Starting HAART: When to Take the First Step?
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FIONA: We're here to discuss a crucial question in the fight against HIV/AIDS, when to start antiretroviral therapy in people with HIV. It's not a new question. In the past 10 years in the research rich world, in the resource rich world, a 350 CD4 cells threshold for treatment has been used as a reasonable compromise between the risk of long-term toxicity or developing resistance to antiretroviral drugs and the risk of progression to AIDS and death.

WHO have recently raise the threshold for starting treatment in resource poor countries from a 200 cut off to a 350 cutoff, so at least on the face of it there appears to be a global minimum benchmark for starting treatment, but some believe that treatment should start even earlier, perhaps, as soon as HIV is diagnosed. So what should clinicians do whether they're in the resource rich world or the resource poor?

To help us understand the best evidence and best current practice, we have here two inquisitors and four witnesses. Our two inquisitors are Anton Pozniak, HIV physicians and Director of HIV Services at Chelsea's and West Minister Hospital in London and Nathan Geffen from Treatment Action Campaign in the USA. Our four witnesses are Steven Deeks, Professor of Medicine at UCSF in the states, Dr. Peter Mugyenyi, Director of the Joint Clinical Research Center in Uganda, Mark Harrington, Executive Director of Treatment Action

group in the USA and Ambassador Eric Goosby, the United States Global AIDS Coordinator.

First of all, I'm going to ask Anton and Nathan to do some scene setting. We're then going to ask each of the witnesses up to answer some questions and we'll then have a general discussion. I should also say that if you're on Twitter, you can Twitter me, I've got my blackberry here, at FGODLEE and ask questions. I don't know if that will work, but we'll see if it does.

Okay. So Anton, please set the scene.

ANTON POZNIAK: One of the reasons to do this session was that there are many issues around starting early not just for clinicians and their patients, but also around advocacy communities as well as how this might be resourced and funded and so as Fiona said we're trying to understand some of the bigger issues and not just the one of a patient has a certain CD4 count, therefore should or shouldn't be giving medicine and so that's some of the things we're going to try and explore today.

NATHAN GEFFEN: Yeah, I mean, this is simply one of the most important questions in HIV research at the moment and one that is not short of controversy. Many of you would've followed a statement that was released earlier this year by activists around the world questioning the new U.S. guidelines which allow for treatment at a much earlier stage than

previously and I hope that in the discussion today we'll get to the bottom of some of the issues that have arisen from that.

FIONA: Thank you very much. Can I then call Steven Deeks as our first witness? Steven, thank you very much for joining us. You're a professor of medicine at UCSF?

STEVEN DEEKS: I am.

FIONA: Anton, over to you.

ANTON POZNIAK: Steven, just go through some of the processes that you use when somebody comes into your clinic who's not on any antiretroviral therapy. What makes you think that you'd want to start them on treatment? What factors do you take into account?

STEVEN DEEKS: Well first of all, if someone comes in and their CD4 count's less than 350. My first sort of business is to get them ready to start therapy as soon as possible and I don't think anyone really has any– I think, basically, the entire world now agrees with that. There was a nice paper in the New England Journal of Medicine by the group in Haiti more or less confirming that once your CD4 goes below 350, if you have access to drugs and you're willing to take the drugs, you should start therapy.

To be honest, in San Francisco and I think a lot of clinics in the states, that's actually pretty typical. People show up rather late. But if someone did show up into my clinic with early stage disease, let's say above 350, who's never been

on therapy, my process, the way I think about this, the way I talk about this is I say first of all there's no definitive date on what to do.

There's lots of data that can inform what to do, but none of it's definitive and that at the end of the day you, as the patient, need to decide which of the two options you want to pursue. Both are associated with potential harm.

Option one is due nothing, but that is an active decision in which you're going to allow a virus, which is known to be pathogenic to cause some irreversible damage, to replicate at will and that could, perhaps, affect your long-term outcome and your quality of life. That's option one. Option two is to go on therapy immediately and that also is associated with harm. Each of these drugs has toxicity and so the question is how do you manage it, how do you balance it.

I think that I can describe my patients what the perceived toxicity will be from therapy and I tell my patients if there's any problems with the drugs we can switch them around and that I think most of the toxicity with the current generation of drugs can be managed. On the other hand, I think that the harm of ongoing virus replication in terms of the irreversible damage it does to the immune system, the inflammation that it generates, the impact of that inflammation on cardiovascular, neurologic, bone and so forth is actually in my mind far greater than any potential harm from the drugs.

I make it very clear that that is an opinion. It's a data informed opinion, but that when I collective look at everything that I know about what's happening now it's essentially in my mind everybody who's HIV zero positive more or less would benefit from going on therapy.

ANTON POZNIAK: So Steve, given this we're going to give you a magic bullet the antiviral therapy and I know you understand the consequence of that, do you think we've really got enough data in the long-term to say to some patient, look, in 30 years time, you're still going to be on these drugs or maybe similar drugs and the risk benefit of starting when you're 700, 800 CD4 cells now, it's worth it rather than being drug free for two or three years.

STEVEN DEEKS: Well, right, so there's another point, right? So I think patients hopefully will live 30, 40 years, normal life span and so if they come in early, perhaps, we can give them instead of 40 years of antiretroviral therapy, 38, 37 years of antiretroviral therapy. At the end of the day, they're going to spend most of their life on therapy and the issue is do we actually have less long-term toxicity by preserving those three years, three or four years that it would take for someone from 700 T-cells to get to 350. It's possible that that added toxicity will have a long-term effect, but I doubt it, when conceding the context of four decades of therapy.

On the other hand, a pathogenic virus causing irreversible damage to the immune system which could play out over decades is something I think is under appreciated by clinicians and patients and I do think that actually is far more harmful than the toxicity of the drugs. But it is an opinion, a data driven opinion.

ANTON POZNIAK: When you're going to put these patients on drugs and tell them they're going to be on drugs for 30, 40 years, do they not ever say to you, look, I want to wait and what do your colleagues think of you doing this?

STEVEN DEEKS: It's a great question. Actually, up until recently most of the patients for whom I've engaged in this discussion have said, huh, alright I understand what you're saying. Let's talk about it next time, right. Let's just put it off, put it off. In San Francisco I think the community is changing. They're becoming more aware of the fact that current generation of drugs are safe and that it's not all about AIDS. It's about this vague concept of aging and so forth. I think actually for the most part patients now are going on therapy earlier.

Your second question Anton is?

ANTON POZNIAK: About what your colleagues think of your practice. Is there a diverse in opinion even within your own units?

STEVEN DEEKS: Sure. In San Francisco, in general, we actually have a city police that was put together Diane Hadler and our program in collaboration with some community physicians and the department of public health basically now have guidelines, recommendations that we think everybody might benefit from therapy. In general, there is support. Although, I'll be the first to admit that in San Francisco and elsewhere, I don't think I know of anyone who is more aggressive than myself.

ANTON POZNIAK: But don't you think it's more reasonable to have a targeted approach, Steve, to these people with CD4s greater than 350. For example, the DHHS guidance and European guidance and lots of guidance should say consider treating these people if they have cardiovascular disease, liver disease, renal disease, but you're just saying, well, there's a guy who's completely well, 1,000 CD4, comes to your clinic, you'd say straight on the pills?

STEVEN DEEKS: I give them my advice. I try to tell the story where the advice is coming from. I do make it clear though– two things I make clear that this is again an opinion, a definitive data or pending. It might take a few years. The other thing I saw that it really– the key thing is that you have to be informed and motivated and that there's no rush, right? In fact, I even typically do not start therapy the

first time. I like to take a few visits and if a patient wants to take a year or two to look into it.

NATHAN GEFFEN: How do we move past opinion? What research is ongoing at the moment to change opinion into a well informed recommendation?

STEVEN DEEKS: Well, I think that there's a fair amount of ongoing research that is linking the consequences of ongoing virus replication on the immune system, on inflammation and trying to link these two things to end organ disease. I think that research is robust. Each study has problems, but it's growing. I think that will actually continue to generate more support from my approach. At the same time, we are hopefully going to learn more about the short-term, long-term toxicity, which could swing the drugs in the opposite direction.

Of course, everybody's waiting for a study for which [inaudible] despite my rather strong opinions because I know that my opinions are not fact and that study is the star study and the star study has actually been enrolling quite nicely. It is enrolling people with CD4 counts above 500 to immediate therapy versus deferred therapy when a CD4 count goes below 350. I'm in support of that study for two reasons. I think that guidelines and so forth will never really change unless we have definitive proof. Two, I think the group that did SMAR [misspelled?] was able to use their study, which essentially became a well characterized cohort to inform a whole series of

secondary questions. It's my hope that the START study will also from the basis for that kind of really important research.

ANTON POZNIAK: Steve, can you just outline the START study for us all?

STEVEN DEEKS: CD4 count above 500, I'm not entirely sure whether people have to by asymptomatic, but I don't they can have any AIDS defining complications, any viral load, treatment-naive and they start therapy immediately versus, basically, remaining care and start therapy when the CD4 count goes below 350. I think that's the design.

NATHAN GEFFEN: There's been a long history going back to BW002 trial which found that AZT was effective against placebo of physicians changing their mind about when to start and when not to start. Do you not think that we should hold off changing guidelines and making a definitive decision until we have a clinical trial that gives us a definitive result?

STEVEN DEEKS: Yeah, the guidelines have shifted back and forth and back and forth and it could again. The problem is if the default approach is that you have to have evidence that a treatment is beneficial before you recommend it then you are essentially making an active decision that you will allow a person to harbor a pathogenic treatable infection. So in the lack of any clear data, an opinion has to be made. You have to inform your patient. You can't say we don't have any data that treatment doesn't benefit you early, therefore we're not going

to give it to you because that's a very active decision to give that person years of ongoing virus replication.

NATHAN GEFFEN: Just to follow-up on that you probably represent the school of thought with the strongest view of starting early. Despite that, would you recommend to your patients and would you recommend to other clinicians to enroll in the START trial?

STEVEN DEEKS: Yes. Again, I think that I try sometimes it's hard not to mix-up my opinion with the strength of the data and I actually have gotten a fair amount of pushback from other colleagues who I respect who actually have the opposite opinion and so I think broadly speaking there is a enough equipoise that I would advise my patient about the study, give them the pros and cons in the context of what I said and certainly support their decision to participate in the START study.

ANTON POZNIAK: Steve, do you by the story that by treating HIV early that you will have a public health benefit in the long-term?

STEVEN DEEKS: Sure. I mean, it just makes sense, right? [Interposing]

ANTON POZNIAK: What your opinion was about the whole thing.

STEVEN DEEKS: But I've actually never– I talk to my colleagues from around the world. I think that we, American

physicians, we're sort of trained to get the patient into the clinic room, close the door and take care of the patient, right? So I don't typically think too much about all this public health stuff.

I know that clinicians elsewhere, it becomes first and foremost, so 99-percent of what I'm talking about is being driven by my desire to take care of my patient in the best way possible. As a consequence, if there's less transmission than great, but that's not what's driving at least my personal opinion.

ANTON POZNIAK: So it's more individual rights versus a utilitarian approach that maybe is more prominent in other parts of the state or Europe and especially other parts of the world where they're considering this.

STEVEN DEEKS: The other antidote that I tell my patients and it's a very important one is that in the 90s I would tell my patients– It was again in the early 90's, mid 90's, I was telling patients we don't really know how to treat you, but it's probably likely drugs are better than no drugs and you should take this drug called d4T because it's essentially benign, right? That's what a lot of– if you get a little neuropathy, we'll dose reduce you.

It's not like AZT. It's a well tolerated drug. We don't think it has any long-term side effects, which is what I say now about Rotaga [misspelled?] and other drugs. So I am

absolutely aware that we made a big mistake in the 90s giving out too much d14 and so forth and we may be making the same mistake now, but again the collected data in my mind suggests the virus is worse than the drugs.

FIONA: Steve, can I just ask a question? We're about to hear from Peter Mugyenyi who's facing similar patients, but in Uganda. In his shoes, what would you be doing?

STEVEN DEEKS: Again, I don't take care of thousands and thousands of patients, so I have no idea what I would do in those shoes. At the end of the day, if you can't afford to provide drugs for everyone, and clear that is true, it's increasingly true in the State of California and San Francisco then some decisions by those who lead on how to triage are needed. But I, fortunately, am not in that position to have to make those decisions and so I will just advocate for therapy for my patients.

FIONA: Steven Deeks, thank you very much indeed. [Applause]. We're not going to hear from Peter Mugyenyi, Director of the Joint Clinical Research Center in Uganda. Welcome Peter. Nathan, over to you.

NATHAN GEFFEN: Alright. Thanks, Peter. Is this just the theory for discussion for us living in sub-Saharan in African? I mean, most of the patients are coming in with double digits of CD4 counts or not much more above 100, so when we're starting talk about treating people with much earlier CD4

counts, are we just going into the realms of theory from an African point of view?

PETER MUGYENYI: I wouldn't say that it is theory. There is no separate science for the rich and separate science for the poor. [Applause]. Those are such results absolutely apply to both. Simply because there is a situation of poverty, does not mean you deliberately prescribe inferior recommendations.

Having said that, we have a situation where the reality is that we are not able to access the kind of privileges for our patients that Steven was describing. He said his patients come late. Our patients come very, very late. That's the situation. They come very late. They don't come very late because there is something wrong with them. It is because of the conditions under which they come to access treatment, so that is the background to the situation that we have in our setup.

NATHAN GEFFEN: One of the big differences between U.S. in America and the situation in Uganda and South Africa at the moment is that in South Africa and Uganda and most of sub-Saharan in Africa, we've got millions of patients on Stavudine [misspelled?]. Do you think that starting earlier is compatible with keeping Stavudine as the backbone for first line therapy or do we need to move away from it?

PETER MUGYENYI: Well, I think this is now a question– you are moving into an area of human rights. Here is a drug d14, which Steven apologized he ever gave to his patients and this at this time remains the drug that is used by the majority of the people in resource constrained countries. I think this situation is totally unacceptable that people continue to use a drug that we know is toxic. A drug that we know should not be used. [Applause]. It's totally unacceptable.

What I would say and what I practice is that we are not going for the very best, but at least we can go to the [inaudible] best regime instead of D14. We don't have [inaudible] as well. Simply because we don't have it doesn't mean we should make recommendations that exclude it. We should make the right recommendations and we should as a world move towards achieving the right diagnoses, right treatment for our people in resource constrained countries.

NATHAN GEFFEN: Health minister Mazoletti earlier on spoke about the change in South African guidelines that for people with TB and for people with pregnant women, we're now starting to treat at a CD4 count of 350, but for all others it remains 200 and throughout most of the continent 200 remains the threshold and clearly that's a decision most countries have taken based on cost. What do we do to remove that barrier of cost so that we can start people at earlier CD4 counts?

PETER MUGYENYI: Well, first of all, in Africa, we must acknowledge what happened. Historically, if you look back 2003, 2004, there was absolutely nothing, but then PEPFAR came about and Global Fund. PEPFAR, a program which I have been involved with showed how we can succeed in Africa by treating a big number of people. Their graphs have been all grayed up, so this is the kind of spirit that we need now to reactivate. Surely, there is not any other way except to go back to the commitment that was made in 1996 by the G-8 of universal access.

Now, to go towards that line, we are now calling upon the donors to know although we have the world recession AIDS has not gone in recession. On the contrary, it has continued to increase, so we need a new commitment. This commitment is fairly straight forward. We call upon the rich countries to increase funding. We call upon our own countries to increase the funding and this needs to be a global approach so that in my clinic where I sit and receive patients just as Steven does I do not have to make those kind of choices.

I get patients, critically ill, those are the majority. I don't even need to do CD4. You see he's very sick, CD4 most of them– in one cohort we had CD4 average of 62, very sick people. We need a commitment internationally to keep up the momentum that was started in 2003, 2004 of global fund and PEPFAR to increase funding and we call upon our countries.

Although, they are poor, they should increase funding. We should move towards the target of 15-percent income going to HIV/AIDS.

ANTON POZNIAK: So, Peter, while you're waiting for this to happen and there's some new rules and regulations and guidelines all that come out about starting earlier, so I see a moral dilemma which thankfully, although I've worked in Africa before, I don't have to make these decisions nor does Steve, whereby you say you've got 500 patients half of which are below 200 and half of which are under 350 but above 200 and you've only got enough antiretroviral for half of that 500, then it's obvious to me you'd give it to the people with less than 200.

PETER MUGYENYI: Yes.

ANTON POZNIAK: And yet you're being told, perhaps, by funders, government guidelines, you should be starting treating early, how does that get reconciled in sort of physicians and the activists and communities minds when you're basically maybe playing lip service to some and that's probably what Nathan was saying about governments have taken decisions not to follow some of the guidance that's come out.

PETER MUGYENYI: Well, healthcare providers in resource constrained countries including mine fess data frustrations. Our knowledge about what is needed. The recent released new recommendations for U.S. apply to us. We know what needs to be done. Therefore, it is a heart wrenching conditions to be able

to know what is right for your patients, to know what should be done and not be able to deliver it.

We do it the emergency style. We are treating the very sick. The right thing to treat people before they are very sick. As a result, we have got high mortality. We have got lots of our people dying a preventable death. There is another factor. Recent studies in South Africa showed that people go to clinics. They have their CD4 tests done. They are found to qualify according to South African criteria and over 69-percent of them are not started for up to a year in certain cohorts when they have already qualified for treatment. That is a program anomaly.

It was a breath of fresh air this morning listening to the South African Minister of Health talking a different language from that of the previous minister. It was absolutely wonderful. [Applause]. Now, this minister with the commitment she has made here needs to work on that. Countries which are able need to work on that, so that as soon as people are diagnosed they don't stay a year before treatment and in that particular cohort people waiting the mortality was very high.

ANTON POZNIAK: But do you see a situation where there are so many people now that you've diagnosed with HIV because you maybe testing or trying to treat people early, but your resources will be much diminished and that, perhaps, surrounding countries people will be moving in to try and get

tested to get treated in your country and therefore you end up firefighting twice as hard as you are at the moment. How do you overcome that? I mean, the DART trial sort of helped some of that in terms of monitoring people and what sort of regiments you might be able to give cheaply, but do you see a way through that situation?

PETER MUGYENYI: Yes. The evidence we have from our own research in Africa is that we can in this very dire situation that we still have we can do something. We can treat more people, afford with the same kind of resources by savings that we can make within the programs.

This homegrown research that we did in Uganda and Zimbabwe which showed that we could make some savings because what do they use for example of doing so many CD4 tests and yet you don't start people on treatment. If you do one, you know people need treatment. Imagine if they saved that life by starting them early on treatment after knowing they qualify and then saving a little bit more money by doing less of those tests.

When we say this we are not advocating for second rate kind of monitoring, absolutely not. What we are saying is that we have got some scientific evidence which shows we can treat a bit more people by admitting non-essential tests and saving more lives while we are building up our resources and hoping that the world can come back to the reality that treating AIDS

is an investment in the future, so that we can eventually gradually move towards a uniform of practice for the world not a practice for the developing country and a practice for the developed countries. [Applause].

NATHAN GEFFEN: A few epidemiological questions, if we start treating– can you comment on treating earlier and its effect on number of things on TB, on HIV prevention and on encouraging whether it will have an effect on actually encouraging people to get tested earlier and to get treated earlier?

PETER MUGYENYI: Absolutely, where we have got most wonderful results coming over the recent few years. One of the most exciting studies that we have had is a discordant study that looked at over 3,300 discordant couples in Africa. The results were very reassuring, 92-percent protection.

Now, if you put this in the perspective of Africa where discordant if you really looked it would be in the millions, antiviral therapy would be a strong preventive tool in that kind of situation and we are talking of a need for a strong, preventive tool in combination with other preventive strategies that we already know about because we are still having two, three people being infected for only one or so we put on treatment. So treating early would really be great for people are in a discordant relationship. It would save lives.

We already know we have to treat early the pregnant women. I don't agree that we have to treat them only at 350. I think pregnant women it is extremely important to give them priority. These are two lives. We have to treat them the same way as they are treated everywhere else.

TB is one of the disease that is associated with the highest mortality in Africa and we know that early start of antiretroviral therapy reduces the mortality associated with the TB/HIV [inaudible]. And we also know that it prevents more TB cases. There's other circumstances when early treatment is very, very pertinent.

There are people who come who are sick, maybe their CD4 have not yet come down. In some centers, we do viral loads and we see some patients with high viral loads. We should not wait for them to fall sick, become too expensive to treat and we normally forget that some opportunistic infections take CMV [misspelled?] to treat it for just one month is equivalent to treating HIV for two years using a standard genetic combination therapy, so really treating HIV is cost effective and treating it early we believe it will have a preventive and eventually save lives and costs.

NATHAN GEFFEN: Peter, can I ask you the START study are African centers involved in the START study?

PETER MUGYENYI: Well, I think– I'm not– my center is not involved, but we have had some pleasant news. We've been

contacted. Whether even at this late stage we might be able to join. I got some centers in Southern Africa– one center in South Africa is involved.

ANTON POZNIAK: [Inaudible].

PETER MUGYENYI: Yeah.

ANTON POZNIAK: Because the reason I really asked this is that you've started from the beginning that everybody is biologically the same, but obviously starting early in resource poor conditions where there is a lot more opportunistic infections, a lot more other infections and things, do you think that would be important to make sure those patients are put into START because of all the other issues are relative different in say Europe or the states to the African setting.

PETER MUGYENYI: The short answer is absolutely because as you know it is Africa where the majority of HIV/AIDS is found and this is the continent where the cutting edge of research should be done and this is the same continent where the results of research should apply.

NATHAN GEFFEN: Thanks. [Applause]. I think that's a clear message for the principal investigators of START to roll out more START science in Africa.

FIONA: Peter, before you go, can I ask following on from that you said very memorably there is no separate science for the rich and for the poor, but as Anton was implying there are clinical questions that are of higher priority or of more

relevance in a resource poor setting, so I wondered if you could tell us what is the really important clinical question that research should be tackling in Uganda and in Africa?

PETER MUGYENYI: Well, these very question of when to start is very, very pertinent and we need to remember that we have got a huge number of people. We are talking about possibly over 10 million people in the need of treatment in the near future, very near future.

Now, some people keep quiet about the 350 criteria now universally accepted as the minimum starting point because if it applied in Africa it would double, so we need research that looks at public health management of HIV/AIDS not only in the short-term, but sustainably. We need to find out a very, very important question that is very, very pertinent because we already know for example that in drug injecting HIV infected patients I think in Columbia, Canada, they have demonstrated that it is a community benefit by treating a number of community members, a strategic number. That is an optimum number of people within the community.

In Africa, we need to research and this research is to find out the community benefit of treating the majority of the people and this community benefit which I think would work out to show that there is a community preventive benefit will in the end be one of the ways which I think will guide us to use

breaking the back of the epidemic for future eventual global control.

FIONA: Peter Mugyenyi, many thanks indeed. [Applause]. We now welcome Mark Harrington, the Executive Director of Treatment Action Group in America. Welcome Mark.

MARK HARRINGTON: Thanks.

FIONA: Over to you Nathan.

NATHAN GEFFEN: Hi, Mark. How are you doing?

MARK HARRINGTON: Doing good.

NATHAN GEFFEN: Mark, you've probably got a point a view quite different from Steve Deeks when it comes to starting early and I would just like you to prep sort of by responding to some of Steve's points.

MARK HARRINGTON: Well, yeah, let me first separate the sort of personal from the political here, which is the personal is that I made a decision to start treatment relatively late. I was infected in '85 and my CD4 didn't drop below 200 until '96, which was the year of HAART of course and so I was able to benefit from HAART because I made a decision to star late and so I didn't develop a resistance to mono therapy or double therapy, so I benefited from waiting for very much.

But at the same time, now it's 14 years later and we have a lot more evidence about both when to start and that treatment should be initiated with CD4 below 350. I think the evidence from randomized control trials is incredibly

compelling that everybody with that level should be started and also people with earlier CD4s if they're pregnant or they have tuberculosis or viral hepatitis. But I think there's another element that hasn't been brought up, which is that there is a human right not only to treatment based on the best evidence from randomizing controlled clinical trials, but there's also a human right to inform consent based on the best available information.

At the same time as we should be treating, there's a mandate for us to treat everyone with CD4 under 350 in the world, which means we must triple our existing spending on HIV treatment and care. There's more mandate on us to do the research to provide rigorous and randomized controlled clinical trial evidence so that people with HIV who are living in a privileged country that has access to earlier ART can make a truly informed decision and now one that's just based on even the most expert informed opinion of somebody as smart and sort of ahead of the curve as Steve Deeks.

MALE SPEAKER 1: The U.S. guidelines have posed a fair amount of policy. Do you want to explain that to the audience and also to talk about the petition that was sent to the guidelines committee a couple of months ago?

MARK HARRINGTON: I have to do a disclaimer which is that I was on the guidelines for like ten years, and I am really glad I am not on it any more. Luckily, some other

activists are taking up that albatross. The guidelines have always been a process where there is a huge amount of expert opinion vying with a limited amount of data. The amount of data has grown but it still isn't what we need.

When they changed the guidelines to recommend to everyone below 350, and so that group's above 350 begin therapy, they actually quantified their uncertainty for the group that was above 350. They said that 50-percent of the panel thought that everybody should be put on therapy and 45-percent of the panel thought that it was okay to delay some people until they went below 350. They didn't say we really need data from a randomized controlled trial, even though there was one getting under way right at the time they put out that guideline, which was a strategic timing of any retroviral therapy or start trial.

There was a controversy that was, there was fear that the new guidelines would make it impossible to enroll the START study and, a year later, I think it is pretty clear because people aren't universally agreeing with the 50-percent of the early pushers on the guidelines panel, that actually people are enrolling in the study, the study's enrolling healthily, and we hope that it will be allowed to be complete.

MALE SPEAKER 1: Even in the U.S. most people that are starting are starting below 200 or in the region of 200, well

below the 350 threshold point. What do we do about that and what are the consequences of that for starting earlier?

MARK HARRINGTON: It sort of goes back to the distinction between San Francisco and Uganda, which we heard about before, in the U.S. we have huge huge disparities in our health systems and most groups are coming into treatment very late because we have a really fragmented health system that has made the U.S. a mockery in the developed world.

People with HIV, often from groups that are poor that are suffering other socioeconomic problems and sometimes co-morbidities, are not in a position to get good health care in many parts of the country. We have Band-Aid solutions like the AIDS drug assistance programs in some states, but there's waiting list of over 2000 people with AIDS/HIV that now therapy right now, that needed it yesterday in a 11 states to get access to drugs.

We have these reactionary senators and people in Congress that are actually and at the state legislature that would prefer to see those people die and are not offering money for those AIDS apps. There is a sort of domestic mini genocide going on.

MALE SPEAKER 1: It sounds like you believe there should be a public health system in the Unites States.

MARK HARRINGTON: Absolutely. I think we have a lot to learn from what changes you and your colleagues in South Africa

have been able to evoke in the government in South Africa over the last ten years through a really strong mobilized civil society.

MALE SPEAKER 1: One of the concerns around encouraging the treatment, getting many more people onto treatment is resistance. Do you want to comment on that?

MARK HARRINGTON: I think the data on resistance is getting better and better from the point of view when the start of HAART because there was a large fear in the 90s that early start initiation of ARTs would lead to a massive outbreaks of transmitted drug resistance. Actually, what was been seen in almost all countries, since the introduction of HAART, is there has been a steady decline in the amount of transmitted drug resistance, because obviously triple therapies associated with much lower emergence of resistance strains and transmission of them.

I think the other shoe that has yet to drop with respect to global access because they think it maybe that the stock [inaudible] up to date are not actually, have not actually, we haven't been treating people in Africa long enough to really know whether those resistance strains are going to be transmitted. I think there is an ongoing fear that if we don't keep scaling up and we don't keep everybody on treatment, there will be outbreaks of transmitted drug resistance. That is a

program failure though in this case as opposed to a failure of treatment strategy.

MALE SPEAKER 2: I was just wondering how you can reconcile all of those sorts of policies that activists have really pushed forward and when you look at the global situation, for example, Europe there is a huge issue about migrants not getting access to treatment and care and all being testing earlier.

In the states, you've already outlined some people find it very difficult. Then we add the Peter's view from Uganda and how do you see instead of this all becoming divisive into issues maybe are continent specific, because these are the big issues, how do you see that it can be globally put together. I am really a little concerned that when everybody says the benchmark is 350 that that will just be accepted and we will give into our silos and try and fight our own positions in each continent.

MARK HARRINGTON: I think we need to integrate the views and the needs of the activists, the providers, the clinicians, the researchers, and the policy makers. The way I like to think about it, is in terms of the UN AIDS, the new UN AIDS estimate is that 10 million people need treatment now and aren't on it, and 5 million are on it. That means that 15 million out of the 33 million with HIV need treatment right now.

Our number one priority should be making sure that all of those people will get put on treatment in the next few years. That means we have to mobilize political will, at the donor country level and the high burden country level, to fund to make that treatment available. South Africa is the only country that is really taking it seriously and trying to do it.

The second piece is that we have to rigorous and randomized controlled drug trial evidence about when to start. It actually maybe true that all 33 million, if Steve is right, than all 33 million will need treatment and the world is not yet ready to scale up to that level. In between gathering the evidence to do, when to start for higher CD4s, we need to get everyone who needs treatment at lower CD4s on treatment. We need to develop cheaper, and easier to take, and more tolerable, and less prone to resistance and toxicity regimes.

Ideally, a wonder pill that you can take one pill once a day. I think we also need to reemphasize the need for research on a cure because thinking about the 27 million people that are going to get infected in the next decade, and trying to add on their treatment costs, and having that strapped on to the rest of the century, we are facing something that at some point will be unsustainable. We need to accelerate research on curative therapy both for people at early infection and later infection.

I think we saw some exciting papers early this week that, even with established infection, you might be able to accelerate removal of the latent pool of infected T-cells. I also want to draw the audience's attention to a really wonderful policy paper that is being put out tomorrow at 3:30 PM by Rachael Wolinski [misspelled?] and her colleagues from Cape Town and from Harvard that actually talks about the cost implications of the new WHO guidelines and what should we do first. Basically, we can save the most lives first if we put everyone under 350, and with TB, and pregnant women, and with viral hepatitis and children on therapy, first.

The second greatest gain would be also putting second line therapy into countries. Things like labs, lab support or even switching from D14 to synopadrear [misspelled?] didn't have as much as an effect, so you should all go to the session in room 5 tomorrow afternoon at 2:30.

MALE SPEAKER 2: It is much more difficult access for activism and policy making, what role do you think the community can make, for example that somewhere there are politics the countries are in are difficult to penetrate, it is difficult to know what is going on there, and yet we suddenly got this global benchmark that everybody should be put on treatment at 350, and things are perhaps very, very difficult in that country to even talk about HIV/AIDS.

MARK HARRINGTON: What countries are you thinking of because there is activism that is effective in China, there is activism that is effective in Zimbabwe.

MALE SPEAKER 2: There may be some countries perhaps in the Middle East and even in parts of Africa, parts of the Congo, Somalia, where it is very difficult politically to work, Eric Trair, et cetera.

MARK HARRINGTON: If you have a failed state, you're not going to be able to have a public health system within the failed state. I don't think the global donor community has any political solution for that except for reducing the violence that is causing AIDS.

I think there is other countries like the failing former Soviet states and Central Asia that have their massive violations of human rights and TB and MDRTB where mobilizing civil society has been really difficult but there's been groups supported by, for example, Open Society Institute been trying a lot to build up civil society in those countries.

The issues there will be different, they will be around getting people out of prisons, not making them be excluded society just because they have HIV or TB, getting drug treatment and drug substitution therapy in the country and this is another place where we can see the human rights issues, public health issues, and the social justice issues all merging.

I think that is one of the strengths of the AIDS movement is that we have all merged in the last 20 years and we are a lot stronger when we fight together.

MALE SPEAKER 3: I want to pose a hypothetical situation but it is important because it brings into focus a potential clash over interpretation over human rights. That say, Steve turns out to be wrong and the spotran [misspelled?] shows that there is no real benefit to starting early. At the same time, we have emerging evidence that putting 8 people with HIV onto treatment renders them much less infectious and therefore has benefits for prevention. What do we do? Do we do the prevention benefits become more important than starting people at the appropriate point or not?

MARK HARRINGTON: You can also think of a scenario where it wouldn't even be that earlier starting of HAART was bad but countries wanted to put a lot of money into prepro-microbicides [misspelled?] instead of HAART, where that same moral dilemma would exist. I think you just have to follow the universal access paradigm where people get individual treatment based on what's best for them. If it's not in their benefit to take it for the communities benefit, than people can't be forced to take therapy for the benefit of others when it doesn't benefit themselves. That violates the whole principle of Helsinki agreement about ethics.

FIONA: Mark, can I ask your sense of what the clinical question for patient activist is at the moment starting HAART. One of the issues I am conscious of in discussing with people is around what could be done to reduce the cost of these treatments. Obviously, that would be one way of increasing access to the moment. Do you think enough is being done to?

I have asked you a question and I have given you my answer. There are really two questions there. Is enough being done to reduce the costs and what other research questions would you like to see being answered from the patient activist point of view?

MARK HARRINGTON: My biggest question would be what would it take to get Barrack Obama to give what he needs to give for global AIDS and provide the kind of leadership that President Zuma is not providing in South Africa. For me, it is a research question how can a president who is so progressive and came to office with so much hope, let himself be getting advice from people that are basically intellectuals genicidars like Mead Over and Zeke Emanuel [misspelled?] who are pitting women and babies against people with AIDS, TB and malaria, when it's the same people that's lives are at risk, and are proposing a globally woefully inadequate global health initiative, where they are robbing one section to pay for another. Both will be inadequate. The health systems will continue to collapse.

They should be proposing 120 billion health initiatives, instead of the 63 billion one. They should be doubling research to institutes of health, like they planned on and like they promised, so that we can get the cure and get the when to start question answered, and get the vaccine that we still desperately need, and build on the incredibly exciting result of the microbicide trial that are being explained later today. Without letting other countries off the hook, I think the United States has a unique global responsibility that it is now in very great danger of losing forever of helping to push forward the global response to the epidemic.

I think until those political problems are solved a lot of our research needs are going to remain unanswered and unaddressed. That is a crisis that we all face and that we all need to push just as hard against the U.S. government as Nathan and our colleagues did to get the South African government in the last ten years.

FIONA: Marc Harrington, thank you very much. [Applause] Well, perhaps appropriately we are now have Ambassador Eric Goosby who is the United States global AIDS coordinator. Eric, thank you very much for joining us.

ANTON POZNIAK: Have you got a feeling about what most funders think about the start early question? Is it a dream or an achievable reality when you look at the actual need for funding this?

AMBASSADOR ERIC GOOSBY: I wanted to start with some of the dilemmas that that I think Steve and Peter and Mark really put on the table. There needs to be a real distinction between what a provider, who's in front of a patient, should be thinking about when they are in front of a patient versus a more public health thought process. It's dangerous to mix those two. I have never seen it done well. It can't be done well, even by really brilliant people. The provider/patient interaction must retain the assumption that the physician or the nurse practitioner or the health officer in front of that patient is always, and every time, making decisions that they believe, the provider believes, are in the best interest of the patient. As soon as you erode that assumption, you unravel the trust that is the foundation on which physicians, health care providers, must have to move forward with a patients' care over the duration of their illness.

That distinction also sits with individual delivery systems versus public health systems of care versus policy level decision making. They are different calculus' and using the same data to inform it, but at the same time are not necessarily making decisions for any given individual would be in their best interest. That distinction I think was a theme in that early discussion, I really just wanted to highlight that.

ANTON POZNIAK: I am 100–percent behind that, Peter actually said that one of the dilemmas they have, I would imagine this policy, the WHO policy was 350 and not taken up by some governments to 200, but if you had two patients that came in and didn't have the resource, he's being facing this dilemma for years, and fighting it brilliantly. This is the issue.

You have to say to one, you are a priority above the next. That's been happening a lot in sub-Saharan Africa that people are being prioritized for full care. If you have this 350 mark for which everybody, and the individual conversation, even Steven in the individual conversation if he was in Africa, he would be saying you are eligible for treatment, would be a dilemma for individual physician or anyone looking after the patient.

AMBASSADOR ERIC GOOSBY: It absolutely would. The science is the science. You as the provider of care for that patient need to take the science, and in dialog with the patient, informing the patient around what is or is not in their best interest from your formulation, as best as you can put it together. That's the relationship, that's what you are there to do. The science shouldn't even be changed because there isn't enough of money, or because there is a political or policy difference by administration around who or who should not be treated.

The judgment that goes into how you got infected, resulting in who should or should not be treated, should not be part of the interaction. I think that, never the less, there is the triage decision that an individual health care delivery system at country, provincial, city, and individual clinic must confront. That there are limited number of resources and I have a patient population apart from the patient in front of me, the individual life in front of me, that I have a share in responsibility for as the director of that clinic, as the provider in that clinic, as the decision maker over who gets treated or who doesn't get treated, that all of us have been in front of.

Peter is unfortunately in front of it in a larger volume and intensity. Many in sub-Saharan Africa, Southeast Asia, China, Eastern Europe are all in those dilemmas. Many of us in inner city situations in the United States, Washington DC, California, San Francisco, there are pockets of patients who, for a variety of reasons, do not have access to care, or are not retained in care over time. Those elements of access need to be addressed, aggressively, but the question over how one decisions, clearly the triage mechanism for a provider with limited resources and an expanded need, should in my opinion go to the sickest patients.

ANTON POZNIAK: All of the data so far and, all of the guidelines say the 350, so I come back to this question of

funding. Do you think there is enough will and enough funds to get the 350 benchmark global achieved from not just funders who are independent of government but also governmental agencies and governments' themselves?

AMBASSADOR ERIC GOOSBY: I think the science clearly shows that we should be trying to put patients on at 350. It's clear. The science above that is less clear, but the studies are in queue to answer that definitely. I think the issues of unchecked viral replication with the persistent fueling of inflammation and acceleration of endothelial damage, coronary artery disease acceleration, et cetera, are all real concerns.

I think that those of us who followed patients for many years have seen all of that play out. I think the resources are currently not there. It is in part a reality that is different in each country in terms of their relative contribution to this effort. Those countries that are more, or completely, dependent on international aid to resources their medical response to HIV/AIDS and TB are dependent on that aid staying the same and increasing over time.

To expand to the 350 mark, we're looking at two to three times the number of patients who are suddenly eligible for a medical delivery system that had been in calibrated on a 200 or less; that stresses that system significantly. The fact that the resources are not available does not change the science that 350 is better than 200. I think that countries,

and decision makers within countries, have to have a rational, fair, thoughtful way to decide who goes on treatment before another.

One of the most defensible is those who are more sick. I also would agree with Peter, Steve and Mark around prioritizing those who are in exceptional risk for more rapid progression of disease within themselves or to benefit another, it terms of a baby, fetus, or to prevent the wide kind of ubiquitous availability or prevalence of tuberculosis in a community that is also high in HIV prevalence with a disproportionate susceptibility to infection from tuberculosis.

Dropping that herd immunity around TB is a very defensible position to take to diminish spread, diminish mortality, and diminish morbidity, also to show better outcomes with the actual treatment for tuberculosis in that individual.

ANTON POZNIAK: One of the issues that you could envisage from the outside is to say, well there is a 350 cutoff but most governments in resourceful countries are going to stick to the 200 and add the TB, the pregnant women, et cetera, onto that. The push to get up to the 350 could be lost over several years because everyone is saying there is a economic down turn, there is not enough funding, there is not enough money, even the money we got won't even get these people along to treatment. What impact to you think governments and governmental agencies could have to try and raise that bar up

to the 350, and not just keep it stuck at sort of the 200 plus a little bit of fire fighting. What could really be done by the funders to push this on? From writing a blank check?

AMBASSADOR ERIC GOOSBY: I think that the science will keep it front and center. The knowledge that this is indeed better for the people that we are serving to be started at 350, should keep it front and center. The voice of the community that is infected and affected by HIV is that strongest voice and force to keep it front and center. It is a resource issue.

Resource money is needed to increase the delta from those that we can cover for care at 200 to the 350. The commitment to do that is informed by political pressure, by the economies of countries, and I believe that it requires both. I know it requires both and it have seen this over and over in my career. You need both to have that unmet need, the real need prioritized in the eyes of the government, the policy makers within government at all levels, to fund that before they turn to another priority.

ANTON POZNIAK: Isn't there a way this science and the push and the pull of trying to get the bar raised to 350, I mean there may be some enlightened governments that are. Do you think that most governments where this is really important issue are aware of this?

AMBASSADOR ERIC GOOSBY: I can speak to the United States government, it is acutely aware of it. Our scientists,

our clinicians, our populations that are on these drugs are woven throughout the process. WHO, UN AIDS that is in dialog around these issues.

The leadership within the United States has been really at the forefront of both the research, but also the policy discussion really since the beginning of the epidemic in framing and understanding how medical delivery systems respond to these expanding changing needs as the science comes in to guide it. I do have no misconceptions about the need to continue to put the pressure on decision makers around prioritization of this need above others.

I think the science is clear and is already there, that's the basis on which the discussion should start. Then it's getting the political will to fund this over another. That's a big part of what I do. It's the really I see my position as an interface between translating the science and communicating it to policy makers, decisions makers, so they are aware of the ramifications of their decision, and of keeping them aware of it that once the decision is made and making sure that we follow the impact of all of those decisions, so we can continue the good ones and stop the bad ones.

FIONA: Eric, how do you explain to marks very impassioned challenge to President Obama and those around him

and therefore you as the person implementing PEPFAR. How do you respond to marks challenge?

AMBASSADOR ERIC GOOSBY: We need more resources, there is no doubt about it. President Obama knows that, has been committed to putting resources in PETFAR, in global fund. We have increased funding as much as the administration has been able. It has not been a decision about ignoring a known, defined, unmet need. It has been a decision that has largely been dominated by a resource constraint, accentuated by the economic down turn. Not in way of an excuse, but in way of an explanation of really want is occurring within the administration to more forward to this.

The commitment to fund all of that Mark, in his impassioned plea presents, is in the Obama Administration and I have great confidence that as this economy returns our influx or resources will go up.

ANTON POZNIAK: The flip side of resources of developed countries like the U.S. and the European union and Japan not allocating enough money to PERFAR and the global fund is that on the developing countries side there is often misappropriation of funds, inefficiencies, et cetera, et cetera. Now the global fund has had a policy of exposing that, although not necessarily as well as they should, as Bernard Roversis [misspelled?] recently pointed out in the issues of the global fund observer. Can we expect to see PETFAR taking

the same policy, when PETFAR finds a misused or misappropriated fund at the developing country level, that countries that do that, will be exposed, there will be repercussions when that happens.

AMBASSADOR ERIC GOOSBY: Yes, we are really vigorously looking at all of our programs, their ability to interface with the populations we are most trying to reach, or inability, the appropriateness of the decision in prevention and care and treatment for that particular population in that particular geographic setting, the alignment or misalignment of that. We are not funding those that are poorly aligned or not effective. We are looking for ways to collapse costs so we become more efficient, but are able to free up resources to pour back into unmet needs within a country context. We have increased the volume on that, we are aggressively looking at that and we are indeed moving to partner differently with our global fund colleagues and country though the CCM process to try to stop having any parallel development of parallel systems of care and really collapse to the global fund PETFAR resources, so we are additive in our ability to impact.

That we hope well create a significant increase of our resources is what we are seeing, that will carry us through this period of economic instability, so there is no down turn in our ability to increase the number of people we're treating.

FIONA: Eric, thank you very much. You have been very great. [Applause]. Anton, Nathan, I am going to ask you both to sum up in your work to direct any additional questions to our four witnesses. I just want to tell you one twitter I have had from Paul WMS, it seems to sum up the whole debate. Do you want universal accesses at CD4 of 200 or less people accessing treatment but starting at higher levels? Anton?

ANTON POZNIAK: I think it is a dynamic thing and I think if we could sort out the 200 and the risk groups issue, I don't know what Mark, you feel about this, if you could be reassured that everyone under 200 plus the others, the pregnant women, the TBS et cetera, and maybe the discordant couples, were guaranteed treatment, as the next goal for the next two or three years, would you be prepared to wait for the scale up to the 350 or do you think it should all go hand-in-hand right now?

FIONA: I think you are still on your lapel.

MARK HARRINGTON: It should all go hand-in-hand in a staged fashion. If you don't have everyone under 200 going on treatment right now, you should do that first. In some countries and I think you confirmed this in our meeting, a uprising number of countries in Africa are adopting the 350 target so they have the national political will and some like South Africa are putting in their own resources, I think we should figure out global ways of actually encouraging and

rewarding countries that are doing the right thing, by rewarding them by enabling them to do it faster. It think that would be a smart use of global development assistance.

I don't think you have to make that choice. I know that is your job to pose these supposedly difficult moral questions, but I actually think they are not all that difficult.

ANTON POZNIAK: It is your job to answer them in a sensible way and you have. I am with you on that because I think if everyone waits for everything then we will all be waiting forever. It sometimes the view that being put, that I hear, we got to sort out our own house before we actually start decorating the wall.

MARK HARRINGTON: These are people that didn't want to do universal access in the first place, it is like Medovers and the Zeke Emanuel's' [misspelling?] of the world who are using this as an excuse to actually massively defund global health. I disagree with what you said about the will and the Obama Administration because they found the political will to bail out the banks, the mortgage industry, the auto industry, the airline industry, and they haven't found the political will to bail out global health. [Applause].

And they say they want to reduce domestic HIV by 15-percent, where President Zuma wants to reduce it by 50-percent and then he wants to put 25 more million into the AIDS out

crisis, which is just a Band-Aid. I don't see the political will in the Obama Administration. I accept you, I think you're not part of that view of things but I think there's people in the Administration that are telling him, and he is receiving very bad advice.

FIONA: Nathan?

AMBASSADOR ERIC GOOSBY: Well, can I just respond to that. The ability to respond to this disease has been taken on by the United States in a big way, globally. We are now over 50–percent of the response on global health that you can add up and quantitate. In every country that PETFAR is in, we range from 45 up to 90-percent to the HIC/AIDS response.

In the 15 sub-Saharan African countries that are most impacted we are in the 70 to 90-percent of the response. We are committed to that and the Obama Administration continues to fund that and to increase the funding for that. The numbers do show that.

I appreciate what you are saying in terms of a shared responsibility because the President Obama, secretary Clinton have been the only world leaders that have spoken to a shared responsibility, that there is one. It is a real ethical connection and President Zuma and there have been other individuals who certainly have spoken to that, I don't mean in an absolute sense. Certainly, the United States leadership has been a loud voice of that and over the next few months, there

will be a louder voice calling for a convergence of our resources so we become more efficient and more effective.

Also because it is the right thing to do. I'm echoing the voice of the highest levels in our government, the United States government around that issue. The commitment is real. The economics, I know we can argue over what an individual decides as a country to spend their money on, but this government will not ignore this issue. We will continue to increase and support of this issue, as it has, and I believe we need to start expecting and holding our colleagues and country who are heavily burdened with this disease to be the loudest voice in asking their countries to maintain and increase their support.

FIONA: Eric, thank you very much. [Applause]

ANTON POZNIAK: Can I ask you do you envision a day when your country will be reaching out to other countries like Wanda or to Congo or to your neighbors to set up programs there to ensure that the 350 threshold is fair and that you will be using your own resources, knowledge and ideas, rather than what you are implying in the moment, really tough to fight the fight in your own country. Do you think that should go hand-in-hand now and you should be talking to Eric saying, come on we what to start regional development and we don't just want things to come from the outside?

PETER MUGYENYI: I agree with what Mark said. Eric is committed to this goal and I know part of his motivation is that he first treated the patients himself in resourceful countries. There is little that he doesn't know. What we need to focus on right now, is to take harvest of what we have so far, which is that, we have made great progress over the last ten years and we came to this crucial stage when we need to scale up.

We met a roadblock in form of global financial crunch. The global financial crunch has been felt in almost all countries by stimulus money, that is by increasing the resources. The sum of all of it is that this is a crucial time for increasing resources.

Not only that we should not loss the great achievements that we have achieved so far but we are at a very critical stage when new science has shown clearly that we can actually move AIDS treatment, AIDS prevention, under our own AIDS management to a new level. This is not the time to give up the fight, this is the time to come together to increase the resources.

Not only with Eric's group of funds, U.S. is the leader, it should mobilize other countries, other rich countries, G8, African union and the others, this is a critical moment which we have come to. This is not that is not the right

time to loss the battle, when we can see possible success on the horizon.

FIONA: Peter, thank you.

NATHAN GEFFEN: I hope you will forgive me if I take off my interviewer hat and give my activist two cents worth for a second and that is, one of the things that we haven't discussed, really is the taste and treat approach. If the Starchar [misspelled?] shows within the next 5 years that starting treatment early is beneficial, we are going to have to have a serious discussion on taste and treat. If all of us, this isn't supposed to be theoretical, including starting at 350, then it is critical that the global fund gets the 18 billion dollars that it needs over the next three years. That means activists in America putting pressure on Congress, activists in Europe putting pressure on European governments, but most importantly from my perspective, is that African activists on my continent, putting pressure on their own governments to deliver.

When money is stolen from the global fund in Uganda, it is critical that activists in Uganda march in the streets and tell the Swahili government that it is unacceptable. We've got to see more of that across the African continent if we are going to start to see real change across the continent and less dependency on international donors supporting AIDS programs. [applause]

FIONA: Thank you, Nathan, and your question was summing up for the witnesses.

NATHAN GEFFEN: I think there has been some critical issues raised around the resources, and Peter has certainly put on the line the fact that from a human rights point of view, there is no question, so need to be able to start earlier, we need to start at 350 in all African countries. Most of our guidelines aren't in line with that yet. The issue is getting the resources there. That is the critical point that is being made here today.

FIONA: On that note, and slightly early I hope you will be pleased to hear, I want to thank very sincerely our interrogators and our four excellent witnesses and thank you all for attending this session. Have a good lunch. [Applause]

[END RECORDING]