# The Lancet 2012 Special Theme Series: Men Who Have Sex With Men and HIV
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**RICHARD HORTON:** Welcome, everybody. My name is Richard Horton, I edit a medical journal called The Lancet, and you have very wisely come to the Special Theme Series Symposium on Men Who Have Sex with Men and HIV. Chris, you did it, my friend [applause], the second time.

This is a serious symposium. On June the 23rd Thapelo Makutle, a 23 year old openly gay man in the Northern Cape in South Africa was murdered. This throat was cut in a hate crime that began after he was targeted and attacked, because of his sexuality. Although many gay men in South Africa hide their identity, Thapelo was open and proud about his. He was killed for his identity for who he was.

Only last week on July the 18th, Nelson Mandela's birthday, South African activists gathered to recall Nelson Mandela's service and stand against all forms of hatred and violence, a hatred and violence that is endemic in many parts of the world today. Do not assume that homophobia is confined to places far away from where we are now.

At midnight on Sunday in Northeast Washington D.C., two men, Michael Hall and Michael Roike were walking home together. Both men were brutally attacked by a gang in what police believe was an horrific hate crime. Michael Hall had his cheek

bone broken and suffered extreme facial injuries and he underwent surgery here in D.C. yesterday afternoon.

On their Facebook page a friend has written about what he called this random act of violence, but let's be very clear. What happened to end the life of Thapelo, what happened to Michael Hall on Sunday night at midnight were not random acts of violence, they were expressions over pervasive homophobia, a homophobia that still exists in many of our societies today, and in some thrives.

At this conference so far we have heard a great deal about success, about ambition and about optimism. The idea of an AIDS free generation, cure, and ending the epidemic, but we must not let these ambitious and hopeful visions cloud what is a crisis that faces millions of people today. A stubborn epidemic of stigma and discrimination against gay men and women and transgender communities. Over 80 countries still criminalize sexual relationships between two consenting adults of the same sex.

The series you're going to hear about in the next hour and a half or so reveals what are by any standards startling findings, that HIV among men who have sex with men is an expanding epidemic, that there is a hidden and slowly emerging burden of HIV amongst men who have sex with men in low and middle income countries.

The key driver of this epidemic, something we don't talk about enough, not just at AIDS conferences, but in our societies more broadly, a key driver is homophobia. That there are many opportunities for prevention, but there's a shameful lack of funding targeted towards men who have sex with men, that there are horrific disparities that reveal a catastrophe in our health systems, especially even in high income countries, and that there is a sense of uncertainty about what we should be doing next.

This series and what you're going to hear from this fantastic panel aims to end that uncertainty. We also want to do something else very, very important, we want to use this series to celebrate the unprecedented contribution that men who have sex with men have made and continue to make to the AIDS response, but much more than the AIDS response, to global health, and to democratic movements worldwide. There's no person that I know who better embodies these principals than the man who is now going to introduce our series, who's had the vision for the work that's taken two years to produce, the absolutely wonderful human being, Chris Beyrer. Please welcome him [applause].

**CHRIS BEYRER:** Good afternoon, everyone. Let me welcome you to this event, this special session this afternoon, the Lancet Series: Men Who Have Sex with Men and HIV. I'd like

to begin by thanking Richard Horton for his vision, really in grasping the global health importance of this problem. Richard is one of the people in the world believes that science should be a force for good and we're really all deeply indebted to his leadership. Thank you [applause].

Let me also thank the series associate editor, Pam Das for her tireless efforts [applause], and my guest co-editors for this series, Professor Ken Mayer, who you're gonna hear from; Dr. Patrick Sullivan; and Dr. Jorge Sanchez.

The work you will see presented here today was supported by grants to our center for Public Health and Human Rights at Johns Hopkins, from amFAR, the Foundation for AIDS Research, the Bill and Melinda Gates Foundation, and the Johns Hopkins Center for AIDS Research, and we're deeply grateful for all of that support.

This series is our collective attempt to answer some very difficult questions. Why despite the best efforts of so many HIV epidemics among men who have sex with men are on such a different trajectory from the rest of the global epidemic. Why are they expanding in rich countries and in poor countries and in the era of successful treatment for HIV/AIDS.

Why are MSM in so many setting at such great risk, despite solid evidence of behavior change, and why are so many men still excluded from care or excluding themselves from care,

and perhaps most importantly, what can all of us who are engaged in the AIDS response, the community, fellow investigators, providers, political leaders and activists do now to start to turn the tide for this unresolved component of HIV/AIDS.

We looked at this in terms of epidemiology, clinical care, prevention, from the global community perspective, with the tools in political science and from the perspectives of black MSM, so powerfully raised for us all on Monday's plenary by Phil Wilson.

What you're gonna hear today I have to tell you is challenging and novel. I think the evidence you're going to see calls for a reinvigorated approach, for new understandings of MSM epidemics at social, biological and political levels. And for new approaches to prevention, treatment, and care, that could begin to use this evidence to improve our responses and begin to turn these epidemics around. This won't happen without the total engagement of the community of course, and without all of our efforts to support the human rights and fundamental dignity of this community at every step.

The series through additional commentaries also addresses homophobia in Africa, the rights issues associated with condoms and HIV risk for incarcerated men, health disparities among African American MSM, and it includes also a

piece we're very grateful for by Jack Killen; Mark Harrington, and Tony Fauci, on the contributions gay men have made to AIDS research.

They remind us in that piece that without gay men fighting for treatment and volunteering for so many of those early clinical trials, we would never have gotten to successful treatment as quickly as we have [applause]. That's right. They also tell us that everyone on treatment today owes those early heroes a profound debt.

I would like to acknowledge those many men now at the start of this series, and also my own late partner, an amazing man, named Ed Luther who died of AIDS in 1991 at the age of 31, before there was any treatment available. It is unconscionable that so many years later young men are still dying. Now not because there isn't treatment, because of course we all know there is, but because of stigma and discrimination there's no treatment for them.

Let's proceed with the first speaker of the session, Dr. Stef Baral of our own group at Johns Hopkins. Stef is a Canadian Medical Epidemiologist, who focuses his research on key populations, epidemiology, and prevention, and he's also now serving as the Associate Director of our Center for Key Populations at Hopkins. Stef?

**DR. STEFAN BARAL:** Thanks very much. I'm here to set the stage by going over the global epidemiology of HIV infection among MSM, and I'm presenting this on behalf of Chris Beyrer, Frits van-Griensven, Steve Goodreau, Dr. Suwat, Andrea Wirtz, and Ron Brookmeyer.

I'll start with talking about the methods that we used in order to sort of inform our understanding of the global epi among MSM. I'll then talk about some systematic reviews that we did looking at both biological and behavioral factors, as well as the molecular epidemiology of circulating strains of HIV among MSM, and then I'll discuss modeling that was led by Steve Goodreau, an agent based stochastic modeling to look at really drivers of risk and kind of take it to the next level, and then discuss some of the significance of it all.

Again this review was informed by systematic reviews looking at both prevalence and incidence data for the last five year. Systematic review looking at risks for infection, and as well again of the molecular epidemiology of HIV among MSM. Then we modeled the dynamics of transmission using the agent based stochastic approach.

To start the burden of HIV among MSM. What's really striking is that whether you're looking at North America, Central and South America, South and Southeast Asia, or Sub-Saharan and Africa, you really see a very narrow range of HIV

prevalence, ranging from about 14 to 17-percent, but there's a lot of consistency across regions. We see lower rates of HIV prevalence among MSM in Middle East, North Africa, and part of Europe, and Central Asia. And we saw the highest rates, about 25-percent in countries of the Caribbean.

In each of the settings we looked at, here you're looking at in red the HIV prevalence among MSM and then blue that in the general population, and even in the generalized epidemics of Sub-Saharan and Africa we see concentrated epidemics among MSM, and more so in what we know to be concentrated epidemics, including South and Southeast Asia, Latin America, and the Caribbean, and then our higher income countries. In all settings we see a disproportionate burden of HIV born among these men.

We also wanted to look at incidence rates, new infections among MSM, and again what we saw was really consistent across regions where data were available. We see sustained incidence of between two to 5-percent over the last 10 years. When we look in the last few years where incidence data is available from China and Thailand we're seeing increasing incidence rates.

We have a combination where data is available of sustained or increasing incidence rates and that's in the context of a declining incidence rates in the general

population. We're simply not seeing it among MSM. So we wanted to try and understand using a systematic approach, what were the different drivers of this massive epidemic, what's really happening. We looked at it using a framework of individual level, network level, and structural risks.

Now the majority of attention has been focused on individual level risks. And we know that there's biological and behavioral risks that have been well described, and they're important and they're necessary, but they're simply insufficient to be able to explain these massive epidemics that we're seeing. When we looked at network level risk we started seeing that increased size of networks, that lower density networks have been associated with either HIV prevalence or incidence, or also HIV risk in China and Australia, and among racial minority men, as you'll hear more about throughout this session.

Then as was already alluded to there's this emerging data of structural risks. There's this emerging understanding of the relationship of HIV with criminalization, with stigma, and with discrimination in the healthcare settings, which again is really excluding people from care and limiting provision of preventive services.

It's important that we focus and look at the biology here. Bagley, et al, completed a review a couple of years ago

and what they found was the per act transmission probability of HIV and anal sex is about 1.4-percent, and to put that in context, that's 18 times greater than the transmission rate in vaginal intercourse, in vaginal sex.

The per partner HIV transmission in a serodiscordant relationship, per partner is 40-percent for those who reported exclusively unprotected receptive anal intercourse and about 39.9-percent for those who reported both receptive and insertive, so again you can see this is really driven by unprotected receptive anal intercourse, but there's another component here.

As we know biology has determined that a man is an insertive partner and a woman is a receptive partner during heterosexual sex, but that's not the case with men, they're sexual role versatility, so and that versatility of being either the insertive or receptive partner during anal sex increases the efficiency of transmission.

If we look at our gentlemen in the middle we know that his acquisition risks are really driven by his receptive intercourse, but when he's the insertive partner that really drives his transmission risks, and that's really a different dynamic than what we know to be the case with heterosexual sex.

We also wanted to look at the molecular epidemiology of HIV among MSM, and when we did this review it was really

striking in the results. Investigators around the world have shown in several setting that there's faster spreading networks among MSM than there is in the general population, likely driven by the biology.

There's also a marked clustering of infection in these births of transmission as shown really nicely by Lewis, et al, and so there's much more linking of the HIV in clusters among MSM as compared to heterosexual populations. Separately, MSM are much more likely to be infected with multiple variance, and so as an example 38-percent of U.S. MSM have multiple circulating variance.

When we looked at the molecular epidemiology around the world we found that there was also a really striking similarity, in the U.S., in parts of South America, and Western Europe, and parts of Asia we still be a B-clayed predominance.

When we looked at South and Southeast Asia there's really an emerging and continually so A/E recombinant and that's also in the context of increasing incidence rates in those countries, and where data were available from Sub-Saharan and Africa, what we see is that the circulating forms of HIV and MSM is the same as that in the general population, that is to say these are not distinct epidemics. That was most clearly shown in South Africa where the predominant form is now a clade C and the context of a clade C epidemic.

Steve Goodreau, the modeling of infectivity of HIV among MSM, again using the stochastic approach, really building on his and Susan Bafinders [misspelled?] work in Peru and the USA. We wanted to propose an experiment which was to say that if sex between men had the same transmission probability of sex between men and women, and all other things being equally, what would happen to epidemics among MSM?

Again, the drivers as we talked about, high per act transmission rates for anal sex relative to vaginal sex, this unique ability for a man to be both insertive and receptive partners during sex, and the existence of higher numbers of partners with a subset of MSM.

We used country specific inputs from Peru and the USA, including demographics, testing, treatment levels, and some sexual behavior data. We started with an HIV prevalence of 15-percent based on our review and model incidence for five years. In our first scenario where it says vaginal infectivity, that if you replace the transmission rate of anal intercourse with that of vaginal intercourse, over the next five years 80 to 90-percent of infections among MSM disappear.

When you look at role segregation where 50-percent of men hypothetically would be the exclusive insertive partner and 50-percent of men would be exclusively receptive partner, you see about 20 to 50-percent decline in infections. When you add

the two together and this is really now mimicking heterosexual transmission, so you have vaginal infectivity instead of anal and role segregation, you see up to 90 to 95-pecent declines in the epidemic.

When we looked at unprotected anal intercourse and really looking at having consistent condom use in casual partnerships, it decreased the amount of infections by about 30 to 40-percent, but simply not to the scale that really was driven by the biology.

There's just a few themes that I want to leave you with today. HIV epidemics among MSM are expanding globally in 2012 in high and low income countries, and we really see these burdens among young men. We see rapid spread and clustering within networks and we see a high frequency of dual and multiple variant infections among men, and it really is driven by the biology, by the high per act and per partner HIV transmission probabilities, the sexual role versatility, and these network and structural level risks.

What are the significance of these findings? The modeling tells us that due to the biology of HIV and anal sex, even programs that would benefit in substantial behavior change are not gonna be sufficient in terms of changing the course of epidemics as we see them now, and that really the high transmission probability, the high force of infection, the

potent effect of high prevalence that is already in place, mean that interventions have to focus on reducing infectiousness in order to control these epidemics moving forward.

Finally just to say and to set the stage for our other speakers, HIV remains uncontrolled in MSM in 2012, that's a reality. These results, as Chris mentioned, demand a reinvigorated effort. We have to look at approaches based on biology and epidemiology, and there has to be a comprehensive effort by all of us, by community, by academic, by government, and by funders, to look at structural level risks that are aiding and abetting HIV spread in these men, that's a necessity.

I just want to thank a series of students including, Marco Imbrosia [misspelled?], Sharina Katayeva [misspelled?], Madeline Schlefer [misspelled?], and Darren Adams [misspelled?] for the data extractions. Again thanks to Susan Barfinder for the modeling work. And then as Chris mentioned, amFAR has been a huge supporter as they have always been, and the Bill and Melinda Gates Foundation, and the Hopkins CFAR, the Center for AIDS Research. Thank you [applause].

**CHRIS BEYRER:** Thank you so much, Stef, and our next speaker is Dr. Patrick Sullivan. Patrick is an Associate Professor of Epidemiology and Emory Rollins School of Public Health in Atlanta, and the Co-Director of Emory's CFAR,

Prevention Sciences. Patrick's research interest include HIV prevention for MSM, and technology enabled approaches to enhance prevention and adherence. Patrick?

**PATRICK SULLIVAN:** Thank you. I'm pleased to present today on behalf of my Co-Authors who are listed here and what a privilege to get to work with this group of people on what I'm gonna present today. Early in the epidemic communities of MSM in many places, in Australia, in the United States, in Europe, undertook changes in reductions in sexual risk behavior, and this coupled with the availability of an HIV antibody test in 1985, really substantially reduced levels of transmission within these communities, and those reductions were important. Without them the epidemics in MSM communities would have been much worse.

As Stef has really laid out beautifully, the only conclusion we can reach in looking at current data is that our current efforts at HIV prevention have failed to control the perifilation of HIV among MSM, and we must do more. What I'm gonna try to address today is a piece of the cover of the booklet, which I hope you have in your bag, and address the idea that we know with the prevention tools we have today that we can do more.

So using HIV prevention technologies that we have today, we could prevent a quarter of new HIV infections among

MSM globally in the next decade. This is the conclusion that my co-authors and I reached through a two step process. First a comprehensive review of available literature on HIV prevention/interventions for MSM, and also a series of modeling experience which I'll describe in this talk.

This is a depiction of what we know in the literature about HIV prevention interventions for MSM, and I'll orient you to this graph. Each bubble represents a published study of an HIV prevention intervention. On the horizontal axis is the year of publication and on the vertical axis is the estimated effect size, so that one means sort of no reduction or increase in risk behavior or HIV infection and those studies with bubbles below this line showed efficacy. Those with red halos were statistically significant.

In reviewing this prevention literature there are several themes that became clear. Early in the epidemic most prevention interventions tested were behavioral interventions, whether they be for individual level interventions in blue, for group level interventions in red, or in community or network level interventions in purple.

These interventions have been extensively tested and many have shown reductions in self reported risk behaviors, but none has shown a reduction in end point of HIV infection in

these trials, their efficacy has generally been estimated to be modest.

More recently biomedical prevention interventions have also been tested at MSM, these are more recently tested, less extensively tested, but with higher efficacy estimates, and with a demonstrated ability to reduce new HIV infections among MSM. They're not without their caveats.

First as I'll describe, all these approaches are inextricably linked with behavior change interventions, also for some of them, although MSM have been included for example in 052, which I felt the need to point out to you, because it's tiny, the size of these bubbles is proportional to the number of MSM in the trial. This is a significant trial with the highest estimate of efficacy we have observed that included very few MSM.

It's also important to point out that most of the work that I described in the previous slide has been done in North America. Our inference about these behavioral interventions really should only be extended that far, and certainly there's opportunity to explore behavior change components and see how they may work in other settings.

Too often we've created artificial dichotomies in our discussions of the relative merits of different approaches to prevention. Different intervention approaches have different

strengths and weaknesses in terms of efficacy, cost, scalability, and capacity requirements. No one approach is sufficient to turn the tide of HIV epidemics among MSM.

Indeed the strengths and opportunities of each of these approaches suggests that the intelligent combination of complimentary interventions is better than any single approach, and in fact combination most likely will be required to have a sufficient prevention impact. I'll talk further about the social and societal aspects in a following slide.

When we think about packages of prevention interventions where should we set our targets? I would suggest that we should choose targets that are important epidemic drivers that occur at different points in the pathway of infection and for which we have primary interventions with good efficacy, and although the Lancet Series piece that's in your books talks about some additional elements I'll illustrate three of these.

Stef talked very eloquently about the high risk of anal sex for HIV infection, and in fact if we could just set that at the level of -- reduce that per act risk to the level of vaginal sex, 80 to 90-percent of cases in MSM of new infections would not occur. For this we have interventions like condoms, a barrier method that are probably at least 80-percent

efficacious, and pre exposure prophylaxis estimated to be 44-percent efficacious.

The high prevalence of unknown HIV and partner pools is probably also an important driver, and here we have a great intervention called HIV testing. In a meta analysis of nonrandomized studies, testing a person and informing of their HIV positive status was associated in a reduction by about two-thirds of unprotected sex acts with negative or unknown status partners.

Finally the high viral load in HIV positive partners, and we have a great intervention for this which is treatment, and although few MSM were included in the 052 study, our best estimate of efficacy is 96-percent. It's important to say that all of these interventions will fail to reach their potential without the concurrent element of changing behaviors, this means changes in HIV testing, in adherence, in condom uptake, and linkage, and retention.

Also importantly we need to have safe spaces of prevention and culturally competent care. In too many parts of the world MSM cannot seek healthcare, prevention services, or prevention supplies that they need, because of stigma, because of discrimination, because of criminalization of male/male sex, and we must takes steps to change this.

In the models that I'll show you next this is really implemented by coverage in terms of how we can reach the proportion of men that we need with prevention services, and while these kinds of situations go on we won't be able to reach that coverage. We build on the models that Stef has already talked about and led by Steve Goodreau, developed agent based stochastic models in four countries, Kenya, the U.S., Peru, and India. We use local data sources and develop country specific parameters and then calibrated these models, so that when they ran they produced an epidemic situation that was consistent with what we knew from other epi data.

We then took these models and simulated the implementation of three prevention packages. One based on oral pre exposure prophylaxis, with follow up testing, one based on early ARV treatment of men living with HIV, and one based on increased condom use. Our outcome was the proportion of infections estimated to be averted after 10 years.

This slide summarizes the results of those model runs and each bar is the median of 10 runs of the model. Starting on the left, the group of four bars represent country specific models for an oral pre exposure prophylaxis package with a 40-percent coverage. Here about 20-percent of new infections are averted in a 10 year time span.

The middle set of bars is early ARVs as a prevention package, and here with 40-percent coverage the estimates cluster around 10-percent of infections averted. The last set of bars is the condom promotion package and if we can substitute 20-percent of unprotected anal sex acts with condom protected sex, we estimate that between 20 and 30-percent of infections would be averted over a 10 year period.

I next want to talk about the critical role of coverage, and remember here that what we're talking about is the ability of men to present, to talk about the fact that they have male sex partners and to get the services they need. Here I'm presenting data from all four countries, but I'll focus on the United States as an example. Each of the blue dots represents one run of the model, the estimated percent of infections averted for the early implementation of ARV package with 20-percent coverage.

We estimate that that combination of coverage in a U.S. epidemic would result in a 5-percent reduction in infections. If we increase coverage to 40-percent, 60-percent or 80-percent the estimated percent of infections averted goes up in turn. The same pattern is true across all the countries we modeled.

Last, I want to illustrate as sort of a proof of concept the idea of combining complementary preventative interventions to give the highest effectiveness possible out of

some of our interventions. This is the oral prep package and here we've simulated the impact of this at three different levels of adherence.

One at about 50-percent of men having adequate adherence. One at about 75-percent and one at 90-percent, so this would simulate providing a concurrent adherence in support intervention. Here I'll highlight data from Kenya where at 50-percent adherence, which is about what was observed in Eprex, 19-percent of infections are estimated to be averted. That's 23-percent and 27-percent as we increase adherence.

Since we have these packages, what are the challenges? As it's already been discussed, prejudice threats and violence against MSM, or indeed those who are thought to be MSM, prevent men from seeking services, commodities and prevention services that they need.

The lack of training for healthcare workers interferes with the ability to provide the right clinical services and to provide culturally competent care. Criminalization of same sex behavior discourages men from talking about their risks with providers and has even been used by ethics bodies to shut down research that would document effective HIV prevention methods for MSM.

Finally, their technical challenges to testing these prevention packages. Using the HIV prevention technologies we

have today we could prevent one in four new infections among MSM in the next decade. The formula for this is existing technologies packaged in smart ways and brought to scale. Binging to scale means sufficient human and monetary resources, political will and safe places for prevention through addressing stigma, discrimination and criminalization.

Our review also revealed a lot of exciting new prevention technologies in a pipeline and we look forward to adding those into the mix in the future, and that's exciting. What's equally exciting and more urgent is the need that we take what we have today and make investments to bring these interventions to scale. It won't be easy to do this but when we do this the impact we have will be great.

I'd like to thank collaborators who helped with our literature review, Susan Buchbinder and the PUMA team as well as funders. Thank you. [applause]

**CHRIS BEYRER:** Thanks so much Patrick, I know some of those slides are going to be appearing in talks for a long time to come. Our next speaker is Professor Ken Maye, another one of the series guest editors with myself, Patrick and George. Ken was trained in internal medicine and infectious diseases and molecular epidemiology. He's the founding medical research director at Fenway Health, which is really a leading LGBT health center in this country and a visiting professor at

Harvard Medical School. He's going to talk to us about comprehensive care and health services for MSM, caring for the whole man. Ken.

**KENNETH MAYER:** Thank you Chris and thank you Richard for your inspiration and allowing us to put this session together. On behalf of my multitalented and multinational coauthors, I'm really excited to be sharing some of the data with you today.

The structure of this article, this was a literature review going over about the last 25 years, searching PubMed and Google Scholar. After we review the articles, we try to determine articles that might be able to be synthesized, put together a picture of what do MSM need? What do men who have sex with men, transgender, individuals, bisexual men and other MSM need for comprehensive clinical care? Our thesis is there are not vectors of diseases, they're whole people and prevention will only work if people are respected and get comprehensive care.

Although MSM have existing societies throughout history AIDS created awareness of health concerns. There was a nascent gay health movement in the '70s and prior to that but the AIDS epidemic catalyzed this creating a health emergency. The health emergency created infrastructures and organizations and the recognition that MSM had healthcare needs.

Increasing research has shown the role other kinds of health conditions and health disparities in potentiating the HIV epidemic. More recent work has really suggested that there are particular health disparities for MSM living in less resourced environments.

This cartoon says, no, we're not twins. MSM come in all shapes, sizes, and colors. The other cartoon is a depiction from my colleagues at the Humsafar Trust in Mumbai, the largest MSM NGO in India. Showing their cosmology in terms of how people may understand their identity and knowing that identity, attraction and behavior do not always co-locate.

What is important is to take a life course perspective in understanding the evolution of people's sexuality and behavior. A big part of this is that same sex behavior and gender nonconformity remains stigmatized in most societies throughout the world.

Therefore youth are getting societal messages that they're not accepted, whether it's marriage pressure or exclusion from military. This may result in loss of peers, loss of family supports, religious abandonment and verbal or physical abuse. This internalized stigma may lead to internalized homophobia, which results in depression and substance use. We have to face the reality that sexual expression is happening earlier so these internal tensions are

occurring at earlier ages for younger, more vulnerable individuals.

There is an increasing body of data that says that early self-acceptance can lead to early identity integration, disclosure and adaptation of safer sexual practices. These adverse experiences may impair identity formation and behavior. We particularly see this true in regard to youth that are at intersections who are racial ethnic minorities as well as sexual gender minorities. This fully may have resulted in longterm economic health consequences and economic consequences if youth withdraw from school.

In countries where homophobic laws exist this may also impede development. One key cornerstone is the importance of gender supportive discussions early in age. Ron Stall and others have used the term syndemics which is often applied a socioeconomic realities to understand the increased co-location of depression, substance use, sexual risk and HIV. A good part of this may relate to homophobic and domestic violence and the internalization that this may play in syndemics formation.

The important thing is to note that syndemics do exist but although MSM may be more likely to experience syndemics. The vast majority of MSM who experience some of these adverse life outcomes do not develop their lives in ways in which they are engaging in HIV risk taking behavior.

Ron and colleagues inverted some of their earlier work and basically showed that although 23-percent of individuals in their sample, who reported three or more syndemics, reported high-risk sexual behavior and 22-percent reported being HIV infected. That also means that 77-percent of individuals who experience these adverse experience did not engage in unprotected sex and were not HIV infected and this is important.

The real lesson for us is we have to think about what are these individuals teaching us? How have they been able to be resilient in the face of these substantial adversities?

When we think about sexual health we have to really pay attention to the fact that it is not just the absence of disease, it is safe and sexual pleasure. This is why we are engaging in sex throughout the planet every day.

We also need to, as healthcare clinicians, have to realize that there are other STDs and other infections that people may be at risk for and to informed so that we can counsel people about how to avoid other health outcomes. There is a panoply of different infections that I have listed on the slide. The ones that are bolded are extremely important because these are all vaccine preventable diseases. Hepatitis A, Hepatitis B, Human papilloma virus, we have safe and

effective vaccines. They really should be part of the standard package of services for MSM throughout the world.

The other point, in terms of sexual health, to keep in mind is and you'll hear more about this from Greg Millett, is that some MSM may not be individually risky but may be meeting partners in high prevalence pools. For an example, black men who have sex with men in the United States. The counseling also has to pay attention to the social environment, not just the individual actions.

In terms of these infectious diseases we have to pay attention to the fact that they don't always spread in the same manner at the same time. Syphilis has been highly associated with serial snorting and with substance use, particularly the use of stimulants in the developed world. There are new imperatives for diagnosing gonorrhea and chlamydia which are quite prevalent and that's the use of nucleic acid amplification testing which picks up a symptomatic disease.

The paradox here is that we also are seeing increasing resistance in gonorrhea and we do need to do cultures, at least in subsets of individuals, so we can pay attention to being sure that our guidelines are up to date as this microbe evolves.

We still have to pay attention to herpes simplex even though one study looking Acyclovir for chemoprophylaxis and to

prevent HIV acquisition was unsuccessful. We still need to think about herpes vaccines and other stronger drugs that might suppress herpes because it's quite ubiquitous.

Human papilloma virus is an extremely important area. There is a consensus about the need for routine and frequent screening for people who are living with HIV. The question about the frequency of screening for HIV unaffected MSM urgently needs attention so we can evidence based guidance in this regard.

In terms of mental health issues, because of some of the earlier factors I described, we know that there is high prevalence, 40-percent of MSM may be depressed in the course of their lifetime, which is twice the rate for heterosexual men in several societies. The correlates of depression are not having a partner, experiencing anti-gay threats or violence and nonidentification as gay.

Other mental health problems are also common, such as panic disorder, social phobia, and generalized anxiety. There are a number of different studies that say that culturally tailored treatment that acknowledges people's sexuality and provide support groups may be particularly helpful in enhancing identity, integration and allow people to improve.

In terms of substance use, many studies suggest that substance use is common among MSM both in developed and

developing world settings. The reasons for substituting include coping with homophobia, depression and anxiety. Among men who use substances polydrug use may be common. Some drugs that we have not paid enough attention to as a community of scholars and clinicians are cigarette smoking and alcohol. Cigarette smoking may be associated with a high level of morbidity in a large percentage of the population.

Alcohol use, heavy use may not be common but social use is common and use in conjunction with sex and that being associated with HIV risk is definitely increasingly common. The drugs may affect libido, they may also have acute biological effects and chronic biological effects as well. Once again, as in the case for a mental health treatment, culturally tailored programs that include groups and/or support MSM identity have been shown to be beneficial for both addressing cigarette and crystal methamphetamine use.

There are a number of other noncommunicable medical conditions we must consider as well. Body image and weight because of attempts to conform to societal ideals and kind of to interject what the ideal person may be. Some individuals may increase exercising to an unhealthy degree. Others may self-medicate depression by overeating.

Certainly there are the complications of chronic substance use such as cardiopulmonary and pulmonary

complications. Insufficient research has been done to understand aging issues that many MSM may face particularly if they're aging alone without the support of their biological families.

Structural questions, this cartoon at the bottom says, "Again lesbians are getting married, haven't they suffered enough?" We're living through a sea change in history in terms of the civil rights that are being afforded to LGBT populations in different societies. The question is does that track into decreasing HIV incidence. We don't know the answer to that yet. What we do have are some very interesting ecological studies that need to be followed up by much more detailed prospective work.

One study by Mark Hartz Hatzenbueller looked at programs in Oregon that had supportive environments for LGBT youth versus others and found a decreased rate of gay suicide in the programs that had supportive systems. Another study that Mark conducted at Fenway showed that there decreased medical and mental health costs after marriage equality. We're not seeing HIV and STD rates going down in the U.S. or Europe yet.

Now is the lag due to the high prevalence so that people may be less risky but they're having more contact with

HIV every time they engage in risk. Or could it be changes to social norms or therapeutic optimism. More data are needed.

In conclusion, I just want to make a plea that we need to think about culturally competent care. Culturally competent care really means training the workforce for medical and other clinical providers. One of the ironies is that healthcare providers may be uniquely positioned to assist MSM in their coming out process because of their social role.

We have to think about the whole person and that's not just HIV, not just STDs, not just substance use. There are issues about families, relationships, mental health, chronic diseases and commutable diseases. I'd like to thank you for your attention. I want to thank the wonderful community of scholars and clinicians that I work with at Fenway health. I want to call your attention to a resource, the National LGBT Health Education Center, led by Harvey Makadon. The web site is there on the button. Thank you. [Applause]

**CHRIS BEYRER:** Thanks so much Ken. Our next speaker is Dennis Altman. Dennis is Director of the Institute for Human Security at Latrobe University, in Melbourne, Australia. He's been a member of the governing council of the International AIDS Society since 2004. Previously president of AIDS Society of Asia in the Pacific.

He's the author of 12 books and is a distinguished political scientist. Somewhat of a different science of what often gets published in *The Lancet*. Nevertheless because of the political issues involved in this epidemic from its very beginning we really felt that we needed a voice like Dennis's and his colleagues.

**DENNIS ALTMAN:** Chris, I missed most of that introduction but judging by the smiles on you and Richard's face I take it was positive. I want to thank both of you and particularly thank Pam for helping a nonmedical traverse the problems of writing an article for *The Lancet*. One day I shall at an AIDS conference explain what I have in mind.

Some of what will be on the overheads is actually a summary of what's in the article. All of you have the article as part of your show bag for the conference. I don't want to spend a lot of time running through material that's already available. I do want to stress that we are talking about, when we talk about homophobia, something that exists in both an individual and a social level. Our concern was to think through both the reasons for the existence a very strong stigma and discrimination, which, as Richard pointed out, exists in many forms in almost all societies.

To distinguish between the sorts of examples that Ken's just used, which very much put the emphasis on the individual,

and the larger structural forms that are probably better described by terms such heteronormativity and the way in which heteronomic masculinity imposes certain rigidities on how men are allowed imagine and express their sexuality.

I also want to note that although haven't spoken much in this particular session or issue about transgendered people. Certainly the failure to conform to gender roles and gender norms often causes enormous problems and increases very considerably the oppression that many people experience.

Let me just point to the reality that when we are talking sexuality, when we are talking about sexual cultures and when we are talking about stigma and discrimination, we have to think of a variety of evidence.

As my slide says, we need to understand the ways in which people imagine, construct, control and understand their sexual worlds and the sexual worlds of others. One of my regrets about this conference is that we still haven't reached a point where we see our poets, our dramatists, our filmmakers as possessing as much expertise to stand on these stages as we do our medical peers. [applause]

I hope my Melbourne colleagues took due note of that applause. I also want to refer to the different levels of homophobia that exist because there's a variety of different forms ranging from the denial early in the epidemic with

standard to be told by officials from African countries, homosexuality does not exist in our countries.

Stef has very clearly pointed out how false those assumptions were. Even today and I'm sure there are people at this conference from national governments who will tell you they don't really any people like that. I can assure they are wrong and there are enough people at this conference who can tell them from their own experience that they are wrong.

The gamut of homophobia runs right through from denial and ignorance through to legal persecution, violence, rape and murder. As I think Richard already pointed out, in something like 80 countries of the world, sexual behavior between two men remains illegal. Let me immediately apologize this map is inaccurate. I'm not responsible for it, I downloaded it to quickly—Peru has decriminalized homosexuality 80 or 90 years ago. I'm not sure quite sure why on older map it still shows up in red.

The point that I want to use the map to draw your attention to there is two areas essentially of the world where homosexuality remains illegal. That is essentially those countries with strong Islamic traditions and those that are products of the British Empire. The second—[applause]—I'm showing great self-control in not seeking further connections.

I also wanted to draw your attention to last point on the slide. Because homosexuality is not criminalized does not mean that states do not persecute homosexuals. We are seeing in current world's classic example of this in countries like Russia. Where although the law maybe silent there is in fact a very considerable amount of official sanctioned homophobia. Where some cities, particularly Saint Petersburg, have adopted a whole set of very repressive measures. Legal change is enormously important but it is equally not sufficient.

What I think we really have to grapple with is why? Why so much hatred? Why so much fear? Why so much stigma? In our article, we seek to find explanations for this. It's a long and complex story; it's a story that's both universal and specific. There appears to be in almost all religious traditions deep fear and hostility to homosexuality. It is clearly related to traditional sense of gender behavior. It is clearly related to authoritarian regimes.

There are very few authoritarian governments that are sympathetic to sexual and gender diversity. Exploring that connection is one of the great challenges that we need together to embark upon. Because the rise of political homophobia from a number of nations in pretty well every region of the world is one of the great political challenges that we now face. I don't mean that because this slide is actually dealing with

matters that have already been covered by the previous speakers.

I just want to stress again the point that is being made over and over again. Large numbers of people who are vulnerable and at risk of infection are being denied basic information, basic services, and basic resources. Indeed in some parts of the world, men come to believe that homosexual behavior is safer than heterosexual because of the resistance to giving out appropriate information. That is crucial and that is something that we have to collectively address.

I also want to draw your attention to the fact that in my part of the world, in East Asia, in the rich belt of countries running from Japan through to Singapore, the majority of new cases are found among homosexual men. Yet the government's by and large denies. In many East Asian countries, they talk about youth as the category at risk.

That's absolute nonsense. For most young people in rich East Asia the chances of HIV infection are far less than the chances of being run over in a traffic jam. The unwillingness to talk about, to talk fully and openly and honestly about sex means that crucial messages are not being conveyed.

This is happening in a world in which attitudes towards homosexuality are increasingly polarized. In many countries

now, same sex marriage has become legal but equally in other countries there is increasing official persecution. There are reports and I'm careful not to name countries because the reports are perhaps not totally accurate, there are reports of people being executed for nothing else than having sex with another adult of the same gender.

The crucial political point to understand is that we in this room I'm sure all share a sense of anger and indignation that this can happen. We have to be strategic and careful in how we express that. When spokespeople from rich and powerful Western countries stand up in international foray and talk about the need to respect LGBT rights. They have to think very carefully about how those messages will be heard in the countries they are speaking about.

I happen to believe in a universal sense of human rights and human dignity that transcends specific notions of culture and religion. I'm also aware that there are many people who would mobilize opposition to us by saying; you are a rich white Westerner. We rich white Westerners have to be very careful how our messages are heard and the impact on the people who are much more vulnerable and have much less political space than we do.

Let me end with what is I think now the great challenge. This conference is telling us we have new and

exciting possibilities for prevention. Patrick spoke of some of those. Our challenge is to make those possibilities available universally. Our challenge is to not allow the specter of tradition, culture and religion to stand in the way of promoting the saving of human lives and the recognition of human dignity. I look forward to continuing this discussion in my home city of Melbourne in 2014. [applause]

**PATRICK SULLIVAN:** Thank you very much Dennis and apologies about the British Empire. One of the great successes of this series and it's really thanks to Chris and the gurus who led, is that this is a truly international team. Sixteen countries have scientists involved in producing these papers. It's a truly amazing network that's been created. It is my great pleasure now to introduce Gift Trapence who is Executive Director for the Center for Development of People, which is a wonderful title for any center in Malawi. He's going to talk about community participation. Gift, you're very welcome.

**GIFT TRAPENCE:** Thank you. My presentation is the voice of the people who are on the ground in preventing HIV programs. Those people who are willing to operate in the very hostile environment regardless of their arrest, regardless of the killings, but they are there to save their communities. [applause]

In this presentation I'll look at the histories that happened there since the past 30 years. We'll look at the HIV response amongst the gay men and other MSMs. As well the leadership that we gave to our community and other MSMs has given in the HIV/AIDS response.

If I take you back for the past 30 years. If we all reflect what has happened for the past 30 years in the struggle of gay men other MSMs you find that out of challenges happened first. Out of successes have been achieved. One of those great men who has a story to tell is, Jen Lee [misspelled?] from China. This person has this to reflect for the past 30 years in the HIV/AIDS response and has this to say, "I have witnessed so many challenges in the gay or MSM community in my country.

During the 1980s we had nowhere to go for gay knowledge or even gathering or spaces where people who gather. People who gather or meet in toilets. Also the way they are experiencing attacks from the police. People lived in fear. But in the 1990s we started to have HIV/AIDS in our community. Some of my closest friends died of HIV/AIDS.

And I know that most of us we have seen this experience for the past 30 years. Later on, Africa where discrimination, but as we are HIV programming and access to services for the

gay men and other MSMs is a challenge. And people are still dying right now each and every day because of HIV."

This paper that I'm talking about here, we look at eight countries, China, Ethiopia, Guiana, India, Mozambique, Nigeria, Ukraine and Vietnam. We made sure that we're able to present the HIV prevalency rate data. The [inaudible], the [inaudible] environments for LGBT groups. As we all deliver funding, that information we make sure that we are able to collect psychological information.

Also we had to do a peer review of publications that we had done from 1981 up to 2012. We looked at the community networks in reference to homosexuality. If we look at the history of the gay movement as well as the MSM, you find these movements grew out of activism in order to restore, in order to challenge operations that were in different countries.

Some rose, again it's the military regimes, but also some rose against the apathy like in South Africa in the like of Simon Goudy [misspelled?]. Also if we go further, you find that these movements grew out of the frustrations that have been there in the HIV activism, as well in the political arena.

These movements wanted to challenge the political administrations, as well they used confrontational and is with a visible activism. For example, the ACT Up, which organized

the connection between government and the ingrate of homophobia.

The results of this activism from 1980s where that some [inaudible] approval of projects for expanding clinical research were made. The lowering of the price of licensed HIV medicines and getting some registration to the HIV funding and services. This is in the case of U.S.A. in 1980s and '81.

When we look at the earliest HIV/AIDS response amongst the gay men but as we're rather in ourselves. You find that it also arose from the sense of personal danger, not government and ingrate. It also rose from that general HIV/AIDS activism.

One example of the achievements around 1983 is the draft the Geneva free sports. This opened up the space to challenge to label people with HIV/AIDS as victims. It puts recognition for the involvement of those who are affected. This case we have now what we call Jeepa [misspelled?] the involvement of people living with HIV.

This advocacy for the gay activism as well as other MSMs, evolved around research and the evolvement of grade pricing, vaccine research and sexual reproductive therapy. Also through these programs were also seen the community empowerment where gay men and other MSMs had opportunity to express their health needs and collectively organize, negotiate solutions for their needs. This approach has also seen some

results, like in terms of the individual label of knowledge, our awareness of risks, motivation to decrease risks as well as skills and efficacy for [inaudible].

One of those wonderful is the empowerment program, the education program in the U.S. The community engagement in HIV design as well as put into service as initially designed and HIV programming improved the services in terms of quality. We have seen the trained of research where the gay and MSM individuals have actively participated as researchers as well as research participants.

Since that end in ages a lot of trends have been achieved where MSMs to get data which can inform their programs. MSMs now continue to play critical roles in crucial status, [inaudible] HIV prevention, technologies that and are a sole benefit. In terms of advocacy, successes have been there. We've seen that at the international level where strides have been made in case of the Global Fund, the PEPFAR lines on MSM, the World Health Organization, The World Bank, also [inaudible] level. We have seen those successes.

Regardless, all these levels have been challenges faced. You find that most of the countries where we have the funding for the Global Fund there's still challenges in terms of MSM groups who have excess funding. The other challenge is on the backlash that has been there. We have seen gay men and

other MSM being murdered. In case of Moiche [misspelled?] in Cameroon, Steve Harvey Jamaica, Dave Ducato [misspelled?] in Uganda and Tepero Keto [misspelled?] in South Africa. People have been murdered, they've been arrested and we have so many cases that are in court.

I've been one of the victims last year, where I went into hiding for three weeks. The government wanted to pursue us and that reason I went into hiding. I remember Ian Swatz [misspelled] visited my hiding place including the U.S. ambassador. It is when I noted that working underground is really challenging.

These are three key messages that I want you to take home. HIV has affected us since the beginning of the pandemic. The response our communities have made major contributions to fight that help benefit all affected by HIV. In this stigmatized environments our community ropes are often the only ones willing to advocate for and provide HIV related services. Our communities have had great successes around the world but the price has been so high. Let us move forward this generation so that all people who are at least able to be included.

Let me end by saying, by remembering Robert Carol [misspelled?] who contributed greatly to this paper. Doctor Carol said that only with the blood collusions we will turn the

tide of HIV epidemic affected by gay men and other MSM. Let us now view these solutions and bend to his ways. May his soul rest in peace. Thank you very much. [applause]

**DR PATRICK SULLIVAN:** Thank you so much. You're now going to hear the results of some further quite astonishing research. It's my great pleasure to introduce Greg Millett from the office of National AIDS Policy here in the United States. Greg is one of the principal writers, as you know, of the president's national HIV/AIDS Strategy and he's going to speak to us this afternoon about MSM, HIV and health disparities. Greg, you're very welcome. [applause]

**GREGORIO MILLETT:** Hi, good afternoon. Before I begin I wanted to thank Richard Horton, Pam Doss [misspelled?] and Chris Beyrer for this unprecedented opportunity to publish in this series. It really has been an incredible privilege and a wonderful experience. I'm absolutely grateful.

I wanted to go ahead and pledge this presentation to one of my closest friends who was unfortunately stabbed to death 10 years ago in a fit of homophobic violence in North Carolina. He was a black gay man from Trinidad. I really just wanted to invoke his presence here today.

I wanted to talk about HIV related disparities among black and bisexual men in associations with some structural factors. There's been a lot of fantastic research that's been

coming out at this conference, looking at black gay men in the degree to which they are at higher risk for HIV infection here in the United States.

What my team and I were curious about is if you look at black gay men overall, are they also at elevated risk for HIV infection with other gay men across countries? Are they at higher risk for HIV compared with other black populations across countries? Also are they at greater risk for HIV infection compared to general populations overall across countries?

With that in mind, we pulled together two papers that when put together really provide a composite across each one of these issues. They're both metaanalyses. The first was a paper where we tried to explain HIV related racial disparities among U.S. men who have sex with men. We did some analyses among HIV positive men who have sex with men as well as young men who have sex with men.

We're also curious to see whether some of the disparities that we see in the U.S. are also manifest in studies in Canada, UK and other locations. In our sample, we included about 106,000 black men who have sex with men. Nearly 600,000 men who have sex with men of other races and ethnicities. There are 174 studies from the U.S., 13 studies from the UK and 7 studies from Canada.

For our metaanalysis number two, the purpose of the paper was to estimate HIV prevalence for black gay men versus general populations across the world. We looked at black MSM versus general populations as well as black MSM versus the black populations. We also assess HIV prevalence among black MSM by African and Caribbean countries that criminalize homosexual behavior versus those that do not. The sample for these analyses was about 130,000 black men who have sex with men.

Looking black men who have sex with men across the world, we found that black gay and bisexual men were 15 times more likely to be HIV positive compared with general populations. Compared with black populations overall, there about eight and a half times more likely to be HIV positive. Now there are differences when you did sub analyses with some of these studies in our meta-analysis.

We found that those studies that look at HIV status by testing, that there was a greater proportion of black MSM, greater odds ratios of black MSM who were infected compared with general populations overall, they're about 8.5 times more likely to be HIV positive.

Now there are differences when you did sub-analyses with some of these studies in our meta-analysis. We found that those studies that looked at HIV status by testing that there

was a greater proportion of black MSM, greater odds ratios of black MSM who are infected compared with populations, general black populations.

Also, when you took a look at it by income level, you found those high income countries had a greater prevalence of black MSM who are HIV-positive compared with general black populations and that's mostly due to the fact that the background prevalence of populations in high income countries is lower than the background prevalence that we find in lower and middle income countries.

Then also when you take a look by region, you find again manifests that black gay and bisexual are more likely to be HIV positive than compared with black general populations. What we found is that except for Southern Africa, black gay men were more likely to be HIV positive compared with general populations in East Africa, the United Kingdom, North Africa, West Africa, Canada, the Caribbean and the U.S. With the great disparities being right here where we are in the United States where black gay men were 22 times more likely to be HIV positive across studies compared with the general black population.

What's pretty interesting about these analyses as well is that there's also a breakdown between low and middle income countries and high income countries where we found comparable

HIV prevalences for black men who have sex with men. So for here, in East Africa as well as the United Kingdom, we found that the prevalence of HIV infection compared with general populations was somewhat similar. The same we found as well for black MSM in West Africa versus Canada and then last for black MSM in the Caribbean versus the U.S. where we found a lot of similarities in HIV prevalence compared with the general population.

When we only looked at those higher income countries with general populations, was a much lower HIV prevalence, but unfortunately the HIV prevalence rates just sky rocketed among black gay and bisexual men where in the U.S. Black gay and bisexual men were 72 times more likely to be HIV positive compared to general populations, 73 times more likely to be HIV positive to general populations in Canada and 111 times more likely to be HIV positive compared to the general population in the UK

We're also interested in looking at HIV risk behavior and HIV infection among black gay and bisexual men compared with other men who have sex with men. These are really based upon a study that I published several years ago where we found that there was not necessarily higher rates of risk behavior that was taking place among black gay and bisexual men across studies, but when you looked at HIV infection, you found that

black gay and bisexual men were more likely to be infected with HIV.

We basically updated that analysis and instead of just looking at unprotected anal intercourse, we looked at zero discordant sex. We looked at the number of male sex partners, receptive unprotected anal intercourse and the likelihood of being HIV positive. In this first plot, anything to the left is greater than likelihood or rather a less likelihood among black gay men compared to other MSM. Anything to the right of the plot means that black gay men were at higher risk compared to other MSM.

What you can see fairly clearly is that black gay men engaged in comparable patterns of discordant UAI across the U.S. They are significantly less likely to report as many partners as white gay men in other gay men. They engage in comparable ways of receptive unprotected anal intercourse compared with other gay men, but they are still 3 times more likely to be HIV positive, so these men were engaging in comparable if not less risk behavior, but across studies, we find that black gay men in the United States are 3 times more likely to be HIV positive.

The interesting thing in our analyses as well is that when you look at data from the UK, you find almost exactly the same pattern, that black gay and bisexual men engage in

comparable rates of discordant UAI compared with gay men of other races and ethnicities in the UK; that they report similar numbers in sex partners as well as similar numbers of receptive unprotected anal intercourse, but black gay men in the UK are nearly twice as likely to be HIV positive across studies compared with gay men of other races and ethnicities.

When we took a look at structural levels and social inequalities because we were curious to see the degree to which might be associated with HIV infection, we looked at black gay men in the U.S. compared with other men who have sex with men and perhaps not surprisingly to many people in this room, we found that they were 3.5 times more likely to have less than a high school education in the United States compared with other gay men; that they were 2 times more likely to have a low income that's less than $20,000 per year; that they were twice as likely to ever be incarcerated; they were 1.5 times more likely to be unemployed and then overall, they were twice as likely to experience any of these structural level barriers.

The interesting thing though is that we were also curious to see the degree to which black gay men engaged in any type of resilient behaviors. This is using condoms, disclosing their HIV status to others, not using drugs and no drug use during sex, etcetera.

What we found is that black gay men were nearly 2 times more likely, about 40-percent actually were more likely to engage in any type of resilient behavior even though they experienced any one of these structural barriers. Given the fact that these structural barriers were taking place among black gay men, it was really surprising to see that there was still a higher level of resilience compared to men of other races and ethnicities.

Another thing that we're interested in as well was to take a look at all of those factors that we know that are associated with HIV infection in our meta-analysis and to rank them; to rank them compared with other gay and bisexual men and what we found was something that was somewhat striking.

If you take a look at the bottom of the first plot, you find that a lot of the traditional factors that we think are associated with HIV infection where black gay men here were just as likely to engage in any type of sexual intercourse where compared with other races and ethnicities.

They had fewer sex partners. They were less likely to engage in drug use before or during sex and far less likely, nearly 70-percent less likely or 60-percent less likely, to use amphetamines or nasal nitrates.

This is really striking because we know that these are drivers for the epidemic and primarily among white gay men in

the United States, but not necessarily for black gay men as you can see here. When you take a look at the top of this graph however, you see where some of these greatest disparities are compared with black gay men versus white gay men and these are disparities in things that we know are associated with HIV infection.

Primarily black gay men are more likely to have black partners, compared with gay men in other ethnicities who have black partners, where about is 11 times more likely to have black partners compared to other men of races and ethnicities, so partner characteristics is a big issue.

Another issue is structural inequalities as I've mentioned in a previous slide, high unemployment, higher rates lower education compared with gay men of other races and ethnicities. Not surprisingly what you find in this slide as well is that some of the great disparities are among HIV positive black gay men compared with HIV men who have slept with men of other races and ethnicities. Those of us who are living with HIV are less likely to have health insurance, were less likely to adhere to our antiretroviral therapy and were also more likely not to be virally suppressed.

So there are all of these issues that unfortunately come together in a perfect storm that place black gay men at a

higher risk of HIV infection that is greater in terms of what we see in terms of risk behavior.

When you take a look at these disparities by the treatment cascade and there's an awful lot in looking at the treatment cascade recently, you find unfortunately that these disparities persist and every step along the treatment cascade across all of the studies that have been done in the United States. Black gay men are 6.5 times more likely to have an undiagnosed HIV infection which we know is associated with greater transmission of HIV. As I mentioned before, black gay men were 3 times as more likely across studies to be HIV positive compared with men of other races and ethnicities.

black gay men were nearly 50-percent less likely to utilize antiretroviral therapy compared with men of other race and ethnicities; about 60-percent less likely to have a greater than 200 CD4 compared with other men of races and ethnicities. Again, about 50-0percent less likely to adhere to antiretroviral therapy if they had access to anti-retroviral therapy. Overall, were about 50-percent less likely to be virally suppressed compared with gay men of other races and ethnicities.

When you think about some of the structural factors that might also be associated with this among HIV positive black gay men, you found that HIV positive black gay men were

about 50-percent less likely to have access to health insurance. They were 3.5 times more likely to have less than a $20,000 income. They also were far less likely to have access to healthcare visits or visit healthcare providers.

Again, these structural issues are even salient when you take a look at the treatment cascade and having a lot of the technologies that we have available today from PrEP or even just having access to antiretroviral therapies and applied by 052 really might not be available to some of the communities at highest risk here in the United States.

We were also interested in looking at criminalization of homosexuality and HIV prevalence by region. What we found is that for those regions, African and Caribbean countries that criminalize homosexuality, there's a nearly two-fold increase in HIV prevalence for black gay and bisexual men compared with general populations. However, this two fold increase was only associated significantly for the Caribbean countries where it was statistically significant.

There were other noteworthy findings that we found. In our sample, black gay men were not as likely to engage in discordant sex. There were no differences perceived in susceptibility or treatment options for black gay men compared with other gay men.

In light of network variable that came up with people's discussions to day where people were wondering what's taking place with black gay men that perhaps there are greater rates of concurrency or that black gay men were more likely to have partners in the same race compared to other men having partners in the same race.

Those were all statistically non-significant and didn't contribute, however we found a greater risk of seroconverge for black gay men who engaged in serosorting or strategic positioning across studies compared with other gay men who engaged in the same types of risk behaviors. As I mentioned beforehand, black men were likely to engage in drug use or even sex with drug use.

Because of rates have been skyrocketing among young black gay men in the United States, we were also interested in doing sub-analyses with that population and these are just some of the findings that have been found. We found that young black gay men who are less likely to engage in substance use and they were less likely to engage in any drug use during sex compared with gay men of other races and ethnicities.

Yet despite engaging with less substance use or any type of sexual risk compared with other men of races and ethnicities, they were still more likely across studies, five times more likely to be HIV positive, 7 times more likely to

have an STI, and 45-percent greater likelihood of having undiagnosed HIV infection.

Across the studies what we found that's associated perhaps with some of the great race with HIV infection with young black gay men was that they were 65-percent more likely to debut at a younger age, had an 82-percent greater likelihood of experiencing childhood sexual abuse, and there were also 52-percent greater likelihood of having an older sex partner.

In summary, black gay men were 8.5 times more likely to be HIV positive compared to black populations and 15 times more likely to be HIV positive compared to general populations worldwide. Risk behavior does not explain HIV disparities, in the US, in the UK among black gay men and antiretroviral access for black MSM is evident in both countries.

Disparities are also greatest for structural, clinical and network variables associated with HIV infection and not behavioral risk and future interventions must focus there. Black MSM were also 40-percent more likely to engage in any protective behavior despite greater exposure to any structural barrier.

We also found that criminalization of homosexuality with the two fold increase in HIV prevalence. For black and MSM across Africa and Caribbean countries although it was only statistically significant for Caribbean countries, however both

of our reviews established that there are similar patterns and greater risk for HIV infection for black gay men across countries and that addressing structural barriers is essential to eliminating disparities and achieving health disparities for black MSM at higher risk for HIV infection worldwide and should be targeted for HIV prevention efforts and care.

I wanted to acknowledge my colleagues who were a part of both papers. It was a Herculean task to pull both of these papers together and it really was a pleasure to be able to work with my colleagues both here in the USA, in Canada, as well as in the UK. Thank you for your attention. [Applause].

**RICHARD HORTON:** Okay, thanks, Greg, now we're running just a few minutes later than we had planned, but don't go! Because this is where we now bring it all together. We've had very generous funders for this two year project, including the Bill and Melinda Gates Foundation, but I would particularly like to give my thanks to AMFAR for its support during the course of the preparation of this series and their continuing support for the regional launches that will follow this symposium.

Now it's my huge pleasure to invite Chris Collins who's vice president and director of public policy for AMFAR to come and tell us about the call to action! [Applause].

**CHRIS COLLINS:** Good afternoon. First I want to acknowledge my other authors on this paper, particularly Chris Beyrer, who was the lead in preparation of this paper and the lead in the whole issue. Thank you, Chris. Also, in today's presentation I want to remember my friend Gurev [misspelled? ] who was murdered last year in a gay hate crime in Washington, DC.

From the epidemic's beginning, gay men and lesbians and their non-gay allies have been at the forefront of AIDS advocacy and service delivery, fighting for services and legal changes and research. Gay community engagement has a history of advancing response to AIDS and laying the groundwork for other countries at heightened risk in this epidemic.

Here you see the great late gay and HIV activist, David Kato from Uganda, an Act Up poster from the 1980s and an early Act Up march calling for healthcare for all.

Today we need to acknowledge that we have failed in too many places to provide even the most basic services to gay men and much of the world, they remain hidden, stigmatized, susceptible to blackmail if they disclose their sexual lives. LGBT individuals continue to be criminalized for their sexual orientation in more than 80 countries.

HIV epidemics in 2012 are severe an expanding in MSM globally in both low income countries and high income

countries, yet we remain underrepresented in decision making about programs to address our own health.

So what do we do about it? First, count us. We have to end the invisibility of gay people and HIV epidemiology. We have to include and support gay people in helping to provide HIV services. We have to involve gay men in decision-making about health programs that affect them. Count us, but don't wait for perfect information about the impact of HIV on gay men because we were in every country and community and we know HIV related services for MSM must be scaled up with urgency.

This map shows countries where HIV prevalence among MSM is reported. Those are the blue countries. The other countries were invisible. Now I'm not so worried about Greenland here, but data are most sparse for the Middle East and Africa where criminal sanction against same sex behavior can make epidemiological assessment very challenging. What we do know is that whoever surveillance is undertaken, new or newly identified outbreaks of HIV among MSM are being detected.

So gay men need significantly expanded access to a full package of HIV related services and that includes testing and treatment, condoms and lubricants and mental health and substance abuse services. But where services are offered, the research suggests that these services are often focused on intervention such as individual level behavior change which are

critical but by themselves insufficient to end the epidemic among gay men.

So we need to scale up comprehensive packages of services and that include behavioral interventions along with testing, condoms and treatment. We need integrated quality clinical care for MSM. Health providers must be trained to provide supportive nonjudgmental care. Factors that may potent HIV risk such as substance use and depression require the skills of informed healthcare providers.

Gay men should be treated as whole people, not just vectors of disease. Comprehensive care of MSM requires well-trained physicians, knowledge that MSM are whole people with a range of healthcare needs and understanding that provider engagement can enable youth and older MSM can develop healthier lifestyles. For this paper, David Dowdy at Johns Hopkins in this paper modeled costs and scaling up a variety of HIV prevention services for MMS. The bar show the proportion of total estimated costs and cumulative global HIV infections averted in gay people over ten years.

One major takeaway is the huge impact that great prevention and investments in lower income settings can have, where unmet need is highest and resources are currently incredible limited usually. The analysis also points to the imperative to lower drug prices in richer countries to enable

wider use of strategies like pre-exposure prophylaxis in those countries.

As for the dynamics of HIV among gay men, suggest that antiretroviral based approaches that reduce the probability of per act transmission, are likely to be needed along with behavior change and condom to drive down infection rates in our communities.

Let's not forget the basics. An investment of just $134 million in the coming year could provide enough condoms and lubricant to set a course towards earning a quarter of new global HIV infections and MSM over the next decade. This estimate includes cost of condoms and lube and a conservative effort of cost of condom distribution.

Cost estimate assumes the program would build on existing distribution channels including through community based organizations, but this strategy was projected to avert 120,000 infections in just the first year and of course that amount of money represents just a tiny fraction of the funds that are spent on AIDS globally every year.

In December of last year, US Secretary of State Hilary Clinton made this statement to the world and he is among world leaders who acknowledge the crucial connection between advancing human rights and achieving better health. "The best biomedical behavior change interventions cannot succeed without

spaces in which men can safely seek services and communicate openly about their sexual lives."

Programs to address homophobia in schools like those in Brazil will be an essential part of doing better against HIV among gay men. This paper asserts that arguments about culture, tradition or religion cannot be used to override the basic human right of all human beings to enjoy bodily security and the right to sexual health.

The clearest articulation of the universality of human rights for all people is arguably the Yogyakarta Principles of 2006. Four of the 29 principles are particularly relevant to gay men and HIV. They are the right to universal enjoyment of human rights, the right to the highest attainable standard of health, the right to protection from medical abuses and the right to found a family.

In 2011, the Global Commission on HIV and the Law examine the impact of punitive laws against gay men around the world among others and they concluded, laws criminalizing consensual same sex relations undermine effective HIV programming for gay men.

In many countries discriminatory and brutal policing is tacitly authorized by punitive laws and social attitudes and that decriminalization while essential, has to be accompanied by other measures, including preventing MSM, enforcement of

anti-discrimination laws and removal of legal barriers to HIV and health services and to forming community organizations.

LGBT communities are diverse across the world, across cultures and within countries and the HIV epidemic is diverse within our communities. Poverty, immigration status, access to health services and other factors affect HIV disparities and subgroups of gay men.

As we've heard in many settings, particularly subgroups of MSM remain at disproportionate risk for HIV, for example black gay men in the United States and First Nation MSM in Canada. Attending to those disparities is an urgent equity issue in our communities.

Research is going to be central to forging a better response against HIV among gay men. This paper lays out a detailed research agenda and our research in question include in epidemiology, how prevalent is HIV among MSM? We still have limited information. In economics, the cost effectiveness of programming. In basic sciences, what formations of rectal microbisides have most anti-HIV activity? I also right now want to thank groups like the International Rectal Microbisides Advocates or IRMA which is pushing for research to benefit gay men around the world.

We lay out a strategy to greatly improve the response to lay out HIV around the world globally. For this, we looked

at inputs like epidemiology, social settings and clinical factors. We suggest a four part strategy.

One, overcome barriers to prevention treatment and care through decriminalization and targeted programs to reduce homophobia. Two, expand access to evidence based services bringing to scale with prevention and treatment programs with evidence of impact.

Three, develop and implement a coordinated donor and recipient plan to expand services strategically to maximize impact. Four, set targets, measure progress and hold stakeholders accountable for making progress. These actions, we believe, can lead to outcomes that improve decreased stigma and mortality among gay men globally.

Let me end with the words from this paper graciously provided by Archbishop Desmond Tutu of South Africa. “For the LGBT youth out there who are struggling, who are made to feel inferior, let me say this, God loves you as you are. He wants you to live and to thrive, please take care of yourself, protect yourself against HIV and protect your partner’s honor and cherish them. Never let anyone ever make you feel inferior for who you really are. When you live the life you are meant to live in freedom and dignity, you put a smile on God’s face.”

This is a time of great hope. This is a transformational moment. Because of the new science and

because of the attention of the needs and rights of LGBT people, there can be no AIDS free generation until there is one for gay men and LGBT people, but working together and demanding equality in rights and health, we can achieve an AIDS free generation for gay men and in the process advance our rights and the rights and health of others. Thank you. [Applause].

**RICHARD HORTON:** Now let me hand back to our leader, Chris, who will say a few final words.

**CHRIS BEYRER:** Well, first of all, I just want again to thank all of the extraordinary researchers, community members and writers for this session. When you think about the future and what a still long road we have to hoe for providing services and getting control of this epidemic, I get tremendous optimism from knowing that I have allies and colleagues in the fight as good as these people honestly and that we're delighted to have included some of the next generation because some of us are graying in the struggle against HIV and it is so exciting to have people like Stef Baral and Patrick Sullivan, Greg Millett, really are going to carry the torch forward in this incredibly important work that we're all engaged with.

Let me say that I hope this series is also for all of you something of an invitation and something of a challenge. Please, I know it's a lot of detail, but go through it, go through the science, go through the community elements, think

about it, think about the implications it might have for your own work in this area and whatever, part of HIV you're in, I think it's critically important that wider world of people involved in HIV understand that this part of the epidemic cannot any longer be ignored, can no longer be marginalized. We really have the evidence now to say this is an essential part of HIV everywhere we look.

Finally, let me know that for me now in hearing the papers and seeing the series coming together alive for you, this is the first time the papers have been presented in their entirety, I saw some really extraordinary synergies. The themes that are coming through here so fundamentally are that first of all, we cannot get there without real structural change.

Greg Millett's detail about each step of the way where greater risks in the cascade are seen, that is absolutely a map for what we need to do in the next phase of this response. We have to address each one of those steps with interventions that make sense for men that are engaged and led by the community that protects human rights and that are grounded in the really biological insights of this work.

When you put together the biological risks, the structural realties, the stigma and discrimination, it becomes clearer and clearer why these epidemics are on a different

trajectory and I hope it's' clearer particularly with the plan that Chris Collins laid out at the end in the Call to Action that there really are ways forward to start addressing this and what I would say as a final word for this Call to Action is we need allies, we need partners, we need everybody to be reinvigorated.

I'm so thrilled that all of you are here and I just want to say, let's keep going. Thank you so much for your attention. [Applause].

[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.