

**2008 HIV/AIDS Implementers' Meeting  
Plenary: Monitoring and Evaluation for Impact Improvement  
Government of Uganda; PEPFAR;  
Global Fund to Fight AIDS, Tuberculosis, and Malaria;  
UNAIDS; UNICEF; World Bank; and WHO  
June 6, 2008**

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**DR. RUFARO CHATORA:** I have been asked to be moderator of this session on Monitoring and Evaluation for Impact Improvement. My name is Rufaro Chatora. I work for WHO as Director, AIDS, TB and Malaria, in the WHO regional office for Africa, based in Brazzaville, Republic of Congo. My colleagues like to call me "ATM," but since I am not able to dispense money as an ATM would do, I prefer to be called by the name my mother gave me, so call me Rufaro.

My background is in health systems, though since starting work in AIDS, TB and malaria, I see myself doing more health systems work than before.

A comprehensive monitoring and evaluation system enables tracking of what is being done in HIV/AIDS prevention, treatment and care. A good M&E system would cover all aspects of the problem from inputs such as financial and human resources, to processes such as policy development and partnerships, to outputs such as commodities purchased and persons trained, to outcomes such as numbers accessing interventions and to impacts such as reduction in disease burden or improvement in life expectancy.

Furthermore, a good M&E system is one that complies with the three-in-one principle: that is, one national

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strategy; one national coordinating authority; and one M&E system both at the design and implementation phases.

Surveillance is a key component of M&E systems, and this should cover biological, behavioral, as well as social impact surveillance. The information generated will show us where the program activities make a difference. At any one time, we can then tell what progress we are making to realize the goals and targets that are set both at international and national levels.

Through information from M&E systems we know, for example, that at the end of 2007 globally about 3 million people were receiving antiretroviral therapy. This translates to 31-percent. While on one hand there has been tremendous progress over the last couple of years; on the other hand, it means 69-percent of people needing treatment are not getting it. The picture remains the same when we consider different aspects of HIV/AIDS prevention, treatment, care and support.

The questions we hope we can get answers to in this session are: 1) Are M&E systems compliant with the three-in-one principle?; 2) Is information generated used to monitor progress towards set goals and targets?; 3) Does each measure impact?; 4) Is information generated used to update policy and plans and by whom? 5) Does this include the media? 6) What about its user friendliness? 7) Do we have adequate

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institutional and human capacity to manage information systems?; and, lastly, Are we investing enough in this information systems?

In terms of the structure of the session, we have two plenary speakers followed by a panel discussion. We have agreed we will keep to time. As has happened in other plenary sessions, the panel discussion is limited to the panelists. The audience will have an opportunity to raise questions and have discussions in the breakout sessions later this afternoon.

With these introductory remarks, it is my pleasure and honor to introduce our first plenary speaker.

This is Daniel Low-Beer. Daniel has been with the Global Fund since 2004. He has previously been director of the health and population evaluation unit at Cambridge University. He has worked in southern Africa on evaluation of HIV problems. He has worked at WHO in the former global program on AIDS. He helped establish global AIDS surveillance and contributed to the scientific evidence behind any HIV prevention successes in Uganda and Thailand. He has also worked with USA, [inaudible 0:05:22] and NGO. In the Global Fund, he has helped establish performance-based funding, ensuring [inaudible 0:05:30] is focused on reaching people with services and measuring impact on HIV, TB and malaria.

Daniel, you have the floor.

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**DANIEL LOW-BEER:** Thank you very much, Dr. Chatora.

We, like Dr. Chatora, also try to lose the acronym ATM at the Global Fund, to ensure that we are not a [inaudible], but financing for results and, as we will present today, for impact, which is particularly important.

It is a great pleasure to talk today about M&E impacts and particularly here in Uganda.

I want to stress two points in the presentation: firstly, M&E impact is about managing the epidemic, showing all the excellent services we deliver, and we have talked about it in detail this week, ARVs, PMTCT, VCT, [inaudible 0:06:29] MCP. They all add up collectively to fight the behaviors and the epidemiology of the acronym that counts most which is AIDS and fighting AIDS. So managing the epidemic is the M&E in my title.

Secondly, I want to show Uganda the importance of the quality of the engagement with community networks and behaviors as we deliver services to achieve impacts. It is often the last 10-percent of these interventions, the feelers that connect our services to the community networks, to those at risk and who engage in behaviors that can be critical.

So as we scale up, as we shall hear from Kevin, we will also need to ensure that we scale down our services to engage

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with the community networks and people at risk, and these are the partners in implementation.

I am going to cover three topics today: First, is the importance of impact, the real focus it gives for activities and for partnerships. The hundreds of activities we do are working towards impact, towards managing the epidemic.

Secondly, I want to stress the importance of investing in impact systems, that we spend 5-percent to 10-percent of our program funding on the activities which will include impact measurements. This is not an extra cost, but to ensure the effectiveness of the other 90-percent.

Thirdly, I will discuss the importance of using data, analyzing it, and continually relating our services to the behavior and to the epidemiology. In the Kampala conference in 1996, we started by saying we had more data on AIDS than on any other health condition, and I want to show Uganda the importance of linking services to analysis of the epidemic curve, to behaviors and to engagement with communities.

First of all, there is the importance of the focus of impacts, the basic focus and compass for our activities. The scaling up of partnerships has been a theme of this conference, and not just for partnerships for their own sake. For the Global Fund, it is the main element and the purpose of the Global Fund: to make a sustainable and significant contribution

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to the reduction of infections, illness and death caused by HIV, tuberculosis and malaria.

I want to stress also that monitoring the level of services to people is a key element of our monitoring framework, to ensure that real services reach people; but it is also important to measure impacts, not just for the measurements but so we can move towards managing the epidemic.

Finally, I want to stress the importance of the collective goals of impacts. For us, it is more than just attribution to Global Fund activities. It begins to change the focus in the way we deliver. We need more of a partner approach to ensure activities are filling the key gaps in covering the epidemic [inaudible] and begins to link us to programs in the national and the community level. This is very much the theme of our report, Partners and Impacts, focused on partners but also on impacts.

Secondly, impact is very important for me because it opens up the importance of prevention, not as an addition, but as the basis of the large impact we have had on behaviors and on the epidemiology. It is not easy. It certainly requires real focus, persistence, engagement and, as I was reminded by Jim Shelton, scale bound into community networks; but it can also have significant impacts on the epidemics.

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We can see in Uganda the large declines in HIV prevalence. We have talked of certainly the 1 million people lost to AIDS, but also with 75-percent declines, 3 million or more lives which may be saved in one country.

There have also been important declines seen in Thailand, in Kenya and, to a lesser extent, in Zimbabwe, Zambia and Malawi. These are largely due to changes in behavior.

There is also a similar response among men who have sex with men and among IV users in the 1980s, when networks were also important to mobilize in very different groups. We also know the importance of the impacts PMTCT can have on mother-to-child transmission.

There have also been major development results in treatments, encouraging results about mortality. We know in Brazil and the effects from cohorts, but also the exciting evidence of declining adult mortality we are now seeing in Malawi and in Botswana.

So impact opens up for me HIV prevention, not as an add-on, but as a foundation for impacts.

Thirdly, after the focus on the importance of prevention, we need partners to invest in the M&E systems for impact improvement. Impacts in the Global Fund is at the top of our evaluation pyramid, so we build from capacity

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strengthening to people reached by services and, over time, towards impacts on the epidemic.

Secondly, we recommend that 5-percent to 10-percent of grant funds, and this is considerable resources, 100 to 200 million per annum, are used in investing in these impact systems. We are beginning to open performance-based funding for incentives for grants that can show impact for funding up to 11 years.

Finally, it is important that it is about achieving and managing services, but also managing the epidemic, the scale, universal access and global goals, as we will hear from Kevin, but also the quality of the engagement bound into communities.

The second part I want to talk about is the investing in the impact systems. First of all, why is investment in impact systems important? For us, it is about monitoring, but also about management of the results, that we are managing the epidemic, and we see it very much as a key problematic area, as part of our programs.

In terms of the what, we recommend 5-percent to 10-percent of grant amounts are used to invest in M&E systems, including impacts. At present, this is around 4-percent. It needs to be invested now so that information can be built into services and then can be followed up over time.

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We also want to contribute to a national approach. It does not require direct attribution to the Global Fund, but that we support many of the systems and surveys that can be extended beyond AIDS, so [inaudible] diseases.

There are four others that we are stressing as particularly important. First of all, there is a complete survey schedule, DHS surveys that include behaviors and testing; but also the importance of many the intermediary surveys built into many of the projects and programs we have seen.

Secondly, it is important for surveillance, investments in the basic HMIS and the sentinel surveillance.

Thirdly, we must consider the mortality systems. If you will remember some of Kevin's early work on mortality in West Africa, these are less developed, but we are seeing important investments in Botswana, Malawi, and Ethiopia. Most importantly the [inaudible] analytical capacity to make sense of the data and of the epidemic.

The final point is to include analysis of behaviors and impact, not just at the beginning and at the end, but to promote the learning in M&E, and here we stress the importance of operational research. We have seen very many good examples from some of the work in South Africa, some of the work in Soul

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City, work [inaudible] Mozambique, and building these into programs.

We have put forward that we would like to get more out of M&E: some monitoring up front, but also operational research and evaluation, and we have worked with WHO for guidance on this with some countries.

The outcomes of some of these investments are becoming increasingly important for sustaining our financing. Here I give an example of Malawi, one of the poorest countries in our portfolio, which has put out considerable effort to develop M&E for impacts. First, they captured some of the early evidence of declines in adult mortality from some of their workplace data. They are seeing a 40-percent decline in adult mortality; but also at the community level from some of the demographic surveillance sites, which have seen up to a 50-percent decline in adult mortality, as you would have expected as mortalities increased 3, 4 or 5 times in these countries.

Secondly, they have looked at the HIV prevalence trends, showing some progress, but also the challenges and have used them to guide their efforts.

Then, thirdly, they are showing some of the impacts on health systems. For example, they have a program which they have shown takes 350 health personnel to implement, but they already have 2,000 health personnel on treatment, so they are

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beginning to show that the mortality benefits just to health workers are greater than some of these inputs.

This has been very important to us. The grant itself got a B1 in terms of the delivery of services, but we upgraded it because of its ability to show potential for managing the epidemic and have agreed continued funding for 11 years to this grant.

The third important area I want to show is using the data to link services to the behaviors, to the epidemiology, and to the quality of engagement with networks in communities. Here I want to show some of the analysis from Uganda and the importance of going face-to-face with the epidemic and all the services they delivered.

One of the areas of the success in Uganda was not just in the technical sense of the services they delivered. In many ways I wish they had better services in the early 1990s: we did not have ARVs; the main treatment was aspirin; but when they delivered these services, they were related to the epidemic curve, to the behaviors, and to the community networks and communications. It was this approach to measurement, but also managing, which was essential.

Firstly, it is important to know your epidemic, overall and in terms of particular groups. In Uganda in the early 1990s, we were working with 20-year epidemic curves, with long

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waves; and in 1994, it took very careful analysis with the Uganda AIDS Program to break these down by individual age groups and birth cohorts to show that the epidemic curve was really beginning to change, in guiding our activities.

I think we should pause at the scale in HIV prevalence, the declines we see in urban and rural areas and in the number of age groups, a 75-percent decline in a number of years: 5 or 6 years in this situation. We certainly underestimated back in 1996, but it shows the speed of changes when prevention can work.

Secondly, it is important to know behaviors in the population and we focus very much on what changes. Here in Uganda are the results from the surveys of casual sex in 1989 and 1995, and it shows very marked declines in casual sex of 60-percent from 1989 to 1995, again showing the science in half a dozen studies. Again, this is quite a rapid response within 5 years.

What is also important is the national level of the response. We see declines in urban and in rural areas, and in men and women.

Secondly, we also need to be precise about the behaviors and the balance of the response. This is why I am stressing analyzing the data. Although we talk about Uganda,

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there are probably only 4 people who have analyzed the data and the datasets in detail since this time.

This graph shows for each of the age groups: that is the 15 to 19 on the left, to the older age groups; the responses. A: The closest we could get to abstinence, stopping all sex; B; and C.

If you look in the youngest groups, in orange, you find a variety of responses. Among women, sticking to one partner is the most important response. It is only among men, age 15 to 19, that stopping all sex seems to be a main response. In 20 to 24-year-olds, you see a similar pattern, the purple bar, certainly with more condom use and partner reduction among males age 20 to 24.

Overall, in terms of the balance, it is quite clear data. The decline in partners is the major response and there has been too much confusion in identifying what provides an important focus for these declines.

Finally, here is the response in the population and all the interventions are valuable, and it is not just the simple messages, but the real engagement with risk and with the communities who will respond in different ways.

It is also important to pursue the analysis from the epidemiology to the behavior, to the quality of the engagements, here shown in terms of communications. We find

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that prevention in Uganda has got into the social and the personal networks. It has taken root in the communities.

In the graph, the personal networks for contact with AIDS is shown in orange; and the major network by country is shown with a star, comparing Uganda to Kenya, Malawi, Tanzania, Zambia and Zimbabwe in this period.

In Uganda, in 1995, personal networks were the major source of contact and information on AIDS, uniquely. There was also a shift in Uganda from 1989 to 1995, where prevention had taken root in personal networks.

Why is this so important, this connection down into communities? The last 10-percent of our interventions make sure that we take root in community networks and with behaviors. It amplifies or can silence the whole response.

Here is a chat comparing South Africa to Uganda 10 years later. This is in a community.

"The neighbor came over as we were talking. She came asking for washing powder soap. My mother-in-law asked her, How did the funeral go? The neighbor said it went well. My mother-in-law asked, What did she die from? The neighbor said, She had piles. My mother-in-law said, A shame she had piles. Why didn't she consult the doctor? The neighbor said, she went. My mother-in-law said, shame. Now, who will look after the children? At least the grandmother is still alive. It

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won't be such a big hassle. Then the neighborhood went.

That's when my mother-in-law said, AIDS is killing children."

They knew it was AIDS and they had the knowledge, but it was communicated in the network. The epidemic here was silent. It becomes a little bit like giving this talk with your hand in front of the microphone in terms of an HIV prevention response.

The second crucial networks are health personnel and the health sector response in communities. It shows also how M&E information right down at the community level can interact with the epidemic.

This map shows the AIDS cases diagnosed at a local level in Uganda as early as 1990. In every community there was an AIDS case, really quite early on in this epidemic. This did not occur elsewhere and local reporting, which was initiated by WHO, was stopped after 1994 until 1996.

Now, the importance of each case diagnosed by a local doctor was reported, was named directly in funerals, and helped mobilize many of the care networks we saw in communities in Uganda.

Again, M&E and surveillance is not just an add-on, but is part of our response to managing the epidemic at a national and right down to community level.

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Again, this conversation shows the importance of this engagement as part of the health response.

"How many of your patients are affected by HIV?"

"About one-third of patients seen in gastroenterology have HIV."

"Do you talk to the patient about their condition?"

"No. Although both the patient and doctor may know that he or she has HIV, we do not mention it or mark 'HIV' on the medical records. Partly, this is due to insurance, but also mistrust."

"So how do patients know what condition they have?"

"Often they do not; often they do; but we don't talk about it."

"Is there not an ethical responsibility of a doctor to talk about the patient's underlying condition with him or her?"

"I suppose so, but the patients themselves don't want it on their record; and for the doctor, there is so much paperwork in mentioning AIDS compared to other conditions; and though both know it is HIV, they do not talk about it."

This engagement amplifies how silence is the response. By coincidence, the interviewer was with a doctor who had worked with Kevin, one of the great communicating doctors, but it highlights the need to include this in the engagement.

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Finally, it is important to push the analysis of the data further down with modeling in the final stages, from the epidemiology to the behaviors to the communications.

Here, we have modeled the communication networks which draw people into contact with the epidemic alongside the epidemiological networks. It shows that where there is extensive social communication, personal contact with AIDS occurs ahead of the HIV prevalence curve, which is shown in red. So regarding personal contact, the majority of the population has come into contact before HIV prevalence has peaked.

Where there is medium communication, contact spreads alongside HIV prevalence. Prevention becomes more difficult. When there is restricted communication, although HIV prevalence is peaked, with very high mortality there is little personal contact. AIDS can be silent.

Learning from impact data, we can see some of the components that are important in the response as we deliver services. It is certainly not easy and requires focus, persistence, engagements, and renewal every 5 or so years.

First, there is the importance of the vertical political communications, to engage networks and open up communications. This is not lip service or slots on the radio. Every politician had to speak about AIDS at community meetings

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in Uganda, whether they were about fishing, agriculture, or health. They also ensured that schools talked about AIDS every two weeks.

Secondly, there is the importance of engaging horizontal communication networks: the last 10 meters of the intervention, which are important partners in implementation.

Thirdly, there must be a persistent focus to engage with behaviors, particularly with sexual partners, which we know will drive the epidemic.

Fourthly, and critically, there must be care networks which draw in and involve people with HIV, be it in Uganda or New York, be it in many of the successes we have seen. There is a strong link between care and prevention.

Then, finally, local surveillance and analysis, so AIDS is a real social fact at the community level. This is not easy. It is not packaged in some of the services we hear about, but it requires real engagements to mobilize the social capital of our implementers. Many countries have only focused on a few of these, when I look at the five, and it makes the response to impacts more difficult.

Coming to the conclusion on M&E for impacts, I am stressing it is about managing the epidemic. That is the M&E in my title. Even with fewer services, it is one of the things we can learn from Uganda.

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We certainly have very valuable services and new interventions which are important to scale up to the national level. As we do that, we need to ensure that they are delivered with a quality and engagement to affect behaviors and the epidemic, so we are always face-to-face with the epidemic.

To conclude, we are partners and it is important that we are partners in impacts, and this involves both the global goals and the coverage, but also the quality of the engagements as we deliver services and in the behaviors in the community networks. Secondly, it is important that we invest in impact for 5-percent to 10-percent of funding in our grants; but also it provides a focus for activities on the epidemic. Then, opening up prevention, matching our services with those at risk is very important in that we engage with the behaviors, as well as the commodities and the services.

The final lesson in my last slides, which we learned from some of the recent increases in Uganda, is the need to sustain this focus and this engagement. A new sexual generation occurs every 5 years and we need to renew the focus and the effort with youth, community networks, and risk areas as they become apparent. Here, I certainly need to mention the gay as well as the community networks in Uganda who are really partners in implementation.

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It is also important to link our activities and good work to the behaviors and impacts because it helps sustain efforts among implementers. As [inaudible] said, in Uganda, when we talk to the local people, when they hear that some of their activities and efforts have had some benefits, it removes their feelings of apathy and gives them hope. So, it is very important to show evidence of impacts to sustain our efforts, certainly at the Global Fund internationally, but also at community level.

Finally, as we scale up, we need to ensure that we also scale down the quality of our engagements with communities and those at risk, so we and they can manage the epidemic.

Thank you very much.

**DR. RUFARO CHATORA:** Thank you, Daniel. Thank you for showing us how M&E systems data can be used to contribute to managing the epidemic.

The second plenary speaker is Kevin De Cock. Kevin is an infectious diseases specialist, and he is the Director of the Department of HIV/AIDS at WHO in Geneva. He has served as director at the CDC Kenya Program for 6 years. He has also served, among other posts, as director of the CDC division of HIV/AIDS prevention, surveillance and epidemiology in Atlanta, Georgia, USA. He has served on a number of notable professional committees, such as the WHO Strategic and

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Technical Advisory Group on HIV/AIDS. He has co-edited the book, *AIDS in Africa*, and served on editorial boards and panels for journals including *AIDS*, *Lancet*, and *The New England Journal of Medicine*.

Kevin, you have the floor.

**KEVIN DE COCK, MD:** Thank you very much, Rufaro. Mr. Chair, colleagues and friends, I would like to thank the organizers for the opportunity to speak on behalf of the World Health Organization on progress towards universal access.

WHO is the specialized agency of the United Nations, whose overriding objective is the attainment by all people of the highest possible levels of health. Under the UNA's division of labor, it is the lead agency, amongst other issues, for HIV/AIDS treatment.

In 2005, just three years ago, leaders of the G8 met in Gleneagles, Scotland, and committed to working towards universal access to HIV prevention, treatment and care.

In 2006, the 59<sup>th</sup> World Health Assembly requested WHO to report annually on progress towards universal access. On Monday of this week, June the 2<sup>nd</sup>, Dr. Margaret Chan launched the second of these reports in association with UNAIDS and UNICEF, in Geneva. In my brief presentation from this report, I will review methodology, data on treatment access, interventions for HIV-associated tuberculosis, prevention of

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mother-to-child transmission, I will comment on HIV testing, and then conclude.

The published framework for assessing progress towards universal access addresses the availability of specific health-sector interventions: their coverage, their outcome and, where possible, their impact. Data collection is coordinated between different processes managed by WHO, UNICEF and UNAIDS; and data are collected from different sources in 143 countries before being maximally cross-validated with partners, including PEPFAR and the Global Fund. So, I particularly want to acknowledge all the many persons and all agencies, and all countries that contribute to this product.

The target of 3 million people on antiretroviral therapy by the end of 2005 was first committed to by WHO and Director-General Brundtland at the Barcelona AIDS Conference in 2002. It was clearly consolidated by President Bush's announcement in 2003 in the 2 million targeted of PEPFAR. It was formally adopted by the late JW Lee, in his inaugural address to the World Health Assembly in mid-2003.

What actually was achieved was 1.3 million by 2005, but now we have 3 million by 2007. As we have heard, and as you all know, by the end of last year, some 3 million persons in low and middle-income countries were receiving ART, almost three-quarters of them in sub-Saharan Africa.

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The regions with the next greatest numbers of people on treatment were in light-blue, in Asia; and gray, in Latin America and the Caribbean. With an estimated 9.7 million people in immediate need of therapy, global coverage is estimated, as was mentioned, at 31-percent.

We have limited evidence of impact on mortality other than population-based data in Botswana, demographic surveillance systems in rural South Africa and Malawi, and large international cohorts, as well as abundant anecdotal data that we clearly are having an impact on mortality.

My favorite anecdote actually is from a CDC friend and colleague Barbara Marston, who, on a recent visit to Kisumu in Kenya, was told by a taxi driver that his business had gone down because he took fewer people to funerals.

These data from 2007 represent an additional 1 million people on therapy, compared with the year before, with a 54-percent increase in Africa alone. Access among women is at least as good as for men; it is often higher. 97-percent of recipients on therapy were on recommended first-line regimens and the prices of these regimens have continued to fall, as indicated in the different histograms for different regimens, from left to right, over time.

The most widely used regimen, on the left, stavudine, lamivudine, and nevirapine, is now available at less than \$100

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per person per year. By the end of 2007, some 200,000 children were on ART: 80-percent in Africa, representing an increase by over 60-percent compared with 2006, and by at least 150-percent compared with 2005. Because of ongoing and planned discussions concerning assessment of numbers of infections in children and treatment need, we have refrained from giving an estimate of coverage.

WHO recently changed recommendations for infants aged less than 12 months. They should now receive ART upon demonstration of infection, rather than waiting for specific clinical or immunologic criteria.

We obviously have far to go, recognizing that in 2007 only 8-percent of HIV-exposed infants were assessed virologically for HIV diagnosis. Since one-third of infected infants die by the age of 1 year and fully one-half by 2 years, I am concerned that treatment scale-up in children has benefited particularly older children, and much work remains yet to be done for the youngest who face the greatest mortality risk.

Concerning tuberculosis and HIV infection, WHO has a 12-point policy brief defining key health-sector HIV-TB collaborative activities that include specific mechanisms for collaboration: Interventions to decrease TB in people living

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with HIV, and interventions to reduce HIV and its impact on people with TB.

This slide, and it does not matter that you cannot read the different legends, compares data in 2005 and 2006, not 2007, with 63 priority countries making up 90-percent of the global TB-HIV burden. The histograms show numbers of countries that have adopted specific policies or initiated specific activities such as joint planning, Clotrimoxazol prophylaxis policies, etc. The histograms from 2006 clearly show progress across the board, though much remains to be done.

By 2006, as shown in the blue histograms, 35-percent of TB patients in 11 African countries making up over half the world's HIV-TB burden were tested for HIV. An estimated 78-percent of these TB patients diagnosed as HIV-positive received Clotrimoxazol prophylaxis and 41-percent of such persons were enrolled in ART programs. These two African data points represent greater than a 2-fold increase in 2006 compared with 2005.

HIV-TB can be approached from the TB perspective, but also from the HIV perspective. We in the AIDS establishment must accept our responsibilities and acknowledge that to date we have not always fulfilled them.

WHO convened a meeting recently to discuss three priority interventions that AIDS programs should address in

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relation to TB, known as the three I's: intensified case finding; isoniazid preventive therapy; and tuberculosis infection control.

For the first time, data on the prevention of mother-to-child transmission as well as pediatric treatment and care are included in the report, major areas of interest for UNICEF. Some data are available on prongs 1 and 2 of the UN strategy: that is, primary prevention in women and family planning for HIV-infected women; but time precludes me exploring them.

Concerning interventions to interrupt transmission from infected women to their infants, some 18-percent of pregnant women in low and middle-income countries received an HIV test in 2007, but rates vary greatly by region, as shown on this slide, with the highest rates in Europe and the lowest in the Asian region. Although overall in Africa the testing rate was only 18-percent, in countries with the highest burden of infected pregnant women, such as South Africa and Zambia, it ranks 64-percent and 65-percent, respectively. In some smaller countries with a very high prevalence, it currently exceeds 90-percent.

This map shows antiretroviral prophylaxis coverage amongst HIV-infected pregnant women, the highest coverage rates shown in gray, which means above 80-percent; or the lightest blue, 50-percent to 80-percent. Global coverage for

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antiretroviral prophylaxis among HIV-infected pregnant women was estimated at 33-percent.

Just 20 countries, all in Africa, with the exception of India, account for almost 90-percent of pregnant women with HIV and 12 of these countries are in East and Southern Africa. So there is a particular need to shade that part of the map, East and Southern Africa in light blue and then gray. Note the leadership position of Botswana, the only country in gray, in this particular part of the world.

This slide shows the percentage of HIV-positive pregnant women receiving prophylaxis in the 10 countries with the highest numbers of pregnant women living with HIV, the circles showing the estimated coverage. Coverage in South Africa amongst HIV-infected pregnant women was estimated at 57-percent; in Kenya, 69-percent; but rates remain low in several large countries, such as Nigeria, Ethiopia, and the Democratic Republic of Congo. Overall, coverage in East and Southern Africa, the most affected area, increased four-fold between 2004 and 2007.

These proportional bars, which add up to 100-percent, show the frequency of different regimens for PMTCT used in 2007. 50-percent of women still received single-dose nevirapine; 27-percent received a 2-dose regimen; and 12-percent received some form of triple therapy.

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An area of concern is the apparently low access of pregnant women to combination therapy for their own health. Not more than 9-percent of pregnant women were taking triple therapy for their own HIV disease.

Some conclusions concerning PMTCT scale-up are listed here. We need to do better in linkages, to ensure that HIV-infected pregnant women can access family planning services as well as ART for their own health. Women needing ART for their own health have a disproportionately high transmission rate and combination therapy maximally suppresses transmission, prolongs women's lives, preserves families and prevents orphanhood.

We will be under increasing pressure to review ART regimens for pregnant women with HIV from both research findings as well as advocacy and practicality arguments. The use of triple combination therapy for all pregnant women, irrespective of disease stage or CD4, on a life-long basis, or just for pregnancy and the breastfeeding period, as being assessed in Kisumu, Kenya; and the use of extended infant prophylaxis, in view of data from Malawi, just published in *The New England Journal of Medicine*, will need to be discussed. How much evidence and what level of evidence are required for such policy decisions is a vexing philosophic question.

HIV needs to be addressed as a disease of the family, each infected individual often being a sentinel for other adult

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or pediatric infections clustering together. Emphasis is needed on increasing access to the pediatric interventions such as early diagnosis and Cotrimoxazole prophylaxis and we need real-world data on HIV free survival and long-term pediatric outcomes. A geographic focus is necessary following the epidemiology, and the desirability of country-specific targets is evident.

Clearly, your work and that of your national colleagues in implementation has made a huge difference, as captured in the descriptive statistics of this report; but the quest for universal access is elusive and I list here some upcoming challenges.

Only 20-percent of people living with HIV are aware of their HIV serous status. We will never approach universal access until knowledge of HIV serous status itself is virtually universal.

We still face increased early mortality on ART from late diagnosis and unmeasured mortality in people diagnosed but who never access ART; and worrying evidence is accumulating that longer-term retention of patients is not as good everywhere as hoped or believed.

There is pressure to change practice to eliminate stavudine and adopt tenofovir, as well as to initiate treatment at higher CD4 counts; though we must recognize that right now,

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most people access treatment at CD4 counts well below 200 per cu mm. There are budgetary implications to these proposals, tenofovir being more expensive, and recommendations to start treatment earlier, swelling the denominator of treatment need. This will obviously affect the calculation of treatment coverage, coverage being an attractive but potentially unstable concept.

The emergence of MDR and XDR tuberculosis in association with HIV in South Africa may be one of the most important events in public health in recent time. While funding may not be the absolute bottleneck right now, sustainable and predictable financing and functioning health systems are likely to be so in the future.

Finally, if new infections continue unabated and people are kept alive on ART, the future treatment backlog and burden will likely at some time become unmanageable. WHO has issued guidelines on ART use based on the public health approach of simplification, standardization, decentralization of services, and population-based surveillance for drug resistance. We wish to remain faithful to that approach that has stood the test of time, as well as scientific evaluation in this particular paper in *Lancet*; but we need to recognize the pressures for change just described.

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As an evidence-based organization, we need to heed the warning of the late Bradford Hill. "All scientific evidence is incomplete, whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us the freedom to ignore the knowledge we already have or to postpone the action that it appears to demand at a given time."

That is an interesting quote when you think of where we stand with male circumcision.

WHO looks forward to continuing collaboration that combines its global normative role with implementation by partners leading to synergy and mutual adaptation. There is a great responsibility to learn from this implementation experience, assessing the population-level impact of our interventions irrespective of whether we call that operational research, public health evaluation or, simply, learning by doing. WHO is eager to participate in this process of gaining and disseminating knowledge, including evidence for what works in prevention.

In closing, HIV/AIDS remains the leading infectious disease challenge in global health. Even if we will increasingly share the spotlight with other issues, be they other health-related millennium development goals or the food prices, surveillance is the conscience of any epidemic, and we

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cannot scrimp or save on collecting quality data on which literally billions of dollars of decision making depend and which ultimately can be the only judge of impact of our efforts and our only source of accountability.

Dr. Margaret Chan famously said, "What gets measured gets done." So, what is the future for universal access? It will not be achieved everywhere by 2010, but it will be achieved in some places and if we persevere in many places at their own pace. I hope that this annual report meets the needs of those that we need to serve, captured in these quotes from WHO's director-general: "I want my leadership to be judged by the impact of our work on the health of two populations, women and the people of Africa"; and then: "Our greatest concern must always rest with disadvantaged and vulnerable groups. These groups are often hidden, live in remote rural areas or shantytowns and have little political voice." Those groups do include people of same-gender sexual preference.

Dr. Chan spoke referring to health in general, but she could have been speaking of AIDS and, if you close your eyes, it could have been Jonathan Mann speaking, the first director of WHO's AIDS agenda, the 10<sup>th</sup> anniversary of whose death we mark this year. The words embody the commitment to 3 by 5, at some personal risk by JW Lee, who died two years ago.

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To me, universal access should be the legacy of these and other individuals who have gone before, a legacy that affirms freedom from major infectious diseases like HIV, TB and malaria, as a global public good, as a basic right for anyone, anywhere, from which there is no going back.

Thank you.

[END RECORDING]