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Turning the Tide on Transmission
Kaiser Family Foundation
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[Video Plays]

FEMALE SPEAKER: Please welcome Dr. Jay Levy, professor in the Department of Medicine and Research Associate in the Cancer Research Institute at the University of California San Francisco.

JAY LEVY: Good morning [applause]. Good morning and welcome to this plenary session. Also, I can't help reminiscing about the last time this conference was held in the United States in 1990. Those of us at UCSF who helped organize that conference in San Francisco dedicated the program with hope for the future.

At that time, 22 years ago, we had about half the attendees we have today, less countries represented, less knowledge, and also, no PowerPoint [laughter]. Today's conference reminds us of the great strides that have been made towards controlling HIV/AIDS in the past two decades, but an effective vaccine remains a major objective.

Vaccines by inducing in a person immune responses against the infecting agent are the key to controlling all infectious diseases worldwide. While some in the early days may have bought this goal to be easily achieved, we have learned the challenges are great in deriving an effective vaccine.

It is therefore a pleasure to introduce my friend and colleague, Dr. Bart Haynes, who was internationally recognized for his research and studies in vaccines. Bart Haynes received his M.D. from Baylor College of Medicine, and had training at Duke University and NIH, and is currently the Frederic Hanes Professor of Medicine and Immunology at Duke University School of Medicine, and the director of the Duke Human Vaccine Institute, where his team and investigators are working on vaccines for emerging infections such as TB and HIV and flu.

He has been the director of the NIAID-funded Center for HIV/AIDS Vaccine Immunology known as CHAVI, a consortium of six universities and academic medical centers that develop and test new vaccine strategies to overcome key immunologic roadblocks in HIV vaccine design. Furthermore, Dr. Haynes leads the Haynes Vaccine Discovery Consortium as a part of the collaboration for AIDS vaccine discovery funded by the Bill and Melinda Gates Foundation.

Dr. Haynes is a member of the Institute of Medicine, of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and a fellow of the Infectious Disease Society of America. I am really pleased to have Bart Haynes here to present to us [applause].

BART HAYNES: Thank you, Jay. I'm very grateful to be here. Over the next few minutes, I'd like to talk to you about a path forward for HIV-1 vaccine development. First question

we should ask is why try to develop an HIV vaccine? As you all know, the theme of this meeting is prevention of HIV and that it is a major global priority. Treatment as prevention, microbicides, pre-exposure prophylaxis, voluntary male circumcision, and preventing mother-to-child transmission are all key components to the overall prevention portfolio. Should a preventive vaccine be developed, it will become the most powerful preventive tools and the cornerstone of an integrated preventive program.

The next question is how do vaccines work? Well, traditional viral vaccines, like measles, mumps and polio allow infections to occur, but prevent symptoms and therefore prevent the disease. In contrast, an HIV vaccine must totally prevent infection. Once infection occurs, the virus inserts into the genome, the genetic material of the host it infects, and the immune system has difficulty controlling the virus. A major mode of preventing HIV infection is going to be what we call neutralizing antibodies.

What have the roadblocks been for HIV vaccine development over the past 25 years? Well, there have been many. Two that I'd like to talk about today are the need to understand what types of antibodies can prevent transmission, and secondly to discuss why we have been unable, and to discuss our inability to induce broad neutralizing antibodies with current vaccines.

What's happened in the last two years to invigorate the HIV vaccine field has been new clues have been found that we think are directing now HIV vaccine development. The first set of clues came from what's called an immune correlates of infection risk analysis found in the RV144 Thai vaccine trial. Immune correlates are immune responses they predict whether a vaccinee who received a vaccine will become infected or not.

Secondly, new broad neutralizing antibodies have been discovered that are very potent and neutralize many quasi-species around the world. The role of the host in limiting broad neutralizing antibody induction has been discovered.

Let's talk first about the RV144 Thai vaccine trial. This is a Kaplan-Meier plot that shows in this line, the placebo arm of the vaccine trial, and in this arm, those that received the vaccine and showed lower probability of HIV infection over time when receiving the vaccine with a 31.2-percent estimated vaccine efficacy. When this trial came out in 2009, a global consortium was organized to carry out an immune correlates analysis to begin to identify how this vaccine might have worked in order to point the way to learning how to make this vaccine better.

This global consortium measured immune responses from 41 infected vaccinees, 205 uninfected vaccinees, 40 placebo recipients, and asked the question, what are the immunologic responses in vaccines that project HIV-1 infection over a

three-year follow-up? This study was recently published in April in the New England Journal of Medicine at the reference to see there.

Now a bit of definition: what are immune correlates of risk? As I said, the correlate of risk of infection is an immune response they predicts whether vaccinees become HIV-1 infected. It's important to note that in the interpretation of this work that it may be causally related to protection from infection, which is what we're interested in, or it may only be a surrogate marker for another factor. The study that was performed in and of itself cannot distinguish. Therefore, this type of analysis only raises hypotheses or clues for the field regarding immune responses, which immune responses might be protective.

The first hypothesis that was raised by this study was that antibodies of a type called IgG to a region of the envelope – this is the envelope of the virus with the virion down here — and the region is the V1V2 loop region. The hypothesis is that antibodies to V1V2 can protect against HIV infection because the higher the level of antibodies to this region, the lower the incidence of transmission.

The way the field is evaluating this correlate of risk is that the field as isolating V1V2 antibodies from the vaccinees themselves as monoclonal antibodies. They're testing these antibodies for the ability to give them to rhesus

macaques, and then challenge those rhesus macaques with simian human immunodeficiency virus, retroviruses, and to see if they actually can protect. Secondly, in the new efficacy trials going forward in South Africa and planned for Thailand, these antibodies will be tested again to see if in different trials, if they indeed are correlate of risk.

The second hypothesis that was found in the trial was a surprise. This hypothesis is that monomeric IgA found in the plasma or the blood can block antibody binding to HIV-1 envelope uninfected cells and prevent protective functions. What was found was the higher the level of plasma IgA to envelope, the higher the rate of transmission. Now, we do not believe that these antibodies caused enhancement, but rather that they mitigate the effect of otherwise protective antibodies.

The way going forward that the field is pursuing to follow this clue is to isolate IgA envelope monoclonal antibodies from RV144 vaccinees, to test these antibodies for their ability to mitigate the protective effect of other antibodies in rhesus macaques challenged with SHIV retroviruses, and again to test for IgA envelope antibodies as correlates of infection risk in new efficacy clinical trials such as the new South African trial being planned.

Now, what about broad neutralizing antibodies and the role of the host in limiting broad neutralizing antibody

induction? The first question is why are we interested in broad neutralizing antibodies? Now, again, broad neutralizing antibodies are antibodies that neutralize quasi-species around the world regardless of their type. Number one is the RV144 trial did not induce broad neutralizing antibodies. The hypothesis is that protection in that trial must have occurred via a non-broad neutralizing or a non-neutralizing mechanism such as antibody killing of virus infected cells.

Broad neutralizing antibodies in contrast very potently protect rhesus macaques from challenge with simian human immunodeficiency viruses and are very potent in the test tube. However, the problem is to date, no vaccine has yet induced broad neutralizing antibodies. One of the things that has so energized the field is the discovery of a whole host of a new broadly neutralizing antibodies that bind to vulnerable sites on the HIV envelope, the so-called envelope Achilles' heels.

These sites are the CD4 binding site, the V1V2 loop, the sugars — glycan is a word for sugars that coat the envelope — and a piece of the envelope called the gp41 membrane proximal region. These words and letters out here are all these new monoclonal antibodies that have been isolated by a variety of investigators.

The point is, and the importance of these antibodies are that they all show greater breadth of neutralization. That is, they neutralize more isolates found around the world and

they're far more potent. You need less of these antibodies to neutralize than any antibodies previously found before the last two years.

This is a model of the HIV envelope with the blue molecules, the sugar molecules, covering the protein of the envelope in red and shows these four Achilles' heels; the membrane proximal region of gp41, some of the carbohydrates, the V1V2 up here, and the CD4 binding site. The white box down here shows the group of investigators who have isolated many of these new antibodies.

Now, this is what we want a vaccine to do and where we're working towards. These are crystal structures of these different new broad neutralizing antibodies here shown in a mall binding to this HIV envelope. We want to induce with a vaccine a number of these broad neutralizing antibodies so that they will bind at once and prevent transmission.

To understand why we don't have a vaccine, I need to go over with you three definitions. Let's start down at the bottom first. Antibody self-reactivity is a trait of antibodies in which they bind multiple molecules including self, or our own molecules, in addition to infectious agents. Self-reactivity is also called auto-reactivity.

The term somatic mutations means a process in germinal centers, and germinal centers or where B cells live that make antibodies and where they grow to become strong antibodies.

This is a process in germinal centers of acquisition and antibody mutations that lead to potent antibodies.

Tolerance mechanisms are immune mechanisms that serve to protect the body and to remove or inactivate self-reactive antibodies. Here is a human antibody showing it's made up of two heavy chains and two light chains. We want antibodies that bind very tightly to HIV to prevent infection.

Interestingly, all of the new broad neutralizing antibodies isolated to date have one or more of the following unusual traits. First, they have long regions where antibodies bind to HIV called into body combining regions here. These are unduly long in many of the antibodies. The importance is that antibodies with long antibody combining regions are frequently illuminated by tolerance mechanisms.

The second trait that broad neutralizing antibodies frequently have is they have excess accumulation of what's called the somatic mutations, these changes that occur that make them better antibodies. The problem is that antibodies with too many of these somatic mutations are unusual because they're usually eliminate about tolerance deletion.

The third trait is that many of these are self-reactive with our own molecules in addition to reacting with the HIV envelope. Antibodies with self-reactivity are usually frequently eliminated by tolerance deletion.

In summary, the unusual traits of broad neutralizing antibodies or long antibody-combining sites, extremely somatically mutated antibodies, and self-reactive, all of which predispose them to be susceptible to being prevented from being made by our bodies. To study this, we've looked at initially these two antibodies called 2F5 and 4E10 that bind down here near the junction of the envelope and the viral membrane and asked, how are these regulated in bio-mammalian immune system? Are they indeed controlled by tolerance?

The way we've done this is to make what's called immunoglobulin humanized mice. These are recombinant mice that only make one antibody. In this case, they make one of these human broad neutralizing antibodies. We expressed this human broad neutralizing antibody and see if tolerance mechanisms delete or modify the antibody in mouse B cells.

Now, for 20 years, this has been the goal standard by immunologists for determining how a mammalian immune system that handles a particular antibody to determine in this case if the broad-+neutralizing unusual traits are sufficiently strong to induce tolerance mechanisms. In addition, once you have this animal model, it becomes an immunization model for trying to free up these antibodies with a vaccine.

If no immune tolerance interference with development of broad neutralizing antibodies is present, here is what we would see in this mouse. We would see the B cells making these

antibodies start to develop early on, and then as they continue to develop, they would see all of the parts of the immune system of the mouse not be perturbed or deleted.

Here's what we actually saw when we made both of these mice for both of these broad neutralizing antibodies. We saw the initial antibody start to be made, and then as they tried to be further made, they became deleted, just as we were concerned about, with only a few B cells left around that were inactive and asleep.

In humans, what we're trying to do is vaccinate such that there will be antibodies present such that when transmission occurs with a transmitted founder virus, the antibodies will prevent the virus from infecting the person, and the person will be protected from HIV. What we're concerned about, that has been happening with clinical trials in which we've not been able to induce broad neutralizing antibodies, is that there's interference of induction of broad neutralizing antibodies by the host's immune system such that when antibodies try to be induced and a virus comes, it's the antibodies that go away leaving only a few that are there, but are asleep.

Broad neutralizing antibodies are very unusual. They only occur in 15 to 20-percent of chronically infected subjects and, to date, in no vaccinees. They all have one or more in usual traits that may be controlled by tolerance mechanisms.

This mouse model of expressing only brought neutralizing antibodies shows that most of the cells are deleted and for vaccinology, thank goodness, a few survived to be awakened by a vaccine. The goal is to awaken the remaining B cells in both mice and humans. We're working hard on that.

What can we learn from patients in whom broad neutralizing antibodies do develop? This is a person, and they become infected with one virus that mutates into many different viruses over time, such that by the time chronic infection occurs, there are many hundreds of thousands to millions of quasi-species in a chronically infected individual.

Now, to see what happens to the antibodies, let's divide this person. It's the same person, and we see an initial transmitted founder virus starting and then mutating. Then we see, in the same person, on the right-hand side, antibodies start to develop, but they develop slowly. It takes about six weeks for a neutralizing antibody response to develop. By that time, the host, our own bodies, have lost control of that particular virus.

Perhaps the best way to understand what's going on in this situation is to use a metaphor that we're all familiar with, and that is of a nuclear arms race between two countries. One country makes a bomb; another country makes a bigger bomb. This first country makes an even bigger bomb. The second country retaliates with another bomb, bigger and bigger and so

on and so on until we're left with a cacophony of nuclear arms that are neither useful to either country and certainly deleterious to mankind.

Now what goes on in HIV is essentially the same. We start out with one virus in about 80-percent of people — this is work from the CHAVI — that about 80-percent of people are infected was just one virus, one virion, one particle. Then that particle expands, and then there's an antibody made about six weeks later. That antibody kills most of transmitted founder virus, but then induces an escape virus that rapidly populates the person is infected. That induces other antibody that induces another escape virus and another antibody and another escape virus and so on until we have a cacophony of virus quasi-species and antibodies that eventuate in 85-percent of people in a non or poor neutralizing antibody response.

Fortunately, investigators have recently found that in 10 to 15-percent of people, the virus evolution goes in a different direction and drives the person's antibody responses where it can go and to make one or more broadly neutralizing antibodies, here hopefully shown in gold. The question is how do we recreate this scenario with a vaccine?

Now, what the field has been doing for the past three or four years has been going to chronically infected subjects, patients, and screening them for whether they make broad neutralizing antibodies or not, and then isolating from these

individuals the lineage of antibodies to exactly map how they get to the broad neutralizing antibodies. Now, in this setting, we have no information about how the virus evolves to drive these broad neutralizing antibodies, but we can still use this in our first strategy that I will talk about; using this to make experimental vaccine.

The way we're doing this is called B cell lineage vaccine design, and the key points to understanding how to do this are as follows. Number one, it's important to understand that an antibody a B cell makes also serves as its surface receptor, recognizing those vaccines for that B cell to grow and divide. Secondly, those vaccines that bind the strongest to the antibody of the B cell are the best vaccines.

The strategy that the field is using is to isolate antibodies, here, antibody one, two, three and four, that all come from the same naïve B cell so they're in the same clonal lineage, and then to either use computational means or to actually isolate the antibodies — here, the un-mutated ancestor is the original naïve B cell antibody that started off this lineage — and then its intermediates, and actually physically make these antibodies and use them over here as templates and to select envelopes or envelope fragments that bind the best to each antibody step along the broad neutralizing clonal lineage.

The envelope that binds best to the un-mutated ancestor, the naïve B cell receptor will be our prime. Then

the one that binds here will be our boost. Then a second boost, and if needed, a third boost.

The goals of B lineage design is to drive broad neutralizing antibody lineages in the way we want them to go, to drive shorter lineages with fewer mutations that occur in chronically infected individuals that the immune system does not like, to drive lineages with either no self-reactivity or acceptable self-reactivity so the immune system will allow these antibodies to be made, and therefore, to give broad neutralizing lineages that are normally sub-dominant — that is, they don't progress very far — the ability to compete and to become dominant.

Now, I've said that what would be most powerful would be to know what happened over here to the virus evolution that drove the right kind of antibody, the gold. What CHAVI immunodesign has done and several other groups have done as well is to follow a number of individuals from the time of transmission with that single virus all the way through virus evolution to the time of development of broad neutralizing antibodies.

We now have isolated a number of these pathways of virus evolution as well as the evolution of the antibody because embedded in the evolution of the virus is the blueprint for vaccinologists to know the changes that occur and the sequential immunizations that occur to get to broad

neutralizing antibodies. We're hopeful that we're not going to require hundreds or thousands of primes and use it, but rather three or four primes and boosts to drive a shortened version of this journey.

In conclusion, I can assure you that the HIV vaccine field is invigorated. We are working hard. We are collaborating with one another, and we are treating this problem as a global emergency. The RV144 immune correlates analysis has provided clues and hypotheses to test for finding immune correlates of protection, to figure out how that trial worked, and to ask the question, is there any way that we can make the results of that trial better so that a vaccine can be implemented?

Secondly, the field is invigorated because of the discoveries of new broadly neutralizing antibodies and new insights into why broad neutralizing antibodies are not made. These discoveries have provided hope that rational strategies can now be developed for broad neutralizing antibody elicitation by vaccines.

I've been working on an HIV vaccine since 1985, and it's taken these 27 years for myself and the field to recognize that the complex biology of HIV, the escape mechanisms of the virus from broad neutralizing antibody induction, and the very unusual traits of the very antibodies that we want to induce when they are induced are necessitating completely new

strategies of vaccine design that have not been used for vaccines to date.

These new strategies for driving broad neutralizing lineages to become dominant are number one, the strategy of using the broad neutralizing clonal lineages as templates, called B cell lineage immunogen design, and secondly, for mapping the virus and the antibody doing this intense virus antibody arms race that occurs after HIV transmission. In doing so, we hope to recreate this scenario of the arms race with a vaccine and a strong adjuvant so that the vaccinee wins.

Now, many of you may have heard in the last week or so, two new awards, of which we were fortunate to receive one, the CHAVI, Center for HIV/AIDS Vaccine Immunology Immunogen Design. This is funded by NIAID and the Division of AIDS. This is our scientific leadership group of this grant, and our team leaders and our administrative team. A second group was awarded to Scripps Institute led by Dennis Burton, who is the principle investigator of that group. The Duke Group, I'm looking forward to working directly and closely with the Scripps Group to bring a successful HIV vaccine to all of you for testing.

The collaborators in the work that I've talked about today are listed on this slide. It's a wonderful group of collaborators, and I've said the field has come together and is coming together even more in solidarity behind all of these efforts. Finally, I'd like to thank the funders of this,

particularly the Bill and Melinda Gates Foundation, in the National Institute of Allergy and Infectious Disease, and the Division of AIDS.

NIAID has funded the Center for HIV/AIDS vaccine immunology from 2005 to 2012, and now is funding both centers of HIV/AIDS Vaccine Immunology Immunogen Discovery to go until 2019. Thank you very much [applause].

FEMALE SPEAKER: Please welcome the honorable Tanya Plibersek, MP, Australia Minister for Health [applause].

TANYA PLIBERSEK: Thank you. Australian tradition, I'd like to begin my remarks today by acknowledging the traditional owners of the land that we're meeting today and pay my respect to their elders, past and present. As a woman and as a mother, I'm particularly interested in the topic of our next speaker, Turning the Tide for Children and Youth. As a feminist, I know that the empowerment of women, the economic, social, and political empowerment of women, is the key to improving the health of women and their children.

I have great pleasure in introducing [applause] Dr. Chewe Luo, who will be making the next presentation, Turning the Tide for Children and Youth. Dr. Luo is a pediatrician and tropical child health specialist from Zambia currently working as senior program adviser for HIV and health with the United Nations Children's Fund, UNICEF, in New York.

Dr. Luo has over 15 years' experience in HIV/AIDS and child health, and holds postgraduate training in pediatrics from the Zambia School of Medicine and a masters and PhD in tropical child health and epidemiology from the University of Liverpool in the UK. Dr. Luo is a global technical leader for scaling up countrywide HIV/AIDS programs with a focus on prevention of mother-to-child transmission, pediatric care and treatment, prevention of HIV in adolescence, and protection of affected children. Please join me in welcoming her to this session [applause].

CHEWE LUO: Thank you. I'd like to first of all thank the organizers of this meeting for inviting me to give this very important talk to this very important audience 12 years after I made the same a plenary in Durban at the Durban International Conference. I must say upfront that it's very exciting for us that work in the area of pediatric AIDS. What we've gone through, the trajectory that we've gone through since 2000, starting with the scientific breakthroughs, the commitment that we now have with governments scaling up these interventions, and finally, the technical support and the financial support that we continue to have from the donor community.

In the next 25 minutes, I will focus my discussion on elimination of mother-to-child transmission. Why is it that we have the confidence that we can eliminate mother-to-child

transmission and keep mothers alive? The second part of my conversation will be around early infant diagnoses, the importance of that, and the importance of treatment of HIV-infected children. Finally, I want to talk about the second decade of life. Adolescent prevention and treatment as a co-mandate to what we have to do to turn the tide on children. I'll end my conversation with a call to action.

Some key concepts that have been driving the science behind mother-to-child transmission; I just want to say that transmission of HIV can occur during pregnancy, labor and delivery, and postpartum during breastfeeding.

This is very, very important because we now know that if we are going to intervene, we have to intervene at all those time point. Not all infants born to HIV-infected infected children will acquire HIV infection. We know that the estimate in breastfeeding populations is around 25 to 45-percent without intervention, and the distribution of that risk is 10 to 25-percent during pregnancy, 35 to 40-percent during labor and delivery, 35 to 40-percent during breastfeeding.

We've known as far back as 1994 that delivery of Zidovudine as a prophylaxis to mothers to reduce viral load, as a pre- and post-exposure prophylaxis to babies, can actually reduce transmission risk in children by as much as 67-percent. We know the translation of these results in the U.S. starting in 1994 was able to achieve a decline of 81-percent in new

infections in children by 2000. I just want to emphasize that this took six years. It's taken us a long time to come to this point in low and middle-income countries, but I want to emphasize that the time has changed.

Just to refocus our attention that at a high-level forum in New York last year, a global plan to eliminate mother-to-child transmission and also keep mothers alive was launched. I just want to mention that there were two high-level targets. One of the targets was to reduce new infections in children by 90-percent from the 430,000 baseline in 2009 to 43,000 in 2015. What I've highlighted here is where we are. In 2010, we had 390,000 new infections in children, and in 2011, we had 330,000 new infections, and what [break in audio] day, we you can actually say 57-percent in 2011 of women actually were able to access of antiretroviral therapy, both for PMTCT and treatment of their own health. This is up from 48-percent that we reported last year for 2010.

I want to highlight the high coverage that we're seeing in Eastern and Southern Africa, 72-percent in the Caribbean, 79-percent in Eastern Europe and Central Asia, 79-percent, but the job is not done. We need to do better in Western Africa, for instance, where we only have 27-percent of women accessing. South Asia, we have issues there that we need to equally address.

Now, when we look at this, we're making progress as I've mentioned, but what does the trajectory would look like in terms of the global target of reducing new HIV infection by 90-percent? UNICEF, the Business Leaders Counsel, and Clinton Health Access Initiative have actually released a document in this conference that is called the ***Business Case for B Plus***, or treating all HIV-infected women. In that business case, we've actually modeled where we are now and where we're going, and if we continue business as usual, where we're going to be.

I just want to highlight that looking at the 2011 data, we estimate that the reduction from the 2010 baseline is 10.8-percent. Now, that's not enough. We know from the global plan that we have the indicator that we should have reduced this by 25-percent if we have to keep the trajectory to elimination or reduction by 90-percent.

What do we need to do differently? Where do we need to put our investment? This is a schema that talks to the four-pronged strategy of the UN that was coined in 2001. Those tabs really are just we need to close new infections and women. We need to make sure we reduce and meet need for family planning in HIV-positive women and women overall.

We also need to identify those women that are already infected, give them drugs, antiretroviral drugs, 90-percent of them, and reduce HIV transmission to less than 5-percent. More importantly, we need to make sure that we provide ART to 90-

percent of pregnant women in need of ART for their own health, and I'll come back to this point.

I just want to applaud that one of the things we need to do is to make sure that as we provide these interventions to women, we ensure that we're using the most efficient delivery system, but also the most efficacious interventions that we know. I just want to applaud WHO that in the event of what has been happening – I told you about the science and how much science we have, but WHO but has been at the forefront to make sure that as evidence has evolved, they have translated that into guidance that then we've taken to the field to implement and make sure that women have access to it.

What I highlight here it is the 2010 and a 2012 update. I just want to highlight a few things. I talked about the schema and the transmission risk across pregnancy, labor and delivery, as well as breast feeding, but I just want to say that in the 2010 guidelines, WHO recognized that we needed to raise the bar of treatment in women to 350. I just want to make that point because that's the distinction between what was released in 2006 and what the 2010 guidelines actually talked about.

The other thing that the 2010 guidelines talked about, based on the Lehman study in Thailand, was that we needed to start treatment earlier than what we had been doing which was 36 weeks in the Thai study and other studies that followed.

The second part of this is that apart from treating women that were in need of treatment, based on the scientific evidence that we had, two options for prevention were actually proposed by WHO.

One was based on an AZT backbone monotherapy, switching to Lamivudine and AZT during delivery, and then some drug to baby and mother post-delivery. The second option, prevention audition, was actually triple-therapy to mother from 14 weeks through delivery, and postpartum during breast feeding. What has happened with the updated 2012 and looking at the operationalization of the 2010 guidelines and the challenges that we have is that WHO now has come up with a third option, which is option B Plus, which is about giving triple-therapy to all pregnant women regardless of CD4 for life [applause].

Now, this is all very welcome news, and I am one person that's very excited about this new development knowing how challenging it is in some of these sectors in delivering the 2010 guidelines' very complex agenda. I'm sure people in this room can agree with me, but how have countries actually adopted these guidelines?

What I have here is a chart that talks about different countries and the different options focusing on the prevention option. Remember that the women that need treatment should have that, so this is focusing on prevention option.

You'll find that for most of the high-burden countries that have the weakest systems, the option that they've selected as options A. Then you see in the middle the option B countries. Then Malawi was the only country that chose option B Plus, and I'll come back to Malawi.

The issue with this is that many of the countries — and we've done a recent evaluation with the Global Fund and UNICEF looking at this in terms of a decision-making points in each of the countries —many of the countries where actually basing a lot of their decision on cost. I just want to highlight this report by AUDI [misspelled?] that was presented in Vienna in 2010, where they actually analyzed building on scenario for 26 guidelines, scenario A, which is the option A, and scenario B, which is option B.

I just want to highlight that when you look at the options through this model data in 15 focused countries, there seems to be very little difference between option A and option B. Now, remember, this is model data, and 26 guidelines seems to be less effective, but when you move down to cost, that's where you see the biggest difference. 288 million estimated per year versus 171 million the estimated per year for option A.

Now, a lot of the argument within this also has to do with what regimens but countries are choosing. If you look at the 2010 guidelines, there were variable options that countries

to choose from. The fear of using Efavirenz in pregnancy meant that most of the countries were choosing a PI-based regimen for prophylaxis for pregnant women, hence the higher cost in the estimate. Operationally, it's not that simple.

I just want to show the scheme of actions in our business case for option B Plus that looks at the cascade of CD4. How is CD4 performing in our settings to be confident that we will be able to operationalization the 2010 guidelines. You can see that cascade from the time the blood is drawn, the CD4 test result is received, whether the woman even initiates treatment, and the fact that a lot of these women will not even come back to deliver. This is the bottom line.

The idea that we are focusing on prevention, and in a lot of these countries, the default when CD four is not available is prevention, the prophylaxis. I just want to highlight here from work by Kroon and colleagues at Columbia University in Zambia, looking at a cohort of 1,025 pregnant women in Zambia, and looking at if you did a CD4 and you did screening, clinical screening, what proportion of these women who actually need treatment, and a statistic base 68.1-percent.

Now, we have a range of about 40 to 50-percent, but this is what was found in the study in Zambia. I just want to highlight that when you look of the 21.7-percent infections that happened, 82.87.5-percent of these infections actually

happened in women that were eligible for treatment using the count of 350.

When you look at mortality two years on, of the women that died, 82-percent of them were also treatment eligible. The idea that our programs are focused on prevention has to change. We need to look at PMTCT as a component of ART [applause].

I just want to continue this argument. In looking at the study by high-profile colleagues in Zimbabwe, and looking at what happens to these women even at higher CD4. You'll see in this slide, that actually, for HIV-positive women, mortality is still higher when you have CD4 close to 1,000, 3.9 times. When CD4 is close to 2,000, 2.5 times. Again, the argument that we have a prevention program for mother-to-child transmission, I think, has to go.

We need to find ways of making sure that these women actually access treatment early. I could talk about Mary Glenn Fowler's study that was presented at CROI last year [applause] looking at women who have higher CD4. If they have CD4 between 350 and 500, how many of them in the next pregnancy will actually have lower CD4 that warrants initiation of treatment?

The study was very clear. These women in that category, one-third of them will need treatment in the next pregnancy.

The work by Belzi and Scheren [misspelled?] — Lorraine is in the audience — looking at all this and saying what is then happening with orphaning and children? Again, we find that because we are implementing programs that are focused on prevention, orphaning will continue to increase if we don't actually provide treatment for women. This is true even for countries like Namibia and Swaziland that have very good PMTCT programs in terms of how many women are accessing the intervention.

I come back to Malawi, and this is the bottom line for me. Malawi, a very small country with a small population, very little capacity — minimal lab capacity in that country — looked at the 2010 guidelines and said for them, it didn't make sense because they would never have universal CD4 screening for pregnant women.

They also thought through the rates of breastfeeding in women and how long the women were going to the breastfeed, the whole idea that fertility was very high in Malawi, and that you would have to stop and start in Malawi, even in the situation that we're in.

They were not willing to stop and start, and they decided that for them, what they needed, even given the new evidence of the potential for reduced transmission in sexual partners, for them, what was appropriate was one standard for their ART program and their PMTCT program. What they decided

to opt for is treatment for all pregnant women, which now, WHO has embraced [applause].

Now moving on. In this conference, Malawi has presented some of the results. For us, it's very, very exciting to note that in less than one year of implementation, ball out we started implementing in 2011. If you look at quarter two results, and look at the yellow bar, which is pregnant women, and you look at quarter four results, which has yellow and pink, and the pink are breastfeeding women, you start to see the trajectory of where the Malawi program is going.

In quarter two of 2011, only 1,200 women actually accessed treatment in Malawi. By quarter four, 15,000 pregnant women and breastfeeding women were able to access treatment. Using this simplified approach, and I want to quote simplified, that could be delivered in the lowest services of care in Malawi in maternal child health services.

I just want to also show you a different slide on Malawi. Looking at the global targets in the global plan, which is basically how many women in Malawi are actually accessing ARVs, which is the first slide there, and you see that in 2009, only 24-percent of women in Malawi were accessing ARVs for mother-to-child transmission when you exclude Nevirapine. By 2011, they had 53-percent.

Now, because Malawi is offering a treatment program for all pregnant women, you see in the next slide that although they have only 12-percent of women accessing treatment in 2009, this increased to 51-percent in 2011. I just want to highlight how making it simple can actually achieve so much, and I think we have to applaud Malawi for being so bold to actually provide this [applause].

Now, I talked about the business case on option B plus that we've released in this conference. Within that case, we've also modeled what the potential benefits of this is. I want to talk about reducing infant infections because that's obvious, but look at what happens in the yellow to reduction in HIV-related maternal mortality and in the yellow below to reduce transmission in HIV sexual partners. I think the argument is clear that if we have to optimize what we are doing, we have to transform PMTCT programs into ART programs.

Now, this is not going to be simple, and I just want to highlight one point, which I've already made with Malawi, is that it's not going to happen in the centralized hospitals or the regional hospitals. It's going to have to happen in MCH clinics at the primary level, in the primary level facilities, and that we really need to foster as a global community integrated MCH services that adequately integrate TB, ART and PMTCT interventions that reaches out also to the family into one service. This is the only way we're going to adequately

link these services to communities allowing women living with HIV to support the mothers and to make sure that they are adhering to their clinic visits and also to the drug intervention.

Having said that, I did talk about the four-pronged strategy and the elements within that. We must not forget the fact that new infections are happening as we sit here. I would like to applaud South Africa for achieving a transmission rate of less than 3.5-percent, but it is in a country [applause] where the prevalence of HIV in pregnant women and adolescents is extremely high. We know that as new infections happen, these women are more efficient in transmitting the virus to their baby. We also know that every infection that happens is between somebody that is infected and somebody that is not infected.

I want to just raise the point that in a study in Rwanda and Zambia, the fact that in married couples, when one partner is positive, over 40-percent of their partners may be negative also means that we have to transform these programs to target not only women, but also men as well. I want to applaud WHO for issuing the guidance on couple testing, and it's up to us now to look at this and see how we can operationalization this in our programs [applause].

The second thing that I want to talk about is also related to the fact that we have evidence. We have evidence

for primary prevention. We have evidence HPTN 052 targeting discordant couples. We had evidence around circumcision, and we just need to apply this evidence.

I want to also say that this evidence is just not just applicable to high-burden countries where where there's heterosexual transmission. Junio in Colombia has also proven beyond reasonable doubt that this works in IDUs, and also has impact on mother-to-child transmission. I think we need to make sure that we do that.

I want to just spend a few moments now focusing on family planning, and just to say that the meeting that just happened in London, where the U.S. government, the UK government, Bill and Melinda gates, and UNFDA committed to actually changing the paradigm of the current stagnation in family planning. Over the last decade, we have not made any inroad and family planning. This is true both for HIV-positive women and HIV-negative women, although in one study in Zambia, there was some indication that [inaudible] need for family planning is much lower in pregnant women, but in most countries, this is not the case.

What about children? The statistic that only 28-percent of children are accessing treatment is unacceptable because we know [applause] that without intervention, 50-percent of these children will die by their second birthday. We also know that from the Scheren study that early initiation

of treatment in these children can reduce mortality by as much as 76-percent, but we're failing to reach these children.

This is a slide that I and brought from Elaine Abrams at Columbia ICAP program looking at the trajectory between 2005 and 2010. If you look in the yellow, less than 20-percent of children are identified before their first birthday to initiate treatment and we found the same findings in our five-country review looking at this.

Part of the problem is that even though we thought [inaudible] would be the game changer for early infant diagnoses and linking facilities to laboratory is and children to testing, you see here that looking at the children that we tested and following them through one year on, 76-percent of these children, we don't know what happens to them. They would have died or lost to follow up.

We need to do a better job at identifying these children. People have tried out SMS technologies and other technologies to try and improve on this. I just want to applaud UNITAID here loudly for actually reporting yesterday or two days ago that they are releasing $140 million to look at the viral load and EID pipeline in terms of point of care technologies including CD4, but this is not good enough. The first EID point of care technology, if you look at this schema, is only going to be available to us between 2014 and 2015. We

still need to see how best we can improve on what we're doing with dried blood spots.

I just want to end on children with a slide that looks at the fact that for children, we still need simplified dosing platforms, and research needs to continue [applause] to look at this and [inaudible] and colleagues through the [inaudible] trial have been looking at this. They were the first to come up with a fixed-dose combination, Triomune. They're now looking at liquid Lipinavir, looking at how it performs versus tablets, or how it performs versus sprinkles. We need more of this research moving forward.

Finally, what about adolescents? 2.2 million of children between 10 to 18 are HIV infected. We know that a lot of these infections in adolescents are actually happening in adolescence. The key question for me without having done any analysis — we're very busy with a global plan to reduce mother-to-child transmission; we're very busy with trying to treat children that are infected, but if we don't protect the second decade of life, all that investment will yield nothing.

My call to all of you is that we really [applause] need to focus on this. We really need some championship around the evidence that we have and how we can actually make it happen. A lot of countries are very comfortable doing the things in the yellow in terms of their response, but what I would like to

challenge you — and this is not just me but UNICEF — is that we need to be in the purple box.

We need to make sure that we're testing young people. We need to make sure that we're treating those that are infected. We are identifying them and treating them. We need to be comfortable with young MSMs. We need to be comfortable with young female sex workers. We need [applause] to be comfortable with young IDUs and make sure that they have access and to services to actually protect them from getting infected. Finally, the circumcision as an agenda for me is something we have to do and we must do.

I would like to end with a call to action. My first statement is that to move forward on this agenda, we need to simplify our programmatic approaches to allow effective integration of both PMTCT, ART in maternal-child health serve at the lowest levels of care to optimize treatment access, and adherence and retention. Second, we need to introduce innovative approaches to expand provider-initiated testing to adolescents, pregnant women and their partners.

Fourth, we need to make sure but we change the trajectory of treatment access in children and make sure that we operationalize what needs to be done at the lowest levels of care within child survival programs. Fourth, we need to collaborate with community groups, including women living with HIV, to enhance support to women and their families, to

maintain good adherence, retention into care. Finally, I just want to again echo that we have to and we must focus on adolescents and make sure adolescents have access to high-impact interventions. Thank you [applause].

FEMALE SPEAKER: Please welcome Dr. Mabel Bianco, a leading advocate for women's rights in Argentina and worldwide for more than four decades. Dr. Bianco is the founder and director of the Fundación para Estudio e Investigación de la Mujer and research on women based in Buenos Aries. She's the coordinator of the International AIDS Caucus.

MABEL BIANCO: Good morning. I want to start saying that I'm very happy and very honored to co-chair this session, not only due to the issue that they are the women issues and so important for us, the but also because it's a plenary session in which we have no gender balance. So I'm very happy. It's the first time I saw one of these plenary sessions with more women [applause].

We have been working so long to have these results that I'm very honored. Thank you to all the organizers. I'm invited and this is another honor to present Linda Scruggs. Linda Scruggs is really a leader of the woman living with HIV and for all women with HIV [applause].

It's difficult and a great challenge for me to summarize her CV, but I want to only let you know some few

issues, then you are going to know her and you can better know how she is and how good she is.

She started in 1992 working on women's issues related to HIV as a John Hopkins University and then moved to AIDS Services in Maryland in Baltimore, but I think the most important issue is how she really, over these twenty years, she works to empower women living with HIV and the families, but all the women to be able to participate in partnership as community members.

This is something that really is great because she continues doing that and also because she became a leader and recognized she has many great combinations, but I only want to mention that two years ago, she received an honorable mention from President Obama because of her work, [applause] but also she is a mother of three and she is Minister in church in her city. She's coming here to talk, but also to present the new voices and the faces of the women living with HIV worldwide. So I'm not going to continue saying this because I want to listen and all of you invite to listen to Linda. Thank you. [Applause].

LINDA SCRUGGS: Good morning, everyone. First, just allow me a moment to be in the moment of awe, to give honor to my god, for this extraordinary moment, to be here, to join to as we do something very close to my heart. IT's to speak about the impact of HIV on women.

I want to thank the International AIDS Society, all of my affiliates, my professional affiliates, my colleagues, the conference planners, the women who wrote letters and found me worthy to come to this platform this morning.

I would like to give a special thank you to the women of the Women's Networking Zone, the positive women of the U.S. Positive Women's Network. From women around the world who have given their faces, which you will see on the screens, to be with me, to be with my co-presenters this morning. I want to give honor to my loving family.

Many of you who have heard me talk over the years, have heard me talk and speak of the greatest woman I know of in the world, she's my mother. She's here with me this morning. I give honor to her. I give honor to my sister for traveling from Angola, the British West Indies, did not find it [inaudible] to stand her with her youngest sister this morning.

I give honor to my son, my youngest son, Isaiah. It is he that I was 13-weeks pregnant on a cold November day while visiting a perinatal clinic at Johns Hopkins in Baltimore, Maryland that I had to face a critical decision at 4:15 in the afternoon at receiving an HIV diagnosis and I was given a choice; to terminate the pregnancy and live five years or have this child and possibly live three. Well, I'm glad that day the doctor was wrong. I gave birth to the most handsomest young man in the world who just turned 21 and who's HIV-free.

Lastly, but not least, to my general, I was in South Africa in 2000 in Durban and I met an elder and he told me that God was preparing a general for me, as a single woman not looking for a date, but I thank God he sent me Nathaniel Scruggs, my loving, my general in my life.

I want to speak to you just for a moment about women's needs and I'm going to get to the point. I'm a story teller and when I receive the invite to be here, hundreds of emails came to me that people found out I would lead on this platform, so there's a lot of expectation, but the people who advocated for me to be here asked me to not talk from the credentials that I received at Lincoln University, the work that I've done as a consultant as a collaborator or as a capacity building assistant.

They asked me to speak from experience that November day when my life changed, when HIV became not just someone else's issue, not someone else's problem. They wanted me to speak to the woman who's still 22 years later, whether you see it or not, HIV still runs through my veins.

In 2006, at the International Conference, one of my fellow sisters, Louise Binder from Canada, told us the reality of our lives as women is that gender equality is the economical social and educational and political errors directly impacted by our ability to protect ourselves as women. Louise also said

in her plenary speech in 2006 is that HIV is a result, not the cause of these equalities.

So what? The solution for women is not mainstreaming us. We are different. Not ghettoizing us. We're not all underserved, but its' an integration of a complex, comprehensive system that will have to be addressed that will surely meet all of our needs.

In Vienna just two years ago, my sister, Waheedah Shabazz-El set the stage for us being here in the U.S. today to express her concerns around a collective issue about women about a symptomatic human rights and the violation of women and girls. The HIV travels a well-worn path of gender equality. Globally, she said women and girls are forced to sterilization, crimi9narlizatoin of sex workers and HIV transmission.

These excerpts from these two women are very powerful to me, but they're just simply talking about women's human rights. I'm not going to ask you for anything. I think women have been for the last two decades, if not more, have been asking not only the International Conference, but the international platform to work on behalf of the people with HIV, we've been asking to count us in, we've been asking to be a part of, but today I stand here to give you some directions.

We've decided to stop asking and maybe you just need the recipe. To turn the tide on behalf of women, we must do, we must accurately all women and all of our diversity into

research. We cannot no longer satisfy for being the count of less than 10 or maybe even the 10-percent of anything that you want to do, that you want to be a part of.

We must turn the tide and you must meaningfully involve women at all levels of authority within the government, within our local communities, within organizational, as we are expanding services and opportunities with women, we need to be able to put women in a position of leadership within authority within the titles that they serve.

We're not asking just for male ran organizations that would tolerate a women's program. We want women to have the tools to follow the research for us, by us, with us.

We have come to a place. We're not asking you, we're telling you there is a time to address the inequality and imbalance against women with HIV globally.

It's not enough to create task force and write papers, we need to be part of the solution, we need the support and the resources that follow the issue to give us the power to heal our sisters, to change our men. We are the mothers of the earth.

It's time to turn the tide at our national strategies including the U.S. strategy on AIDS that President Obama signed two years ago. It's not enough to vaguely include us into the work. We're more than 50-percent of the epidemic, not taking away from the gentlemen on this planet, but I would hope in

Australia we have a plan all to ourselves, all of our women, acknowledging we are in this fight. There is complexities that go along with what's happening in our lives.

Now that's what the directive is, but let me also share with you part of probably got me to this stage today. IT's not just about stetting that clinic in November. I had an experience standing at a bus stop in Baltimore and I want to apologize for the experience because the experience was with my god. I don't think I ever had to opportunity to ask, why me? My life had never a cup of tea.

I understood why me. I understood there was things in my life and my past that would get me there. I would tell you at the point of my diagnosis as I was full grown woman, it was an interesting because when I think back just like anytime you talk about something you do something, you're challenged, I was challenged to do this work.

I didn't understand womanhood when I found myself pregnant at 25 years-old. I didn't understand womanhood when I had to make the choice whether to abort this child and see what I had already seen on television or what I had known just from other women who were dealing with a child with HIV.

I could've made the decision to have an abortion. An abortion would not have been the first one I had had, but I had an experience with God. I had an experience that taught, made me really to look and to reflect about woman. After all, what

is a woman who thinks she's ugly? What is a woman who feels she has no self-value? What is a woman who allows not one, but two men her silence? What is a woman who allows her uncle her molest her and others and still be silent? What is a woman who feels she cannot read and write to U.S. high school education?

What is a woman who feels that she's been broken and voiceless? What is a woman who's afraid of understanding herself? What is a woman who spent a lifetime trying to be someone else other than her? I'll tell you that cold November day, that woman was me, but it was through the support of this community that I was able to find a voice and a place, that I could be just who I say I am. I am woman. [Applause].

I believe I just celebrated over 20 years of drug delivery. I've been monogamous sleeping with one man. That's worth an applause. [Applause]. Trust me. Trust me. May not be your choice, it's okay, I'm a sexual being and I chose one man. That had not always been my story, but it was goal that I accomplished.

I came here to this community thinking I was different. I'm not from the ghetto, I'm not from an underserved community, my parents both lived in the household. We had two incomes. I wore designer jeans and designer shoes, but somewhere along the way, I created a new path outside of what they had been designing for me.

I was lost. Trauma had entered my life very early. It created a band aid and I began to wear a mask that would cover and cover. It's powerful for me to stand here and to be with you and to understand that it was when I was working at Johns Hopkins and I met a woman named Karen. Before Karen even entered the clinic, I was a women's health advocate. She was there to come get some help from me. All the clinics they had warned me of her. Before she could even could come in, they told me, watch out, don't turn your back, she dangerous.

Me being me, I'm a little county girl, I'm a suburbanite and I'm in the inner hearts of Baltimore City. Karen walked in, a little teeny woman, and she had rough written all over her. I had just a moment to swallow before I became alarmed at what I saw and I can't remember what I heard, but I thank God that I had an encounter and I understood what they meant to someone just where they were.

At that moment, I invited her to go away because she came into my office and she began to drift off as the heroin began to set effect. She gave me an out to listen to the clinicians and the folks who warned me about her. I did what I did. I opened the door and I asked her to come back when she was able to talk to me. She left. I felt real empowered.

Why would I feel empowered? When she came for help and I offered her nothing. I went to the waiting room and there she was sitting, still nodding, and something said to me, just

sit there and wait. She's worth the wait. When she woke, I asked her to forgive. I asked her was she able to come and check with me then.

And after many choice words that I dare not say here, I took her, she came into my office and what was quite interesting, four years, five years later, working with Karen, many a relapse, her imprisonment, her home business, I learned more from and those women in inner city Baltimore than I had learned in a lifetime. Incredible. I'm glad to tell you that Karen has now over ten years drug free.

Then there's Ms. Grey. We're going to call her Ms. Grey. I met Ms. Grey when I moved back to D.C. in about 2005, I met Ms. Grey at a private healthcare clinic here in the city. We're calling her Ms. Grey, okay? Because there's a reason. Not everyone's walking around with a button that says I'm HIV-positive and I live in your community.

Ms. Grey was in the clinic. I didn't know her and she didn't know me, but she was crying. Me being me, folks who know me, I'm not nosy, God just wants me to know a lot. I gave her a Kleenex and as I gave her the Kleenex, the conversation began. She shared with me that she was a widow. She was from Michigan and they moved to Northern Virginia so that after all they told their friend and their family, Mr. Grey had lung cancer.

Her new job would provide a safe place away from the eyes insurance would give him care. Ms. Grey had stayed out of care for a long time. Mr. Grey died in 2000 and she was just entering care of an HIV diagnosis in 2005. Ms. Grey is a vice president of a national corporation. She has a private driver. Her means are met, but yet she's living in Northern Virginia and live Karen and me, HIV is running through her veins.

There are many stories — oh, did I tell you? I introduced Ms. Grey to a lot of wonderful women as a result of her getting education, being able to network with other women like her. She went back to her large corporation where there's over 15,000 employees and she incorporated a women's health initiative that includes women and HIV, woman and violence using influence and power, whether we're in the shooting galleries going to look for our clients or we're in corporations where we have power and authority, women do count.

It was coming back from South Africa Durban that I went there thinking that I was going to become an international phenomenon. I went there thinking I'm going to meet people. I want to take these ideas because I dreamed programs, I dreamed realities, I dream vision.

I believe in a comprehensive agenda for women includes hope. It includes comfort. It includes nourishment. It includes allowing her to understand, you didn't have to, you can forgive yourself, what he did to you wasn't about you, what

he told you love was, wasn't love. Some women feel guilty because they enjoyed the molestation. It wasn't molestation till I found out that it was wrong.

How do we agree to disagree? Would the complexities that women bring to our communities. HIV in the U.S. and many countries was not the treatment and the systems were not designed for us. It was designed for gay male society. No one was thinking about us. We weren't in the rooms. Some of us were in the labs as the statistics and researchers following someone else's lead, but I'll tell you at the table, we're here, we're a force to be reckoned with. We're changing the game.

In the words of a Michelle Obama quote I found and I wish I would've, I read the whole thing, I made sure it was in content and I'm going to find it because I don't want to be out of content. Michelle was giving a speech and she wasn't talking about HIV, but I think it is what we're talking about today. Michelle Obama said, "We need a big change, not just the shifting of power among the insiders.

There's no more insiders than being inside of Washington, D.C. We need to change the game in because the game is broken." We don't have another 30 years. We don't have another 30 years. We don't need another 30 years as women. We need you to do it now. We need you to go back into your communities.

We need you to take a picture of what's happened here in D.C. this week. Go back into your communities and meaningfully look into programs. What do you need to do to re-tool? There is no more money right now, but many of us have programs and there's some shifting that's going to have to happen any old way.

Resources are going to have to be moved around any old way. We want PEPFAR refunded. We want the Global Fund refunded. We want Ryan White re-authorized, but there's going to have to be some shifting and they're not shifting, we want an international shifting of women. We want an intentional thought, we want women at the table as you make decisions on to use shift and include us.

Women being retained and access to care, research upon research has already been done. We connect with women. Women connect. We understand the complexities of waking up in the morning, putting on the coffee pot, getting the kids ready for school, if they're looking around the room, to see if you're up yet. Is your shoes? Your tie? Is your dress? Whatever it is, are you taking of before I even begin to put on my pantyhose? [Applause]. Women understand the choices between work and utilizing sex workers and creating opportunities that you know what? She don't have to get more not use the condom.

We need to create jobs for women with HIV. Its' not enough. It's not enough. It should be unacceptable that in

2012, programs are still providing meaningless stipends versus providing and directing women to the skills and training they may need to not only be part of the result, but to be a living part of the economy in our local communities.

I'm appalled when I still hear providers say, well, we can only give her that much because of her SSI. Bad provider. Bad You. We need skills. We need to direct women to the places where they can do and be productive citizens, productive financial earners within their own home, within their own communities. I don't know nobody that's looking forward that's going to ask the government for anything to have means.

We keep bringing them to meetings. We ask them to speak on our behalf. Let's give them the skills to be at the table.

I don't have a timer up here, but I want to say one thing before I take my seat. There are a lot of women between Karen's story and Ms. Grey's story. There are a lot of women. I find myself in the middle somewhere. I want to give honor to some of those women. Some of those women you see on the screen behind me as I put out the call and ask them to stand with me today.

Because I wasn't bringing you slides of data, research, you've already been talking about that all week, but I wanted you to go back with a picture. Is aid to my friends, I want to do something that no one else would do. I wanted to bring my

community to the platform. I wanted to honor the women who couldn't get here today. I wanted to honor the woman who couldn't get childcare to get here.

I wanted to honor the woman that's in the conference hub watching this on the screen. I wanted to honor the women down in the Global Village who didn't' have access to the main conference. I wanted to honor the nanas and the grandmothers. I wanted to honor the women who hide behind the stigma and the reality still of HIV.

I want to honor the women who for whatever have decided, I can't pull off this mask. I don't understand that when you tell me that there's no shackles holding you. I don't understand when you tell me that HIV was the last secret I could not keep.

I do this very selfishly. The first time I spoke at a conference, I could remember. It was funny. Carolyn Burr is here in the room somewhere I'm sure. They invited me because another speaker couldn't speak. I had never spoken at a national platform and I'm not afraid to say, I only because they offered me $500 and my rent was due.

It's real life, but something incredible happened that day as I began to tell my story, as I began to tell my truth of being a whore, of using drugs, lying to my parents, stealing from my parents, stealing from society, I can hear clink, clink. Clink, clink. Clink, clink. The molestation. Clink,

clink. The rapes. Clink, clink. They were shackles. Shackles was breaking loose from me. [Applause].

So I do this very selfishly because I don't want to feel those shackles on me any longer. I wanted to honor the sister whose fallen before us, Eva, Louise, Fern, Laverne: it's on their shoulders we stand today. If you would just give me one more minute and maybe you have someone who's not in this room, but she's a soldier and she deserves to be called to the platform.

I'm going to ask you if you would, just stand and call her name. Maybe she's Gina. Maybe she's Roomette. We speak your name. We speak not to be counted in surveillance and data research, we speak your name for you boldness. We speak you name for making a choice to live. We speak your name for making a choice to fight. Nana. Vanessa. Speaker her name. Do you not have a woman? [Shouts of names]

Karen. Tanya. We speak their name because they are women. We speak their name because we cannot forget. We speak their name because their worth fighting for. Ladies and gentlemen, please take the picture. Go back. Make the change. We have already taken our pen too. Thank you. [Applause].

I dare not, I dare not, I dare not, I dare not, I must do it, I wasn't going to do it, but I absolutely have it do it. Ladies and gentlemen, I want you to know I stand with our

president. I'm waiting for change. It's one more election. It's get out the vote. [Applause].

FEMALE SPEAKER: Please welcome Joseph Asunka, director for the Elizabeth Place Pediatric AIDS Foundations I Cote d'Ivoire.

JOSEPH ASUNKA: Thank you. Good morning. Sometimes in life, there is that woman when it's possible to make a change for the better. This is one of those moments. This statement is not from me. This statement is from Elizabeth Glaser, 20 years ago addressing the Democratic Convention in the U.S. It was true 20 years ago, but it's so real and so true today.

I am honored and privileged to introduce our next speaker, Dr. Geeta Rao Gupta, the Deputy Executive Director of Programs at UNICEF. Prior to her appointment, she served as a senior fellow at the Bill and Melinda Gates Foundation. When she acted as the senior advisor to the Global Development Program on the strategic direction and management of a cross-cutting range of issues and projects.

From 1996 to 2010, Dr. Rao Gupta was the president of the International Centre for Research on Women, ICRW. She conducted and oversaw research on topics ranging from the social and economic factors that affect women's use of maternal nutrition and health care services, to girls' and women's vulnerability to HIV. Under her leadership, the ICRW catalyzed policy and programmatic change for women and children around

the globe. Dr. Rao Gupta has led and participated in numerous high-level, global initiatives for women and children, including the U.N. Millennium Project's Task Force on Education and Gender Equality. She's the recipient of various awards including the 2007 Washington Business Journal Woman Who Mean Business Award. She earned a Ph.D. in Social Psychology from Bangalore University and an M.Phil. and M.A. from the University of Delhi. Please join me in to welcome Dr. Rao who will tell us how close we are to turning the tide for women and girls.

GEETA RAO GUPTA: Thank you very much. Good morning to all of you. That was a tough act to follow. Before I begin, let me thank my colleagues at UNICEF who helped me put this talk together, in particular Susan Cassidy, Maya Gillespie and Katherine Rogers and Craig MacLeod. Thank you very much.

It's an honor to address this plenary session. I feel all the more privileged because I was here once before. In 2000, I addressed the plenary session at the 13th International AIDS Conference in Durban. It seems fitting therefore to reflect on the lessons of the past decade as we prepare to turn the tide on the epidemic for women and girls.

In 2000, the world was struggling to find solutions for what had been until then a growing HIV/AIDS epidemic. It had left no region of the world untouched but a closer look revealed that the epidemic was feeding on fault lines forged by

deep-rooted inequalities and claiming its greatest toll on the most vulnerable groups: women, adolescent girls, men who have sex with men, sex workers and injecting drug users, among many others. We have answered in large the question that dogged policymakers, scientists and activists alike during the early days of the epidemic. What will it take to halt and reverse HIV?

The UNAIDS investment framework shown here responds to the questions with six basic program activities. Condoms, BMTCT, treatment, harm reduction for injecting drug users, and targeted approaches for men who have sex with men and sex workers, male circumcision and communication for behavior change. Several countries have now seen significant declines in new HIV infections due largely to the effectiveness of these basic program activities.

We've also learned that the effectiveness of HIV prevention and care is predicated on certain preconditions, chief among them, gender inequality.

In Durban, I explained that gender, the social construction of the biological difference between women and men in very fundamental ways affects both women's and men's HIV. I also showed how economic and social inequality between men with women typical having less access than men to education and social and productive resources, such as income, land ad employment results in women having less access to HIV

information, prevention technologies and healthcare services and negatively affects their ability to protect themselves from risk.

Over the past decade, policymakers have increasingly acknowledged gender as a dominant of the epidemic as demonstrated by the gender sensitive targets set at the UN high level meeting on AIDs in 2006 and the emphasis on human rights and gender equality within the UNAIDS 2010 Globe Strategy for Getting to Zero. The global recognition of the importance of gender triggered a proliferation of community based projects and programs designed to reduce gender inequality and women's' vulnerability.

We have success stories. The solar technology program that empowers sex workers. The IMAGE Project which combined health, education and microfinance initiatives to combat violence against women in South Africa. Programmed Age which introduce strategies which introduced masculinity in Brazil and many others.

By challenging gender norms, both male and female and calling attention to the importance of female empowerment to the AIDS prevention agenda, these programs broke new ground. But as we celebrate the successes of the past decade, we must recognize how much remains to be done despite substantial progress from funds, adolescent girls continue to bear the brunt of the epidemic.

The statistics speak for themselves. Of the 4.8 million young people living with HIV worldwide at the end of 2011, 3 million were girls. In sub-Saharan Africa, the face of the HIV epidemic remains that of a young female between 15 and 24 years of age. The regions adolescent girls and young women age 15 to 24 accounts for almost 70-percent of all young people living with HIV.

In Eastern Europe and Central Asia, regions with the most rapidly growing HIV epidemics at the world young people are at the epicenter of an epidemic fueled by unsafe injecting drug use. Of the quarter million people living with HIV in Eastern Europe and Central Asia, nearly 40-percent are young girls. These are the lesson girls and the young women, our sisters and daughters, represent an unfinished agenda in the AIDS response and our greatest hope of turning the tide of the epidemic.

I will focus the remainder of my talk on what it will take to reach support them, to unleash their potential. In the first part of my talk, I will outline briefly why we must focus on adolescent girls before reviewing what we need to do to reduce their vulnerability to the epidemic.

I will conclude by recommending how we can do this through a set of actions that will, I believe, introduce the trajectory of new infections of adolescent girls.

I'm acutely aware that the epidemic imposes multiple challenges on adolescent girls who represent 60-percent of the 2.2 million adolescents living with HIV. These adolescent girls often serve as caretakers for their own children, siblings and the elderly. Many girls have lived with HIV since childhood and now struggle to cope with their own sexual and reproductive development as HIV-positive adolescents and other adolescent girls, while still in the prime of life, just cope with the onerous challenges of managing treatment as a daily routine.

Without wanting to overlook the profound significance of any one of these significant challenges, in the interest of gravity, I will focus the rest of my remarks on the prevention of sexual transmission of HIV among girls referring to treatment and care as they relate to prevention.

Let me begin by considering briefly why adolescents matters to girls and women. Adolescence the period from age 120 to age 19 is critical to the development of girls as well as boys. It's a period of growth and maturation, a phase when attitudes and behaviors are shaped and set. A time when independence and adventure are essential for growth, yet the possibilities for irreversible damage abound.

The challenges that girls encounter in adolescence are particularly complex. A review of national household survey data on the experience of childhood across the life cycle show

that while the difference between the boys and girls are relatively modest early in life, they increase exponentially in adolescence.

As this bar chart shows, more girls than boys are sexually active by the age of 15, if you look at the bars on the right. 11-percent of girls and 5-percent of boys are sexually active by the age of 15. The rapid succession of biological and social changes that girls experience in early adolescence what has been described as a density of transitions that renders girl susceptible to a vast range of risks.

UNICEF most recent Progress for Children Report reveals that more than one third of girls are married before the age of 18 as show on the last line of this slide and in least developed countries, early marriage is the reality for nearly half of all girls in this age group, as shown in the second to last slide.

Adolescent girls who marry older, more sexually experienced men face an increased risk of HIV and other sexually transmitted infections.

Another unfortunate but sadly predictable consequence of early marriage is early pregnancy. The most recent demographic and health survey data show that 1 out of 5 young women aged 20 to 24 had given birth to a child by the age of 18, in fact many who see the UNICEF logo, see not a child and a woman, but two children, one of whom happens to be the mother.

While still in childhood, adolescent brides and mothers assume physically and emotionally demanding domestic responsibilities, that often include caring for children, the ill and the elderly, responsibilities that are all the more strenuous when they include caring for family member debilitated by AIDS. Every day we hear accounts of child brides struggling with isolation, humiliation and a sense of abandonment as they try to come to terms with the reality of their lives as young wives, a reality that increases of violence.

In 2002, WHO estimated that 150 million girls under the age of 18 experienced forced sexual intercourse or other forms of sexual violence. A national in study in Tanzania reported that 3 out every 10 girls, age 13 to 24, experience sexual violence.

Strikingly almost a quarter of the girls said the incident occurred while traveling to or from school. 15-percent of girls said at least one incident had occurred at school. In fact, the threat of sexual violence is one of several reasons why girls drop out of secondary school, especially if parents believe that remaining home is safer than being in the classroom.

Yet, we know that compared to their peers who are in school, adolescent girls who drop out of school face an even higher risk of early pregnancy, having more sexual partners,

many of whom are significantly older and are more likely to engage in high risk behaviors that increase their risk of HIV infection.

These gross violations of girls' rights are all the more troubling because of the heavy emotional and physical toll they exact. Sexual assault presents a direct risk of HIV infection from the assailant and sustains the risk over the longer term through the emotional and behavioral effects that include lower self-esteem, frequent partner turnover and an increased likelihood to engage in transactional sex.

High risk sexual behavior including transactional sex is exacerbated by economic inequality between males and females. When girls depend on men for food, material goods, economic security or protection, they're less able to demand safer sex, fearing violence or abandonment. Some girls forge relationships with older men with greater resources, partners who are more likely a higher number sexual partners, thus increasing the girl's dependency and her risk.

Many girls enter into such relationship with the belief that the material benefits will outweigh the costs, a fatally flawed calculation of risk. The evidence shows unequivocally the close association asymmetries of age and income in non-marital relationships with increased risk of HIV infection.

The risk for girls is exacerbated by their lack of access to information about safer sex, condoms, and other commodities reduce the risk of HIV infection.

Let's state the example of sub-Saharan Africa where young women account for almost 70-percent of all young people living with HIV. Data from national household surveys show that in this region just under half of the young men who had sex with multiple partners in the calendar year used a condom in their last sexual encounter while among young women with multiple partners, less than a third used a condom in their last encounter.

This lack of access is not news. Adolescents have told us this repeatedly over the years, but in our effort to protect adolescents, especially girls, from the stigma and risk associated with early sexual activity, we, the adults, restrict their access to information and commodities that are meant to protect them. Ironically, our reluctance to acknowledge adolescents as sexual beings reinforces the very factors responsible for early and unsafe sexual activity.

In some, the underlying factors that deter girls from accessing and utilizing prevention strategies and increase their vulnerability to HIV include lack of access of information and commodities due to preconceived about notions adolescent sexual activity, social norms, support child marriage, condone violence against girls and women and caste

girls in subservient roles in society and economic variance in girls' education and a false sense of security or empowerment that motivates adolescent girls to exchange sex for goods or favors.

These are just symptoms of the double jeopardy that adolescent girls experience. They live at that perilous intersection of two key sources of inequality in society: age and gender. They are young and thus wield less power than adults. They are female which gives them less control than males over their own destinies.

As a result, for many girls, adolescence which should be a time filled with promise is in fact a time filled with peril. As a global community equipping adolescent girls to reduce the risk of HIV is both a model, obligation and a pragmatic strategy to achieve an AIDS free generation.

A business-as-usual approach won't achieve the results we need. The results from an ongoing modeling exercise by UNICEF and the Futures Institute shows what would happen if we continue along the current path. New infections would continue to rise among adolescent girls and boys. The top solid line and the bottom boys.

The HIV investment framework sets out a bold proposal for enhancing the effectiveness and efficiently response for all. It recommends coordinated action on three fronts. First,

build a response around a set of core higher program activities.

Second, deliver these activates in conjunction with strategies to address the legal policy and social factors to enable access to high impact interventions.

Third, anchor the HIV response with the interventions in the areas of education, health, social protection and economic empowerment to capitalize on development synergies. What could we achieve if we applied this approach to our work on adolescents?

The modeling work I mentioned a moment ago says that if we combine the high impact program activities outlined in the HIV Investment Framework with strategies that enable girls to access those interventions and investments in girls' overall development, we can reduce the number of infections of HIV in adolescents by more than 50-percent by 2015 and sustain the decline until 2030.

A systematic review by the Interagency Task Team on the Young People with HIV and the London School of Hygiene and Tropical Medicine confirm the effectiveness of this approach on young people. They concluded that sexually active adolescents stand a greater chance of making healthy choices when they can obtain HIV prevention, commodities and reproductive health services through youth friendly, health centers and access comprehensive quality information about sexuality and sexual

health provided by adults or older youth with the requisite training. Young people need trusted adults that they can count on.

Prevention information provided through mass media campaigns can also be effective. If we can combine that access to information and services with strategies that create an enabling environment, policies and laws that support the rights of adolescents and broader investments in development, we will have created the foundation for a healthy transition into adulthood.

So we have the evidence of what needs to be done. All that remains now is to translate out knowledge into actions that reach the many adolescents who need support, information and services.

What are the critical next steps that need to be put into place for that to happen? I have five recommendations.

First, I call upon government and their partners to develop context-appropriate, adequately resourced national plans that direct the high impact program activities outlined in the investment framework to what's the most vulnerable group of adolescents with a special focus on girls, the young brides who get lost among the adults and the girls who drop out of school. This may sound obvious, but recent evidence shows that this still isn't happening. Few country plans specifically target the most at-risk adolescents.

In a 2010 analysis of prevention programs in 20 high burden countries showed that investments in young people aged 10 to 24 represented less than 5-percent of all spending in each country. Moreover, the investments focus primarily on the skill sets of in school youth, even though the majority of adolescents and youth are not in school.

Of course action plans alone lead nowhere without ambitious leadership and dedicated commitment. We need the kind of leadership that challenges the idea that the risk faces by girls and women are somehow inevitable. The type of leadership that accepts the political cost of recognizing adolescents as sexual beings and that provide sexually active adolescent girls with the sexual and reproductive health services they so need.

We finally have that kind of commitment for the elimination for mother to child transition, if we demonstrate that same level of commitment for adolescent girls, we drastically reduce infections in adolescents we will strengthen the likelihood and we will strengthen the likelihood of reaching the EMTC goal and in so doing, we will transform the epidemic.

Second, we need to work with other sectors. For adolescent girls, the education sector is a much needed partner. While not a silver bullet for the education challenges that girls face, the education sector plays a major

role in keeping adolescent girls in classrooms, ridding schools of violence and providing students, girls and boy, with the section health curriculum that boosts their knowledge and reinforces their own agency by instilling in them the confidence to act on the knowledge they acquire. Those two components, resources and agency are what empower girls to make healthy choices. As we all know, empowered girls and women lead to empowered families, communities, and entire nations. [Applause].

Third, let us start early with young adolescent girls, the 10 - 14 year old. By focusing on younger age groups, we can reach the adolescents before they're sexually active, before their attitudes and behaviors are set, to engage the adolescents that are most vulnerable adolescents, we must first identify them and understand their needs. Adolescents between 10 to 19 are largely absent from national, regional and global data sets, while adolescents 10 - 14 are almost invisible.

Health statistics often follow girls through their last immunization at age 5. The girls then don't reappear in the data until they suffer an adverse event in adolescence such as HIV infection or early pregnancy, at which point they are counted within the adult data set even though they are still children.

This situation is entirely unacceptable. All the more so because we know the devastating cost of data gaps: the health and wellbeing of adolescent girls.

Fourth, we must invest in creativity and innovation to reach the hardest to reach adolescent girls. We can strengthen the returns in our returns in our investments and prevention by harnessing the channels that have captured the imagination of adolescents of the world over, mobile technology, social media and other new forms of communication offer enormous potential to reduce the risk of social isolation by connecting adolescent girls and adults a virtual community of support.

Programs like Soul City and the multimedia initiative SUGAR, Love, Sex, Money, launched by PEPFAR, MTV and UNICEF are linking mass media and social media to the delivery of services such as HIV testing and counseling to adolescents.

But information is not confined to the realms of innovation dnc communication technology. Cash transfers, conditional and unconditional are programmatic innovation pioneers in a range of country context to keep girls in school, increase the age of marriage and reduce the risk of HIV. There are many other innovative programs as shown on the slide.

We need to encourage more of these kinds of innovative policies and programs. Perhaps a grand challenge of awards is needed for social innovations to reach adolescent girls and services.

Fifth, we must engage adolescent girls and boys as partners, leveraging their potential and making them a visible part of the solution. Adolescent girls are innovators and active agents of change often out of necessity. Their seemingly boundless energy and creativity are fueled by an insatiable curiosity and a keen desire to make a mark on society. These characteristics make adolescents refreshingly receptive to new ideas and behaviors that can be harnessed for social change. Yet, adolescent girls are often the last to be consulted on social issues that affect them.

As activists and community workers, we need to remind ourselves that adolescent girls are experts in their own reality and represent a vast repository of untapped potential. We must facilitate their transition from adolescence to adulthood by equipping them with the knowledge to make healthy decisions and the self-confidence to act on those decisions.

At UNICEF, we believe that our investments in elimination of mother to child transmission go a long way towards our promise to protect children from HIV, but as our executive director said, we invest so much in keeping children alive in the first decade of life, we must not lose them in the second.

Just a month ago, representatives of governments from around the world committed to a call for action to end preventable child deaths. Governments with UNICEF and a range

of partners are now translating that call into action under a banner of a promise renewed. Let us use this moment to do the same for adolescent girls, translate our promises to them into action.

Over the last three days, I have been inspired by the many young women and adolescent girls, both HIV-positive and negative who have spoken eloquently and empathically about the need for closer engagement and faster action. I hope you're here in the room this morning because to you I say; it is time for you to take the mantle. Don't wait any longer. Use your energy, your voice and that part of your networks to hold us, the donors, the multi-lateral organizations, the financial institutions, your governments, we adults accountable.

An AIDS free generation is within our reach today. As an adolescent growing up in India, you could say that I was part of an AIDS free generation because I grew before the world new AIDS. It was an AIDS free world, but a world in which women and the poor experienced immeasurable indignities, inequalities and injustice. That is not the kind of AIDS free world that we dream of today.

We got this far because we knew that all along. We fought together for the principals of equity, justice and inclusiveness. We must not lose sight of those guiding principles now. As we travel this last mile together, the world that we should be calling for is one that is not only

AIDS free, but is just because we will not be content to have the one without the other. We must be unrelenting in our commitment to create that kind of world. That must be our legacy without any caveats, ifs or buts. Thank you very much. [Applause] [Music].

[END RECORDING]