exciting interferon-free combinations is sofosbuvir (GS-7977) and daclatasvir, two drugs originally researched by Pharmasset and Bristol-Myers Squibb. Although the final data from the phase II trials have not been released, it has been widely reported that the combination was very effective – perhaps up to 100% effective for people with HCV genotype 1.

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with Bristol-Myers Squibb to further test it in combination with daclatasvir. They will instead test it with their own drugs, most likely delaying FDA approval of an interferon-free HCV regimen for at least two years.

Other combinations have also shown good results. In 2010, a Roche study of two new drugs, danoprevir and mericitabine, showed that this interferon-free combination could suppress HCV in people who did not have HIV. Viral loads fell 100,000-fold in just 13 days in one trial.

Last year, Boehringer Ingelheim studied two of its drugs without interferon – the protease inhibitor BI 201335 and the polymerase inhibitor BI 207127 – in people without HIV. After 16 weeks of treatment, 60% of people in the trial had an SVR (sustained viral response, meaning an undetectable HCV viral load) 12 weeks after treatment ended, which is now regarded as an indication of a cure.

A trial of the protease inhibitor asunaprevir and daclatasvir found that 90% of people who had HCV genotype 1 had an SVR after 12 weeks of treatment, in spite of failing earlier treatment with interferon.

The ASPIRE trial of the protease inhibitor simeprevir (taken with interferon) reported cure rates of over 80% in people without HIV – both in those new to treatment and those who had failed earlier treatment.

Unfortunately, there has yet to be a single trial of an interferon-free regimen in people co-infected with both HCV and HIV. Researchers are concerned about how effective the new drugs will be without interferon in people who are immune suppressed. They also don’t know how people with other complications will respond to the new meds.

Several more drugs will likely be approved for use with interferon over the next few years. The first interferon-free combinations may not hit the market for three to five years, and their approval for co-infected people will take even longer. Of course, knowledge gained from mono-infection trials and pressure from advocates could hasten that process, and any drugs approved for people with only HCV can also be prescribed for people who are immune suppressed. They also don’t know how people with other complications will respond to the new meds.

What if I have both HIV and HCV?
Despite the development of new meds, treating HIV/HCV co-infection is still very difficult. There are many concerns about how new HCV meds might affect a person’s ability to manage HIV infection. The specifics of any treatment regimen will vary depending on the types of HCV and HIV, a person’s overall health, treatment history, liver function, and response to different medications. As additional treatments are developed, there is great hope that such complications will become less of an issue.

Conclusion
The next landmark in HCV treatment will be a regimen that is interferon-free, easy to take, and tolerable both for people with HIV and for those who have advanced liver disease. While the current evidence is promising that such a treatment will eventually become available, the reality is that it will take years to reach the market. In the meantime, it is crucial that efforts are made to raise awareness about sexually transmitted HCV and to encourage those at risk to get tested in order to slow its spread. HCV is a serious but preventable condition, and increasing the amount of knowledge on the topic is the first step to empowering people to reduce the risk of its transmission.

Aaron Arnold is the Data Manager of the M2M Project at Pittsburgh AIDS Task Force. Mark Milano is the Editor of Achieve.
thought I had dodged a bullet. I had stopped using heroin intravenously in the early ’70s and tested HIV negative. My husband wasn’t so lucky – he died of complications from AIDS in 1987, two years after our son died from SIDS. I started going to Narcotics Anonymous and Alcoholics Anonymous after my husband died, and I still go to about four meetings a week. I have a real compulsive personality and need all the help I can get.

But once I got back on my feet, I had to face another problem. All of my friends have been gay since I stopped using heroin. They were so good to me, rescuing me from my former life. So when they started getting sick, it was my turn to help them. I also experienced a very real fear of abandonment. My dearest friends were going to leave me, but they weren’t going anywhere if I could help it. I was all about trying to control the situation. I believed that if the government could put a man on the moon, they could find a cure for HIV. For the most part, nobody in power really cared about the group of people who were affected by HIV: first gay men, then IVDUs and people of color. I had been an activist in high school, protesting the Vietnam war. I am an old leftie and I am good at it. So, before my husband died, we founded AIDS Action Baltimore (AAB) – and I’m still the AAB President 25 years later.

Then in 1996, I experienced yet another blow. I was diagnosed with breast cancer. I underwent two surgeries and nine months of chemo and a month of radiation. In the middle of the chemo, my ALTs (a liver function test) started to go up and never really came back to normal levels. I haven’t been able to walk up two flights of stairs since that time. I’ve always complained to doctors about being tired and exhausted. When I’ve told them what my schedule is like, they’ve just said, “No wonder you’re tired.” Nobody really paid attention to my complaints. But I kept feeling weaker and weaker. When I had my family over for the holidays, I had to prepare everything days before. If I tried to get things together the same day, I wouldn’t be able to get off the couch by the time company arrived.

Finally in 2006, my primary care doc did an HCV [hepatitis C virus] test because my ALTs continued to increase a little more every year. They weren’t in the danger zone, but something was wrong. When the HCV test came back positive, I was glad to know I hadn’t been crazy all those years – something really was the matter. But I also felt terrible about the HCV diagnosis. I felt contaminated. I had been out of “the life” for many years and was finally feeling better about myself. Here was yet another diagnosis slamming me in the face once again. It was nice to have a cause for my symptoms, but not at the expense of having another potentially life-threatening disease.

I learned about a new drug from Pharmasett. The data looked fabulous. I thought, “I want this drug!” But I knew the only way to get it would be in a clinical trial. So, I did my homework and decided which trial was best for me.

I went to Dr. Dave Thomas at Johns Hopkins. Dave is a renowned national and international HCV physician and researcher and Chief of Infectious Diseases Division at Johns Hopkins. He kept telling me, contrary to what my friends said, that I didn’t need a liver biopsy unless I wanted to start treatment. He suggested we use the HCV FibroSURE test instead. FibroSURE looks at results from a number of livers tests, essentially averages them out and provides a projection of liver fibrosis score that indicates the amount of liver damage (fibrosis). I had a blood draw every six months and my levels were pretty much the same for a long time.
I decided not to take any HCV regimens containing interferon (inf). Inf is part of the current standard of care for HCV treatment. I was afraid of the many side effects associated with inf. I had survived chemo, but I was older now, and much more beat up. I knew I couldn’t tolerate the psych side effects. If I was any more anxious and depressed, I would be out in the street with a machine gun! I just couldn’t handle being even worse mentally. I also knew that the anxiety and depression remained for many people even after inf treatment was completed.

I did know people who took inf and didn’t have horrible side effects. But although drugs are usually very effective for me, I always experience a lot of side effects. Moreover, I knew that I couldn’t afford to take off work for even part of the 48 weeks of required treatment. Everybody thinks of me as a strong dog, but physically I am pretty beat up from years of abuse.

I also knew that new inf-sparing drugs, called direct antiviral agents (DAAs), were coming down the pike. Because I was ready to think about starting treatment with one of these new regimens, I got a liver biopsy in 2008. My symptoms were getting worse. I recall going to a Hepatitis Community Advisory Board meeting where I was so exhausted I couldn’t even walk up a hill. I thought, “I can’t live like this anymore.” I tried to stop traveling so much, which again is a joke in the activist arena. I knew it was time for me to do something to help myself.

I was on the lookout for the best new available HCV drug combination. Two new HCV protease inhibitors had just been approved, Incivek and Victrelis, but they had to be taken with interferon as well as ribavirin (r). Incivek and Victrelis plus inf/r treatment is even worse than inf/r alone.

I learned about a new drug from Pharmasset, called PSI-7977, or sofosbuvir. The data looked fabulous. I thought, “I want this drug!” But I knew the only way to get it would be in a clinical trial. There were a couple of 7977 trials in combination with other DAA HCV drugs enrolling at the time. So, I did my homework and decided which trial was best for me. I looked at the rate of HCV viral load decline with different 7977 combinations and what side effects were reported. The longest safety and efficacy data was available on 7977 combined with a Bristol-Myers Squibb drug called daclatasvir, another new HCV DAA drug which is an NS5A inhibitor. I talked to the Principal Investigator of the study and to my doctor. My doctor said he thought this regimen was safer and had a better chance of success with fewer side effects.

continued on next page
than inf/r therapy with one of the newly approved HCV drugs. I made an informed decision based on what I had learned from reviewing the data and speaking to other HCV activists as well as my doctors.

I knew when the trial was going to start at Hopkins. I called them every week for months, inquiring whether the study was enrolling patients yet. I ended up being the first person enrolled in the trial at Hopkins! It was a Phase 2 study. If you would have told me I would be in a Phase 2 study a year before, I would have laughed in your face. But this trial was different than most. The dose had been established and it used a design that activists had proposed in the HIV arena for treatment-experienced patients. It was open-label, so everyone knew what drugs they were getting, and it had three arms. One arm included 7977 mono-therapy for five days with daclatasvir added thereafter. The second arm included both drugs together at the start. The third arm added ribavirin to both drugs from the onset. Everyone got the study drugs for 6 months. Everyone knew that they were taking and also received their viral results in real time.

Before I started the trial, I had enlisted the aid of a doctor friend who was willing to give me ribavirin if I got assigned to the two-drug arm. I was afraid that two drugs alone were insufficient to cure my HCV. I also obtained the advice of other activists. One said, “OMG, there’s not that many people in the world to prove the efficacy of 7977, its lack of proof of concept trials and efficacy is not really proven until Phase 3. I take the ribavirin too just in case.” But I decided against using the ribavirin. I thought to myself, “All right, you have agreed to do this, so whatever arm you get randomized to you’re going to do.” I just didn’t feel that I could lie to my doctors who were also colleagues. I decided to honor my commitment and stick to whatever regimen I was randomized to. But truth be told, it wasn’t only altruism on my part. I was pretty convinced that the two drugs alone would do the job.

My study nurse Erica was wonderful. She made all aspects of the study so much easier for me, including the “informed consent” process. Erica was everything we’ve ever asked for when we’ve discussed this aspect of clinical trials with researchers and drug companies. I had to go to the site every day for two weeks. It was very crazy at first. Every time I went I had to get an EKG, a blood draw, and a physical exam. The problem was that I had just had foot surgery and all three procedures were in different buildings. There were a couple days that I had to stay all day, and on those days I had blood draws at 30 minutes after taking the drug, and 1, 2, 4, and 8 hours thereafter. A Phase 3 study would not have been so intensive, but I’m lucky I didn’t wait until Phase 3. I will go into more detail about this later. After the first two weeks, things got a lot easier. I had to have blood draws twice a month for a time, and finally only once a month.

Luckily, I got assigned to the two-drug combination arm, and for two months I had absolutely no side effects other than indigestion. But after about 60 days, I started to get really dizzy. I don’t mean I just got dizzy when I stood up. It was like the world around me was a swinging pendulum. I got out of bed one day, tried to get into the shower and almost fell in the tub. I complained about it, but was told that nobody was complaining about dizziness. The next four months were not a lot of fun. I noticed that when I traveled I felt worse, so I tried to travel less. Once again, that was a joke. But just like when I was on chemotherapy, I worked every day. I didn’t always go into the office eight hours every day, but I went every day.

When I joined the study, my HCV viral load was around 4 million. My viral load was undetectable after just 21 days of treatment and it has never come back! The big day came six months after I finished the protocol. Another viral load test would determine if I was “cured”. Within the week, I got the great news. I was officially “cured”. Fabulous! I still can’t believe it sometimes. In fact, just last week I got a letter from Dave Thomas that reads:

No infection was detected including on July 29, 2012, a full 24 weeks after stopping therapy. This is incontrovertible evidence she has been cured of HCV infection. She should be regarded as free of HCV infection with regard to life insurance and other medical issues.

While I am delighted about my results, I am furious with Gilead Sciences, the drug company that bought 7977 from Pharmasset. Because of business decisions, Gilead will not conduct further studies of 7977 in combination with daclatasvir.

Pharmasset was all about working with every drug company in the world to prove the efficacy of 7977, its lack of serious side effects and lack of drug-drug interactions.
They designed studies like the one I was in so people would enroll quickly and results would be demonstrated quickly. They were all about selling 7977 quickly, which they did, to Gilead for $11 billion dollars.

At a meeting with activists, Gilead promised that they would continue to work with other HCV drug companies. I asked them three times during the meeting. Dr. John McHutchison, a Senior VP at Gilead, assured us that collaborations with other HCV drug companies would continue. He referred to Gilead’s record of collaboration in HIV and promised that the same would be true in the HCV arena.

Unfortunately for patients, that is not what has actually occurred. Gilead first plans to study 7977 with inf/r, and then with its own NS5A inhibitor, which they claim should be similar to daclatasvir. But the necessary interaction studies will take at least an additional year. Eventually, Gilead will have a combination pill that will include all Gilead drugs, to the exclusion of Bristol-Myers Squibb and every other drug company.

Gilead could have begun a large Phase 3 trial with 7977 with daclatasvir yesterday. This combination could have been approved in a relatively short time. But now the combination may never be studied together before both drugs are approved individually, and that won’t happen for another couple of years. I am one of the few people in the country lucky enough to have received 7977 with daclatasvir. I was ecstatic to learn I was cured. My happiness is quite bittersweet now that I know that I was one of only 44 people with genotype 1 (the most prevalent form of HCV in the U.S.) that will actually have access to this combination for many years to come. It is also important to note that 100% of the 44 people with genotype 1 in my study were also cured with 7977 and daclatasvir.

I am outraged that Gilead refuses to study 7977 with other DAAs that are farther along than their own drugs. I am outraged that people with HCV with serious liver damage who do not have the luxury of waiting at least an additional year will have to be subjected to horrible side effects that occur with the current standard of care. Many people are in much worse shape than I was and need treatment immediately. Because of Gilead’s business decision to use only their drugs in 7977 combinations, people with more serious liver damage are being forced to take regimens with less efficacy and more side effects, for longer periods of time, so that Gilead can make more money in the end.

We will be asking Gilead to provide the NIH with 7977 so the AIDS Clinical Trial Group can study it with daclatasvir. Without more data on the combination, there is a real danger that insurance companies won’t reimburse for this combination once both drugs are individually approved. We’ve also been pushing Gilead and other companies for early access to these new DAAs. But HCV is not like HIV. Once you’re cured of HCV, you’re cured. Companies will not continue to receive lifelong profits from HCV patients like they do HIV patients. So, I believe they don’t want to open the floodgates now. They want patients to have access to these drugs only after approval so and they will be sure to get astronomical prices for these new drugs. Activists have started an online petition at hepc-cured.com to request that Gilead study 7977 with daclatasvir. Please sign on. We will keep the pressure on Gilead.

So what have I learned? Besides not to trust Gilead, I know I am cured because I took the bull by the horns. I’ve never been the kind that of person to sit and wait for something to come to me. I’d be long gone by now if that was the case. I got involved in my care the minute I was diagnosed. I learned about the availability of new drugs as well as when and where they would be accessible. I made sure I educated myself about the data, what questions to ask, and who to ask. It’s really not that difficult. All this information is online for anyone who is willing to take charge of your own life and health. You can learn all this and more at sites like NATAP.org, HCVAadvocate.org, treatmentactiongroup.org, and hivandhepatitis.org. Do the work. It may actually save your life.
Looking Back, Looking Forward

by Tom Duane

At the end of this year, I will finish my final term as a New York State Senator. I was first elected to the Senate in 1998, after serving in the New York City Council for seven years. I have worked hard to represent my community and constituents on Manhattan’s West Side for more than 20 years, but decided earlier this year that it is time for a new chapter in my life.

When I first was elected to the State Senate, people told me it was a foolish career choice. Many said that an openly gay, openly HIV-positive man could accomplish little in a highly partisan and conservative State Senate. But I was not discouraged by this talk. Instead, I took it as a challenge and was energized by it. And 14 years later we have proved the naysayers wrong. With my colleagues, we accomplished much, and every success was achieved in a bipartisan fashion.

An AIDS Activist First
As a person living with HIV for at least 27 years and probably longer, I have been involved in AIDS activism since the start of the epidemic. I attended my first ACT UP meeting in 1987 and remained a member even after I was elected to the New York City Council in 1991. In March of 1993, I was arrested during a rally protesting the detention of over 250 Haitians who had tested HIV positive at the U.S. base in Guantanamo Bay, Cuba. After a Federal Court ordered the camp closed and their immediate medical parole to the U.S., I negotiated with Mayor Dinkins’ administration to provide them full access to the public “safety net” services offered to all New York City residents with HIV.

I continued to engage in civil disobedience and went to jail on multiple occasions, most recently in November 2011, in protest of Governor Paterson’s veto of legislation to cap rent at 30% of income for people with HIV receiving rental assistance from the HIV/AIDS Services Administration (HASA). Unfortunately, this legislation remains an important goal, not a reality.

As a person living with HIV for at least 27 years and probably longer, I have been involved in AIDS activism since the start of the epidemic. I attended my first ACT UP meeting in 1987.

As a New York City Councilmember, I successfully fought to increase the city’s budget for AIDS and tuberculosis services by over $1 million. And in 1994, I prevented an effort by Mayor Giuliani to eliminate the NYC Division of AIDS Services (now HASA). In 1997, I shepherded a law that made the existence of the agency mandatory, increased its staff, mandated improved oversight, and created a Bill of Rights for its clients.

A New York State Senator
During my time in the State Senate, I worked to kill “HIV Presumption Legislation” – laws that stated that contraction of HIV by members of particular professions (including law enforcement, taxi and limousine industry, etc.) would be presumed to be job related. In response to this advocacy, Governor Pataki vetoed all HIV presumption bills passed from 1999-2005.

I was appointed to the New York State AIDS Advisory Council in 1997 and continue to serve on that advisory body to the New York State Commissioner of Health and the Department of Health AIDS Institute.

In 2009, I worked to pass the Department of Health (DOH) HIV/Hepatitis C Oversight Law, which gave the DOH oversight of HIV and Hepatitis C treatment for people in New York State prisons and jails.

I spoke at the White House Office of National AIDS Policy’s “HIV and Housing Meeting” in December of 2009 on “Bringing successful strategies to scale: The level and nature of unmet housing needs, and a review of existing housing resources”, which helped inform President Obama’s National HIV/AIDS Strategy.

I worked to pass the HIV Testing/Consent Law in 2010, an important and necessary update to an earlier law. This law requires that HIV testing be routinely offered to people aged 13 to 64 in all health care settings. It pre-serves written informed consent for conventional HIV testing but simplifies the process of obtaining it – so that it can be done in the waiting room as part of a general medical consent. It also allows for documented oral informed consent for rapid HIV testing and makes written and oral consent durable at the same provider until it is revoked or expires by its terms.
It mandates quick referral to medical care for all who test positive for HIV, and streamlines post-test information for those who test negative. Finally, it protects doctors, providers, and emergency personnel in the event of occupational exposure and expands public health access to HIV information for the purpose of disease monitoring and quality of care oversight.

Another critical piece of legislation that I supported was a 2010 law that legalized the possession of hypodermic needles, including those with drug residue. It clarified sections of the Penal Law to state that participants in needle exchange programs are not acting unlawfully by possessing a needle or syringe from that program. There’s clearly no point in providing clean needles through these programs if the people obtaining them can then be arrested for having them! The legislation also stated that possession of a residual amount of a controlled substance in a needle or syringe is not a crime if the individual is legally permitted to possess the needle or syringe under the Public Health Law. This allows people to return their used needles and syringes to the programs – an important component of “exchange”.

**The Fight Continues**

But there’s still much work to be done. In addition to passing the 30% HASA rent cap, we must address these important issues:

- Establish a statewide Division of AIDS Services to provide access to benefits and services to every person with HIV in New York State.
- Increase funding for HIV prevention and health literacy among older people on the state level.
- Expand syringe access by lifting the cap on the number of syringes that pharmacies can sell to an individual.
- Increase funding for shelters for runaway and homeless youth, a group particularly vulnerable to HIV.
- Ensure success of legislation that has been passed, including the DOH oversight of prisoner HIV treatment and routine offering of HIV testing, through proper funding and management.
- Continue investment in evidence-based HIV prevention and increased funding for community-based outreach and education initiatives regarding HIV and sexual health, with particular emphasis on women and girls of color, and men of color who have sex with men.

The fight goes on. And on January 1st, while I may no longer be a Senator, I will continue to be an activist and an advocate. I will proudly hold these positions for life, and I hope that you’ll join me in making a difference in the lives of all those with and at risk for HIV.
Some studies in Africa, however, have seen higher rates of suspected superinfection. Julie Overbaugh and her team have been following a cohort of female sex workers in Kenya for nearly 20 years. By 2012 they had analyzed viral sequences from 110 women and identified 19 cases of superinfection. They calculated an annual superinfection rate of about 3%, similar to the rate of initial infection in this group. While half the cases occurred during the first two years after initial infection, two people were superinfected after five years.

In another African study, Andrew Redd from NIAID sequenced virus from 149 people who were recently infected in Uganda. They identified seven cases of superinfection for a rate of 1.4 per 100 person-years — similar to the local initial infection rate in Uganda. They identified seven cases of superinfection for a rate of 1.4 per 100 person-years — similar to the local initial infection rate of about 1.2 per 100 person-years.

**A Comprehensive Approach**
The shift from behavioral interventions to biomedical prevention in an era of scarce funding has raised concerns about putting too many eggs in one basket. If treatment-as-prevention takes priority over treatment-as-treatment, some advocates fear that people with HIV will be subtly pressured, or even coerced, into starting therapy before they are ready, for the sake of public health. “Prevention for positives” puts the onus on people with HIV to prevent transmission, while HIV-negative people risk being left out of the picture. On the HIV-negative side, shifting resources to PrEP could mean getting rid of culturally sensitive behavioral approaches tailored for specific groups.

“The problem with prevention for many is that you cannot avoid dealing with sex and drugs,” former UNAIDS head Peter Piot declared at the 2006 International AIDS Conference. Biomedical prevention should not be an excuse to avoid difficult conversations, nor to neglect tried-and-true strategies like explicit sex education, condom distribution, and needle exchange that are proven effective but remain politically sensitive.

If recent studies have a common theme, it is that different strategies work for different people. There is no magic bullet, and a combination prevention approach that includes risk-reduction counseling, community support, condoms, and now biomedical interventions is likely to be most effective.

“It is easy, but somewhat naive, to say that people should just try harder to use condoms,” said Dana Van Gorder of Project Inform. “We must give people at risk for HIV the ability to choose for themselves which proven prevention methods are most likely to respond to their needs.”

“Choice matters,” Mitchell Warren of AVAC concurred. “For the millions of men and women who remain at risk for HIV worldwide, each new HIV prevention option offers additional hope that we will achieve the end of the epidemic.”

Liz Highleyman is a San Francisco-based freelance medical writer and editor-in-chief of HIVandHepatitis.com.

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**Sex Workers Not Welcome Here**

*by Rachel Thomas* “Where are all the red umbrellas?” a conference attendee asked in the busy corridors of the 2012 International AIDS Conference. She was referring to the international sex worker community, which has adopted the red umbrella as its symbol. Others also wondered why sex worker and drug user activists from around the world, who have actively participated in past conferences, were largely absent this year.

The reason? Visas. When the U.S. Government issued a travel ban in 1987 that prevented people with HIV from entering the country, activists and scientists criticized the move as both a violation of human rights and an ineffective response to the epidemic. After a 22-year battle, the ban was finally lifted; however, the victory was only partial. Applicants for U.S. visas must still answer the following two questions:

1. Are you or have you ever been a drug abuser or drug addict?
2. Are you coming to the United States to engage in prostitution or unlawful commercialized vice or have you been engaged in prostitution or procuring prostitutes within the past 10 years?

Based on these questions, sex workers and drug users remain barred from entering the U.S. unless they are issued a waiver at the discretion of their country’s consulate. This means they must either lie on their forms — which is against the law — or risk being denied a visa.

Yet, how can two of the communities most at risk for HIV worldwide be left out of an international conference on AIDS? And how can we hope to end AIDS when such blatant social exclusion persists, driving the epidemic?

These U.S. immigration laws are just one example of the many ways national and international laws, regulations, and policies directly affect groups at risk for HIV. In July, the United Nations Global Commission on HIV and the Law released a report calling for the removal of all discriminatory and punitive laws, policies, and state practices which are fueling the global HIV epidemic. It explicitly recommends the decriminalization of consensual adult sex work and drugs for personal use. The U.S. should take note and bring its actions in line with the freedom, tolerance, and nondiscrimination it preaches. We can end AIDS, but only if those most affected are at the forefront of the response.
Election Day 2012: Voting For Your Health

On November 6, 2012, people with HIV and those who care about HIV services face a stark choice. With Draconian cuts in all federal spending looming on January 1, 2013 – including multiple programs for people with HIV – we have never faced as important an electoral choice as this year. There is more at-stake in the direction of our government than the Presidency. Every member of the House of Representatives, one-third of the U.S. Senate, and many state and local officials will be up for election. And many of the winners could be decided by just a few votes. So it is has never been more important for everyone to get educated about the issues and to vote.

Access to adequate health care for people with HIV is primary among the issues in this election. The major political parties’ stances on the Affordable Care Act (ACA), and their intentions regarding other key health and human services programs, serve as a guide with regard to the likelihood of adequate post-election support for vital HIV programs. President Obama and most Democrats have clearly indicated their intention to fund and implement the ACA and strengthen provisions that are meant to improve access to care. Governor Romney and his party have stated their intention to repeal the law in its entirety, and replace it with “commonsense reforms” to lower costs and end lawsuit abuse. It is unclear what benefits would be offered to people with HIV through a Republican-sponsored plan, since no clear alternative to the ACA has been put forward. Republican Presidential candidate Mitt Romney is, however, in favor of legislation allowing states to decide how to reform health care on their own.

While the provisions of the ACA will be phased in over a period of years, it already extends a host of beneficial provisions to people with HIV. It prevents insurance companies from denying coverage to children because they have HIV or any other pre-existing condition. Starting in 2014, insurers will no longer be able to deny coverage to anyone with a pre-existing condition nor charge more for the same coverage. The law also prevents insurers from dropping coverage except in cases of fraud. Additionally, the law stops insurance companies from imposing annual or lifetime dollar limits on essential health benefits.

According to the CDC, most people with HIV in the U.S. get their health insurance through Medicare or Medicaid. Many without health insurance rely on the AIDS Drug Assistance Program (ADAP). It is expected that any changes made by the ACA will directly affect them. Beginning in 2014, states can extend Medicaid coverage to all Americans with incomes below 133% of the federal poverty level (about $14,500 for an individual and $29,700 for a family of four). As a result, low-income adults with HIV will no longer have to wait for an AIDS diagnosis to become eligible for Medicaid. People without insurance will be able to buy private coverage from state-based health insurance exchanges, which will make health insurance more accessible and less expensive. People with low or medium incomes will also have access to tax credits to make coverage more affordable.

HIV drugs are extremely expensive, costing well over $12,000 a year. But Medicare Part D stops paying for all medications when a certain cap is reached. People must then pay for their drugs themselves until “catastrophic coverage” kicks in. This is called the “donut hole” and the cycle starts over every year. The ACA will close this gap in coverage by requiring discounts on the price of drugs and counting ADAP benefits as contributions toward the out-of-pocket spending limit. This will help people get through the “donut hole” more quickly, which be completely eliminated by 2020. Unfortunately, the ACA does not address every health care problem faced by people with HIV. But it is by far the greatest step toward that goal since the Ryan White CARE Act of 1990.

Another issue, and one of equal concern, is the Budget Control Act of 2011. This law required Congress to identify $1.2 trillion in targeted deficit reductions or face automatic reductions (“sequestration”) on January 1, 2013. Since the bipartisan committee charged with agreeing on these cuts failed to reach a compromise, we now face an across-the-board 8.2% cut in all domestic programs, including those funded by the Ryan White CARE Act. This means deep cuts to ADAP, AIDS housing programs, the CDC’s HIV prevention programs, and many other federal HIV programs. The effect of these cuts on the federal deficit will be negligible, but their impact on people with HIV will be profound. Thousands of lives will be put at risk. In trying to minimize the damage of sequestration, Republicans have focused on avoiding defense cuts while allowing Draconian cuts to domestic programs.

Moreover, Vice-President Paul Ryan’s proposed budget would cut federal spending, including HIV programs, by at least 20%. Aside from ending traditional Medicare and turning it into a “voucher” program for future beneficiaries, it would cut $1.4 trillion in Medicaid funding over the next ten years, and let individual states use those dollars as they wish by giving them a fixed “block grant” to spend as they wish each year. And if a state’s health care costs exceeded the amount given, it would be on its own to provide care to its residents from its own limited funds.

There is a vast array of other issues on which candidates differ at both the state and federal level. With this in mind, it is important that everybody – especially people concerned about health issues like HIV – get educated about the candidates and vote on November 6th.
ACRIA Center of Expertise on Aging & HIV, STIs, and Viral Hepatitis Presents a Webinar Series:

Working with Older Adults at risk for and living with HIV/AIDS

This four-part webinar series is designed to build provider skills in working with older adults living with HIV/AIDS. Each webinar will explore critical issues, listed below, focusing on building provider knowledge, awareness and skills for addressing these issues with clients.

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- **December 3rd, 2012** - 1:00 pm: Older Adults & HIV: Substance Use and Depression
- **January 24th, 2013** - 1:00 pm: Older Adults & HIV: Social Isolation and Social Supports
- **March 6th, 2013** - 1:00 pm: Older Adults & HIV: Sex and Prevention Burnout

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A CALL TO ACTION

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