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## Emerging Issues in Today's HIV Response: Debate 6

# Treatment as Prevention

**“Treatment as prevention is today’s game changer, with the potential to resolve the longstanding but artificial tension between allocating resources for prevention and resources for treatment.”**

**–Michel Sidibé, Executive Director of UNAIDS and Under-Secretary-General of the United Nations**

On Thursday, November 10, 2011, the World Bank and the U.S. Agency for International Development (USAID) presented the sixth in a series of debates on emerging issues in the response to HIV. In an era when development aid is under pressure and the dynamics of the pandemic are constantly changing, it is imperative that governments, civil society organizations, and other partners have the best evidence and knowledge to maximize the effectiveness of development dollars and achieve results. The debate series was designed to advance discussion and begin to build consensus about contentious issues within the HIV community. The World Bank’s global video conferencing and web-based technologies allowed country teams in Africa and other partners from across the globe to participate in real time in the debate. Over 800 people registered to attend the debate either in person or remotely.<sup>1</sup>

Debate 6 discussed the proposition, “Countries should spend a majority of what is likely to be a flat or even declining HIV prevention budget on ‘treatment as prevention.’” The topic reflects critical questions arising from observational studies and a recent prospective clinical trial demonstrating the effectiveness of antiretroviral therapy (ART) for HIV prevention. Much of the debate centered on the dramatic findings of the recent HIV Prevention Trials Network (HPTN) 052 study of 1,763 HIV-serodiscordant couples in nine countries in Africa, Asia, and Latin America. The HPTN 052 study showed that early treatment—started at a CD4 count between 350 and 550 cells/mm<sup>3</sup>—reduced the risk of HIV transmission to an uninfected partner by at least 96 percent. This suggests that starting ART earlier than many treatment guidelines currently recommend could have significant impact on the spread of HIV.

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<sup>1</sup> Additional information about the debate series can be found at <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTHIVAIDS/0,contentMDK:22570781~pagePK:210058~piPK:210062~theSitePK:376471,00.html> and at [www.aidstar-one.com/events/emerging\\_issues\\_todays\\_hiv\\_response\\_debate\\_series/debate\\_six\\_treatment\\_prevention](http://www.aidstar-one.com/events/emerging_issues_todays_hiv_response_debate_series/debate_six_treatment_prevention).

Conferring additional weight to treatment as prevention was a speech given by U.S. Secretary of State Hillary Rodham Clinton on November 8 at the U.S. National Institutes of Health, which funded the HPTN 052 study. Secretary Clinton called for a renewed push for an “AIDS-free generation” through research-proven interventions: voluntary medical male circumcision (VMMC), prevention of mother-to-child transmission (PMTCT), and early ART to prevent illness from and transmission of HIV.

The debate moderator was Nancy Birdsall, Founding President of the Center for Global Development. Two panelists spoke in favor of the proposition: Wafaa M. El-Sadr, Director of the International Center for AIDS Care and Treatment Program and Professor of Epidemiology and Medicine at the Mailman School of Public Health and College of Physicians and Surgeons of Columbia University; and Sten H. Vermund, Director of the Vanderbilt Institute for Global Health, Amos Christie Chair in Global Health, and Professor of Pediatrics, Medicine, Preventive Medicine, Obstetrics and Gynecology at Vanderbilt University. Speaking against the proposition, each connected by videoconference link, were Stefano Bertozzi, Director of HIV and Tuberculosis in the Global Health Program of the Bill & Melinda Gates Foundation; and Myron Cohen, Principal Investigator of the HPTN 052 study and Associate Vice Chancellor for Global Health, J. Herbert Bate Distinguished Professor of Medicine, Microbiology and Immunology, Public Health Director of the Institute for Global Health and Infectious Diseases, and Chief of the Division of Infectious Diseases at the University of North Carolina’s Chapel Hill School of Medicine.

## Introduction

Michel Sidibé, Executive Director of the Joint United Nations Programme on HIV/AIDS and Under-Secretary-General of the United Nations, gave the opening remarks from Geneva through a videoconference link. Sidibé welcomed the participants and thanked the World Bank and USAID for organizing the debate. He congratulated Secretary Clinton for being the first world leader to articulate the goal of ending the epidemic soon and assured the audience that many world leaders would soon follow. Sidibé stressed the importance of putting science to work to find a solution to HIV and of embracing treatment as prevention as a way of doing that.

Treatment as prevention, Sidibé said, is today’s game changer, with the potential to resolve the longstanding but artificial tension between allocating resources for prevention and resources for treatment. The HPTN 052 study provides evidence, for the first time, that treatment *is* prevention. The purpose of this debate, he said, is not to discuss whether treatment as prevention *should* be implemented, but to identify the best ways to apply it as part of a package for intervention, treatment, care, and support—and to use HIV treatment strategically and equitably to bring about a revolution in prevention. Treatment as prevention should be a part of redoubled efforts to reach three key goals: eliminating mother-to-child transmission and keeping mothers alive, reducing new infections by 50 percent, and bringing 15 million people into treatment by 2015.

Over 375 computers logged into the live webcast and more than 250 people attended the event in Washington, DC, while 13 additional videoconference sites across sub-Saharan Africa, Europe, and North America joined the debate.

## The Two Sides

The two panelists who argued in favor of the proposition said that treatment as prevention represents an unprecedented opportunity to turn the HIV epidemic around. The proposition, they added, supports Secretary Clinton’s emphasis on relying on scientifically proven interventions in the AIDS strategy, because the HPTN 052 clinical trial demonstrates a 96 percent efficacy in prevention. Thirty years of experience have yielded efficiencies in service delivery that make this intervention feasible, they asserted, and principles of equity and ethics require that HIV strategies achieve gains in both treatment and prevention.

The two panelists who opposed the proposition pointed out that requiring a majority of funds to go for treatment could be appropriate in some countries but wasteful in others, and would disrupt existing interventions. They further argued that there are still many questions about how to implement treatment as prevention, what effects it might have on adherence, and whether it would be effective in a range of populations, such as men who have sex with men (MSM); these as-yet unanswered questions suggest that treatment as prevention is not ready for wide scale-up.

## Debate Proceedings

The moderator introduced the proposition for the debate: *Countries should spend a majority of what is likely to be a flat or even declining HIV prevention budget on “treatment as prevention.”* The four panelists<sup>2</sup> each had 10 minutes to present their arguments defending or opposing the proposition. Following the final presentation, each panelist had two minutes to rebut arguments made during the debate. Once the rebuttals were complete, the moderator asked questions contributed by the audience in Washington, DC, videoconference sites, and webcast participants. Each question was allowed a three-minute answer, with input from both sides. Following a one-minute final argument by each of the four debaters, Roxana Rogers, Director of the Office of HIV/AIDS at USAID, gave the closing remarks.

Before introducing the debaters, the moderator gave an overview of the findings of the HPTN 052 study and its groundbreaking results among serodiscordant couples. She also noted some of the many questions that the findings raised, including the following:

- Should treatment as prevention be made available for discordant couples immediately?
- What tradeoffs or choices might be necessary in prioritizing treatment as prevention?
- How will a new focus on treatment as prevention affect available resources?
- Will people adhere to ART for prevention purposes?
- What are the risks of drug resistance when ART is used as prevention?
- How do we identify which drugs work best at the systems level?
- How will reallocating funding for treatment as prevention affect resources available for other health and development issues?
- How will the high efficacy found in the HPTN 052 clinical trial translate into effectiveness in the real world?

## Arguments Defending the Proposition

The panelists who spoke in support of the proposition emphasized that treatment for HIV *is* prevention, and that findings from the HPTN 052 clinical trial provide the most powerful evidence yet of the effectiveness of treatment as prevention. They argued that treatment efficiencies have made treatment as prevention a feasible and affordable approach to the HIV epidemic, noting the success of treatment as prevention for other diseases, such as leprosy. They also pointed out the need to strike a balance between bringing those with early disease into treatment and continuing ART for the existing roster of patients.

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<sup>2</sup> Panelists were asked to take positions that neither they themselves nor their institutions necessarily supported.

## **Treatment as prevention is prevention and represents a pivotal opportunity in the HIV epidemic.**

One panelist argued in favor of providing at least 50 percent of HIV funding for treatment as prevention because it has the strongest evidence base of any known prevention approach. Implementing early treatment as indicated by the HPTN 052 study would open the way to prompt treatment for large numbers of people, including those recently exposed, who are awaiting ART. For example, the panelist said, the Zambeza project in Mozambique, which provides HIV services for 40,000 people, can only provide ART to 6,000 of them because national policies limit access to ART to HIV-positive people with CD4 counts below 350 cells/mm<sup>3</sup>. This leaves a substantial risk of transmission from the remaining 34,000 HIV-positive people, who are not yet eligible for ART because their CD4 counts fall above the cutoff.

Also mentioned was the danger of repeating earlier public health mistakes by cutting funding when the technical capacity to eliminate disease becomes available. It would be unwise to follow the public health trend of decreasing funding when global incidence of epidemic disease decreases. Now is not the time to discuss treatment mortgages and exit strategies, just as evidence-based public health is about to merge with evidence-based medicine. Given the evidence that treatment as prevention provides unambiguous benefits, it makes no sense to cut back when treatment dollars have become effective as prevention dollars. It is critical, the panelist said, to move ahead and to roll-out testing and improve linkages, education, and infrastructure to maximize adherence to ART.

The audience was reminded that treatment as prevention, broadly applied, has the potential to strengthen health systems. The panelist pointed out that PMTCT programs—a quintessential example of a successful application of treatment as prevention—have kept hundreds of thousands of children HIV-free, allowing pediatric health services to concentrate on other childhood diseases. The panelist further urged the HIV community to capture the attention of policymakers. The financial pressures are tremendous, but mathematical modeling should help convince decision makers that treatment as prevention is a good investment, with strong evidence for its effectiveness. This does not suggest that financial realities be ignored but that program effectiveness and cost-effectiveness should be the focus.

## **Treatment as prevention relies on scientific evidence from rigorous studies to develop an effective prevention response.**

Panelists in favor of the proposition repeated Secretary Clinton's message that the search for solutions to the HIV pandemic must rely on scientific evidence. Evidence of the efficacy of ART is overwhelming, and evidence from the HPTN 052 study shows the highest level of protection from HIV infection ever achieved. The goal of treating 15 million people by 2015 will only become feasible if HIV prevention funding is reallocated to treatment as prevention.

Over the past 30 years, randomized controlled trials (RCTs) have provided evidence for the efficacy of several HIV prevention modalities, but—as panelists noted—this does not always translate immediately into effectiveness. Evidence shows, for example, that condoms are effective in preventing HIV acquisition, but that they work only if used consistently. The first RCTs of VMMC showed good results, but experience with implementation has been mixed; uptake of VMMC has been strong in Nyanza, Kenya, but it has been much slower in other areas. Many argue that VMMC should be part of the prevention budget in sub-Saharan Africa, but that it will take years to make a significant impact on the HIV epidemic.

In contrast, panelists contended, ART as a prevention modality is available now. ART's mechanism for prevention—reducing concentrations of HIV in the blood and genital secretions—is even more encouraging and has relevance for different populations. The effectiveness of ART for prevention constitutes a double win: helping individuals improve their health and delay illness, and also reducing HIV transmission to non-infected partners and any of their other sexual partners.

A panelist pointed out that treatment as prevention is not a “magic bullet,” but must be used as part of a comprehensive package that includes male circumcision, PMTCT, and other modalities, such as harm reduction for specific populations. The panelist underscored the need to examine existing modalities and make the difficult choices to support effective approaches and to stop funding approaches that do not work.

### **Treatment as prevention is feasible.**

Panelists emphasized that while detractors point to barriers to treatment as prevention, such as low-resource settings, weak health systems, and erratic implementation leading to resistant strains, new efficiencies in treatment have reduced the cost of providing antiretroviral drugs and related services to one patient to U.S.\$335 per year. This is much less expensive than other prevention approaches that are not supported by evidence but nonetheless receive large amounts of funding. The availability of new cadres of health workers, such as community-based and peer educators, increase the human resources available for implementation of prevention interventions. The panelist went on to note the distinguished history of treatment as a method of control for other infectious diseases, such as leprosy, yaws, and other conditions.

### **Principles of ethics and equity require the use of treatment as prevention as part of the prevention toolkit.**

A panelist noted the need to strike a balance between identifying and treating those with early HIV disease and continuing to treat individuals in later stages of the disease, who urgently need ART; the evidence shows that those with lower CD4 counts (under 350 cells/mm<sup>3</sup>) are 1.5 times as likely to transmit HIV. Thus both groups must be reached for treatment *and* prevention purposes.

## **Arguments Opposing the Proposition**

The panelists on the opposing side said that it might be argued that HIV programs already spend over half of their funding on prevention. They added that requiring all programs to focus on treatment as prevention would be inappropriate, because funding allocations must respond to the specific context of each country. There are still too many unanswered questions about treatment as prevention to justify broad scale-up, they said. For example, which ongoing programs should be cut in order to fund treatment as prevention?

### **Under various interpretations of the proposition, treatment as prevention is already being implemented.**

A panelist asserted that the proposition needs to be clarified. If the proposition requires spending at least half of prevention budgets on ART-based prevention, one could say that most countries have already configured their HIV funding along these lines. In the absence of resource constraints, few could oppose efforts to scale up treatment as prevention. But if the proposition interprets all prevention in terms of ART—while also treating people living with HIV (PLHIV) to prevent progressive disease—it would be feasible to spend each country’s entire HIV budget on those with a CD4 count below 350 cells/mm<sup>3</sup>, excluding those who are not eligible based on that standard. If the idea is to use the current prevention budget to increase ART-based prevention, then again, the majority of HIV funding would be dedicated to prevention.

### **It is inappropriate to mandate treatment as prevention across all countries.**

A panelist argued that the optimal way to reduce HIV-related mortality would be to allocate prevention and treatment resources according to the epidemic in each country. In the early days of the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) program, formula-based resource allocation specified percentages to be used for prevention and those for treatment. This kind of boilerplate approach does not recognize the vast differences among national epidemics.

For example, Swaziland would need more funding for treatment than Côte d'Ivoire because of differences in prevalence from one country to another. Nor would a rigid formula be appropriate in Norway, where access to ART is universal and women represent a very low proportion of PLHIV. In Iran, access to treatment is good, but MSM are at the highest risk of HIV; in that situation, applying treatment as prevention would require scaling back existing programs for the general population and implementing universal testing, which would be massively expensive relative to the number of eligible individuals identified. On the other hand, applying the treatment as prevention paradigm in Tanzania would be appropriate, because in that country, the availability of ART for people with a CD4 count below 350 cells/mm<sup>3</sup> is less than one-third than what is available in other countries; coverage in Tanzania is low and begins too late, and most PLHIV die without ever receiving treatment. The benefits of treatment as prevention in that country would far exceed the benefits achievable in a country like Rwanda, which has 80 percent ART coverage.

The panelist suggested an alternative, multifaceted approach entailing:

- Reprogramming funding for less effective strategies
- Reducing funding for emerging markets that can finance their own responses
- Increasing support for PMTCT
- Learning from countries that have achieved efficiencies in treatment and prevention
- Strengthening efforts by the Global Fund to Fight AIDS, Tuberculosis and Malaria and PEPFAR to increase country ownership of the HIV response
- Encouraging lower and middle income countries to devote more of their domestic budgets to health.

### **Treatment as prevention is not ready for immediate implementation at the population level.**

A panelist contended that it is not clear that shifting resources to treatment as prevention will reduce HIV rates at the population level. An immediate resource shift would be essentially “robbing Peter to pay Paul.”

The panelist commented that all four of the debate panelists are taking part in ongoing trials, including the HPTN 065 study, which is studying the feasibility of implementing prevention packages in the United States, and the HPTN 071 study, a combination prevention package that includes ART for all CD4 counts to determine what works best. The fact that such trials continue to search for answers to feasibility and implementation issues suggests that an immediate focus on treatment as prevention is premature.

### **Implementing the proposition without regard to local and regional contexts, including the needs of specific most-at-risk populations, may not reduce global HIV levels.**

A panelist noted that the World Health Organization and many countries have adopted a policy of initiating treatment before CD4 counts drop below 350 cells/mm<sup>3</sup>. This should help to combat HIV, and is a desirable goal, but it does not mean that untargeted treatment as prevention will reduce HIV transmission. The panelist criticized the proposition's premise as too universal, suggesting that prevention benefits will likely be regional. For example, the HPTN 052 study showed benefits in Africa, but it would be better to focus on providing *better* use of ART in Africa than on providing *more* ART.

The panelist reminded the audience that the HPTN 052 study focused on heterosexuals. It is not yet known whether treatment as prevention will work for MSM or for people who inject drugs. Nor is it known whether other groups will exhibit the high degree of adherence shown in the HPTN 052 study.

## **Although early infection is critical to address, it is difficult to detect.**

An additional issue, the panelist said, is the difficulty of detecting HIV infection during the initial acute phase of HIV infection, or between the point of HIV infection and the production of antibodies. During this time, even though viral loads are high, an antibody test may give a false negative result. There is at present no way to detect infection in these groups, but they must be reached for treatment as prevention to achieve a population-level impact.

## **The proposition implies that launching treatment as prevention interventions would disrupt programs already in place that have significant potential for long-term impact.**

The panelist speculated about which items in the prevention toolbox—condoms? neonatal circumcision?—might be eliminated or cut back to implement treatment as prevention. For example, VMMC, because it is irreversible, can be expected to yield ongoing prevention benefits (assuming risky behavior is avoided), whereas compliance with ART is often erratic.

The better course, the panelist said, is to continue with the strategy already in place: combination prevention. It is important for each country to determine the best way to spend its prevention budget to ensure that the results are worth the investment.

## **Points Raised During the Rebuttal**

### **By Panelists Defending the Proposition**

- The findings of the HPTN 052 study speak for themselves. No other prevention approaches show an efficacy as high as a 96 percent reduction in risk of HIV transmission.
- Recent history reveals an unfortunate timidity about bringing research into practice in the United States. The tools, knowledge platform, and skills for implementing the findings of the HPTN 052 study are already in place. This is a chance to take historic action, and it is critical to move forward.
- Scaling up treatment as prevention does indeed require choices—“robbing Peter to pay Paul”—but these choices must be made. This means taking a critical look at existing programs, cutting back interventions that do not work, and increasing the efficiency of treatment. It does not mean eliminating evidence-based practices such as VMMC, but examining strategies such as condoms and abstinence education for youth, which have been disappointing, and do not affect the millions of people who are infectious every day of their lives.
- Negative thinking about available funding creates obstacles to thinking creatively about how to fund treatment as prevention, such as reappropriating funds across disciplines. If real political will to support prevention can be leveraged, there is enough money available.

### **By Panelists Opposing the Proposition**

- There are already practices whose efficacy is known, such as VMMC, but only four percent of eligible men in Southern and Eastern Africa have undergone the procedure. Programming to accelerate VMMC is presently being rolled out in many African countries, and it is not clear that countries should halt ongoing or successful programs to switch to treatment as prevention.
- Because the need for treatment is so high, it is critical to identify existing interventions that must be protected in any scale-up of treatment as prevention. This is an issue that the discussion has skirted.

- Because there is not enough money to treat all who are eligible, programs must identify populations to be prioritized for treatment.
- Any scale-up of treatment as prevention must take into account the epidemiological context of each country.
- While the merit of shifting funding from ineffective practices is clear, it is not clear how best to deploy resources for expanded ART. Implementers still need much more information to make sure that the investments and programmatic shifts will give the best results.
- Neither side disagrees on the basic premise of treatment as prevention; participants should remember that this debate would have been unimaginable only a few years ago. The central issue is how to use available evidence to get the best possible results from investments in prevention.

## **Key Themes Covered During the Question-and-Answer Session**

### **What are examples of non-effective interventions?**

A Washington, DC audience member asked which programs might be considered for culling. A panelist defending the proposition mentioned abstinence education and female condoms as examples of prevention interventions that have been heavily funded but have not shown broad effectiveness. Panelists on the defending side also cited behavioral interventions and mass media campaigns as prevention strategies that have been shown to be ineffective. A panelist from the opposing side concurred with the idea of moving away from ineffective programming and pointed out that abstinence-only programs are already receiving less funding.

### **How can HIV-discordant couples be identified and targeted?**

A videoconference participant from Ghana asked whether it would be feasible and realistic to identify HIV-discordant couples and target them for treatment, or instead aim for a broad scale-up of treatment. An opposing panelist replied that while both sides agree that treatment as prevention reduces viral load and the probability of transmission, translating this finding into a global impact on HIV would require targeting those most likely to transmit the virus—and it is not clear how to do this. For example, couples counseling programs in Rwanda have been shown to be an effective HIV prevention intervention, because couples who get tested and are found to be discordant may take steps to avoid transmission more than those couples who do not know their HIV status. A panelist supporting the proposition stressed the need to reach out to people who are already in care as a good target population to begin with.

### **How can the continued availability of funding to support treatment as prevention be ensured?**

An audience member noted that each person who begins ART represents a lifelong commitment to treatment and asked how to ensure sustainable funding. A panelist defending the proposition noted that many programs already have large populations of infectious individuals but are unable to provide them with ART because of policies or program procedures. Addressing inefficiencies in policies and funding streams could be one way of ensuring the sustainability of treatment as prevention. The panelist also pointed to the underused capacity of existing organizations that are already providing high-quality prevention programs to specific populations, such as truck drivers. These groups might expand their mandate and include treatment as part of their prevention work.

A panelist on the opposing side warned of the danger of equating the efficacy of treatment as prevention with effectiveness in roll-out. The HPTN 052 study showed that treatment is efficacious, but studies have also shown that abstinence and condoms can be efficacious. The proof is in implementation, and this is also the case with treatment as prevention. Interventions that prove efficacious in RCTs still require appropriate behavior change to be effective, and it is important to understand what this means in population terms before investing in a full scale-up.

### **Should accelerated treatment become a core strategy?**

A participant in Washington, DC commented that, within the policy context, 38 percent of PEPFAR funding goes to treatment. Because funding for PEPFAR has decreased, does it make sense for President Obama to build a strategy around accelerated treatment, as suggested in Secretary Clinton's recent address?

A panelist on the opposing side said that given the stakes, such a strategy is indeed necessary. However, Secretary Clinton was not referring exclusively to treatment as prevention but to a combination prevention strategy. Another panelist commented that the PEPFAR advisory board (on which all four panelists serve) would be issuing guidelines on the new strategy. While the commitment to increasing the number of people in treatment is strong, the implementation of treatment as prevention must necessarily be an evolutionary process that will require adjustment as more evidence comes in.

A panelist defending the proposition responded that, while evolution is a long-term process, the need is immediate. A treatment as prevention-centered strategy will yield benefits in both treatment and prevention.

### **How will the new emphasis on treatment as prevention affect funding for research?**

A participant asked how the development of a treatment-based prevention strategy would affect ongoing and future research and development of tools and vaccines. A proponent of the proposition responded that this debate focuses on program funding, not research dollars. There is a need for a vaccine—one that can be administered in three or four doses and last for decades—but that will take decades to develop. Investments in research on new vaccines are compelling and important, but there is also a need for research on the behavior and adherence requirements for treatment as prevention. Funding for continued research on both tracks will continue to be critical.

A panelist on the opposing side agreed that funding for research and development must be maintained to support the progress of existing vaccine research and to conduct new studies on, for example, the effect of antiretroviral drugs other than those used in the HPTN 052 trial.

The moderator reminded the panelists and the audience that these arguments do not take the reality of budget constraints into account. It may be preferable to keep the budget for research separate from that for programming.

### **What explains the difference between efficacy and incidence reduction in the HPTN 052 study?**

An audience member asked for clarification of the findings of the HPTN 052 study—specifically, why the study reported an efficacy of 96 percent, when the reduction of incidence to negative partners was 89 percent, which might be a better efficacy rate for typical use. A panelist replied that the end point of the study was to determine whether linked transmissions could be prevented. By the time the study ended, only one linked transmission had occurred before viremia was completely suppressed by the antiretrovirals. A typical use approach would not be appropriate because relationships outside the partnership would not be protected.

## **How can programs ensure the best use of treatment as prevention at the country level?**

A participant from Mexico asked whether, given the epidemiological differences from one country to another, programmers should aim for country ownership, rather than a 50 percent funding allocation, as the best approach for implementing treatment as prevention. A panelist on the opposing team agreed that each country should own the treatment response. The response would vary according to the availability of treatment in each country, based on how many are still awaiting treatment. Directly funding countries would be more efficient, he asserted, adding that there is a need, at the international level, to develop better tools to help countries allocate money most effectively. However, it is fundamental to know who, of the stakeholders involved, will determine the best mix of funding.

## **Might improved diagnosis be a better tactic than treatment as prevention?**

A participant from Brazil asked whether, given that 35 percent of PLHIV are not in treatment, it might be preferable to invest money in identifying these people, rather than focusing on early treatment. A panelist on the defending side argued that a major goal in scaling up treatment as prevention is to identify this 35 percent and bring them into treatment, because their risk of transmitting HIV is likely very high. It is also important, the panelist said, to reach people who fall outside the guidelines (CD4 count above 350 cells/mm<sup>3</sup>) on when to begin treatment—both for prevention and for the “spillover” benefits of ART.

## **How durable is the prevention effect demonstrated in the HPTN 052 study?**

To this question from an audience member in Malawi, a debater from the opposing team replied that the durability or sustainability of the preventive effect is an important element that speaks directly to the tension between efficacy and effectiveness in implementing research findings. Couples in the HPTN 052 trial were followed up for less than two years. It is unknown what will happen in five years, or whether it might be better to wait and investigate problems with resistant strains before implementing the findings. Concerns about implementation include the durability of the effect and behavioral, structural, and programmatic aspects that affect adherence. However, although investigators anticipated early success, the HPTN 052 study was designed to be ongoing. The plan is to report on the intervention’s effect in five years, and investigators would also like to extrapolate the findings to larger populations.

## **How can programs overcome problems of nonadherence, possibly leading to resistance?**

To a question from a participant in Nigeria, a panelist on the defending side responded that treatment as prevention requires behavioral components and that adherence is critical. Actions to support treatment adherence need to continue and must address the reasons for nonadherence, which commonly include problems with transportation or child care, forgetting to take pills, and inadequate patient knowledge. A panelist from the opposing side agreed that adherence is a real concern, but added that if patients clearly understand the benefits of treatment—that treatment is prevention—their behavior may change.

## Resources

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