Youth and HIV: Risks and Interventions in the 21st Century
Kaiser Family Foundation
July 25, 2012

[START RECORDING]

CONSTANCE NYAMUKAPA: My name, ladies and gentlemen, and welcome to this session in room three where we are going to be looking at Youth and HIV/AIDS: Risks and Interventions in the 21st Century, I am Constance Nyamukapa and I am from Zimbabwe. I am one of the coaches. It is my pleasure to introduce my coach Elaine Abrams and our presenters. I will be introducing each of the presenters as they go up on stage to do the presentations.

Our first speaker of the day is Sheetal Patel, a doctor; she recently received her PhD degree in Healthcare and Epidemiology from the University of British Columbia. Sheetal also holds a Masters degree in Public Policy from Simon Fraser University as well as a Master of Public Health from the London University. Sheetal, welcome, thank you very much for doing the presentation in this session.

SHEETAL PATEL: Thank you. Good morning everyone. As Constance kindly introduced me, my name is Sheetal, last name Patel, and today I will be sharing with you some findings from my doctorial research which looked at determining HIV prevalence and related vulnerabilities among young people in post-conflict northern Uganda.

For two decades up until 2006, northern Uganda experienced a brutal conflict between the government of Uganda and the rebel force, the Lords Resistance Army or the LRA. The

Acholi sub-region of northern Uganda was considered the epicenter of LRA activities during the protracted war. This sub-region is now comprised of seven districts including Gulu district where this study took place.

During the protracted war, communities were massacred, thousands of civilians were killed, and over 1.8 million people which accounted for over 90-percent of the population in the region at that time were forcibly displaced into internally displaced people's camps or IDP camps. It was estimated at that time that nearly 70-percent of that displaced population was under the age of 25 years and that as many as 66,000 young people between the ages of 14 and 30 had been abducted by the LRA.

In August 2006 the signing of the cessation of hostilities agreement took place between the government of Uganda and the LRA. Shortly thereafter, the government lifted restrictions on freedom of movement and people were encouraged to move out of primary camp settings, either all the way back to their home villages of origin if possible, or to transit camps which were smaller camps closer to return areas.

When I arrived in the field in May 2010, it was quite apparent on the ground that the cessation of hostilities and the formal end of displacement had led to a prolonged and difficult transition period which appeared to be comprised of

three phases: Pre-transition, early transition, and late transition.

The population in pre-transition were still living in the few unofficially open IDP camps in the region, and this population was mainly comprised of extremely vulnerable individuals and people with special needs.

The second phase was early transition, and this referred to people who had made the primary move out of IDP camps and were now living in transit camps. There was movement however with this population between transit camp and former IDP camp to access services as well as from transit camp to home villages of origin as families continue to rebuild.

The final phase was late transition, and this referred to people who had now relocated permanently and were living full-time in their rural villages.

As of December 2010, it was estimated that approximately 200,000 people were living in transit camps. This constitutes people in the early transition phase, which was the focus of my sample populations.

While it is clear that the war has had onerous effects on the health of Acholi people, the specific influence of conflict on HIV transmission still remains unclear in northern Uganda. In a more broad sense, conflict epidemiologists would suggest that the relationship between conflict and HIV/AIDS is actually quite complex.

On the one hand, literature suggests factors that increase conflict affected populations' risk and thus provide an enabling effect on HIV transmission. On the other hand however, literature suggests factors that decrease HIV risk and thus provide a protective effect on HIV transmission.

These factors include things such as a reduction in mobility, keeping persons isolated and inaccessible for years, as well as an increase in resources and services that we generally see during wartime due to an influx of humanitarian aid.

While there is literature that suggests a relationship between conflict and HIV/AIDS, far less is known about the period that follows conflict, and the risks for young people. In particular, there is very little information on HIV infection and risk behaviors of young people living in transit camps or post-emergency camps.

Recently, the government of Uganda has recommitted to stabilizing and rebuilding the north, and as such has reinstated plans for redevelopment.

Given the potential for the epidemic spread of HIV infection post-conflict, it is critical that these redevelopment plans also include the development of HIV prevention and treatment frameworks.

However, for these HIV frameworks to be effective, an evidence base is absolutely necessary. At the time of this

study, that evidence base was severely lacking in northern Uganda. With limited information available, post-conflict program planners did not have the essential information needed to prioritize and develop effective responses to HIV. My study was conducted to help fill this gap in epidemiological evidence.

The specific objectives of this particular analysis were to first determine prevalence and correlates of HIV infection among young people aged 15 to 29 years in Gulu district, northern Uganda. Secondly: To analyze the risk of HIV infection in relation to gender and risk behavior among young people.

Fieldwork for this study took place between May and December 2010. Our target population was young people between the ages of 15 to 29 who were resident in a transit camp in one of two randomly selected sub-counties in the district, sub-county A and sub-county B.

A combination of proportional and non-proportional quota sampling methods were employed as random and systematic methods were not feasible in the transit camps due to limited information on the population as well as the unsystematic layout of the camps.

The sample included 384 young men and women and this was further allocated in proportion to the population size of each sub-county. A non-proportional sampling quota, 50-

percent, was also set with respect to the number of female and male participants desired.

Cross-sectional and demographic survey was used with blood specimen collection to determine HIV prevalence and collect information on sociodemographics, war-related experiences and the sexual behavior characteristics of young people.

All young people met with a same sex Acholi research assistant who was blind to the HIV status of participants and bilingual in the local language of Luo and English.

Following the interview all participants met with a trained nurse who administered the INSTI rapid HIV test, and an additional sample of blood was taken from those participants who tested positive with the rapid test for confirmatory testing using two ELISAs and a Western blot test for definitive characterization if required.

Adhering to Ugandan testing guidelines we actively encouraged all participants to receive their test results, however only those participants opting for their results receive them.

Finally, because our questionnaire dealt with traumatic and sensitive matters, immediate referrals for followup care including psychosocial support as well as HIV care was provided to participants who requested it.

In terms of statistical analysis, first point estimates of HIV prevalence in a corresponding 95-percent confidence intervals were calculated and this was done for the sample overall as well as subgroups of the population, so males and females and abductees and non-abductees.

A bivariate analysis was then conducted examining differences in sociodemographics and sexual behavior characteristics among HIV positive and HIV negative participants. This bivariate analysis was further stratified by gender.

Finally, logistic regression analysis was used to model the independent effect of individual level risk factors on HIV infection. Separate regression models were constructed for male and female participants.

In terms of results, as can be seen in table one, 49 out of 384 participants tested positive for the HIV antibody, yielding an overall prevalence rate of 12.8-percent. HIV prevalence among young women was 15.6-percent compared to 9.9-percent among young men, although this difference in prevalence did not reach conventional statistical significance.

Out of the 107 formerly abducted young people in this study, 12.1-percent tested positive for HIV compared to 13-percent of non-abducted young people. So, there were very similar rates between these two groups.

In bivariate analysis, although we found gender to be marginally associated with HIV infection, we found no evidence to suggest that having been abducted by the LRA was associated with HIV positivity. This latter finding is quite interesting as it stands in stark contrast to what media stories and NGO reports would lead one to believe.

We found seven factors to be independently associated with an elevated risk of HIV infection; they are listed here in table two in order of strength of association.

The strongest predictor of HIV infection among young people in this study was nonconsensual sexual debut. Young people who reported that their first sexual experience was forced were nearly ten times more likely to be HIV positive compared to participants whose sexual debut was consensual.

Separate modeling by gender suggested that this effective nonconsensual sexual debut was restricted to males and did not pertain to females. This makes biologic sense given that unprotected anal intercourse is a more effective means of HIV transmission compared to other forms of sexual activity.

Another important finding was this relationship between ever practicing dry sex and elevated risk of HIV infection. With dry sex I am referring to sexual intercourse without foreplay or lubrication so that the vagina is dry upon penetration.

Some of the main reasons given by participants in this study for engaging in dry sexual practice was to increase men's sexual pleasure and for women's desire to establish fidelity.

Participants who reported ever practicing dry sex were 2.3 times more likely to be HIV positive compared to participants who had never practiced dry sex before. All 152 participants who indicated ever practicing dry sex had also reported practicing dry sex at their last sexual encounter, illustrating the common frequency of this cultural practice.

Separate modeling by gender suggested that the practice of dry sex was a strong risk factor among females with an adjusted odds ratio of 7.6, but that this relationship did not apply to males.

This suggests that the elevated risk of HIV infection that we see associated with the practice of dry sex among females may be mediated by vaginal trauma as lack of lubrication during penetration increases the chances of lacerations in the vaginal wall creating an environment quite susceptible to infection.

Combined, both of these studies results imply a need for HIV/AIDS programs to reach beyond traditional prevention programming and be contextualized so that the root causes, the combination of factors that drive young people to behave in a manner that increases their vulnerability to HIV is adequately addressed.

This relationship that we found between nonconsensual first sex and HIV infection, traditional prevention responses emphasizing abstinence, condom promotion, the standard ABC strategy, may in fact overlook the reality of the lives of many young people living in post-conflict transition, particularly their underlying ability to choose whether or not to engage in sex and/or in making safe sexual choices. In this instance it appears that more holistic approach is needed.

As well, we found this relationship between the practice of dry sex and HIV infection. Dry sex practices might directly contradict traditional prevention messages including the use of lubricated condoms and more recently microbicides.

In this study, 91-percent of young men who indicated ever practicing dry sex had never used a condom before.

Combined, both of these study findings imply need for the scope of traditional prevention programs to be broadened so that the factors that drive and maintain high-risk behavior among young people in this particular setting is addressed.

Finally I will end with a few acknowledgements; I am deeply grateful to all the young men and women who participated in this study for sharing their stories hopes and fears, and for sharpening my understanding of what resiliency actually is. I would also like to thank my Acholi study team in Gulu for their unwavering support, dedication, invaluable insights, and for making Uganda my second home. Thank you.

CONSTANCE NYAMUKAPA: Thank you very much to Sheetal Patel for the very well researched presentation. Our next presenter is Lucie Cluver. Lucie is a lecturer at the University of Oxford in London, and also the University of Cape Town. She trained as a social worker and works closely with the South African government on researching forming programming for children affected by HIV/AIDS. Lucie, thank you very much.

LUCIE CLUVER: Thank you, good morning. I just have to say it is lovely to be speaking on an all-women panel today.

The story that I am going to tell you today does not follow traditional scientific patterns where you start with a hypothesis and you build a model and you test to see whether that model works in the empirical data.

What I am going to show you today is much more like those detective movies that you see on TV which start with two bumbling policemen stumbling across a body in a crime scene and over the next 48 minutes they try to work out who the victim was, what the crime was, who the culprits were.

In this case, the crime is transactional sex, and it is clear that transactional sex is a killer, particularly for young women and young men. But, it is not just a killer of one child; there is not just one single body here. What we are looking at today is a serial killer.

The research that I am going to talk about is a set of collaborative studies that have been developed in very close

partnership with the South African government including the Departments of Basic Education and Social Development, Health, and to a lesser extent, Agriculture, Forestry and Fisheries. It also works closely with major NGOs who have inputted questions and are asking questions of the research. Also universities. You can see at the bottom right our teen advisory group of children who are affected by HIV and AIDS, who have kept us on track and made sure that we ask the right questions.

I am going to talk to you about findings from two different studies, and the reason why it is important that we have two different studies is that we could crosscheck our findings. To me, the findings were so surprising and shocking that I had to double-check them. I will talk to you a little about each one.

The first study is the developing world's first longitudinal study of AIDS affected children following 1,000 children over four years, starting off in one province of Cape Town but now living in three or four.

The other study is a national study done in collaboration with government following 6,000 children and 2,600 of their caregivers, done in six sites in urban and rural places with random systematic sampling except where it went completely wrong, and I am happy to talk about some of the methodology if you have questions afterwards.

One thing that I do want to say, everything you will see here today is tested in multivariate logistic regression and using a P variable of 0.01, just to be sure that our findings are robust.

What is the scene of the crime that we came across? Firstly, we see that parental HIV/AIDS and particularly living in a dual affected family, and I will talk about that, predicts child sexual risks. You can see here that being AIDS orphaned or living with an AIDS-sick caregiver about doubles children's sexual risks in particular areas.

It is being dual affected, and that is children who are both AIDS orphaned and living with a surviving AIDS-sick caregiver, are at massively increased risk. For these particular outcomes, what is interesting is that these kids are not having more casual sex; they are not having more multiple concurrent partners. I think what we are starting to see is the kid of risks which are connected to vulnerability. If we look specifically at transactional sex, you will see to the left that a child with a healthy caregiver has around a 2-percent chance of having transactional sex, doubling to 6-percent if you are AIDS orphaned or have an AIDS-sick caregiver, and tripling to 9-percent if you are affected by both AIDS orphanhood and having an AIDS-sick caregiver.

Lorraine Sherr [misspelled?] who is in the audience always says to me "what about gender?" And in this case, she

was absolutely right. When we disaggregated by gender, it is really girls who are suffering the brunt of this, and from now on, we are really going to focus on the impacts on girls.

Transactional sex is absolutely crucial linkage in HIV infection, and I think what we are seeing here is a clear demonstration of an intergenerational transmission of HIV, which is not going through mother to child, or parental to child transmission, but is instead going through a heightened risk which these children, who are not born infected, are coming up to in their adolescence.

We got this finding, we did not know why it was, we did not know what we were looking at, and we did what the detectives always do, we looked at the likely culprits.

What were the likely culprits? Clearly, food insecurity was a potential one, and this was very closely connected to transactional sex. You can see here on the left hand side are children who are not affected by AIDS, although some of them are orphaned by other causes or have a caregiver who is sick with another chronic illness. You can see that for children affected by AIDS, we are looking at between double and triple the amounts of food insecurity.

We then think about stigmatization; are these kids feeling alone, are they looking for social support and love from elsewhere? We see again that it is closely connected but also we are seeing between double and triple the amounts of

stigmatization, particularly AIDS-related stigmatization for AIDS affected children.

We also see very clearly that parental HIV/AIDS predicts child maltreatment, and this goes for all the types, physical abuse, emotional abuse, domestic violence, and sexual abuse. We do not really yet know enough about what causes this, but it is a very clear pattern, and we have tested this now in three different data sets, just to be absolutely sure that our findings are true, and they are consistent across all of our findings.

There is also the idea that this might be predicted by psychological disorder, are children miserable, depressed, unable to negotiate safe sex or to have healthy sexual relationships? Again, we see linkages with transactional sex and doubled rates of psychological disorder, although we do also see here that other orphans do quite badly in terms of mental health.

As we went along though, we realized that there was not one single culprit, and that instead what we were seeing was what you might call a plot. We were seeing that these factors piled on each other to produce cumulative effects. What you can see here is just three of these impacts, and we looked at being in an AIDS affected family, being hungry, that is not having enough to eat more than two days a week, and being a victim of one of these types of abuse. You can see here that

girls with a healthy caregiver who is not abused and not hungry has about a 2-percent chance of having transactional sex. If she is AIDS affected, abused, and hungry, that rises to a 20-percent chance, we have a 10-fold increase in her risk.

When we looked at all of those factors together, and essentially added them up to make a risk scale, and there is lots of interesting child developmental psychology work suggesting that we get these kind of cumulative impacts of multiple risks. You can see a clear exponential pattern, a girl with none of these risks has a less than 1-percent chance of transactional sex, and a girl with five of these risks has a 26-percent chance.

All of these findings are with children; they are all with children aged between about 13 and 17. When we looked at these findings with our longitudinal study which allows us to look at girls leading up age 24, we found even stronger findings, going from 1-percent in a healthy family to 57-percent if you are living with an AIDS-affected parent, abused, and hungry. What this is perhaps suggesting is that these vulnerabilities, while severe in teenagers, are getting even worse as these girls get older. You do also see a rise for boys; it goes up to about 12-percent, but not nearly as much as for girls.

What is explaining this? When we start to try and understand it, it was not enough to use regression modeling,

which really looks at the impact of one factor controlling for other factors. What we had to do was to try and understand what were the interrelated links between these factors leading to child sexual health risks? For this structural equation modeling is a really helpful statistical tool. The way I think of it, is it is like juggling, it allows you to hold all of these factors up in the air at the same time, but also to look at the linkages and interactions between factors. We know that in real life these things do not exist independently.

I always think structural equation models are a bit difficult to follow, so I am hoping this is going to be a way to make it a bit easier to understand.

If you see to the left a child is either orphaned by AIDS or has an AIDS-sick parent. These two things lead directly into increased poverty, they also lead both directly into abuse and going via poverty, and again lead both directly into stigma and moving through poverty into stigma.

This interacting set of poverty stigma and abuse lead on to psychological distress. Through psychological distress, and to a lesser extent, through abuse it was not quite significant, we see increased sexual health risks amongst children affected by AIDS or AIDS orphanhood.

What are the implications for intervention? Firstly, the children in AIDS affected families are at higher risk for sexual exploitation and HIV infection. I cannot emphasize this

enough. This is not a set of behavioral risks we are seeing, we are not seeing kids hanging out on the streets and choosing to engage in transactional sex. What we are instead seeing is a massive heightened social vulnerability. And not just one, but multiple social vulnerabilities that these children are experiencing, and which is massively raising their risk of this killer activity.

But I think what is really important when we look at this is not to think of it just as a disaster, this also highlights what kinds of interventions we can do. While we might not be able to change the things to the far left, we cannot change the fact that this child is orphaned by AIDS or has an AIDS sick parent necessarily, but we can potentially change these intervening factors. These might be our opportunity to interrupt these pathways of risk for these kids.

If we are thinking about social protection, we can think about targeting these modifiable pathways from familial AIDS to increased child sexual risk.

Those ones that seem to be targetable are extreme poverty, abuse, stigma, and psychological distress. Now, some of these we have better evidence for what works than others, but there really are opportunities here. The last thing that I would say is that this also highlights a complex question about our social protection programs, and increasingly we are hearing a story about HIV sensitive social protection. To me, this

sits right in the center of that issue, and it says that our social protection programs must be sensitive not just to the outcomes of sexual risk and HIV infection, but also to the groups who are most at risk. And those groups are also the groups most affected by HIV in their families.

Before I end, I have just spotted in the audience the person who asked the question that made this research happen, Thomas Fenn from UNICEF sat me down in Addis Ababa six months ago and said "What's really going on, how does this all fit together?" So if you have any difficult complex questions, please direct them to him in the seventh row rather than to me.

We have got a bunch of papers on this if you cannot be bothered to read them, we have policy briefs on the website up above. Thank you to our very tolerant funders and to 6,000 children.

CONSTANCE NYAMUKAPA: Thank you very much to Lucie. Our next presenter is Vicki Tepper. Dr. Tipper currently serves as a Chief of Division of Pediatric Immunology and Rheumatology and is Director of Pediatric AIDS program. She received her PhD in Clinical Psychology from George Peabody College of Vanderbilt University. Vicki, thank you very much for your presentation, please go ahead.

VICKI TEPPER: Thank you. I am very happy to be standing here today, and had I been standing here 22 years ago, and you were telling me that I was going to be here today

talking about the small children and the babies that were currently in our clinic, and that I would be speaking to you today about them becoming parents themselves, I would not have been able to believe that.

Today I am here to tell you the story of these young people, especially the girls and young women in our clinic, because as a result of the success of heart, these perinatally young girls are now reaching adolescence and young adulthood. And, like their uninfected peers, they are exploring sexuality, they are learning about relationships, and they are very interested in where they fit in the world. They are needing to make lots of important decisions as they become sexually active about their reproductive choices.

Unlike their uninfected peers, they have some other challenges. Those challenges are rather significant, and not always the first thing that they are thinking about, but the concerns of those in the public health arena as we think about them moving into adulthood.

We are concerned, and they have become concerned about their ability to have relationships with partners, and learn about acquiring sexually transmitted infections, which for them as HIV positive young women might be more risky.

They are concerned about spreading HIV infection to their sexual partners through unprotected sex, and most

importantly, and what I will be speaking to you today about is about pregnancy and the risk of mother-to-child transmission.

In the cohort of children we followed, we started to see a frequent occurrence of pregnancies, and we started wondering about what was going on with these young women and what we could do in order to help support them in having healthy pregnancies if that was their choice. We wanted to understand the reproductive decision-making process that these young women were thinking about as they entered adolescence and see if there was anything that possibly predicted the reproductive choices within this cohort.

I am going to be talking about the program at the University of Maryland, which is about an hour north without traffic of where we are today. We have a pretty comprehensive program that involves both a pediatric program, which provides specialty HIV care as well as health maintenance care to HIV positive infants, children, and youth. We are also integrated with a high-risk OB program so that we are able to follow the young women with the same team as they move through, if they choose to become pregnant and have babies through that program, and we also have a program where we follow their infants, and we are able to provide special care for those infants as well.

Our cohort, we decided to capture all of the girls within our cohort who were between the ages of 12 and 27 who received their HIV primary care from our program between July

of 2003 and May of 2012. We looked at that age interval because that was when it seemed that we were getting more reports of sexual activity amongst the young girls, so we started at 12.

We used our electronic database to review and abstract information about the young women, including demographic variables, their show rate for clinic appointments, their viral load both during their pre-pregnancy and prenatal visits. We looked at disclosure to partners that is recorded in the record so that we can avoid inadvertent disclosures during care, and whether the girls had talked about an intention to become pregnant. We analyzed the data using Stata 11.

I am going to first talk about the whole cohort of girls that we were looking at for this small retrospective chart review study.

There were 88 perinatally infected adolescent females between the ages of 12 and 27 who we reviewed. They were predominantly urban, living at or below the poverty level. 87-percent self-reported as African-American, and you can see the distribution of their ages.

The educational level attained is reflective of their age, so many of them, about 24-percent, had received less than high school education because they were not quite old enough to get to high school. 24-percent have at least started or have completed some part of college.

Now I am going to talk more about the subset of girls who have become pregnant.

Within this cohort, 29 girls have been pregnant at least once. 10 girls had been pregnant at least once if not twice or more. You see the range, and it is somewhat deceiving because one girl who was pregnant eight times actually had three live births and five miscarriages. The rest of the girls, the most were two pregnancies, so one or two.

We saw a total of 47 pregnancies within this cohort of 88 girls, resulting in 24 live births with one set of twins, nine terminations, nine miscarriages, and as of the time when I wrote these slides we had five girls that were currently pregnant but one delivered last night, but she will not be included in the analysis.

The mean age at first pregnancy was 19 years and two months, with a range of 16 years, three to 22 years, and the mean age at the second pregnancy was 20 years with a range between 17.8 and 24.7.

Only four of the girls reported planning a pregnancy. 18 of the girls, or 37-percent, had disclosed to their partner at the time of their pregnancy, but that number goes up, and by the time of delivery for those 24 live births, 18 girls had disclosed to their partner within that process.

The mode of delivery for live births, we had 13 spontaneous vaginal deliveries and 12 C-sections, only five of which were due to high viral load at delivery.

Here are some of our findings: First we wanted to look at adherence to their prenatal appointments and see if there was any change from their pre-pregnancy data. What we looked at was their attendance at clinic rate for the year leading up to their pregnancy and there the average or the mean rate of attendance at the clinic was about 61.6-percent, which was pretty much reflective of our whole clinic population.

But, when we took the look at their prenatal visits, we looked at each of their prenatal visits within our OB program, it went up to 73.7-percent, which is a significant improvement and adherence to clinic appointments at 0.001.

We also are very interested in looking at their viral load during pregnancy. We started by looking at the two viral loads closest to their pregnancy diagnosis, and at that time, the mean was 15,766. During prenatal care, we looked at their first OB appointment and their last OB appointment before delivery, the viral load mean was 4,062, with a range of non-detectable to 47,000. Three-quarters of the girls were non-detectable at delivery, which showed a significant improvement in viral suppression of 0.009.

One of the things that, when we were anecdotally talking about these issues in the clinic and about looking at

the girls and trying to understand what may or may not be predicting high rates of pregnancy amongst our cohort, we became interested in one of the factors being early maternal loss, whether the young women who were pregnant had lost their mothers at a young age. While none of these findings are significant, and I think that's because our N is small, I think that there is some important information here that we can talk about.

The two bar graphs to the left reflect those with a living mother who were, if you look at the first bar, those are girls who are pregnant. The blue line is mothers who are alive, and the red line is mothers who are deceased. To the right are girls who are never pregnant, and again the blue line is the mothers who are alive, and the mothers who are deceased. While that difference is not significant, it is trending towards significance with girls who get pregnant are more likely to have a deceased mother.

The second bullet point does not have a line on there, on the bar graph, but when we looked at the subset of girls, those two are all girls who have become pregnant, when we looked at those girls who had a live birth, girls who had a living mother were less likely to have a live birth than those with a deceased mother, but again the results were not significant. We felt if the N was larger, that would probably be a trend that would prove to be significant.

Finally, while we do not have enough data to do any statistical analysis, I was looking at the girls who terminated, and of the nine girls who terminated, eight had a deceased mother, and one had a living mother.

I am going to briefly review some of our outcomes. The first is the really good news: All babies born to the perinatally infected girls in our program have been HIV negative. All but one infant was full-term, with a mean gestational age at delivery of 38.3 weeks. 86.3-percent of women kept their first post-partum visit. 19 out of the 25 fathers were involved with the baby at infant followup.

We asked the girls at their first post-natal appointment about post-natal contraception plans. Eight of the girls reported that they were choosing Depo-Provera, and three girls were reporting to be using condoms with some other form of birth control, but our rates of birth control are low.

What we have been able to conclude so far is that prevention of mother-to-child transmission in this cohort of girls works, and that is really good news. We believe that our comprehensive program providing support throughout the girls' pregnancy with people from the same team was also a great support.

We also do not think that we want to recommend that to get good adherence from adolescence you want to suggest that they should become pregnant. So, we started to think about

what is going on and what might help to explain that, and one thing that I have been thinking, and we sort of look at is that for those of us who work with adolescents and adherence, it is very hard for them to form short term goals and to think about specific ways to get them to why the adherence might matter.

We realize that it is likely that for these young women that knowing the impact of their adherence on the baby was enough to support them and improve their adherence during pregnancy. I think that as we talk about implications and interventions, that we might want to think about other ways besides pregnancy that we could find goals and targets for these young women so that they might feel more successful and be able to use adherence strategies a little bit more successfully.

Some of the challenges, obviously the low rate of condom use, is a problem in our population, as well as disclosure of HIV status to partners. We recognize that for all young women, disclosure to sexual partners is challenging, but for this younger group of women who feel particularly vulnerable and have often just been disclosed of their own status in the last five to ten years, this is a much more challenging issue, and something that we feel needs more attention and support.

We think that the directions we should focus on qualitative studies to understand what are the reproductive

decision making processes for perinatally infected girls? And not to leave out the dads, so we really should explore the experiences of boys who become fathers.

I also believe that our data is pretty compelling and that we really should start to examine the role of early maternal loss on child bearing beliefs and behavior in this cohort of youth. I think at this time, we have the opportunity to create multi-site and international studies to prospectively monitor perinatally infected girls, to understand their needs as they age into adolescence.

I wanted to thank the adolescents whose stories we are sharing today, and the many members, some of whom are here today, of our multidisciplinary team who have made the work possible with these girls. Thank you.

ELAINE ABRAMS: Thanks, Vicki. I would like to invite Rachel Jones to speak, she is presenting a paper on soap opera video episodes streaming to smartphones in a randomized controlled trial to reduce HIV sex risks in young, urban, African-American and Black women. Rachel Jones has been a principal investigator of federally funded grants on HIV prevention in urban women in the US, and has examined smartphones to promote health. She is an associate professor at Northwestern University, and she is also a faculty scholar. Welcome.

RACHEL JONES: Thank you, thank you to the conference organizers and thank you to the attendees for being here in this wonderful panel. I am really glad that my first fear did not happen; I did not fall down on the stage coming up here.

Anyway, I want to give a shout out to the nurses in the audience because we play a special role in this epidemic and have an important future role with all our other sisters and brothers that are fighting this epidemic.

What do soap operas have to do with reducing HIV risks, you must wonder. First off, I have to honor our appreciation to National Institute of Nursing Research, the National Library of Medicine, and the Health Care Foundation of New Jersey for helping us along.

Opening up with HIV/AIDS and women in the Unite States and its significance, if you look at this slide, look at heterosexual transmission leading the way, close to 90-percent of all infections in HIV infected women is heterosexually transmitted in the different age groups, and if you look at this slide, of course you could see the highest rate is among African-American/Black women in the united states, and we are really, really worried about this.

All along in the past few years, we have been doing quantitative studies and qualitative studies. In our formative studies, we have found that women engaged in unprotected sex with partners that they were aware or believed or thought were

engaging in HIV risk behaviors, which is, I think, one of the most important threads in this research and, like a dog with a bone, this is what we have followed the most.

We also learned that there are patterns of unprotected sex in women and these really highlight the importance of unprotected sex to win a man, to hold onto a man, and I am talking about heterosexual women, to win and hold onto a man and to show trust. We decided through our trajectory to approach this intervention with soap operas. Our theoretical framework is sex scripts and power as knowing participation in change.

Sex scripts are socially shared meanings about sex behavior, and power as knowing participation in change is not power over someone else, it is being aware of what one is choosing to do and feeling the freedom to act intentionally and being involved in creating the changes that one intends to make, and we all know that people participate in change, but not always in a knowing manner.

Why soap operas? Soap operas are in the genre of entertainment education, which has been used quite effectively in Tanzania, in Zimbabwe, in Thailand, in India, and in other countries. Some countries have had studies that have done an excellent job in measuring the effect of the entertainment education, usually the soap opera. That is what we wanted to do here. The reason we went with soap operas is that through

our qualitative work, we grounded the stories in urban women's own experiences and with the underlying understanding that women would identify with the heroine's process of change, at least that is the advantage of entertainment education. The messages to reduce HIV risk are really designed to fulfill familiar relationship needs.

We first piloted our work with a soap opera that we created called *A Story About Tony, Mike, and Valerie*. This was a randomized, controlled pilot study, and it is a 43-minute video that is available for you to see online at this URL, and we can send you a DVD if you would like. We had statistically significant findings on the difference between this video and a video that stressed careers and computers and healthcare.

Our intervention is called *Love, Sex, and Choices*, and it is a series of twelve 15 to 20 minute episodes written by our team with a professional filmmaker Alan Roth, and wonderful actors whom you can see in these photographs that are taken from the stories.

The study design is a randomized, controlled trial comparing *Love, Sex, and Choices* to 12 HIV prevention intervention text messages. Both groups received smartphones. Our anticipated outcome is that the video intervention participants would have lower vaginal and anal sex with high-risk partners at three months and at six months compared to the comparison text group.

We measured sex risk as unprotected anal sex and unprotected vaginal sex using the vaginal episode equivalent with high-risk partners. The VEE is really just adding the number of unprotected vaginal acts and weighting unprotected anal sex by two, because of the increased risks of transmission, so it is a relative score.

Again, we were only including those who were with partners they perceived to engage in risk behaviors. Our inclusion criteria, again, is unprotected vaginal and anal sex with a man the woman perceived had sex with other women, sex with men, or injected drugs during the past three months. Our study took place in Newark, New Jersey, and neighboring Jersey City, East Orange, and Irvington. We recruited our sample from public housing developments, from STD clinics, community center, a storefront, and a food pantry.

All the interviews we conducted screening, and at three months and at six months were conducted using audio computer assisted self-interview.

This slide is merely to show that both interventions were equal in treatment, both received 12 weeks, that is the text and the video group, both use smartphones, both receive weekly emails with a link to click that would access the intervention, both had intensive followup with a project director that's terrific, and contacted both equally, and both messages and videos could be accessed on the smartphone 24/7,

we could track the frequency of access in both groups, we could track the viewing time of the video group, we could also track why they re-watched videos in the video group, and we also asked questions just to make sure that the phone was not put down while the woman ran to her kid or did something, asked about the episode or asked about the message.

Our data analysis approach, again the outcome is the vaginal episode equivalent with high-risk partners at the two different time points, three and six months. The data were skewed so we log transformed and we did multivariate analysis repeated measures, mixed linear models that were adjusted for baseline behavior, and these are our results.

First we screened in all those sites, 505 women, 295 were eligible, meaning that they were high-risk, consented, and randomized. We lost 57 to followup, mostly due to lost cell phones, but we had 238 at three months, and they stayed for the 6-month study, so we have complete data set. 117 in the video group, and 121 in the text group, and this terribly long slide is really to show that randomization worked, both the video and the text group were equal in terms of age, there was not a statistically significant difference in age at first sex intercourse.

The majority of the sample between 86 and 90-percent are African-American and you can see that sexual pressure,

sensation-seeking and high-risk sex groups were also looked at as well as partner's behavior.

A summary of these baseline findings is almost half the sample had unprotected anal sex in the past three months with a partner she perceived to be high-risk. Half had three or more partners in the past three months. A surprising number knew or suspected their partner had sex with men. 42-percent in the video group, and 30-percent in the text group, almost statistically significantly different but not, and this is why we entered this into the multivariate analysis I will show you in a moment. Over half the sample had first intercourse at 14-years-old or younger.

This slide looks at pre- and post-intervention VEE change. We are using the geometric mean, which is the exponentiation of the log score. What this really is is the median. You can see in the text arm and in the video arm at baseline 21.32 at the text, and 22.2 in video. But look at three months, look at how those numbers drop. 6.55 in the text and 5.7 in the video, and continue to drop in the text and video arm. These drops are statistically significant at the 0.001 level. Pretty cool, right?

Now we look at the multivariate analysis, and we see that while there was a statistically significant drop in each group, the difference between the video and text group is not statistically significant. You can see that although risk

behavior continued to trend down, there was not a statistically significant difference between three and six months, although the trend was to continue lowering risk behaviors.

You could also see by the point estimate of the video versus text that the video risk behavior was 0.81 of that of the text, meaning that risk behavior in the video soap opera group was 19-percent lower than risk behavior in the text group, so that is also trending in the right direction.

I also like to say that the other variables that we entered into the model were those that had a statistical significance of less than 0.2, so the only ones we are looking at now in the multivariate model are high-risk sex scripts that was not, so we controlled for high-risk sex scripts and we also looked at the study sites and we did find that at the sexually transmitted disease clinics the effect of the intervention was greater than at the storefront or at the public housing development, meaning that risk behaviors were lower at the STD clinic compared to those other two sites and similar at the rest of the sites.

In summary of the main finding, sex risk behavior declined by 19-percent more in the soap opera group than the HIV prevention text group. Although not statistically significant, it was trending in the right direction. The risk behavior was 12-percent lower at six months than at three months in the groups, and we found greater risk post-baseline

reduction in sex risk at the STD clinics than at the storefront or public housing.

Just to stop for a moment, what did the women think about the videos that they were receiving, 20 minute videos every single week on their smartphone for 12 weeks? They loved the videos, and you can see that all but one wanted the stories to continue.

As far as the smartphones, and this is published in *AIDS and Behavior* in the current issue on the evaluation of smartphones, and more the technical aspect of streaming to smartphones. They loved using the smartphones.

In discussion, post-intervention risk behavior was reduced significantly in both groups; the difference was not significant. We found a greater reduction at the STD clinics. The stories held the participants' attention and they identified with the characters, and the stories, and wanted to continue watching.

This is the first study to evaluate streaming weekly videos to smartphones to promote health. We believe that *Love, Sex, and Choices* was highly effective in reducing HIV risk behavior and the comparison group also received a viable HIV prevention intervention.

A streamed video intervention can be widely distributed and accessed 24/7, allows usage to be tracked providing measures of treatment fidelity.

I want to acknowledge our film cast and crew, our technical support from Rutgers, Newark Computing Services, and with gratitude to the women who participated in the study, and those at public housing and the sites that were essential to our work, and many thanks to the International Aids Conference.

ELAINE ABRAMS: Thank you, we would like to invite our last speaker, Dr. Vanjana Sharma.

ELAINE ABRAMS: Thank you. We'd like to invite our last speaker, Dr. Vandana Sharma, to present a paper on dedication on HIV/AIDS in western Kenya, results from randomized trial assessing the long-term and biologic and behavioral impact of two school-based interventions.

Dr. Sharma earned a doctor of medicine degree from the University of Western Ontario and a masters of Public Health from the Johns Hopkins Bloomberg School of Public Health. She currently works at the Abdul Latif Jameel Poverty Action Lab at MIT. Welcome.

VANDANA SHARMA: Thank you very much. Good morning everyone, today I will be presenting results from a study on education on HIV/AIDS in western Kenya. The study is a randomized control trial assessing the long-term biologic and behavioral impacts of two school-based interventions, training primary school teachers on an HIV prevention curriculum and subsidizing education through provision of free uniforms to students.

The vast majority of new HIV infections occur in sub-Saharan Africa where nearly 2 million people become infected with HIV every year. Young people are a key group in HIV/AIDS prevention. They are often referred to as a window of hope because they are uninfected and their sexual behaviors are not yet established and may be more easily molded. About 45-percent of worldwide infections occur in youth age with 3,000

of young people infected each day. The more majority of these infections are due to unprotected sex.

Education has been called a social vaccine for HIV/AIDS. A number of studies have shown a link between school attendance and reduced vulnerability of girls to HIV infection. School based HIV programming starting as early as primary school is also considered an important means to address adolescent risk behaviors. Several factors lend support to this view.

First, in sub-Saharan most children in some primary school, thus a large proportion of youth can be reached via schools. Second, a number of studies suggest that youth in sub-Saharan initiate sexual activity while of school age. Finally, school based HIV prevention programs can be inexpensive, easy to implement and to replicate. However, there is limited rigorous evidence about the effectiveness of these types of programs together on biological outcomes such as HIV and other sexually transmitted infections.

Between 2003 and 2006, the non-profit organization International Child Support conducted a large randomized trial conducted 328 primary schools in western Kenya. The study aimed to compare the effectiveness on two programs conducted either in isolation or combined. Teach training in Kenya's National Education Training Curriculum and a free uniforms distribution program. The teacher training program involved

training three upper primary teachers per school on the National HIV Curriculum which had been developed by UNICEF in conjunction with other stakeholders including religious groups.

The National Curriculum focused on abstinence as the most effective way to prevent HIV and did not include information about condoms. After the adoption of this HIV curriculum, many teachers remained uncomfortable and reluctant to teach the curriculum. The in-service training provided by the ICS program aimed to address this issue and thereby increase delivery of the National curriculum.

The Uniforms distribution program involved the distribution of two free uniforms to children in sample schools in order to reduce the cost of education and to keep them in school longer. School uniforms are the only remaining cost of attending primary school in Kenya and at a cost of $6 each, they represented a significant expense for poor Kenyan families at the time of the program.

The study was conducted in Butere, Mumias, Bungoma South and Bungoma East districts in the eastern province. It included approximately 19,300 youths of which about half were females. This cohort of youth was enrolled in grade 6 in 2003 and they were on average about 13 years of age at baseline.

Schools were randomly assigned to one of four study arms. Teacher training arm, uniforms distribution program, an

arm with both teacher training and uniforms were the control group.

An initial follow-up was conducted between 2003 and 2007. Data from that follow-up suggested that teachers who participate in the teacher training program were more likely to discuss HIV in class, however there was little impact in knowledge, self-reported sexual activity or condom use among students in these schools. In addition there was no impact on pregnancy rates three years and five years later. Students in schools that participated in the uniforms programs had lower dropout rates. The uniform program also reduced the rate of teen child bearing from 33-percent to 29-percent after five years.

This current study is a long term follow up study to assess the biological outcomes of those two programs. It began in 2009, more than six years after implementation of the interventions. The study involved a cross-sectional survey to measure behavioral outcomes as well as herpes simplex virus type 2 and HIV prevalence; however the study was not powered to estimate impacts on HIV. This chart is a visual representation of the study design.

The main challenge of this follow-up study was in physically locating the study participants. The population under study was extremely mobile. At the time of the follow up, the youth in the sample had transitioned out of school and

many had married outside of their initial villages. The first phase of the follow-up called the regular tracking phase, about 55-percent of the study cohort were successfully tracked and surveyed. Of the main respondents, 29-percent were sampled and in the intensive tracking phase. The intensive tracking phase involved sending enumerators and lab technicians various locations including outside of our study areas, such as Nairobi, Mombasa and even Uganda, to individually track the respondents in their current homes. In total, 77.5-percent of girls and 84-percent of boys sampled for intensive tracking were successfully surveyed.

The effective tracking rate therefore of the study was 89-percent for girls and 93-percent for boys, so that basically means that for over 90-percent of the total sample, we have data on the respondent him or her or on that of a representative respondent. Conditional on being successful tracked for the follow-up survey, compliance with HSV2 testing was remarkably high at 97-percent on average and comparable across groups.

Here we show the impact of the programs alone or in combination on marriage and childbearing seven years post-intervention on girls separately. Odds ratios are adjusted for age up baseline, the randomization strata and the date of the survey and blood draw. Sampling weights were also used to account for the fact the respondents interviewed during the

intensive tracking phase were sampled to represent a larger sample of individuals. Girls who participated in the uniforms program were less likely to be ever married with the adjusted odds ratio was 0.810 and that was significant at the ten-percent level.

The reduction in teen child bearing that was observed in the uniforms group after five years that I mentioned earlier can still be seen after seven years. The adjusted odds ratio was observed at 0.84 but it was just above the cut-off for significant at the 10-percent level.

Here this table shows the impact of the programs on HSV2 infection. The HSV2 prevalence rate, the overall HSV2 prevalence rate among males was 7.14-percent and among females it was 11.79-percent. As can be seen, neither program alone reduced HSV2 transmission. Girls who attended schools where both were implemented jointly had a 20-percent lower risk of being infected with HSV2 and that was significant at the 10-percent level. The effect was less pronounced in boys attending schools with both programs and it did not reach significance.

This table shows the impact of the programs on the self-reported sexual behavior. We did ask respondents a number of questions related to sexual behavior including condom use, number of sexual partners and so on; however this is self-reported data that is often been subject to important reporting

biases and we do see here mixed results that don't necessarily align well with the objective biologically markers of risky sex that were presented earlier. Here we see the girls at schools that received the uniforms program were less likely to have more than one sexual partner which was significant at the 5-percent level and boys in the uniform were more likely to report using a condom at last sex. Boys at schools that participate in both programs were likely to ever had had sex.

So in conclusion, the provision of educational subsidies in the form of free uniforms appears to be effective at reducing dropout rates of boys and girls and teen childbearing and marriage rates among girls. However the uniforms program on its own did not reduce HSV2 transmission. The Kenyan National Curriculum focused on abstinence until marriage seems ineffective at reducing HSV2 transmission. Both programs implemented jointly appear to reduce HSV2 transmission and the effect is more pronounced in girls than in boys.

Just a thank you to all the youth who participated in the study, to my co-authors and to our partner organizations who were very supportive. Thank you very much.

ELAINE ABRAMS: I want to thank our presenters for their fantastic presentations and for their great work and now these papers are open for questions. We have about 15 minutes we can spend on questions. So I'll ask people to please come up to the microphones located in the aisles and also please try

to keep your questions specific and brief. Let's start over there.

MALE SPEAKER: Yes, I have a question for the videos, for Dr. Jones. It seemed like the videos didn't have an added benefit over just the text messages for smart phones, so I'm curious if you were to scale up something like this, what was it about being in this trial that really enabled you to use this decline. That enabled you, in improvements in decline of risky sexual behavior. It seemed like being in the trial was what took us –

RACHEL JONES: That's a very important question. The question is if there was a statistically significant difference between the text and the video then what is it that we think we need to do to scale up?

The women loved the videos. Literacy is an issue too, but we can't underestimate and you haven't seen the full evaluation, which is a 20 item evaluation and they loved the videos. They kept watching. Adherence was about 98-percent. We only had two people who didn't watch every video every time at least once, most watched two and three times. What we have understood since in educational entertainment is that we need to stress the take-home message more, so women can get lost in the story. It's a soap opera for women, heroines and their cluster of issues.

What we're doing currently is creating a video guide who appears at the end of each episode and kind of does meta-cognition, question the way we think, the way that women are thinking such as, the idea that as long as he comes home to me every night, that's the most important thing. It's not that he's coming home late and who is he with. So the guide says something like, oh really? If you keep doing what you did, you're going to get what you always got. What are you getting?

So we think that the emphasis on some of the take-home messages and some of the assumptions underlying is going to help and that's what we'll be testing next. We can gear up because this is in internet and we can reach the globe with the videos at 24/7 access.

ELAINE ABRAMS: We'll go to the far back. Next question.

AUDREY PETTIFOR: Audrey Pettifor, University of North Carolina. I had a question about the Kenya uniform analysis and I was wondering if you guys did any further analyses to try to understand the reduction and risk for both the teacher training and the uniforms together when the odds ratio for both of them separately looked like they were one, so I was curious if you guys had any hypotheses about what the mechanism of action might have been. It didn't seem – anyway, why together they seemed more effective if you know why.

VANDANA SHARMA: Thank you very much for your question. In fact, we haven't done any additional analysis yet, but certainly we are all very curious as to why we see an impact with both programs and not uniforms program alone. I don't have anything else to tell you about that right now.

ELAINE ABRAMS: Thank you. We'll go to the fellow all the way in the back with the striped shirt.

DEA AEAU: Okay, thank you. I'm Dea Aeau [misspelled?] from Nigeria EQUUS [misspelled?]. My first question is to Patel. Now I didn't exactly get the definition of dry sex as it were and I was also the male didn't seem to get involved in the dry sex and what kind of sex was it? Was it significantly different between consensual sex and dry sex as it were? How does it come into play? They're still coming through with the Sharma [misspelled?] on the uniforms, how were you able to determine –

ELAINE ABRAMS: We can only do one question per person.

DEA AEAU: Oh yeah, okay. Alright, thank you.

SHEETAL PATEL: I think I picked up about three things there so you want to take your choice as to which question? Perhaps the first one? The definition of dry sex?

DEA AEAU: No, what I mean is at do you term 'dry sex? You used it in your analysis a great deal.

SHEETAL PATEL: How did I define dry sex? Yes, so that was sexual intercourse without the foreplay or lubrication.

ELAINE ABRAMS: Okay, we'll go the next person.

CHERRI GARDNER: Cherri Gardner with ETR Associations, Education for a New Research Associates. In Washington DC. This question is for Vicki from University of Maryland. Hi. Fascinating study that you did. What I'm interested in is how were you able to prepare your multiple disciplinary team to receive even be culturally proficient to not just girls and adolescents into women that you work with but also that their male, their fathers?

VICKI TEPPER: Thank you. We have a rather diverse collection of employees who work with us and I think that we've used a variety of different people in the different roles within the team, so we actually have consumers who meet with the young women and talk about disclosure to partners. We've even done workshops for the girls around those issues and some of the older girls who have disclosed have come and talked with the younger girls, so we're trying to approach thing in that regard and I think there are some advantages and disadvantages to having known these girls. I've known them all their lives.

There's a way in which as you get to know them, we've been able to partner them with the type of resource we think might be most beneficial for them. Thank you.

JENNIFER HOWES: Jennifer Howes, New York City, Mt. Sinai School. This is for Dr. Tepper. Quick question: do you have birth weight data as an outcome of the pregnancies?

VICKI TEPPER: We actually have birth weight data but because time constraints, I didn't present any of it, but there was only baby who was not full term was the only baby who was a low birth weight baby as well; and actually Apgar score-wise, that was the only baby who also had an Apgar score that was less than 7.

LAUREN TULLIS: Hi, my name is Lauren Tullis and I'm from San Diego. My question is for Rachel Jones. I work on HIV prevention programs that utilize videos and one of the things that we found is that the soap opera style is way more appealing than any other type of video, but one of the things that we've struggled is the quality of videos. So I'm more concerned about the cost and what it took to get those things rolling. Did you pay your actors? If not, how did you incentivize their participation?

RACHEL JONES: Thank you for the question. We stream our videos over the internet and they're HD videos. We were able to buy an HD video camera through a National Institute of Nursing research grant and there were three before this current study.

There are a lot of struggling actors in New York City and we did a casting call and there is lot of interest in fighting HIV among actors, so the talented actors that we got, we paid reasonable, but not what you would be paid a well-known actor, I think. We had to keep our costs down and we worked

really hard. There are costs in the beginning and then after you've got your intervention, so it levels out.

The second part of your question that others may also be thinking about is the kind of technology and how much it took to get it to stream over videos and that's in our current publication and that was a steep learning curve for us because the first Motorola droid had its own issues about how to stream high definition video, going to public housing developments in various environments in a basement versus a better access place in terms of the third floor, those are the sort of things you have to deal with, but we did.

I think you can do good video. The most important thing is the story. We really were housed within a conceptual framework and we were all schooled in a framework and I think it's worth that came from it.

BETSY TOLLEY: Thank you. I'm Betsy Tolley with HIV 360. I'm from North Carolina and my question is also to Rachel. I'm wondering to what effect you think that actual provision of smart phones to both groups might count for the lack of difference amongst them and to say is there a possibility that in a future study, you might actually be able to control that in some way? You have one of the control groups not actually receive the smart phone.

RACHEL JONES: That's a very important question. We realize that both getting the phones and the amount of

attention, etcetera, and many HIV prevention studies that have a comparison group and not a true control group also show effective statistical evidence, just trending. There's much literature on that.

Yes. The next study that we are designing right now has a true control group and we, because today being 2012, compared to the years we were designing the study, smart phone use, as everyone knows among black youth and Latino youth is so much higher and everybody's getting videos on their phones now.

We don't have to supply the phones anymore. We don't have to keep that constant. We've already shown that we could do this, so now the challenge is to be able to stream to any kind of smart phone or computer or tablet without being device monogamous. That's the next stage of the work we're currently doing now. Thank you.

JUDY WASSERHEIT: Judy Wasserheit, University of Washington. Just to follow up on the earlier question about cost. Can you give a rough dollar estimate of the cost of the text message intervention versus the video?

RACHEL JONES: We didn't break it down by cost. We created the soap opera video with a $150,000 grant from the Healthcare Foundation of New Jersey and that was from writing the story to scripting to casting to filming and editing. That was the whole thing, but we have an intervention now that we could send around the globe to those that may want it, so it's

here, we have it. That's the cost and that's the importance of funding for the kind of work that is so important globally in terms of video and film and media to reduce HIV risk as an adjunct to prevention.

NOELLE LEONARD: Hi, Noelle Leonard from New York City. I'm curious for Dr. Jones about the videos. Did you ask if there was exposure to the videos in the text group? Because it seems like from where you recruited, there's probably a lot of social connections possibly and it's freely available, as you said.

RACHEL JONES: I know you speak from experience because the question breeds experiences. Yeah, women come in with their friends and they get randomized, so we did include in our analysis, we did include in our questions, in our follow-up questions: did you watch the videos? To the text group. Anything less than 10-percent of the sample being contaminated would affect the findings, however we are able to track the IP addresses of the cell phones, so if a text group tried to watch a video, we would capture. Now if she was using her friend's phone who's in the video group, that would harder, but we do what Loretta Sweet Jemmott has recommended in the past is there's a high motivation in that we're saying to women is what you're doing in the study is really important to women's health in the community. Women fessed up. We had maybe 2-percent that contaminated.

NOELLE LEONARD: Did you do dose response for how many times they watched the video?

RACHEL JONES: We did do a dose response and that was the beauty of being over the internet and being able to track use, but everybody watched more than once, so we didn't' have much variability. The films were pretty popular. That data is in a current publication, also more specific. Thank you.

AMY GANOF: Hi, I'd like to thank all the panelists and I am going to direct my question to Dr. Jones. My name is Amy Ganof [misspelled?] and I'm a doctoral candidate at the University of Washington School of Nursing.

RACHEL JONES: Congratulations.

AMY GANOF: Thank you. I was wondering if you have any plans in the future to use biologic outcomes like STI infection or HIV instances in the video intervention.

RACHEL JONES: You must be monitoring my brain waves. We are thinking about the new home monitoring and yes, we are thinking about adding some biological monitoring. We've really been interesting in risk behavior and reducing risk behavior, promoting condom use and so that is something that we're moving towards, yes, in our upcoming work.

CONSTANCE NYAMUKAPA: Well, we have come to the end of the session and I would like to thank everybody for coming to this part of the session and especially my co-presenter, Elaine Abrams and the presenters for a very wonderful research. We

hope to continue fighting for the youth wherever we are. Thank you very much.

[END RECORDING]

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