Prevention Today: What's the Right Mix
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CATHERINE HANKINS: It has six basic program activities as you here in the middle. Key populations children and mothers, condoms, behavior change, care and treatment, and male circumcision. On the left-hand side you see there is a list of social enablers and key program enablers. Along the bottom the synergies that you need to be seeking with other development sectors who want to accomplish similar types of goals. The objectives are to stop new infections and to keep people alive.

Now, if we look at the basic attributes of combination-prevention these are things to retain. Combination-prevention is tailored to national and global needs and contexts. It combines biomedical behavioral and structural elements, so not just one, not just two, but all three, to reduce both immediate risks and underlying vulnerabilities.

It fully engages affective communities promoting human rights and gender equality, the nothing about us without us that we heard yesterday. It operates synergistically on multiple levels individual, family and society. It invests in decentralized and community-based responses enhancing coordination and management.

The final thing, which is appropriate very much so for this talk, is that it adapts to changing epidemic patterns and can rapidly deploy innovations. We are going to look at some of the innovations to consider.

Now, this is a slide you have seen many times before that tries to look at where one can intervene in the whole process from exposure through to infection. In the left-hand side you see the behavioral structural factors, some of the things like male circumcision that can create a condition of lowered risk, then the exposed at the time of coitus, then also postcoitally what could you use, and finally for people who have HIV infection, how can you reduce the risk of transmission.

Now, this is an overall kind of map that Slim and Keratia [misspelled?] did that I find quite helpful. It's interesting because I just circled here microbicides for women. In terms of things that are on the left here, that was the result of Vienna 2012. Since Vienna, we have had three trials of oral pre-exposure prophylaxis, and we'll talk more about them in a moment. We've had treatment for prevention with HPTN-052 trial. We've had more data on male circumcision. As you roll it out and scale it up, what is the impact at community level?

Now, we wouldn't be anywhere if we didn't talk about the mainstay of HIV prevention which is condoms, correct and consistent condom use. Meta-analyses suggest a greater than 90-percent effectiveness when they are used correctly and consistently. A Cochrane review found always versus never was an 80-percent reduction in incidence. I want to mention female

condoms in particular this analysis that was done a couple of years ago that showed that everybody has let the ball drop on female condoms. They are 25 times the price of the male condom. WHO has been ambivalent about recommending washing and reuse. UNAIDS has not actively promoted them. There have been stock outs, under production with no economies of scale and good acceptability with frustrated demand. This is an area we need to work more on.

In terms of male circumcision, you've see this slide before. It's basically showing that the three randomized controlled trials came in with similar results, about a 60-percent reduction in risk, confirming what had been seen for over two decades in observational studies. As we look at the experience post-trial, we see for example from RAKAI, this was the control group; 80-percent of them decided to go ahead and be circumcised when the trial ended. We can see out almost five years a difference of 68-percent reduction in risk for them.

In the slide that Tony showed this morning was showing both the circumcised trial participants and the control arm, combined together we see a 73-percent reduction in risk out to five years. This is very similar to what's being seen in Kisumu and also in Orange Farm South Africa.

Now, there have been a lot different models that have been done, but I just wanted to show you this one that shows that South Africa, for example, could avert a million new

infections if it's scaled to 80-percent coverage by 2015. Zimbabwe could prevent 42-percent of its infections if it scaled up male circumcision by 2015.

These are infections averted out to 2025. This is not a small effect. On the horizon, the near horizon, we there are devices the Shang ring, the Allis clamp, PrePex for example. Some of these have tested in Kenya and in Rwanda there are trials going forward in Zambia and in Zimbabwe. You will be hearing more about these. They cut the procedure time down. They allow task shifting to nurses.

Now, let's look at antiretroviral drugs for HIV prevention both from the point of view of reducing onward transmission from people who are already infected and for reducing HIV acquisition in those who are HIV negative. This was the result that Michel Sidibe called a game-changer, a 96-percent reduction in the risk of transmitting the virus to an uninfected partner if you started treatment at 350-550 versus under 250. It was considered the breakthrough of the year by the *Journal of Science*.

Let's look a little bit at reality. These are the CD4 cell counts at initiation in a number of countries, and you can see they are all below 200. Now, before you get too pessimistic I want to show you some work that's been done in Hlabisa treatment program in South Africa where they actually mapped people coming on treatment by these maps from 2004 to 2011.

Then, they looked as treatment ruled out what was impact on the risk of HIV acquisition among uninfected people in the community. As treatment scaled up, the risk of acquiring HIV fell in those communities.

Let’s talk about pre-exposure prophylaxis. We’ve got oral pre-exposure prophylaxis with tenofovir and tenofovir-emtricitabine. Those have been tested in iPrEx, Partners PrEP, and TDF2. We have the topical PrEP, the 1-percent tenofovir gel that was reported on in Vienna from CAPRISA 004. Going forward, there’s already been one trial with an injectable pre-exposure prophylaxis agent. There are intermittent PrEP trials that are starting now to see if you could use it on a nondaily basis and still have protection. The dapivirine ring is starting in two trials.

From the point of view of women, looking at the trial results you might have found it a bit confusing. If we look at tenofovir gel, we see that there was a 39-percent effectiveness in the CAPRISA 004 trial but the VOICE trial was stopped for futility. We’re waiting for the FACTS 001 trial in South Africa that’s using the same dosing as CAPRISA, meaning using it once in the 12 hours before sex and once in the 12 hours after sex to tell us whether tenofovir gel has a role for women in preventing HIV transmission.

Oral tenofovir, you can see we are sort of at an even basis with VOICE the oral not working and Partners PrEP showing

that it does work for women. For tenofovir-emtricitabine, you can see that we have VOICE, we're waiting for. We have FEM-PrEP that showed no effectiveness. We have Partners PrEP and TDF2 showing effectiveness, kind of a confusing picture.

People have asked first of all could it be due to pharmacodynamics/pharmacokinetics? I just want to show you this one slide that shows, and keep in mind that on the left-hand side this is a log scale, that the gel achieves much higher levels of tenofovir in vaginal tissue and survival tissue exactly where you want it to than does the tablet. The gel has very little systemic absorption in the blood plasma.

Now, this was present at CROI this year, the adherence measurements in FEM-PrEP. The majority of the women said they always took their study pill or usually did. The majority well into the high 90s found it easy or very easy to take their pills. In terms of pill counts, they were taking their pills and yet when they looked at drug detection levels, drug was present in fewer than 26-percent of the women in the active arm. CAPRISA, we saw the same kind of thing.

If you use the gel and you used it well the efficacy was 54-percent and it fell. The less you use it, the less it works for you. Interestingly, 42-percent of the women were using it less than 50-percent of the time; iPrEx, a similar kind of finding with men who have sex with men and transgendered women who have sex with men, where we see very

strong correlation between adherence and efficacy. This is the message that this is the Achilles' heel for PrEP, if you take it, it will work. If you don't take it, it's not going to work.

Let's quickly look at vaccines. There not on the immediate horizon but they were mentioned this morning, and I think it's important to anticipate that we will eventually have a vaccine. A lot of work has been done to try to understand the corelets [misspelled?] of protection for that 31-percent protective level seen in the RV144 trial.

In doing so, we've been able to use technologies that were not present even just a few years ago, like this high throughput screening to discover neutralizing antibodies. In terms of technological advances in virology, I just to point out this has an impact for both prevention and treatment the fact that we're moving faster now towards point-of-care technologies for HIV diagnosis and for HIV clinical staging for CD4 count and viral load.

There are combination-prevention studies going ahead, big scale studies. Here are the big four in Botswana, Tanzania, South Africa, and Zambia. If you look at what they are doing, you can see HIV testing is obviously very important. Three of them are focusing on male circumcision or that is part of the component.

Two of them are going to do test and treat, meaning you test HIV positive and you are offered treatment right away.

It'll take a while. It'll be several years until we have those results. I certainly wouldn't want anybody to be waiting for these results in trying to figure out what to do now in combining different prevention interventions to address your own epidemic.

We have all of these that have shown to be effective in clinical trials with the confidence intervals shown on the right-hand side giving you an idea of the amount of precision. If we look at what's happening we can see this yellow line, for example, shows HIV prevalence and on the right-hand side you see the countries that are grouping that have high HIV prevalence and a huge variety in what they're choosing to prioritized.

One wonders how close to their own epidemics is that priority choice? You also notice that in the green is key populations and I think we're understanding more and more that every single country has got key populations that are marginalized that need attention.

This is the last thing I want to focus on is the know your epidemic, know your response process to try to figure out how best to tailor what's there in the science to what's going on your own epidemic. It starts with a review of the scientific evidence what works, where, and for whom? It includes an analysis of the social, economic, cultural, legal, and political context.

There is a epidemiological review and incidence modeling of HIV behavior and risk factors. Then, there's an assessment of what is the current response. What does it look like, a review of the resources that you're currently putting towards HIV prevention and a beginning understanding of whether that fits with your epidemic, and most important a national prevention consultation or summit to consider what should be changed, how to stop doing things that are not working and start to do those that can have a chance of working. I'd just like to thank a few people who've helped with various parts of this presentation. Thank you.

CHRIS COLLINS: Thanks very much Catherine. That was very helpful. Now, we are going hear from three HIV prevention programmers who are living this and making decisions about how to allocate scarce resources. Some of them may have slides, some may not. They'll each speak for three to five minutes to just give kind of an overview of how they've approached understanding the epidemics they're grappling with, how they're thinking about how to target resources, do things in combination, perhaps use new technologies. Peter, why don't we start with you?

PETER CHERUTICH: Thank you very much, Chris. Thank you, Cate, for the wonderful presentation. From our perspective, HIV prevention has been evolving over time. In terms of how we've conceptualized it, in terms of how we have

designed programs around HIV prevention, and even in terms of how it's delivered and funded. Part of that evolution has really been contributed a lot by, of course, the scientific advances that we've had in this conference.

Part of that evolution has been contributed by better understanding of our epidemic just like Cate alluded in her last slide. As far as Kenya is concerned, I think that fact that we made positions about four or five years ago to really know where our last thousand infections came from guided our prevention and made it more targeted, more focused.

Again, over the last two or three years we've invested a lot in terms of really knowing, even some of our denominators for the populations at risk so that we can as we implemented interventions are able actually to measure the impact of what you get out of those interventions. I think that evolution has sort of reached a point where now we — much as we know that we still need to increase coverage, we need to reach a certain point. Along with that we are talking now is are we becoming efficient in what we do? Is our prevention efficient? Are the combinations of the various prevention interventions that right mix?

While there is still a lot of positive of data to really guide and fine tune and really make that mix of interventions very, very precise, we have nevertheless really just using sometimes common sense put together interventions

that we know deliver HIV prevention as a package. One of those interventions is actually male circumcision. That as much as it looks as it's presented to be just a technology that stands out on its own.

When you actually come implementation you realize that it's a full prevention package. We've designed it in our country so that it combines both biomedical as well as behavioral interventions. It has a foundation on HIV testing so HIV testing is brought in to become part of the mix of HIV prevention. You have, of course, a surgical procedure itself is about medical prevention.

You have a condom which is a behavioral intervention. You have counseling that goes around that. Again, the nice thing it's a condition the flexibility of how it was designed is that you cannot be able to integrate a new technology like pre-exposure prophylaxis PrEP without additional cost, without probably redesigning the entire program.

From my experience, we do know that, yes, it is possible actually to combine different interventions, different prevention interventions into one package that can be delivered to a specific population, to reach a certain coverage for which you can be able to actually measure an impact. That is possible and I think moving into the future is even we get these other technologies, I think the challenge would be how we ensure that we use the current platforms that we have to integrate those

technologies without an necessity overhaul and creating other systems, parallel systems and otherwise.

Then, lastly the other thing that we feel it is also very important as far as when we're thinking about how to mix these interventions is the issue of cost effectiveness and efficiency. This is along with that, I must admit, I think about five or six years ago we were not talking about, now we talk it about it all the time.

That is critical because I think in this time where we are talking about diminishing resources, the best combination, the best prevention, moving that prevention that maximizes, is most cost efficient technologies and package them together and deliver them again in a manner that's efficient. Again, when you talk about delivering in a manner that's efficient it means from the way you actually target your populations to the way you look at partners to deliver those interventions in a rational manner is one of the ways you can actually make programs more efficient.

CHRIS COLLINS: Great. Thank you. Moupali, you're working in the city of?

MOUPALI DAS: Could I use the slides from the podium?

CHRIS COLLINS: You want to go up to the — yes. Moupali is working in San Francisco. Go ahead.

MOUPALI DAS: Great. I'd like to thank the conference organizers and conveners of this session for the great honor to

present here. It is indeed a tremendous honor to share our approach to HIV prevention on behalf of all my colleagues in San Francisco.

Although this is a busy slide, I was limited on the number of slides. This is our approach to maximizing the continuum of care, prevention, care, and treatment. I think what really frames our approach in San Francisco could be best described by a quote by Maya Angelou, where she said we do the best we can with what we know and when we know better we do better.

As an infectious disease physician and internist I'm often faced with urgent life-or-death decisions with a lack of full and complete information. An obtunded patient struggling to breath who's intubated without us knowing his full history or prior medications. We often don't have full and perfect data.

In fact in HIV, specifically, our data systems are siloed and fragmented and this can lead to fragmented care and adverse outcomes. We do the best with what we know and we do the best with what we know now. I think that was the cornerstone of the implementation of our universal offer of antiretroviral treatment guidelines, which we offered and put out in 2010.

Our decision to put out these guidelines was based on the information that we knew, not from randomized control

trials but from very well-done observational trials as well as our understanding of the pathophysiology of immune activation and uncontrolled viral replication having a significant impact on people's lives beyond when they developed AIDS complications.

That's why we instituted our offer of universal treatment guidelines which is one of the cornerstones of our approach. We did that in advance of knowing of the benefit to transmission, and it was really designed for individual health benefit with a collateral benefit for population health benefit.

The other thing that we did is when we were realigning our primary prevention efforts shown here. We wanted to emphasize and target prevention programs to those things that are drivers of the epidemic locally in San Francisco.

We chose factors that increased the relative risk or odds ratio for increasing acquisition of HIV by at least two-fold locally in San Francisco. Those factors included substance use, alcohol, meth, crack, poppers, and STDs and the number of partners. Our prevention programming was targeted to scalable interventions that would address these drivers.

With respect to the rest of the implementation cascade, I think you can describe our approach as a data-driven, evidence-based, culturally and communally competent planning, using communally competent and planning to increase the uptake

of scalable, high-impact, high-return interventions. Our organizing principle really is this implementation cascade.

Here you see we used our local data to target for folks who wanted to remain negative, and folks, once they are positive we wanted to increase our routine medical testing, implement community testing at different intervals with a higher frequency of testing for people in high prevalence groups who in San Francisco are gay and bi, men who have sex with men, IDU, and transgenders, and really implement a more comprehensive, scalable linkage and partner services program that would make sure that all newly diagnosed people were given a warm hand-off to primary care and also offered partner services to ensure that their partners were diagnosed. If their partners were already known to be positive, that they also were linked to care.

We all know that this implantation cascade is not necessarily a continuum and that people fall off this cascade. We wanted to also work to build a system of HIV prevention, care, and treatment that involved collaboration with our other colleagues within the health department and our private and community colleagues within San Francisco to make sure we address the correlates of why people fall off this cascade which include providing mental health services, substance use treatment, housing support, and really having a harm-reduction approach to antiretroviral therapy, meeting people where they

are, having appointments for people when they're ready, helping people set a start date to start antiretroviral therapy, and making sure that when we counsel our patients about starting therapy.

The patient is the ultimate person who makes the decision, that we also counsel them that if we expect that some people will stop taking their meds or stop staying engaged in care. When they do they should comfortable and welcomed when they come to care. We acknowledge that people will relapse from antiretroviral therapy at times. We will welcome them back and they shouldn't let their relapses prevent them from coming back to care.

We also wanted to make sure that we're addressing syndemics and comorbid conditions. This really is a summary of our approach to care. Then, I am just going to highlight two ways that we are measuring whether we're our implementation is successful or not.

The first measure is the time from diagnosis to virologic suppression. Presumably, we'd expect this to go down as people initiated therapy faster and were engaged in care more promptly.

That actually is exactly what we saw. If you see in 2004 which is the blue line, the average time it took to go from diagnosis to virologic suppression was 32 months. By 2009, that was only 10 months. You'll recall that we implemented our

universal treatment guidelines in 2010. We started to see these changes even in advance of the guidelines that we put forth.

We suspect that's because of the increased efficacy and potency of medications as well as the second and third generation possibilities for getting people who were resistant to become undetectable, as well as the fact that many of our private and community providers and other providers in San Francisco were initiating people at higher T-cell counts and earlier in their diagnosis date.

The last thing that I'll briefly touch on is our metric of community viral load. Community viral load really measures the viremic burden, as Dr. Havlir told us. She calculated the amount of virus particles that are being produced globally.

We've looked at the virus particle being produced locally in San Francisco. No matter how we measure community viral load, we've seen a reduction as more people are diagnosed, linked to care, and initiated on treatment from a high in 2004, much lower in 2009.

This reduction and community viral load has been statically significantly associated with a reduction in newly diagnosed HIV infections. That's a brief and rapid run through our approach and how we're measuring it, and we hope to share new results from San Francisco with you all soon. Thank you. [Applause]

CHRIS COLLINS: Zunyou Wu, your perspective from working in China.

ZUNYOU WU: If it's possible I'll use slides, just three slides. Good afternoon. I would like to share China's perspective about — so where I get this? Oh, here — about prevention today. Two years ago, Chinese government had issued new AIDS policy. That policy already incorporated new scientific findings.

To summarize the new policy, we simply called Five Expansions. Expansion education program to reduce stigma, expansion HIV testing to maximize the number of people been identified, expansion prevention model to chart transmission to reduce newborn baby [inaudible] infection to zero new infection, expansion of intervention, and expansion of treatment program.

Let me show you how we specifically implemented this strategy. Besides traditional prevention, measures continue that including education, condom promotion, harm-reduction counseling, we greatly emphasized testing as a prevention. We also greatly emphasized treatment as treatment and also treatment as prevention.

In order to be more progressive, we used weather forecaster strategy, set a target for number of people being identified, and also we set a target for number of people newly involved in the ART program. Each year we monitor and evaluate

the performance of each of the promises. If they're reached the target we set at the beginning of the year then we give them national award.

If they do not do good job, so they ran behind in the bottom, they were not very good. This mechanism encourages each of the provinces competing with each other to do a good job, to identify more people, to treat more people.

At the same time, I want to remind them ourselves, as today, the second speaker said this morning, treatment is treatment. When we talk about treatment as prevention, it's scientifically correct, however when we implement such a strategy, when we work with people infected in HIV, it may not work. People may say, why do I do treatment that benefits other people other than benefitting myself? When we do implementation programs, we must considering different perspectives.

Given that consideration when we advance scientific funding to implementation size, we are puzzled and also in the dilemma, how much efforts, how much resource we devote to which area should we have more effort, working in the prevention by working with China policy people or we focus on working with HIV negative people. Last year when HDPDN did a 52 result, published that people encourage it, at the same time, we get a decision in the scientific community, particularly among clinicians, one, early treatment, people are uncertain about

drug receivement. People may say if more people get early treatment, we have limited development for medicine for treatment. Once people develop drug resistance we lost the weapon to fight against HIV. What do we do?

In May I made a visit to Japan. I talked with a clinician. He treated HIV patients for three sound pieces. He told me his experience earlier treatment does not increase drug resistance. Actually, it reduces drug resistance because early treatment reduces the likelihood of the patient to develop mucosa infection, than you do not start interrupting the ART treatment, therefore reducing drug receivement.

There are still a lot of uncertainty when we implementing new scientific funding to the real public health program. Now I also have an announcement. I am inviting you to participate tomorrow evening, we have a certain talk about how to use certain signs for implementation size to accelerate national program. Thank you very much.

CHRIS COLLINS: Thank you, thank you to all of you. Carol is not with us yet, but if she comes, we'll certainly give her a moment to speak. Let me start off with questions to all three of you. It all sounds like you're doing great things and you've thought this through really well, but I want to ask you is what' been really hard about developing the prevention approach that you've taken. What have you grappled with as the

community raised concerns. What have been the toughest decisions for you?

PETER CHERUTICH: Thank you for that question. One of the tough decisions has been the dialogue that we've been having as a country since the release of HDPDN 52 [misspelled?], and how that can be applied in a setting like Kenya and how it can progressively expand the coverage of treatment to reach healthier populations that we are currently covering.

That dialogue has been very difficult because, again, I think no treatment is been perceived, and I think rightly so, as a very expensive intervention and policy makers tend to be very cautious when they are, of course whenever there is a new intervention, everyone is cautious because they don't know exactly how it's going to play out.

But when there's already a perception that there's a very expensive intervention, trying to communicate the language around the fact that these are potentially intervention, they're actually cost effective in the long run, they can actually be cost-saying in the long run. We'll have more infections that and overall make a program sustainable.

That dialogue is not very easy. It requires a lot of data. It requires a lot of modeling and that data usually not easily available in countries, in some countries like ours, so that we can communicate that to our people, these policy makers and to the people who are actually of the resources.

That is something that we always need to be thinking about, in this current environment, any new technology has to be very clear in terms of how it's going to fit into the rest of the inventions and [inaudible] what's the attitude value, what's being brought on board, compared of course to the relationship and the interventions that are being implemented. I think that has been a very great challenge.

CHRIS COLLINS: And where are you with that challenge?

PETER CHERUTICH: Yes, we've reached a point as far as country's concerned that we will implement treatment as prevention in a progressive manner. There has been a lot of consensus around pregnant mothers which we all know as option B-plus and the constrictions with that is that when you think of option B-plus and treating mothers, you are talking about reducing maternal mortality, you're talking about reducing childhood mortality.

You're talking about not necessarily HIV, and so from other people in the health second and the health system, it's a long way that they can be able to understand, that it's not only something that helps reduce transmission to partners, but only is it beneficial, not only does it have clinical benefits to the model, but it has benefits in terms of reducing child mortality. So that is a direction at least the entering Kenya is moving towards and is progressively making steps to making that a reality.

Now the dialogue around discordant couples is also been going on. One of the greatest challenges discordant couples is in our country, apart from the projects that are following cohorts of couples and a few community projects; they are adding very robust programs that bring couples together.

So people are saying how efficient it would be to begin a new program of making sure that couples are always brought into the program, how do you make sure that incomprehensive care centers or HIV clinics you get partners to be tested and brought to the clinics? Partner services in our country are not really happening, so the opportunities to really make sure that you see couples are very limited and that is also limited the potential of dialogue around moving that forward.

The other populations I think like most at risk populations and the treatment of sex workers is also there, but it doesn't gain traction. Again, it's all clouded in this environment where people are talking about resources and of course trying to balance treatment for treatment versus treatment for prevention and again, that is really very high in the discussion.

CHRIS COLLINS: Thank you. Moupali, what has been hardest in terms of making decisions and working with community around changing your approach?

MOUPALI DAS: That is a hard question. One of the biggest lessons learned about overcoming challenges is it takes

a long time to implement a paradigm shift. We started developing that beautiful model, that complicated horrendous slide I showed earlier in 2007 and it's now 2012 and there's still aspects of things on that slide that we're in the process of implementing.

It takes a long time, it takes cultivating relationships, continuing to build trust, maintaining strong interactions with community based organizations, with colleagues who are proving medical care, in both public and private settings and working with different parts of the health department. I don't think it can be understated how important it is and how sometimes challenging it can be to bring different organizational cultures together from siloed perspectives on how to implement a program.

You mentioned partnered services and I think that's a beautiful example of folks from very different cultures and approaches thinking about how to implement partner services. I don't think anyone would argue that testing the contacts, social network associates or partners of someone newly diagnosed is a good thing from an epidemiologic perspective.

No one would argue against it from a cost-effective perspective. Numerous studies have been done to show how high impact from an efficacy perspective from finding newly diagnosed people as well as a cost effectiveness perspective, but to implement a partnered program in following different

approaches from folks in different divisions of the health department collaborating together takes a lot of times to build those relationships, to bring those cultures together and to do it in a way that invites community participation, brings community along, changes based on community input. Trying to change the way we did prevention took a long time and we're still trying to do it.

CHRIS COLLINS: Zunyou, what's been hardest?

ZUNYOU WU: Yes, for the prevention, there are a few things. The first that we oversimplified about prevention. People may simply think, why people are getting infected? Because their lack of knowledge, once people have knowledge they will not be infected. That really simplifies the way of protection and prevention, however it does not work. We work with men who have sex with men community and most of the people know how HIV is spread, how it's transmitted and how to protect themselves, however people continue to engage in risky behavior and HIV continuing to infect the people, particularly men who have sex with men. In the past few years, HIV increased dramatically this growth.

Another issue, two issues about three years, we tried provide early treatment to reduce HIV transmission among discordant couples. We already proposed to enroll 300 couples; however people are reluctant to be in early treatment. We only successfully enrolled discordant couples because they feel

good. They do not feel ill. We have perception about illness and the Chinese country, when they think someone is sick, they either have a fever or diarrhea or feel uncomfortable.

For HIV infection, you do not have such a feeling. They think, we will not take medicine. Also three years ago, we tried to promote male circumcision among men who have sex with men to increase the response to increase HIV epidemic. We enrolled over 3,000 men who have sex with me. If we do the survey about their intention, over 80-percent willing to do male circumcision, however we really encourage them to bring them to hospital for male circumcision, less than 100 people actually performed the surgery, so that's the challenge that we face.

We have scientific funding. When we move scientific funding to the real field, there are still a lot of things we do not understand. We get tremendous resistance.

CHRIS COLLINS: Alright, thank you. Let me ask one more thing and then we'll go to the audience. Today we heard a great speech from the Secretary of State, Hilary Clinton, and she reaffirmed what she said last November in calling out — Carol, welcome. You're just arriving, so I don't want to put you on the spot, but are you prepared to make a comment or would you like to let us talk a bit and then come?

CAROL NYIRENDA: I could talk a bit. I'm sorry I'm late. I was in another session, I came here a while ago, but I didn't know how to come up. I don't know what I should say.

CHRIS COLLINS: We're talking about we now know we have a bunch of prevention tools and also imperfect information about how to use them in combination and in scale and some unknowns about how they work, so the conversation now is about how people are making decisions to utilize, to be as strategic as possible to get the maximum public health impact. We're hoping you could offer a community perspective on some of those questions.

CAROL NYIRENDA: Thank you very much and again I'd like to apologize for coming in late. So you're right, I'll give an affected community perspective as a person living with HIV and share a bit of my personal experience and I would like to make it clear that when I speak here, I'm speaking as Carol, not my government or the country that I come from.

My perspective on treatment as prevention as an individual, for a person from a socio-limited country, I know that somebody mentioned that scientifically, it does work, but in a country where we haven't even been able to put everybody that needs treatment on treatment and really a bit skeptical an against the idea, unless it's a country that is sustainable and we're able to put people on treatment and you're sure you'll be

able to sustain, because when you go on that, then it is for life.

I have questions, for example, it's very easy for me to take treatment because I know without the treatment, I would not be alive, but for somebody who is not positive, they take the treatment, at some point they'll stop, what happens then? Where are the issues of resistance?

I also wanted to talk about maybe the female condom which is a tool that I think is important. In most countries, it's not widely accepted. In my country that I've tried to push forward, but as a tool, it's something that's helped me as an individual.

At the moment, my CDC4 count is at 1,247 and that is because I use prevention methods and I'm empowered. I will tell my partner that I have to use prevention, we are both positive, but without the prevention then, I know. So at the end of the day, when you talk about prevention, there's the need and the importance to educate the woman or the people who are positive.

In other cases, I noticed that you are HIV positive you know when to talk about prevention. Prevention is really put around people who are negative, but prevention around the positive is also important. To educate the positive to protect themselves and their partners, especially if you are both

positive or even if you are going to use somebody who is not positive.

So how do you work exactly for an organization? I'm currency the interim chairperson for this Coalition of Zambian Women Living with HIV/AIDS. We work with our governments with the Minister of Health. Most case people think when you're activists, you're always condemning governments and you know, always against the government. We don't do that, we work very well with governments and buy into that plan.

We also give the affected committees a platform. We talked about areas about what we know and what we don't know. We use our own personal experiences. You see and find that, how come, I'm on second line treatment, but I'm on CD4 is at 1,200 and how come somebody who adheres to treatment, their CD4 doesn't go over 200? So you see to get each of those experiences.

The clinic that I go to actually has reached the point that the doctors actually speak to us when somebody comes to the clinic and have problems, they ask us and we advise the doctors. We have created a platform for people living with HIV so they can express their views. These are some of the cases, as I said, they are not actually doctors books, but just from experience.

So what we do, there are limited resources. We disseminate information from communities and how to prevent

getting infected. Like I said, people living with HIV, primary infection and we also try and the technical language that you find in the HIV sector, we use it. We try to translate it to a language that they'll understand. For example, we educate them using role plays so they can understand the importance of why they should take treatment therapy and why they should use condoms when they are both positive and the HIV cycle.

We try to also demystify HIV so that people aren't scared of it just because you're HIV. We also share issues around side effects, why you have side effects. I say also share the same information with our doctors.

Another area that we noticed, it's also important to work with community based organizations, we then you have a stronger voice, but we have groupings with people who are living with HIV, we speak to ourselves and we inform the doctors as people living who are positive.

CHRIS COLLINS: Great, thank you. Now let's see if anybody in the audience has questions and we'll go from mics one, two to three in that order. I see someone at mic three, go ahead.

CARLOS VALDARES: I'm sorry, I need to put my microphone lower. Thank you very much. My name is Carlos Valdares. I come from Brazil and I work for Pathfinding International. Thank you very much for all the speakers, but I

have a very naïve question on my point of view, but I think it bugs me.

If we are talking about mix, I'd like to hear more about the very important mix that is mixing PrEP with male circumcision with condom. Nobody talk about that. It looks like that if I take Truvada or if I do my circumcision and I personally think that is very important to still not be careless about condom promotion even under PrEP or with male circumcision and nobody talks about that. I would like to hear from the speakers.

CHRIS COLLINS: Any thoughts about that? A concern, I guess what I'm hearing is a concern that was of these new technology, including PrEP that people will be careless about condom but also will deemphasize the importance of using condoms.

PETER CHERUTICH: I think that's an excellent question and maybe in response to that, I will just go back to my earlier comments on way we have delivered male circumcision in Kenya to really be a comprehensive HIV prevention package that includes condoms, and condom demonstration and condom use. From my experience, again, this is something that is like to share is that it's not about either trying to play the circumcision and the surgical procedure vis-a-vie the condom vis-a-vie PrEP.

It's all a package in the manner that the client is able to understand. That none of them individually is fully protective, so they have to really take it together. So in response to your question, at least in the many of the countries that I know, with male circumcision, they really emphasize condom use and [inaudible] it's really very high and we've seen over time also, just looking at male circumcision data, they worry that over time, maybe people who are circumcised they are less at-risk and so probably engaging in risk sexual behavior.

I think to confirm to you that from all the data we have, the risk really no change in sexual behaviors. Adverse changes in sexual behaviors amongst men who get circumcised, so that means we are doing our work well and we are doing our circumcision well, we are doing our prevention well. We wouldn't want to pit one prevention against the other.

MOUPALI DAS: I would just say that the trials, what you see in the trail, it's not necessarily what you're going to see outside the trial except that for male circumcision, men did know what they had, they either got circumcised or they had to wait the 24 months to get circumcised.

We didn't see the risk compensation in the trials, one trial there was increased frequency of sex in the circumcised arm, but no increased numbers of partners or decreased condom use. I actually think that in the case of male circumcision,

we joke that this is a minor operation on a major organ, but I think the process that men who through of having HIV counseling and testing, getting the surgery itself.

Going through a six week healing period, I think that really does sensitive them, and that's why we're seeing in the communities post-trial, five years out, that the effect is even more. It's not being counterbalanced by increased risky behavior.

Now the PrEP trials, we didn't see risk compensation in the PrEP trials, but people didn't know what they were getting, so the demonstration projects that are going forward now are going to be important to see if people understand that this is a partial protection and so you need to combine it with other things to get full protection.

CHRIS COLLINS: Sir, at number one.

MATT CARTWRIGHT: Hi, my name is Matt Cartwright and I'm from New York City. I work for Housing Works. I'm a social worker and I experience HIV in my life personally. What I haven't heard a lot of at this convention is addressing psycho-, social-, spiritual element. I hear a lot of clinical information, a lot of data, but I am a spiritual being having a human experience.

I am a whole person. I'm not a number and I'm concerned that we are addressing people are numbers and the mechanics and we're not looking at how to empower people to

build up their self-esteem, to build up their self-worth, to address the stigma and the shame that is associated with HIV in North America and around the world. The shame, the racial disparities, the economic disparities.

We're not talking about people, we're talking about numbers and I want to hear about interventions that empower people because when I feel better about myself, I can say no unsafe sex, but when I'm drunk and I'm high and I'm looking for validation because I've been stigmatized, by my church, by my family and the only validation I can get is from somebody who says, yes, I'll validate you but only if we don't use a condom, I'm more likely to say yes because I need that in the moment.

So I want to hear about how we can lift people up and empower people to feel better about themselves so that they want to take care of themselves, so they want to be healthy, they want to make choices that they feel they have something to live for and that's not what I'm hearing here. I'm hearing a bunch of numbers and I'm not just talking about you at the panel, I'm talking about the other sessions that I've visited as well. Thank you. [Applause].

CHRIS COLLINS: Excellent question. That's one of the prime questions of this conference in a way. We're in a the middle of a prevention revolution, people are talking about a lot more biomedical interventions, about metrics, about hard outcome and it is a different language than we used to talk in

prevention, so I guess for folks up here, how does empowerment and encouraging behavior change and supporting people and being safe, where does that fit in this new world we're in?

CAROL NYIRENDA: Maybe just to share some of the programs we have back home. We encourage a spiritual women, we help their capacity by helping them in ways around positive thinking. I'll give an example of myself, I went through the ten stage, the denial and everything else. In my case, I sort of taught to accept my status and learn more about HIV and how I can live longer.

I looked at my children, who's going to take care of my children? My husband died twelve years ago and I had two little children. So I helped myself understand how HIV would work in my body and how I could sort of live longer. I also believed, I took away the power of people to stigmatize me by being open about my status.

I do give speaking at corporate settings whether I tell people I'm HIV positive, like, for example, people in this session who are not HIV positive, I will tell them I'm HIV positive, then how would you stigmatize me because I've told you I'm HIV positive. It's been very difficult for me and even for my children, but I've taught them to be strong.

The fact that I went for testing and that I'm on treatment, I empowered myself, so there's the issue of coming up with programs, but also with people living with HIV and

AIDS, it's important for us to still demystify HIV. We have the disease. It has happened and this treatment now we can live positive in long-term.

When there is no treatment, once you're told you're HIV positive, it's like you are given a death sentence, so from the experience, my own experience, I've tried to put that in a program that we use in Zambia to educate women around HIV, how to take off yourself, but I also really believe at the end of the day, even you as an individual, if you're going to sit back and stigmatizing yourself, but when HIV people going to laugh at me, you give the people power. So I believe that if you demystify HIV, you take the power from the people, live a normal life like everybody else, people will stop stigmatizing.

MOUPALI DAS: I think that was an excellent question and certainly in our brief initial presentations we didn't have time to cover all of the aspects of our prevention care and treatment system and in San Francisco for example, but it was important the questioner mentioned the role of substance use and mental health and self-esteem and basically emotional health and wellbeing which is a vital part of the whole person that we seek to take care of whether they're HIV negative or HIV positive and I think that if we think about the way we approach that, we can approach it very approximately or very distally. What do I mean by that?

Distally would be the immediately thing closest to the risk behavior event, for example being drunk or high because somebody was rude to you earlier in that day, or someone stigmatized you and it made you feel like having a drink or snorting some cocaine would make you feel better about that experience and you were escaping.

Those distal factors are definitely addressed but the relationship in our health department and pour prevention programs have developed with community based providers that focused on culturally competent gay specific appropriate mental health and substance abuse interventions. Meth is a huge problem in our city and we work very closely with community based organizations that deliver meth interventions, but we can’t forget about the proximal acuase.

That could be racism, homophobia, stigma, big things, poverty, health disparities. As HIV prevention might have more biomedical tools to deal with one of the things we may be focusing on is number and data and getting those biomedical tools to the people, which is really important, but it shouldn’t be an either/or, bit should be a both./and. We should also continue to be working as we have been with for many years, with churches as the mayor of D.C. mentioned yesterday and with our other colleagues in civil society to help address those proximal cause that result in the stigma and

discrimination that may cause people to make some bad decisions.

CHRIS COLLINS: Thank you, thank you. Go ahead, sir.

DUANE CRUMB: My name is Duane Crumb. I'm with HIVHope. I do HIV prevention around the world, a lot of it in Africa. One of the things that I'm concerned about is that we're hearing a lot of things like treatment is prevention and PrEP, but we're not hearing about how do we scale up the actual getting treatment to people that need it in countries where more than half to show with the CD4 count of 300 are not able to get it.

How can we be thinking about giving ARVs to people who just tested positive or even to those in terms of PrEP who aren't living with HIV yet. And specifically, what we have not heard the issue address hardly at is how do we deal with the lack of adequate personnel and infrastructure and to get these medications to the people who need them. We don't have enough doctors and nurses to many countries in the world prescribing and then the follow up on those receiving the medication s so that they can be effective.

CHRIS COLLINS: Great questions, I heard two great questions, we were talking about earlier we haven't been able to reach people who are desperately in need with really low CD 4 counts. How do you make decisions in that kind of environment and then what do you do any about getting

healthcare workers, the training they need to support they need to be effective? What is the answer?

PETER CHERUTICH: This is a very difficult question. Now in our setting, we do know that the greatest barrier to treatment is not really the lack of medication itself. It's that the majority of HIV infected people do not know that they're HIV infected with it because they're not tested or by the time they tested the last time, they were not infected. For those who are actually aware of the HIV status and ideally before treatment, in our setting more than 90-percent of them are on treatment.

I know there are sort of difficulties pipeline funding and whether the insurance is going into 2014, 2015 with flood funding, etcetera, etcetera, but we haven't treated a point where we're saying we need to train people with lower CD4 counts and higher CD4 counts.

In any case and I speak just from the perspective of my country Kenya, I don't really understand what's happening elsewhere, is that from the point of service, it's very clear that and the guidelines are very, very clear that for those who are eligible and need to be put on treatment, they really need to be put on treatment.

The discussions we're having now bout option B-plus and where we want to go, will be discussions that will definitely we will not be able to move ahead and try to treat people with

higher CD4 counts and making sure that there's preferential access for those people who really need treatment now because they're sick.

Again we're not very keen to say we're doing either or, but we're actually doing both so we're doing treatment for treatment and treatment prevention.

ZUNYOU WU: I think it's mostly important how much money you have. You have to balance. You have to make a decision who gets this resource and for example, you get early treatment, how early is early? For example CD4 over 500 or over 800, you provide treatment that the number of people in treatment significantly increase.

When we talk about PrEP, the people at risk of infection, the population size is far more than the other people infected, so you have to balance. Which group get a priority for your resource you voted for? And also you need to consider what brings you the most benefit from the money you invest? It's very complicated.

CHRIS COLLINS: How do you go about making that decision?

ZUNYOU WU: You need a balance then also you need to have a group of people to discuss. You have scientists to calculate, particularly economists to tell which invest to give you most benefit. Then you can at least have what the policy maker decides, which direction to go.

CHRIS COLLINS: Go ahead sir.

MARK GUMMUS: My name is Mark Gummus [misspelled?], I'm from Canada and I hear prevention and treatment for the last two days and the one thing that goes through my head is, we're facing economic austerities, it's going to get even worse, so a lot of donors that are investing in Global Fund, PEPFAR, all of these, we're hearing that they're going to invest more money, but honesty know it's not going to happen. We know it. We know that they're going to scale down.

My biggest concern is we're talking about the latest prevention and the latest technologies and how we're going to scale up, but we're not thinking about how we are going to pay for this? We're not going to.

So I'm very concerned we're focusing too much on new technologies and not on technologies that already exist and that we know work, such as female condoms and male condoms, so my question is maybe to the lady these San Francisco health department or any other health department, the FDA in Canada which is the Canadian government's agency for medication are already thinking about approving Truvada as a prevention method. How are you going to first put people who actually need Truvada on treatment without it coming out of their pockets because some people can't afford that drug. In Canada, in the United States or in Africa or wherever it is.

And then my second question is, are you going to give it to anybody who walks into a clinic and needs it? There needs to be a lot focus and a lot of guidelines that we make sure that we're not creating adherence. My biggest issue is that: a problem that I can foresee in the future.

CHRIS COLLINS: So Moupali, we'll to you in a second about intervention about how you make that choice using that. I do have to observe just to your point about scarce resources, there's a lot of reasons to think the other way too, right? We just heard from UNAIDS now that we didn't see a decline in rich country funding in the last year period, we actually seen infected countries increase their investment in their own domestic response.

The Clinton Foundation a couple of days ago came out with a steady showing that when you get really efficient about it, ARV treatment for individuals in low income countries can be about $200 a year per person. I think there is opportunity for increase investment here, there's certainly reason it for it, there's room for really getting prices down and getting more efficient, so I think a scale up is possible of the things we know work, but Moupali, go ahead. How do you make decisions about allocating?

MOUPALI DAS: I would like to address the questioner's point about Truvada and the recent FDA approval. I think that's a great question and I can see him, hello! It's a great

question to think about Truvada and it makes me think about another pill that we use for prevention, the birth control pill.

Certainly women and men can use condoms to prevent pregnancy, but sometimes that's not always technically possible and I think that there are certain women who use the birth control for a part of their life course when they are in a situation they're taking higher risk and they're in a situation where condom use is not readily available to them for whatever reason and I think it would be an ethical and moral dilemma to not allow men who have sex with men and transgender women to be able to use the one pill that's been found to be preventative against HIV acquisition for those groups.

That's the first study that we've seen where there's a medication that's been approved for that population which is the biggest population at risk in San Francisco. I think there might be certain situations where people meet the eligibility criteria for the study where they were engaging in high risk behavior.

And while people certainly were counseled about condom use in the study, certainly there were infections, so it indicates there may not have been as much condom use, we're never saying that you should stop using condoms or talking to people reduce the number of partners, or reducing other risk behaviors, but we are saying that we have an efficacious method

and we think that it would be unethical to at least evaluate it and that's what we're doing in San Francisco and Miami is PrEP demonstration project, where we're asking many of the questions that you asked.

Does everyone get it if they walk into the clinic and demand it? Who gets it? How do we figure how to make people be able use it safely? How often do we have to monitor people's kidney function? How often do we need to do HIV testing for people using PrEP?

Many of the questions you've raise are excellent and they require study and study by implementation science. We have the effective findings from the excellent trials, now we need to figure out how to implement it correctly in a real life setting and that's exactly what we're trying to do, so we'll have a better understanding in the future of how to balance real life imitation of PrEP in a city that is 90-percent of the people that are infected are men and figure out how exactly to work with that with respect to our prevention portfolio.

BETH DEUTSCH: My name is Beth Deutsch. I work with USAID in Malawi. I wanted to pursue a point that was raised earlier about male circumcision as opportunity for comprehensive prevention and sort of speak a bit more about the challenges in real life implementation.

From my experience in the generalized epidemic in many of the sub-Saharan African countries is that we tend to attract

younger men and that we have limited female involvement. If we're really looking at population based impact in the next five to ten years, we really need to be able to reach older marriage who are in marriage or long-term committed relationship.

My question to my colleagues in Africa what strategies do you see to actually get couple's communication, which will ultimately lead to couple's testing. What are you doing in normative change and how do we begin to galvanize that for more comprehensive community based response to address this? Thank you.

CHRIS COLLINS: With male circumcision, how are you using it, what are the issues around driving demand for this intervention and using it as an opportunity to get services for folks, particularly older men.

PETER CHERUTICH: Great question, really right to the point because that's exactly what we have seen that male circumcisions have been taken up by younger men and I think from our perspective, part of the reason is that in Kenya, we are scaling up circumcision programs in communities, but around those communities, they are people who traditionally are circumcised due to that at a younger age, so there is a norm that I think has developed that circumcision is for young people and that is really affecting our ability to reach out to older people and I think that's why really I cannot say that we

have a very clever around that and creating demand for the older people.

What we do know is that some of the reasons they give is that they are working, they don't have time, so I think technology is sort of enable us to reach out to them without disrupting their daily routine. New devices that can deploy very easily will be attractive to those populations and potentially create demand.

Again, as I say, we don't have a very smart way of going around that and trying to get them coming. The question about how to use some of this male circumcision to reach out to partners and create a norm around couple based interventions, again, some programs have been better than others in reaching out as circumcision has been very great in trying to reach out to female partners because we don't have routine mechanism of doing that.

I do know that implement programs are trying their best to ensure that they enroll HIV infected person with their partners as part of a couple can then receive both treatment services, treatment and prevention combined and also I had to help with the issues, the social and the spiritual issues. That's a great opportunity that we need to invest in even though we don't allow treatment for prevention. I see that as a very human aid.

When it comes to PMCT again, we don't have a great example. I'm told that somebody from Rwanda would have given us very nice initiatives that they work to ensure clinics are able to serve both men and women and it's a good platform for couples. For those countries, culturally, it's feasible for antiviral clinics to bring couples together and the news to talk about male circumcision, PMCT, PrEP. I think they should invest in those opportunities.

There was a question that came earlier around eh issues of human resources and thinking about scaling up treatment. One lesson we learned from circumcision is that it is possible to task shifting and ensure that circumcision as a procedure can actually be done by nurses and therefore save costs and time.

I think for treatment, we might need to explore the same, making sure there's task shifting, pure capacity for lower [inaudible] and lower levels of providers. At least maybe no finish it but at least be able to follow up people on treatment are on long term basis and that can be one of the ways to relieve pressure on the healthcare system.

CHRIS COLLINS: We actually have about one minute left. Are there any other comments?

CAROL NYIRENDA: A quick addition, for me it's really, again, going back to what the gentleman said about running on with new prevention methods and ignoring the old ones, for me,

I'd just like to portion our governments especially in countries that are donor dependent. For us it possible to stick with prevention methods that are working with condoms and male condoms and female condoms. Like I said, in my when I give my presentations, I'm really uncomfortable with the treatment for prevention.

Some people say in our countries who have a lot of people, who are eligible for treatment, but they're not on treatment, so we should not take on the kind of responsibility that we know the other government or we know the other country don't have the resources just because American is able to do it. Maybe the UK is able to do it, then I guess more countries in Africa in should be able to do it.

As a person living with HIV, someone who has been an activist for a long time, we are in debt to our governments, but for me, this is my plea, let's not rush just because science says it's doable. It might be doable in a country that is in Europe, but it might not be doable in a third world country, so all I'm saying is let's take caution. Science says this can happen but let's look at our countries and see if it works. If it doesn't work, let's stick to what works. What can help our people and save their lives.

CHRIS COLLINS: Great. It sounds like we're united on the goal of an AIDS free generation beginning to end the epidemic and we have more talking to do in terms of how exactly

to get there, but I want to thank everybody who came to the session. Especially the speakers. Thanks so much for joining us and sharing your experiences and thanks to all of you. [Applause].

[END RECORDING]