

**Press Conference: Towards an HIV Cure**  
**Kaiser Family Foundation**  
**July 26, 2012**

---

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

[START RECORDING]

**SHARON LEWIN:** My name is Sharon Lewin. I'm the local co-chair for the 20<sup>th</sup> International AIDS Conference that will be held in Melbourne in 2014. I'm based in Melbourne. I work at the Alfred Hospital of Monash University and the Burnet Institute. I'm going to give a short introduction as Francoise Barre-Sinoussi is held up elsewhere. She should be here shortly and Francoise will say a few words at the end.

There's been a lot of discussion around HIV cure at this meeting. A lot of interest began back in Vienna at the 2010 conference when the IAS strategy to develop a global scientific roadmap towards a cure, the idea was first launched. As many of you I think know, over the last two years there's been a substantial amount of work done by some group of leading scientists in the field to develop a global strategy. This was co-chaired by our Francoise Barre-Sinoussi together with Professor Steve Deeks and was launched just prior to the start of this conference late last week.

What the strategy does and the approach was to use a bottom-up approach developed by scientists and clinicians that work in the field to identify the main issues that they think need to be addressed to progress us towards finding a cure. There were seven priorities listed and identifying some of the strategies we need for collaboration, not only among scientists

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

and clinicians, but with private industry and funders and regulatory bodies.

Over the course of this meeting, we've gone on to hear about much more research in the field. There's no doubt that the field is moving fast. We certainly don't have a cure currently, but we do have a much, much better understanding of the barriers and some of the things we need to do.

We've gathered here today a number of prominent scientists who have all presented some exciting research at this meeting. They're going to discuss each of that with you. I'm going to hand over to Steve Deeks. Steve is the Professor of Medicine at the University of California, San Francisco. He was co-chair of the international working group Towards a Cure. He's going to speak a little bit more about the strategy and some of the issues and findings that are presented at this conference.

**STEVE DEEKS:** Thank you, Sharon. I think actually today might be considered a day when the cure research agenda moves from the basic science lab into the clinic. Dr. Margolis on my left published today in *Nature* a really landmark study showing for the first time that you can administer a drug to people in a long-term therapy and go after the so-called latent or hidden reservoir of HIV, an absolute critical advancement as we take the concepts that people have been working on for the past 10-15 years into the clinic.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

In addition, later on this afternoon we are going hear from Dr. Kuritzkes and his colleagues. A report on a couple bone marrow transplant procedures that appear, at least with preliminary data, to perhaps to have done what was done with the Berlin patient but not necessarily using HIV resistant T cells. This is a very provocative, not necessarily definitive, study. I think it's one that's going be proved to be a scientific highlight of the study.

There's now I think recognition from the work from our French colleagues. Asier, here on my left, is going to talk about that standard antiretroviral treatment when administered early and for a prolonged period of time in a small subset of people may in fact actually end up resulting in a functional cure for reasons that we're not clear.

The key thing that links all three of these presentations is that they're truly clinical studies being done in people, providing reason for enthusiasm that ultimately we're going to get where we need to go, which is a way to cure people with HIV infection. With that I shift it back.

**SHARON LEWINS:** Thanks, Steve. There'll be plenty of time for questions to be asked at the end of the session. Just to remind people in the room that the content certainly of Dr. Kuritzkes' and Dr. Saez-Ciron's work is embargoed until 3:30. I'd like to introduce our next speaker Dan Kuritzkes. Dan is Professor of Medicine at the Harvard Medical School, Boston.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

His group will be presenting some exciting findings in the afternoon session and that's therefore why this is embargoed until:30, so Dan.

**DAN KURITZKES:** Thanks very much, Sharon. My colleague, Tim Henrich, and my group studied the persistence of HIV in two HIV infected men who underwent allogeneic or foreign stem-cell transplantation for the treatment of lymphoma.

Both patients had been infected for many years and had been on antiretroviral therapy that completely suppressed HIV replication, which they continued throughout the time of their transplant. Despite being on therapy, they continued to have detectable latent virus in their circulating lymphocytes prior to transplantation. These patients in contrast to the Berlin patient received a milder form of chemotherapy just before their transplants and this enabled them to remain on their antiretroviral therapy during the transplant period.

Although HIV was detectable in their cells immediately after the transplant, over time the transplanted donor cells replaced the patient's own lymphocytes. As this occurred, the amount of HIV DNA that was detectable in the patient's blood cells decreased and eventually became undetectable.

One patient has been followed now for nearly two years since his transplant and the other patient has been followed for three and a half years. No traces of virus could be found in the patient's plasma nor were we able to recover virus from

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

the patient's purified CD4 T cells by a sensitive culture method.

In addition, we observed a significant decline in HIV antibody levels, tests conducted by our collaborator Dr. Michael Busch in San Francisco, providing additional evidence for a lack of ongoing exposure to HIV antigens. In contrast to the Berlin patient who received cells that were intrinsically resistant to HIV infection because they lack key HIV receptor, the CCR5 receptor, the cells that our patients received carry CCR5 and are fully susceptible to HIV.

We believe that continuous administration of effective antiretroviral therapy protected the donor cells from becoming HIV infected as those donor cells eliminated and replaced the patient's own immune cells effectively clearing the virus from the patient's blood lymphocytes.

Tissue sampling and analytic treatment interruption are needed to assess the full extent of HIV reservoir reduction following allogeneic stem-cell transplantation. The importance of our findings is that we have evidence now that we can protect uninfected cells from becoming infected when they're transplanted into a HIV infected patient, a form of PrEP at the cellular level, if you will. These data give further encouragement to the field and provide another piece of the puzzle as we continue our work towards a cure that will be generalizable and applicable to HIV patients worldwide.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

**SHARON LEWIN:** Thanks, Dan. I'd like to introduce our next speaker David Margolis. David is Professor of Medicine, Microbiology and Immunology, and Epidemiology at the University of North Carolina in Chapel Hill. David has been a leading investigator in the area of HIV cure and is the senior author of a publication released in *Nature* yesterday the results of one of the first clinical trials of attempting eradication. David will talk about that work.

**DAVID MARGOLIS:** Thank you, Sharon. Just briefly, there are many molecular mechanisms that are understood to allow the HIV virus genome to remain silent and hidden within a specific population of resting CD4 T cells. Although there are perhaps other barriers to eradicating infection in people, this is perhaps the best understood and most obvious obstacle.

Our study took eight patients that like in Dan's study maintained their antiretroviral therapy to prevent spread of virus from infected cells to uninfected cells. We administered a new drug, histone deacetylase inhibitor called vorinostat, in a single dose.

During the time period of the exposure of those patients to the effective level of vorinostat in their blood, we then measured the expression of virus within the resting CD4 cell population. We showed in a very quantitative way that the expression of latent virus within this reservoir increased

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

significantly for a moment in time after a single dose of this drug.

This drug is targeted at the histone deacetylase enzymes. There a human enzyme, but they're known to be a key mediator of the ability of the virus to hide out in resting CD4 T cells. This suggests that perhaps if we're able to repeatedly and effectively target this or other mechanisms that allow latency to persist, we can disrupt latency and force the virus out into the open.

The next steps that need to be done in the field I think are to understand how this can be done repeatedly and completely effectively within all the reservoir cells in the body, completely prevent infection of new cells, and perhaps also find ways to rapidly and efficiently clear or kill these infected cells that are expressing virus.

In that setting, we might then turn HIV into a virus infection like hepatitis C that needs to constantly be finding new cells to infect or otherwise the infections is extinguished, and in this case we could then extinguish HIV infection.

**SHARON LEWIN:** Thank you, David. Our next speaker is Asier Saez Cirion who is Assistant Professor at the Regulation of Retroviral Infections at the Institute Pasteur and Co-President of the French National Agency for Research on AIDS and Viral Hepatitis, ANRS, based in Paris, France and Professor

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.



Saez Cirion will talk about a very interesting group of patients identified in France who can control their infection after stopping anti-HIV drugs.

**ASIER SAEZ CIRION:** Thank you, Sharon. Our team is interested in understanding how some individuals are able to control infection spontaneously. These are called HIV controllers. As you may know, HIV controllers have some characteristics that seems to facilitate the control of infection mainly some genetic background, HLA-B57, HLA-B27, protective molecules that help them to control infection. They are considered as an example of some kind of remission of a functional. This is a promise that the functional cure could be achieved in HIV-infected patients.

Our interest was also to find out if this HIV controller status could be induced or could be found in some individuals. This is the Visconti study that involves a lot of themes and is coordinated by Christine Rouzioux and promoted by the ANRS.

We were contacted by some clinicians that had made some made some interesting observations in some individuals that seemed to be controlling after treatment interruption. We have called the group of such individuals.

We have identified 20 in France so far. We have included in the study 14 already. The most interesting characteristic in all these 14 patients is that they were

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

treated very early after infection in median 40 days after infection they start at just the standard antiretroviral therapy. They keep this antiretroviral therapy for a median of three years. It was a long therapy. It started in primary infection. They have been able to control off therapy for a median of seven years.

We compared these individuals to spontaneous HIV controllers. The first thing that we observed is that they have a much higher viral load [inaudible] primary infection HIV controllers. Actually, they lack mostly these protective molecules that I told you before. Actually, they have some molecules that are more associated to a rapid progression and that is [inaudible] in HIV controllers.

We believe that this is really a promising group of patients because they didn't have the characteristics that have been associated to the HIV controller status including a strong [inaudible] response. We decided to study these individuals because we thought that this could be our way to be able to help patients that didn't have the chance in primary infection or the characteristics in primary infection to control infection to reach this level of control of therapy.

We found out that like HIV controllers they have very weak vital reservoirs that in some cases this viral reservoir is decreasing over time even in the absence of therapy. We thought that perhaps this decreasing the in vital reservoir

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

could be due to a particular distribution of the reservoir.

This is the work that Charline Bacchus [inaudible] unit will be presenting this afternoon at:30.

What was found in this study of the vital reservoir is that very interestingly in patients in the Visconti study, the larger contribution to the vital reservoir is found in cells that there are shorter live, and longer live cells that could contain the virus are contributing very few to the viral reservoir. This could be explained in a context where viral replication is controlled. The reservoir could be decreasing in some individuals because we are losing these shorter live cells.

Actually, we felt intrigued by this phenomenon that we see in patients treated in primary infection and we're contacting some epidemiological studies trying to assess which is the frequency of this phenomenon. We have interrogated different database in France. We have arrived to a preliminary frequency.

In patients that have been treated very early in primary infection and that they have kept this treatment for at least 12 months, the frequency of patients who will be able to control for at least two years of therapy could be between five and 15-percent. It's a small frequency of patients who will be able to control. We are obviously trying to understand why some of these patients control after treatment interruption, why

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

others don't. In any case, it seems like a larger fraction of patients who would be able to control spontaneously and who are HIV controllers.

**SHARON LEWIN:** Thank you. Finally, I'd like to introduce Francoise Barre-Sinoussi, I'm sure she doesn't need an introduction. Francoise was awarded the Nobel Prize in 2008 for discovering HIV. She's the President-Elect of the International AIDS Society and will be President as of tomorrow. She has led this whole agenda for IAS to develop a strategy for a cure. Francoise is briefly going to make a few comments about future activities in the strategy.

**FRANCOISE BARRE-SINOUSSE:** Thank you very much. I would like to say that the first step of this initiative, HIV cure, that we launched two years ago arrive at the one end, but it's not finished. It's not finished because we need to continue the effort if we want to accelerate research on HIV cure. We would like at the level of the Advisory Board of the HIV Cure Initiative to try to better coordinate and to better stimulate funding for research on HIV cure by bringing new partners for the future.

We would like also to improve exchanges in information about what's going on everywhere in the world regarding research on HIV cure. For that the IAS will be involved in trying to get information on the website of the HIV cure initiative in order for all the researchers that are interested

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

to work in this field to get information on the ongoing research on reagents what can be available in order to stimulate cooperation between the researchers at an international level.

We would like also to better work with the industry. For that a group of collaboration with industry together with members of the international scientific working group already started to work on it. David Margolis and Sharon are very strongly involved in that group. We also started a working group on ethics and regulation because as you know the novel clinical trials are really raising cell use ethical considerations that we have to think about. The group will be working on that.

We also established a group on cost effectiveness. The group will meet for the first time, if I remember well, today. The idea is to have more information about the costs versus effectiveness of novel strategy for curing HIV in the future. Lastly, I would like to say that we will continue also to connect the scientists working in this area at the level of the IAS conference. We are planning to have presamples. We have already in Kuala Lumpur at the IAS Conference on Pathogenesis Treatment and Prevention.

Lastly, what I would like to make clear to everybody before giving the floor for questions is, of course, we need more investment for research on HIV cure. This investment you

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

have to keep in mind that we are not going to take the investment for HIV cure from the investments which is still required and should continue for implementation of the current therapeutic tools and prevention that we have.

Secondly, we have to continue research as well on vaccine. Indeed it could be connection between vaccine research and research on a cure. That's all I wanted to say. You heard from the different speakers that there's already progress on HIV cure during the last two years. I think at least partially is here. IAS initiative certainly has helped more exchanges between scientists and also new call for application and for grant in the field of HIV cure. This is certainly one of the roles of the IAS to try to connect, mobilize, and stimulate and promote research. Certainly, IAS is not a research agency.

**SHARON LEWIN:** Thank you Francoise. I'd now like to open up the floor for questions. The standing microphones aren't working so we have some roving microphones that will be brought to you. Could you please state your name and media organization and indicate who you would like to address your question to. We've just got a microphone coming up here to the front. The gentleman at the front was first up, Michael, this man over here.

**ROBERT:** Actually, I asked for the microphone first.

**SHARON LEWIN:** [Interposing] We'll have time for questions. We'll take the question here.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

**ROBERT:** Robert [inaudible] Johnson, *Healthy Living News Service*. This is an extraordinarily exciting. I was sitting almost weeping tears of joy after hearing your presentations to see where this is all going. I asked a question, not publicly in the last press conference, I asked it privately.

I'm going to ask it publicly now because this again is so exciting, but I have some concerns about the message that we in this room as media and journalist might convey from what you're conveying. That is that you seem to be on the way toward a cure. The media sometimes can over exaggerate that and convey to the public, and also the future research would possibly add to it, that we've cured this disease. It's done for at least many.

The public might assume that well, HIV is cured, it's over, happy day. There are millions and millions and millions of people who need billions and billions and billions of dollars' worth of care. The public pressure needs to be brought to bear to provide them, you all with the resources to provide that care.

There's a potential conflicting message here that's going to be coming out possibly over the next several years that HIV is cured. The public is going to lose interest in pressing for treatment for those millions and millions and millions throughout the world who need virus, you get it, okay.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

**MALE SPEAKER:** That's your job.

**ROBERT:** That's exactly why I'm saying it is our job, yes. Do you have any advice to make sure that we send out the good news on cure research?

**DAVID MARGOLIS:** We are very careful about what we say. We define cure. We've defined it several different ways and the different kinds of cure or eradication therapy mean different things to different people and have different levels of value. Perhaps we should come up with a different work like complicated eradication chemoimmunotherapy to slow people down. That's what the field is driving towards. You can't argue with the value of the goal. We can't get there without working on it. I can't say how long it will take. I think there's a clear path and we can make progress.

Once we can cure people or eradicate infection, they can still get infected again, most likely. This is a big circle. Everything is connected to each other. We have to have better diagnosis, better treatment, better therapy, better cure, better prevention, and start all over again.

**SHARON LEWIN:** [Inaudible] front.

**TERRY MICHAEL:** Okay, I think it's on. My name is Terry Michael. I'm Director of the Washington Center for Politics and Journalism. I'm a freelance writer on HIV and AIDS from the perspective of 37-year member of the Washington DC gay community. My question is for Dr. Barre-Sinoussi. In last 2006,

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.



in a video interview, your co-winner of the Nobel Prize, Dr. Luc Montagnier said and this is an accurate quote, complete and in context, we can be exposed to HIV many times without being chronically infected.

Our immune system will get rid of the virus within a few weeks if you have a good immune system. It goes right directly to the question of early invention or no intervention at all. Dr. Barre-Sinoussi, what is your opinion of your colleague, the co-winner of the Nobel Prize for discovering HIV, his view that natural cell mediated immunity antibodies can rid the body host of HIV within a few weeks and why or why not do you agree or disagree with him?

**FRANCOISE BARRE-SINOUSSE:** Difficult for me to comment on my colleagues, as you can imagine. However, I'm going to tell you what I'm thinking personally. I think the innate immunity is certainly something to consider for controlling HIV infection. There is more and more data which are published in the literature that show how much the innate natural immunity is part of the game also for as a driver of adaptive immunity. Certainly, we have to consider natural immunity to control HIV infection.

I know that there are several Montagnier but not only Montagnier [inaudible] has said that if you have a good immune system then you can protect yourself against HIV infection. I think we don't have serious data to say that in my opinion

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

today. We have to consider the data from the literature. When you are exposed to HIV it depends to the amount of the virus that you are exposed. It's not only depending only of whether you have a good immune response or not. It's also depending of the amount of the virus that you are exposed, depending also of your genetic background.

There are a series of factors to be considered to say that you are more or less susceptible to HIV infection. Of course, genetic, as Asier said, the genetic background may play a role in the evolution of the HIV infection as well.

[Interposing]

**SHARON LEWIN:** We just need to move on some other questions please. We have a question at the back if you could stand up and - - yes, go ahead.

**SARAH BOSELEY:** Sarah Boseley from *The Guardian* Newspaper. Can I just ask you to address perhaps the speed with which you expect to get to something that you can actually use in a large number of patients as opposed to select cohorts? Also, the applicability to people in the most affected parts of the world, in other words, Africa.

**SHARON LEWIN:** I might get Steve to respond to that one.

**STEVE DEEKS:** That's a tough one. In terms of how long it's going to take to get to a cure, of course, no one really

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

knows. I think it's important to acknowledge that many very good scientists are quite dubious that we'll every have cure.

The way I think about this whole process is highly informed by what we saw with the development of antiretroviral drugs. Back in the mid-1980s, scientist basically identified AZT as a drug that could partially block HIV replication. By itself it didn't do much, but it stimulated tremendous amount of collaborative research involving NIH, industry, patient advocates, other funders, other governments, clinicians, clinical investigators, all came together very quickly and efficiently and over a period of 10 years went from that first step to combination therapy.

I would be shocked if we did that with cure. If we actually took the first step that David's provided in his work today and got to an effective combination in a decade, but it's at least possible and we all think it's worth pursuing it. My sense is that the barriers to a cure are far greater than the barriers that occurred in terms of combination therapy. It's going to take much longer to get there.

What we're going to see over the next few years are a number of phase-1 pilot-type studies that are aimed at just identifying potential hits. None of them are likely to be curative. Then, you're going to have to go from those promising results into larger, more definitive studies of those single agents. Then, eventually into combination therapy and that

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

really, unless we get very lucky, is probably going to take well over a decade. It's not going to happen any time soon.

**SHARON LEWIN:** We have a question up at the front here. Do you need microphone - - oh, you got a microphone. Go ahead.

**JEFF BERRY:** Thank you, Jeff Berry, *Positively Aware* magazine. It's a two-part question for Dan. The Berlin patient has been referred to as - - that study - - what happened, what transpired was a proof of concept that a cure could actually be achieved. It's also been said that there needed to be a second study to validate that actually occurred and wasn't by chance. Would you say that the study that you are presenting today is indeed that study?

**DAN KURITZKES:** Not yet. I think we are being very careful not to refer to our patients as having been functionally cured because they remain on antiretroviral therapy, and we have counseled our patients that they should stay on their antiretroviral therapy for the time being.

What we have shown is that you can take cells that are intrinsically susceptible to HIV and protect them from becoming infected. If we get to the point where we do stop therapy and if those patients don't rebound, then we could say they are functionally cured and that could be considered at that point a validation of the experience with Timothy Brown. It would be premature to say so right now.

**SHARON LEWIN:** Up the back.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

**FRED:** Fred [inaudible] TV in Portland, Oregon. Are you looking at any innovative ways in which you might conduct research different than what we're already conducting through the regulatory process? Have you made contact with any of the regulators? Is there a need to do that?

**SHARON LEWIN:** David?

**DAVID MARGOLIS:** That is actually being done in a variety of venues. The way that the NIH has tried to begin to approach funding this area has involved not unique but non-standard collaborations between academia and industry. We had a committee meeting just the other day with members of industry and people representing the government of the United States and France, and we have plans to have additional conferences with the FDA and regulatory bodies. As I think all of us working in the field foresee a number of unique aspects to both the ethics of clinical experimentation and the mechanics of moving products along regulatory pipeline. I think we, as a field, are trying to begin to address this at the earliest possible steps.

**SHARON LEWIN:** Yes, down the front here.

**GEORGE:** Good afternoon, my name is George [inaudible]. I'm from Brazil and we publish a bulletin about vaccine and prevention [inaudible] for the community. Recently the Brazilian articulation against AIDS which congregates most [inaudible] in Brazil issued a document stating that Brazil should join the global efforts for a therapeutic vaccines,

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

preventive treatments, prevention PrEP, and also for a cure also investing services in these fields. Do you think Brazilian researchers and advocates could integrate themselves in these global efforts? I am addressing this question to Dr. Barre-Sinoussi. Although I don't know whether Dr. Deeks has been in Brazil recently?

**SHARON LEWIN:** We might start with Francoise.

**FRANCOISE BARRE-SINOUSSE:** You're right. Brazil has been and is still considered to be part of the HIV cure initiative. We are thinking and we already spoke at the level of the Advisory Board to have a representative of Brazil agency within the Advisory Board of the HIV Cure Initiative. We already had someone from Brazil to participate to one of the working group that we just established, indeed the one related to cost effectiveness. The answer is yes.

**SHARON LEWIN:** Steve?

**STEVE DEEKS:** I think Brazil has a potentially a very important role to play in cure research. Brazil is increasingly recognized as having the potential resources to invest in this area. It's got a lot of very well-trained and creative scientists. It has a highly treatment-experienced patient population that tends to be highly informed. In contrast to places like United States and Europe, it actually has a tremendous diversity both in terms of the background of the

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

patients but also the virus. It's not simply just subtype-B there.

In many ways it might be a great place to do clinical research and basic science on novel curative approaches that may ultimately be more relevant to areas outside of where cure research is now being done which is primarily in resource-rich areas, primarily involving Caucasian men, primarily involving people who are infected with subtype-B. I do hope that Brazil takes a lead in this effort.

**SHARON LEWIN:** I also just might make the comment that on the Advisory Board for the strategy towards a cure there are government representatives obviously from the US and France but the UK, Canada, Australia, and I believe China. The idea is really to make it truly international for the reasons that Steve says, but it should involve everyone, high, low, middle-income countries. I think we had a question up here.

**ALAN BAIN:** Allen Bain from the [inaudible] newspaper and the *Baptist Times* in the UK. Question to Francoise, could you give us an idea of the questions the ethical working group are looking at as regards this research?

**FRANCOISE BARRE-SINOUSSE:** They are just starting to work on it. It's too early to speak about their work. They just met here yesterday or two days ago, I don't remember. The idea is to have a review article that will be ready and published at

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

the beginning of next year. You will have the answer at that time.

**SHARON LEWIN:** Are there further questions? Up the front, you've got a microphone coming.

**BOB:** Bob [inaudible] BMJ. Asier, could you first give us a context of how rare these patients are in terms of the total context of the epidemic in France and the people on treatment? Then, secondly talk about why you think it is the intervention that has had the effect rather than yet to be discovered genetic alleles that are resulting in them being [inaudible] controllers?

**ASIER SAEZ CIRION:** Both questions are really, really good. For the first question we have analyzed this in France. Actually, these are rare patients for sure, but we have found out is that what this really in particular is the therapeutic approach. We have made an analysis on the French hospital database on HIV.

We have identified that among 3,000 patients that were included in primary infection in this database in a period of time of 15 years there were 700 who were treated in primary infection. There were just 75 who were treated for at least one year and then interrupt therapy. That means that only 2-percent of the individuals that were included identified in the primary infection followed this therapeutic approach.

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.



Then, we found out that about 10-percent of these individuals who stopped the therapy were able to control. This make these individuals extremely infrequent, but we believe that it's small because the therapeutical approach of treat very early and for long period of time, it was not something that was done before.

This is retrospective study. We are talking about people who were infected in the late 90s, early 2000s when there was not recommendation about early treatment. This is really infrequent. We believe that new clinical trial could help us to determine the real frequency of this phenomenon.

About the genetic alleles yet undetermined, this is completely right. We don't know if in distant percent of the patients there are some factors that will have an impact in the capacity to control. At least these are not the factors that had been commonly associated to control of infection. These ones we have checked for them and they are not there. Obviously, we cannot exclude that some of this factors are playing a role and we are trying to uncover them.

In any case, we have learned in this meeting and in the preconference symposium on HIV cure and we knew before that every treatment has an impact in reducing the viral reservoir, in reducing viral diversity, in reducing activation of the immune system, and also in preserving immune responses. Although we know that this is not sufficient to reduce the

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.

reservoir, probably a combination of all these parameters is having a strong impact on the capacity of these post-treatment controllers to keep the virus under control.

**SHARON LEWIN:** Thank you. That brings us to the end of questions. I'd like to thank everyone for attending and thank our speakers. I want to remind you about the embargo on the work from Dr. Kuritzkes and Dr. Saez Cirion. Some of our speakers are available to speak for some time afterwards. If you'd like to do that, feel free to approach them. Thanks very much.

[END RECORDING]

<sup>1</sup> The Kaiser Family Foundation makes every effort to ensure the accuracy of written transcripts, but due to the nature of transcribing recorded material and the deadlines involved, they may contain errors or incomplete content. We apologize for any inaccuracies.