International AIDS Society

Stronger Together

The AIDS 2008 Impact Report

Evidence to Action

www.aids2008.org
XVII International AIDS Conference
3-8 August 2008, Mexico City

AIDS 2008

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TABLE OF CONTENTS

International AIDS Society/Mondaphoto

Demonstration for universal action, AIDS 2008.

FOREWORD

The XVII International AIDS Conference (AIDS 2008) in Mexico City demonstrated both the enormous progress and outstanding challenges in the global response to AIDS as the 2010 deadline for universal access nears. As the first International AIDS Conference to be held in Latin America, it was particularly gratifying to hear the number of commitments made by political leaders across the region, both immediately prior to and during the conference. From the principled stand of Mexican President Felipe Calderon to fight homophobia and other barriers to meeting universal access targets within Mexico, to the regional agreement of health and education ministers across Latin America and the Caribbean to address sexual health education reform targeting young people, and the commitment of the Coalition of First Ladies and Women Leaders in Latin America to eliminate maternal to child transmission (MTCT), AIDS 2008 has had – and continues to have – an impact well beyond the five days of the conference itself.

As you will read in this report, important new developments were reported in a number of areas:

- Basic scientists are increasing their focus on innate immunity and the body's inflammatory response to HIV as a potentially rich source of new therapeutic targets
- New successes in scaling up ART are being challenged by co-infections, poor infrastructure and differential access between children and adults to HIV diagnostics and care
- Clinical trials from low and middle-income countries indicate the availability of new drugs and improved drug regimens will result in important advances in HIV clinical management
- "Combination prevention" was the new term coined to describe the conceptual approach to HIV prevention: deploying multiple concurrent strategies that address structural, behavioural and biomedical factors that increase vulnerability to HIV
- The potential impact of ART on reducing HIV transmission
- An increasing body of evidence is demonstrating the health system strengthening effect of HIV-specific investments, though important caveats must be heeded to ensure that these investments are coordinated both with other donors and national coordinating bodies to achieve maximum effectiveness
- Human rights, particularly as they relate to gender, sexual orientation, drug use or sex work, received unprecedented attention at the conference and confirmed the need for human rights protections to play a central role in the response to AIDS

Perhaps the most important takeaway message from the conference is that a combination of inadequate resources, unmet commitments and structural barriers are preventing the implementation of evidence-based prevention, treatment and care interventions. AIDS 2008, perhaps more than any previous International AIDS Conference, brought a renewed focus on the legal and human rights issues faced by vulnerable and most at risk populations both in generalized and concentrated or low-level epidemics.

The evidence and experience from the conference were unequivocal in their message: until leaders in both government and civil society are able to separate personal morality and political expediency from the evidence-based interventions required to halt and begin to reverse this epidemic, universal access targets will not be met.

As the theme of the conference reminded us, it is time for *Universal Action Now*. We hope this report is a useful resource for HIV professionals working in every sector of the response to AIDS, and that it will become a powerful and convincing tool for the change required to strengthen the response to HIV/AIDS around the globe.

This document is not a comprehensive analysis of the entire AIDS 2008 conference programme. To access the conference programme, view the Programme-At-A-Glance on www.aids2008.org

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EXECUTIVE SUMMARY

Introduction

The purpose of the *AIDS 2008 Impact Report: Evidence to Action* is to inform the global response to HIV using the evidence, lessons learned, and debates from the XVII International AIDS Conference (AIDS 2008), held in Mexico City from 3-8 August 2008. Although it is difficult to assess precisely how a conference as large and diverse as this will have an impact on the many different sectors involved in the global response to AIDS, this report represents the International AIDS Society's (IAS) analysis of the most important implications of the conference in a variety of areas.

The AIDS 2008 Impact Report is intended to be used by all stakeholders to support implementation of evidence-based policy and programming that will bring us closer to the goal of universal access to HIV prevention, treatment, care and support. With just two years left before the 2010 goal of universal access set by world leaders, it is critical that the new research and evidence presented at the conference be documented, discussed and applied to the real life challenges faced by HIV professionals worldwide. This report is not part of the formal evaluation of AIDS 2008, which will be published in early 2009, nor is it intended to be a comprehensive summary of the conference.

It is divided into five major sections:

1. Epidemiology

Establishing Better Epidemiological Information

As the epidemic matures, accurate information about where new infections are occurring, and in which populations, is becoming increasingly critical in designing effective and well-targeted interventions relevant to today's trends. The quality of HIV surveillance data and methodologies has improved, but in many cases the second generation WHO/UNAIDS surveillance system has not been fully implemented at the national level.

Inadequate Focus on Vulnerable Populations

The differential access to prevention and treatment interventions for children was highlighted at both a pre-conference event and several sessions at the conference, where speakers praised progress in scaling up PMTCT over the past two years but noted that infants and children are still underserved in diagnostic testing and treatment compared to adults and remain particularly vulnerable to the cascading impact of HIV on parents, families and communities.

Many countries are still failing to produce surveillance data and other strategic health information on most at risk populations such as men who have sex with men (MSM), injecting drug users (IDUs) and sex workers. New approaches to understanding HIV epidemiology, which takes into consideration the complex structural, behavioural and biological factors that contribute to HIV vulnerability, are required in order to reconceptualise prevention interventions for both established and emerging epidemics.

UNAIDS/G.Pirozzi

Sex education lesson, Lesotho.

2. Basic, Clinical and Prevention Research

Residual Viremia and the Limits of HIV Disease Management

Research at AIDS 2008 confirmed the speed with which HIV establishes latent viral reservoirs following infection (within one week), particularly in gut-associated lymphoid tissue, and the resulting challenges to viral eradication given how effectively HIV proviral RNA inserts itself into human DNA within these reservoirs. Studies also raised questions about the source of residual viremia and how these might be targeted by novel therapeutic approaches.

Several studies, at times with contradictory findings, addressed innate immunity and the role that toll-like receptors (TLRs), located on the surface and interior of cells play in regulating the body's immunological response and, ultimately, HIV expression. Future immunological research on viral/host dynamics is expected to provide a better understanding of the role of these receptors in the inflammatory response to HIV, and how they might be harnessed in new therapeutic agents and strategies.

When to Start Antiretroviral Therapy (ART)?

The question of whether to initiate ART at higher CD4+ cell counts than currently recommended by World

Kyaw Winn, courtesy of Photoshare

Injecting drug use, Myanmar.

Health Organization (WHO) treatment guidelines received much attention. Updated treatment guidelines released by IAS-USA immediately prior to the conference place no upper CD4+ count limit on when treatment should be considered if other health conditions, such as viral hepatitis or cardiovascular disease, are present. Moreover, a growing evidence base from recent trials suggest that earlier ART intervention may ward off not only AIDS-defining illnesses, but also non-AIDS cancers and heart, liver or kidney disease. If the revised IAS-USA guidelines and these other studies ultimately lead to a revision of WHO treatment guidance, the estimated number of people who will need ART globally will increase substantially.

Task-Shifting to Widen Access to Care and Treatment

Task-shifting is emerging as an important strategy for dealing with the acute shortage of health care workers in many high-burden countries, and several studies presented at AIDS 2008 demonstrated the impressive health system efficiencies garnered by using nurses or other health care providers to deliver HIV care and treatment. One modelling study estimated that, as a result of task-shifting, the reduced number of physicians needed to provide ART in Rwanda by the end of 2008 would lead to a 183% gain in physician capacity for non-HIV care. As many speakers noted, task-shifting, health care worker training and retention strategies will be increasingly critical as the HIV field moves into the "second wave" of ART rollout.

Risk of Resistance in High-prevalence Countries

One of the most important ART studies presented at the conference assessed the emergence of resistance-related mutations at sites in Malawi that rely on CD4 counts and clinical symptoms to assess treatment response, because routine viral load monitoring remains too expensive.

A growing number of stakeholders are recognizing the need to prioritize research to address two concerns raised by this study: determining the optimal time and criteria for switching to second-line therapy; and defining the most appropriate use of viral load (VL) and CD4+ cell monitoring in resource-constrained regions. The pressure to ensure access to accurate, inexpensive laboratory diagnostics – including VL testing – is mounting.

Prevention Research

Research continues to confirm the long-term, protective benefits of circumcision. An 18-month update to the two-year Kisumu, Kenya circumcision trial reported a relative risk reduction of 65% (up from 60% reported when the trial ended) when comparing the men circumcised at baseline with those who remained uncircumcised.

Several studies involving HIV sero-discordant heterosexual couples have produced data suggesting a strong protective effect of ART for HIV-negative partners but further research must be done before definitive conclusions can be drawn. A randomised controlled trial with 1,750 HIV-discordant couples, sponsored by the US National Institutes of Health, is currently underway to quantify the relationship between the level of treatment-suppressed viral load and HIV transmission. However, results are not expected before 2016 and, in the interim, debate continued at AIDS 2008 regarding the 2007 Swiss consensus statement, which concluded there was sufficient existing scientific for monogamous heterosexual serodiscordant couples to dispense with condoms provided specific criteria (such as a sustained undetectable viral load and lack of sexually transmitted infections) were met.

On a related note, AIDS 2008 also became known for the "marriage" of treatment and prevention, with many speakers underscoring the need to integrate prevention and treatment interventions to ensure a more effective and sustainable response to HIV/AIDS.

3. Social, Economic and Political Science, and Policy Research

Prioritizing the Elimination of Stigma and Discrimination

AIDS 2008 firmly established stigma and discrimination as fundamental priorities in the push for universal access to HIV prevention, treatment, care and support. At a session on evidence-based approaches to stigma and discrimination a strong call was made to elevate the importance of stigma and discrimination reduction in national and international funding, policy development and programming. Important progress was reported in the development of standardized tools for assessing levels of stigma, including the People Living with HIV (PLHIV) Stigma Index, intended to measure change in stigma over time and to allow for country comparisons to inform programme and policy interventions, as well as advocacy. Conference sessions and discussions also reinforced the tangible negative effects of stigma on national legislation and policies – such as travel restrictions aimed at PLHIV and the growing trend towards the criminalization of HIV – neither of which have a basis in public health evidence.

Combination Prevention

Numerous speakers at AIDS 2008 stressed the need for replacing prevention interventions that focus exclusively on individual behaviour change or biomedical interventions with "combination prevention". Such an approach calls for a more long-term approach to reducing HIV risk and vulnerability by addressing both individual and structural factors that increase vulnerability to HIV infection, such as gender inequality, homophobia and the criminalization of drug use and sex work. Combination prevention draws on multiple risk reduction strategies rather than relying upon a single "magic bullet", and takes into consideration the relationship between prevention programming and politics, particularly at the level of community involvement and activism.

Research on, for, and by Marginalized Communities

AIDS 2008 featured research involving vulnerable and marginalized communities, particularly in contexts where sex work, injecting drug use, and homosexuality are criminalized and/or are not officially recognized as significant issues for HIV prevention. The conference's increased focus on the role of structural factors that contribute to HIV risk and vulnerability also underscored the need for global advocacy on such issues, and for additional social science research and analyses that are able to capture the complex interaction between individual risk behaviour and social vulnerabilities.

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Sex workers' demonstration, AIDS 2008.

Global HIV/AIDS Initiatives and Health Systems Strengthening

Several high-level sessions addressed various aspects of the debate over "vertical" (disease-specific) versus "horizontal" (health systems) funding following recent criticism that HIV-specific global initiatives are over-resourced compared to other health issues, and that such initiatives distort global health priorities. The overwhelming majority of evidence presented at the conference suggests that HIV investments strengthen overall health systems through the establishment of clinical and laboratory infrastructure, strengthened supply and procurement systems, improvements in health care worker training, and increased community engagement. However, Ministers of Health in attendance noted that HIV-specific investments needed to be closely coordinated with national AIDS authorities and other donors to mitigate potential health system distortions and ensure optimal synergies with other areas of the health system.

Health and Human Rights

Human rights were the focal point for a number of activities at the conference including marches on homophobia, women's rights, and housing, and the first Global Village "Human Rights Networking Zone". Several presentations emphasized the importance of securing human rights to achieve universal access goals, including addressing workplace discrimination, travel restrictions, and gender inequality, including the denial of women's property and inheritance rights. A variety of sessions addressed the human rights context of homosexuality, drug use and sex work, the criminalization of HIV transmission and/or exposure, and the challenges and potential strategies for incorporating human rights principles in HIV programming. Ongoing human rights violations of gay and other MSM in the global South was given significant prominence in these discussions and the growing body of evidence that this population has some of the poorest access to HIV interventions in both generalized and concentrated epidemics.

4. Regional Focus

For the first time at an International AIDS Conference, major policy and programmatic responses to HIV were discussed from the point of view of six geographical regions:

- Sub-Saharan Africa
- Asia and the Pacific
- Eastern Europe and Central Asia
- Latin America
- Caribbean
- Middle East and North Africa

While the epidemiological, cultural and socio-economic contexts in these regions vary considerably, several common, overarching principles and themes emerged. They include: advancing basic human rights, particularly for vulnerable and most at risk populations; ensuring the sustainability of the HIV response through long-term, predictable financing; strengthening health systems; investing in strategic health information; and improving accountability and the involvement of civil society in the response to AIDS.

Equally important is the need to address political barriers to implementing evidence-based interventions such as opioid substitution therapy (OST), needle and syringe programmes (NSPs), comprehensive sexuality education for youth, and sexual and reproductive rights Finally, these regional discussions emphasized the need for legislative and policy reforms related to structural barriers facing women and girls, MSM, IDUs, sex workers and migrant populations.

5. Tracking Progress and Strengthening Accountability

The impact of the conference was also reflected in a number of commitments from leaders, from implementing comprehensive sexual education for young people in Latin America to reducing the price of drugs in the host country. The unprecedented media coverage brought much needed attention and public awareness to the epidemic in Latin America.

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Phill Wilson, AIDS 2008.

Several meetings and sessions at AIDS 2008 also addressed the potential for the International AIDS Conference to play an even stronger role in tracking progress towards the goal of universal access and improving accountability in the global response to AIDS, particularly given some of the inherent weaknesses in the United Nations General Assembly Special Session (UNGASS) review process, highlighted by speakers at several sessions. Specific suggestions included establishing a specific track to address the issue, or developing the Leadership Programme into a more strategic and structured mechanism for monitoring progress on universal access targets and Millennium Development Goals. The XVIII International AIDS Conference (AIDS 2010) in Vienna will, perhaps more than any other conference in the past decade, provide an opportunity to benchmark the response to AIDS – and the impact of AIDS 2008 – on the imminent deadline for universal access.

INTRODUCTION

The XVII International AIDS Conference (AIDS 2008), held 3 – 8 August 2008 in Mexico City, was an opportunity for HIV professionals and individuals working in related fields to explore the latest scientific research, best practices and programmatic experience in the global response to AIDS. It also provided participants with a variety of formats for structured dialogue and debate on a broad range of HIV issues. The *AIDS 2008 Impact Report: Evidence to Action* reviews highlights from the conference programmes (Science, Community and Leadership), programme activities, pre-conference events and other activities to assess their impact on the field.

While AIDS 2008 was notable for the diversity and scope of its programme, this report focuses on content areas in which important new research, other evidence or lessons learned were presented, as well as on issues that generated significant discussion, debate and controversy that are likely to have a substantial impact on the global response in the coming months and years. Although it is always difficult to determine with precision the impact of a conference as large and thematically diverse as the International AIDS Conference, this report reflects the best analysis of the writers and reviewers who attended the many sessions, satellites and affiliated events of AIDS 2008. Session codes are included in each figure and endnote to facilitate searches for the source presentation on either the IAS Abstract Database (http://www.iasociety.org/AbstractSearch.aspx) or AIDS 2008 Programme-at-a-Glance (http://www.aids2008.org/Pag/PAG.aspx).

The purpose of the AIDS 2008 Impact Report is to assist stakeholders to support implementation of evidence-based policies and programmes required to achieve universal access to HIV prevention, treatment, care and support. This report is not part of the formal evaluation of AIDS 2008, which will be published in early 2009, nor is it intended to be a comprehensive summary of the conference. To access the entire conference programme, view the Programme-At-A-Glance on www.aids2008.org

The Role of International AIDS Conferences

For over 25 years, the International AIDS Conference has played a key role in the response to AIDS: by providing the research community with opportunities to share important scientific advances, by profiling both successes and failures in the response to AIDS, and by offering a unique platform for activists and speakers to address critical issues before a global media audience.

Some conferences have been particularly noteworthy for their impact on the field: the V International AIDS Conference in Montreal (1989), where activists successfully challenged the organizers to include civil society representation in future conference planning under the slogan, "Nothing about us without us"; the first major treatment breakthrough of highly active antiretroviral therapy (HAART) announced at the XI International AIDS Conference in Vancouver (1996), and the XIII International AIDS Conference in Durban (2000), where demands for equity in treatment access galvanized the international community and built momentum towards a fundamental shift in the approach to global public health issues affecting low and middle-income countries.

Other conferences are known for highlighting the enormous challenges posed by HIV, such as the IX International AIDS Conference in Berlin (1993), where disappointing results from the Concorde trial of zidovudine monotherapy were reported, or the IX International AIDS Conference in Geneva (1998), where information about the significant side effects and adherence difficulties of lifelong HAART was a sobering reminder of the ongoing challenges in treatment.

Whether reporting on scientific breakthroughs, raising the profile of social justice issues, or highlighting gaps in the response, the conference has acted as a benchmark for the HIV field to assess progress and address both new and ongoing challenges to prevent, treat and control HIV.

Organization of the Report

This report is divided into five sections, each of which includes an analysis of the implications and potential impact of the major developments reported at AIDS 2008 in the areas of research, programme development, policy and advocacy.

1. Epidemiology
A brief review of global epidemiology and current challenges in assessing the incidence and prevalence of HIV, focusing on HIV surveillance and other strategic health information related to most at risk populations.

2. Basic, Clinical and Biomedical Prevention Science
An analysis of new evidence presented in Tracks A, B and C of the AIDS 2008 Scientific Programme, as well as in other related sessions, activities and affiliated events.

3. Social, Economic and Political Science and Policy
An analysis of new evidence presented in Tracks D and E of the Scientific Programme, as well as in other related sessions, activities and affiliated events.

4. Regional Focus
A review of the current response to the epidemic in the following six regions, as well as a discussion of major lessons learned presented at AIDS 2008 and an assessment of the challenges, opportunities and future policy and advocacy priorities within each region:

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Demonstration for universal action, AIDS 2008.

- Asia and the Pacific Islands
- Eastern Europe and Central Asia
- Middle East and North Africa
- Sub-Saharan Africa
- Caribbean
- Latin America

Information presented in this section is drawn primarily from the AIDS 2008 Leadership and Community Programmes, as well as other related programme activities and affiliated events.

5. Tracking Progress and Strengthening Accountability
A review of major discussions at AIDS 2008 regarding how to improve efforts to track progress and strengthen accountability in the global response to AIDS, focusing particularly on strategies to enhance the role of the conference as an accountability mechanism.

Specific programmes and initiatives are included in each section to illustrate both successes and challenges in research, programme rollout and policy. The AIDS 2008 Impact Report was developed by a team of writers and reviewed by a multi-disciplinary panel of experts, including members of the AIDS 2008 Conference Coordinating Committee (CCC).

EPIDEMIOLOGY

The implications of the epidemiological data presented at AIDS 2008 suggest, as one speaker noted, the need for a substantial recommitment to effectively targeted prevention interventions to address prevention fatigue and to diversify access to HIV testing and counselling.[1] Peter Piot, attending his final International AIDS Conference as UNAIDS Executive Director, warned in the Opening Session: "The epidemic is evolving. HIV infections are rising in some countries where we thought prevention had been successful, and new epidemics are appearing... Let us not forget that the epidemic could still bring us new surprises – as it has done so many times already."[2]

Data from the UNAIDS *2008 Report on the Global AIDS Epidemic*, released immediately prior to the conference, indicates that the percentage of people living with HIV globally has remained stable since 2000 (at an estimated 0.8%) and that new infections have declined from 3 million/annum in 2002 to 2.7 million/annum in 2007.[3] However, overall prevalence, due to ongoing infections and reduced mortality as a result of antiretroviral therapy (ART) rollout, remains high. Thirty-three million people were estimated to be living with HIV at the end of 2007, up from 29.5 million in 2001, and over 7,400 people continue be infected daily, with 2 million AIDS deaths in 2007 alone.[4] Most sub-Saharan African countries are reporting reductions in new infections, although this is partially offset by increases in other regions, particularly among injecting drug users (IDUs), gay and other men who have sex with men (MSM), and sex worker populations.

Establishing Better Epidemiological Information

The challenges of establishing precise HIV surveillance data to help inform the response and assess the impact of prevention interventions, even among high-income countries, was highlighted by revised estimates published by the US Centers for Disease Control and Prevention (CDC) shortly before the conference. The US data revealed much higher rates of infection in the US than previously published, thanks to a new technology that is able to detect recent seroconversions. The new figures – and the impact of the epidemic on already marginalized communities in the US – were the subject of a report issued by the Black AIDS Institute issued immediately prior to the conference and resulted in heated debate and activism at the conference itself (see sidebar on the US epidemic).[5] Other high-income countries, most notably the UK and Germany, also have seen recent increases in HIV infections over the last few years, concentrated primarily among gay men.

As the epidemic matures, information about where new infections are occurring, and in which populations, is becoming increasingly critical in designing interventions relevant to current epidemiological trends. Although tools to measure HIV incidence would provide the most useful data for both targeting and evaluating prevention interventions, such tools often are unavailable outside of research settings.[6] In his plenary overview of the current spread of HIV, Geoff Garnett further noted that declines in prevalence may, in part, be related to the natural course of an epidemic, and not exclusively the result of widespread risk reduction behaviours.[7] He proposed a conceptual framework for understanding risk that overlays proximate determinants of risk (such as the number of sexual partners and biological factors) with social epidemiology (including social, structural and individual factors) to develop an accurate model of individual and population level risks for HIV infection.

In the same session on current epidemiology, Elizabeth Fadul noted that the epidemic is increasingly affecting young people (15 – 25 years of age, representing 45% of new infections), with much higher rates of HIV infection among marginalized populations within which the broader social fault lines of gender, sexual orientation, race and poverty continue to drive infections.[8] Additional regional epidemiological data is included in the introduction to each region in Section 4: Regional Focus.

The US Epidemic

Revised CDC figures indicate that new infections are estimated to be as much as 40% higher than previous estimates of 40,000/annum, with 53% of new infections occurring among gay and bisexual men, 31% linked to heterosexual transmission and 12% of infections taking place among IDUs. African Americans, who comprise 13% of the US population, accounted for 45% of new infections in 2007. A Black AIDS Institute report, released immediately prior to the conference, noted that if Black Americans were a country, it would rank seventh out of the 15 PEPFAR focus countries in the size of its epidemic. A California study presented at the conference confirmed that rates of unprotected anal intercourse are increasing among MSM, particularly among men over 34 years of age. The CDC's Kevin Fenton, Congresswoman Barbara Lee, and many other US speakers and activists at the conference called for a national strategy and coordinating authority to respond to the expanding US epidemic, and emphasized the need to redouble prevention efforts targeting African Americans, Latinos and gay and other MSM.

Inadequate Focus on Vulnerable Populations

Women and girls continue to be disproportionately affected in sub-Saharan Africa, where they represent 60% of people living with HIV. Although the ratio of males to females living with HIV globally has remained stable at 50% since 2001, women's share of new infections is increasing in several countries.[9] More encouragingly, prevalence among young, pregnant African women (15 – 24 years of age) has dropped significantly, with seven countries meeting or exceeding the 2010 target of a 25% seroprevalence reduction in this key demographic.

The scale-up of prevention of mother-to-child transmission (PMTCT) using antiretrovirals has increased significantly in recent years, from less than 10% of pregnant women living with HIV covered in 2005 to 34% in 2007, and new infections are declining. However, delegates were reminded that, compared to adults, children remain disadvantaged in terms of treatment access are profoundly vulnerable to the social and familial impacts of AIDS.[10,11] The impact of HIV on children received unprecedented attention at AIDS 2008, most powerfully in the plenary presentation by Linda Richter who argued forcefully that – despite recent gains in attention and resources – children remain underserved and vulnerable to the cascading effects of HIV and AIDS-related mortality on parents, families and communities. While the impact of expanded access to PMTCT interventions is reflected in recent declines in new infections among children (Figure 1), early infant testing is still only available to less than 8% of newborns in low-income countries.[12]

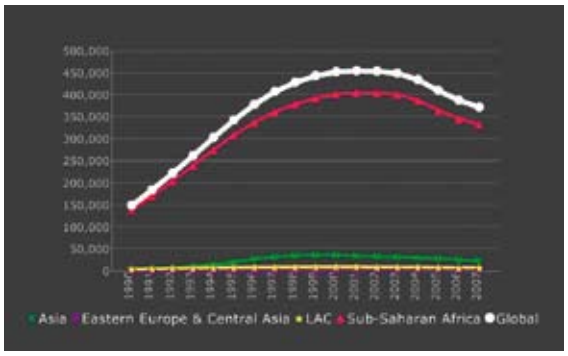

Fig. 1. New infections among children globally, 1990-2007 (UNAIDS, 2008)
Source: Richter, L. No Small Issue: Children and Families (WEPL0102)

Data Quality: Implications for Most At Risk Populations

The disproportionate – and often underreported – impact of the epidemic on gay men and other MSM was the focus of a pre-conference event and was a dominant topic of discussion within both the formal programme and other conference events. At the pre-conference, David Wilson's state of the art overview of MSM epidemiology in the global South – which also included an analysis of seroprevalence among female sex workers and IDUs – drew attention to the gap between the high prevalence and increasing HIV incidence among many gay/MSM populations and the availability of resources dedicated to this population.[13] This issue is particularly relevant for Latin America, where an estimated 20% of MSM are seropositive, a figure that rises to 30% in the Caribbean. Studies in Africa place seroprevalence among MSM between 20% and 40% although it is difficult to assess the accuracy of these estimates as MSM are often not included in national surveillance systems.[14] Projections of the expanding epidemic among MSM in Asia underscores the potentially disastrous consequences of not delivering effective prevention interventions to this key population (Figure 2).

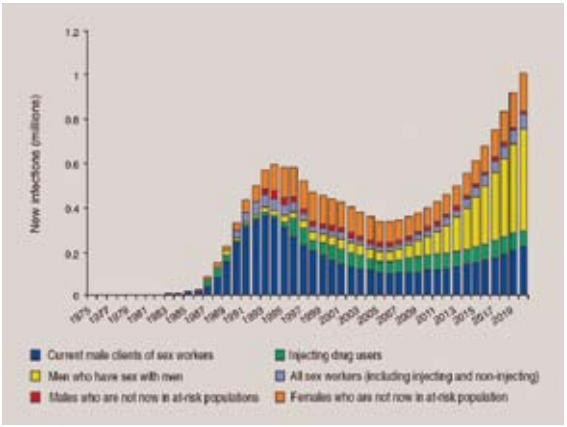

Fig 2. Early Success, potential future failure and a growing MSM epidemic in Asia.
Source: Wilson, D. Overview of MSM Epidemiology in the Global South, from Redefining AIDS in Asia: Crafting an Effective Response*, Commission on AIDS in Asia.*

Wilson's analysis of population-based seroprevalence studies in several Asian cities also reveals the extent to which rising incidence among IDUs correlates with subsequent increases in HIV prevalence among female sex workers and other populations (Figure 3). If this hypothesis is validated in other cities, it could have enormous consequences for Eastern Europe and Central Asia, where the vast majority of infections are the result of unsafe injecting practices driven by structural factors such as the lack of substitution therapy, a punitive approach to drug use, poor access to drug treatment, and limited access to evidence-based prevention interventions.

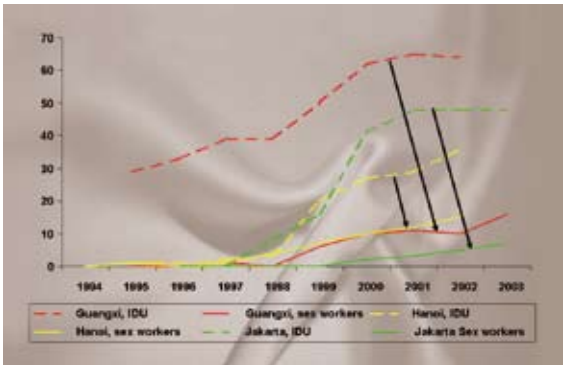

Fig 3. IDU igniting HIV infection among sex workers in Asia
Source: Pisani, E. HIV Infections among IDUs and Sex Workers in Asia

Conclusions

The major issues identified in epidemiological presentations and discussion held at the conference address three issues, the first two closely related:

First, while the quality and accuracy of HIV surveillance data and methodology have improved, in many cases the second generation WHO/UNAIDS surveillance system has not been fully implemented at the national level. Many countries are still failing to produce precise surveillance data, particularly with respect to highly marginalized populations such as MSM, IDUs and sex workers. While significant work on building core HIV surveillance capacity is progressing, it is clear that the UNAIDS mantra "Know Your Epidemic" remains a formidable challenge. A recent survey of 153 low- and middle-income countries revealed that only 56 had fully-functioning surveillance systems and 49 had poor performing systems.[15]

Second, existing national surveillance systems in many low- and middle-income countries often do not collect disaggregated data on some most at risk populations. If disaggregated data are not collected as part of a comprehensive national surveillance system, there are a limited number of population-specific studies on which to base estimates of infection and surveillance data is necessarily incomplete, a point underscored by Kieran Daly at a session on tracking progress on UNGASS targets.[16] It is clear that the structural inequalities faced by gay and other MSM, sex workers and IDUs, which have driven much of this epidemic among these populations since it first emerged, continue to hamper national responses to AIDS. In his plenary presentation on MSM, Jorge Saavedra, from Mexico's Centro Nacional para la Prevencion y Control del VIH/SIDA (CENSIDA), noted: "we have failed to bring down the incidence among MSM because, with some exceptions, we have not tried".[17] The issues he raised about how homophobia continues to undermine the AIDS response was echoed in equally strong statements at the Opening Session by leaders as diverse as Mexican President Felipe Calderon and UN Secretary General Ban Ki-moon. Perhaps additional advocacy efforts targeting political leaders and government officials are required to turn the language former Botswana President Festus Mogae used in his Opening Session speech regarding "people who engage in unusual sexual practices" into an explicit acknowledgment of MSM in Africa – and other regions – and their importance in the HIV surveillance systems that have not served them well to date.

Third, while the majority of PLHIV live in low- and middle-income countries and these areas are also home to the vast majority of new infections, the dynamic situation in high-income countries demands continued attention. The new US figures, together with data from other high-income countries with established epidemics, such as Germany and the UK, reveal rising HIV infection rates among gay and other MSM, as well as recent increases in rates of hepatitis C virus (HCV) co-infection. In the Russian Federation and other countries in Eastern Europe and Central Asia, unsafe injecting practices are responsible for the vast majority of new infections, with harm reduction interventions for IDUs facing a daunting legal and policy context.

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Luis Soto-Ramirez, AIDS 2008.

Endnotes

1 Spire, B. HIV Prevention: What we learned from community experience in concentrated epidemics. Plenary (FRPL012). XVII International AIDS Conference 2008.

2 Piot, P. Don't give up the fight! Opening Session. XVII International AIDS Conference 2008.

3 UNAIDS. 2008 Report on the Global AIDS Epidemic. Geneva, 2008.

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15 WHO/UNAIDS/UNICEF. Towards universal access: scaling up priority HIV interventions in the health sector. Progress Report 2008. Geneva, 2008.

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International AIDS Society/Mondaphoto

Demonstration for universal action, AIDS 2008.

BASIC, CLINICAL AND PREVENTION RESEARCH

Basic Science

HIV has become a chronic, manageable disease for most patients in high-income countries, who can expect to live near-normal lifespans at current standards of care. Two major journal reports confirming this conclusion were released on the eve of the conference and brought a new focus to conference presentations on the basic biology behind the HIV-human host interaction.[1,2]

Residual Viremia and the Limits of HIV Disease Management

Several presentations at AIDS 2008 examined the limits of medical management of HIV. The virus can be reduced to levels undetectable by standard assays, yet a small residual amount of virus remains, on the order of 1 copy of HIV RNA per millilitre of plasma. The source of this residual viremia is still the subject of debate, but its consequence is certain. Patients who stop antiretroviral therapy (ART), even after many years, usually see their viral loads rebound to pre-treatment levels within a matter of weeks. Absent viral eradication, ART is for life. The world is therefore faced with the need to administer decades of antiretroviral agents to 30 or 40 million people, with all the expense and toxicity management issues that come with such a massive undertaking.

Robert Siliciano summarized a decade's worth of research in his presentation on the origin of residual viremia.[3] Siliciano's own observations have led him to infer that there is essentially no ongoing viral replication during successful ART. Instead, residual viremia comes from cells containing latent HIV DNA in their genomes. HIV becomes activated along with the cells' own genes during the immune response to disease.

There is no evolution in this latent population and thus no emergence of drug resistance. ART can control the residual infection indefinitely but it cannot eradicate it. More frustrating yet, the residual viremia in about half of all virologically suppressed patients seems cloned from a handful of isolates. Siliciano argues that on a few occasions, HIV becomes integrated into progenitor cells that faithfully copy the HIV genes as they divide and differentiate into mature immune cells such as monocytes and lymphocytes. Viral production begins only when these mature cells become activated.

In this context, the possibility of therapeutically eliminating all latent HIV or removing HIV that silently replicates along with the human genome in progenitor cell lines is remote. In a presentation, Anthony Fauci suggested a form of "immunotherapy" – in addition to early treatment and treatment intensification – as one strategy for gradually eliminating the latent reservoir.[4] While protected by the most potent ART, anti-HIV immune responses could be preserved and ultimately enhanced. Eventually, they might be strong enough, and residual HIV low enough, to allow for drug discontinuation without viral rebound.

The first step toward developing a therapeutic strategy for controlling latent HIV will be to understand more precisely how HIV proviral DNA integrates into human chromosomal DNA and the factors inducing latency. Kadreppa Sreenath presented data supporting suppression of transcription by SMAR1, a component of the cellular nuclear protein matrix; SMAR1 maintains the genes' physical structure as well as helping to regulate their activity.[5] SMAR1, induced in response to HIV infection, forms a repressor complex with two other proteins that bind to the long terminal repeat region at the terminus of the HIV genome. HIV tat, together with the cells' own activation factor NF-κB, displaces this complex and triggers viral replication. This model yields hints of a therapeutic strategy, involving either SMAR1 promotion or tat inhibition, but this concept is still far from a concrete therapeutic application.

The Challenging Speed of Acute Infection

The conference yielded multiple presentations of how rapidly HIV takes over during acute infection. Eric Hunter and Debrah Boeras showed that new sexually acquired HIV is usually very genetically homogenous.[6,7] It arises from a minor variant present in the donor's body. Presumably such HIV has special, still undefined characteristics that make it more fit for transmission.

Once in contact with a new host, HIV moves very quickly. Yonatan Ganor described the results from his group's explant model of human foreskin.[8] Cell-associated HIV was efficiently transmitted in this model. The Langerhans cells on the inner foreskin became infected with HIV and transferred the virus to the CD4+ T-cells in the dermis within one hour of initial contact. In contrast, transport from the outer foreskin was 10 times less efficient. Cells in the outer foreskin's keratinized layer could become infected but that layer kept the infection from spreading inward. Also, the Langerhans cells in this layer degraded HIV when they captured it rather than transporting it live to the virus's primary target.

The role of mucosal dendritic cells, of which Langerhans cells form a subset, in facilitating HIV infection has been known for some time (see Figure 4). Dendritic cells contain surface receptors containing C-lectin, to which HIV physically adheres.[9] DC-SIGN is the most widely recognized of these receptors, but there are a number of others.

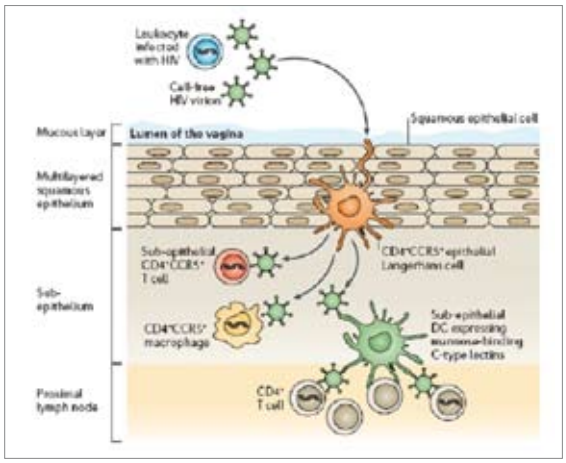


Fig 4. Cells Playing a Role in Genital HIV Transmission
Source: Vanham, G. Future promising microbicidal products: What to learn from the in vitro work (THSY0601), from Lederman, M Offord, R and Hartly O. Microbicides and other topical strategies to prevent vaginal transmission of HIV. Nature Reviews Immunology *6, 371-382 (1 May 2006).*

Dendritic cells' normal function is to present foreign antigen to the CD4+ T-cells, which then stimulate an immune response. The dendritic cell first internalizes the C-lectin receptor-HIV complex in an endosome. Endosomes normally break up foreign bodies for antigen presentation. Whether particular dendritic cell subsets actually degrade or protect HIV depends on the structure of their C-lectin receptors. This observation may help explain HIV's different outcome on the inner and outer foreskin – and hence the protective effect of circumcision.[10]

Tove Kaldensjö reported on four different dendritic cell subsets present on the female ectocervix.[11] Comparing HIV-negative women with high and low risk for HIV exposure, Kaldensjö's team found that the women with higher risk sexual behaviour had more ectocervical dendritic cells with C-lectin receptors capable of transporting HIV to lymphoid tissue.

Damage occurs very quickly once HIV starts infecting CD4+ T-cells. Fauci noted that HIV establishes a latent HIV reservoir in the first week after transmission. In addition, gastrointestinal effector CD4+ T-cells are virtually eliminated during the first few weeks.[12,13] According to a recent report by Fauci's group, CD4+ cell counts in gut lymphoid tissue remain depressed even after 10 years of suppressive ART, and this tissue represents the location of most of the latent viral reservoir.[14]

Understanding Innate Immunity and the Role of Toll-Like Receptors

Halting HIV's rapid progress during primary infection is of prime importance. AIDS 2008 marked a new interest in innate immunity, which is the first line of defence against HIV. The initial inflammatory response arises from a variety of non-specific, T-cell independent immune responses that recognize invasion by some sort of foreign material. HIV's encounter with innate immunity starts with the C-lectin receptors on mucosal dendritic cells. Though mostly ignored until recently, innate immunity remains a major factor throughout the HIV lifecycle.

Much of the new focus on innate immunity concerns toll-like receptors (TLRs). TLRs are an ancient family of cell-surface and internal receptors. They recognize molecules that are common to many pathogens but foreign to host cells. Present on human immune cells, including macrophages and lymphocytes, each receptor in the family specializes in recognizing a certain type of molecule – for example, bacterial glycolipids or lipoproteins and viral DNA or RNA. Once excited, TLRs start a signal cascade that results in cell activation and the release of inflammatory cytokines.

Research into the relationship between TLRs and HIV has accelerated dramatically over the past five years. The AIDS 2008 Scientific Programme included several inconsistent, and even conflicting, reports on strategies to employ TLRs therapeutically.

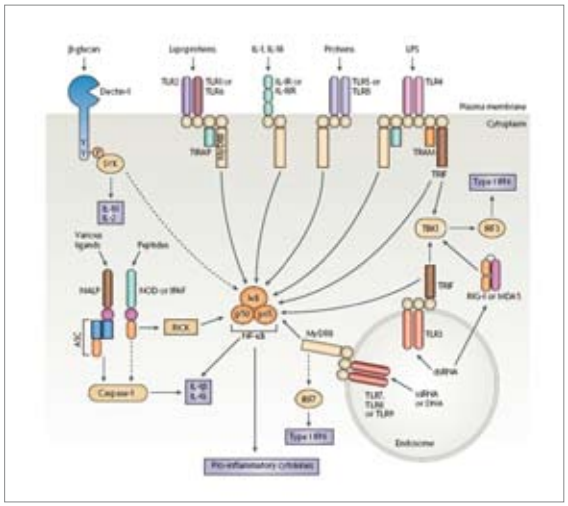


Fig 5. The Toll-like Receptors in and on Cells Recognize Microbial Patterns and Trigger Immune Responses
Fig 5. Source: Pimenta-Inada, H et al. The Toll-like receptor 2 ligand Zymosan inhibits HIV-1 replication in human primary cells (MOAA0105), from Trinchieri G., Sher. A., Nature Reviews Immunology 2007 Mar;7(3):179-90).

Dumith Bou-Habib reported on zymosan, a common fungal polysaccharide that binds to TLR2. Zymosan inhibits HIV infection in macrophages, apparently at the cell entry stage (Figure 5).[15] A synthetic compound, Pam3Cys has similar properties. However, Sandra Thibault reported that Pam3Cys and other compounds binding TLR2 and TLR5 on CD4+ T-cells actually increase cellular HIV integration and

production, a result that conflicts with Bou-Habib's findings.[16] Terrance Brann's also presented findings suggesting the HIV suppressive effects of TLRs. His experiments were with a pair of TLR4 ligands produced by human neutrophils.[17] These molecules reduced R5-tropic HIV replication in macrophage cultures but did not affect X4-tropic HIV in CD4+ T-cells. In other research, Leonid Margolis discussed ways in which viral co-infections such as HCV can up- and down-modulate HIV, probably by interacting with various TLRs.[18]

The inconsistencies in the studies presented require further investigation. One explanation may be subtle ways in which the TLR-signalled response directs chemokine and cytokine release. The zymosan report, for example found that macrophages respond to TLR2 stimulation by releasing beta-chemokines, the chemotactic signalling molecules that fit into and block the CCR5 receptor utilized by R5-tropic HIV when entering new cells. T-cells respond to TLR2 by producing NF- B, as do macrophages, but without the beta-chemokines.

The importance of the overall cell-signalling milieu was further stressed in a report published just after the conference. It described the HIV suppressive effect of a mutation in TLR8.[19] The study, which included 782 HIV+ patients, observed that those with only the mutant (A1G) gene exhibited a mean CD4 decline that was 3.5-fold slower than HIV+ patients with normal TLR8 (75% of the total study population).

When stimulated, the mutant TLR8 triggers relatively lower levels of NF-κB and IL-10 and relatively higher levels of tumour necrosis factor alpha (TNF-α) as compared with normal TLR8. All three are known to promote HIV replication, but TLR8 stimulation and TNF-α also activate protective CD8+ cytotoxic lymphocytes and natural killer (NK) cells.[20]

NK cells are a type of white blood cell that non-specifically kills virus-infected cells. At AIDS 2008, Samuel Nuvor and colleagues argued that down-regulation of NK cells is a critical difference between HIV-1 infection and HIV-2, which progresses more slowly.[21] Restoring NK cell activity via TLR8 or otherwise might be an important component in therapeutically or prophylactically creating an effective immune response against HIV.

Harnessing the Immune Response

Stimulating the immune system to better fight HIV is a complicated issue. Chronic immune system activation without achieving effective HIV control may be a major contributor to HIV-associated T-cell loss.[22] Immune control and regeneration processes become exhausted or dysfunctional. They fail to replace cells lost to HIV or even cause more cells to die via a form of cell suicide known as apoptosis. A number of the factors contributing to immune decline were described at the conference. These include loss of proliferative capacity and response to antigen presentation in HIV-specific CD8+ cytotoxic lymphocytes.[23,24]

Notably, a post-AIDS 2008 report described increased cellular TLR levels and heightened responsiveness to TLR signalling in persons with HIV.[25] This report implicates TLRs in immune dysfunction during untreated HIV infection rather than as a source of protection.

Many of the conference presenters nonetheless suggested that their research findings will eventually help to identify ways to restore the immune response and devise new means for controlling HIV. The relevance of these results is not yet clear given the high degree of HIV control achieved by direct antiretroviral therapy. Suppressing HIV will by itself eliminate much of the chronic inflammation and allow immune recovery. The total CD4+ T-cell count does not seem to ever return to pre-HIV levels, however, and subtle defects in immune subpopulations remain.[26]

An obvious next step will be to better delineate what constitutes effective anti-HIV immunity. Answering that question is complicated by the fact that the behaviour of individual immune components can have both positive and negative effects. As the inconsistent TLR findings discussed previously suggest, researchers need to consider how each component interacts with other aspects of the immune system. Considering that HIV disease feeds on immune activation, the ultimate goal is a plan for deploying the various immune defences to provide maximum effectiveness with the least extraneous activity.

Manipulation of the immune system may eventually prove useful in further restoring the immune system after the antiretroviral agents have reduced HIV to undetectable levels. In particular, enhancing the anti-HIV immune response promises to help block residual HIV, perhaps allowing for simplification or elimination of drug therapy. In addition, immune therapy may prove more effective before the body ever comes in contact with HIV. Vaccines and other preventive technologies have so far been unable to block HIV transmission. Selectively stimulating appropriate immune responses could prove vital to advancing such prevention efforts.

Clinical Research, Treatment and Care

AIDS 2008, of course, took place two years before the deadline for universal access, and significant attention was devoted to the theme of the conference: Universal Action Now!, particularly in the context of both increases in the pace of scaling up treatment and care interventions and the growing realization that few countries are on target to meet universal access goals. Strategies for improving access to care in resource-limited countries, the risk of antiretroviral

resistance in these countries, and evolving antiretroviral tactics dominated the AIDS 2008 agenda on clinical research and treatment of HIV infection.

Should ART Start at a Higher CD4 Count?

As AIDS 2008 began, an international panel of treatment experts convened by the IAS-USA updated antiretroviral treatment guidelines for adults. The panel recommended broadening options for starting ART at a CD4 count above 350 cells/mm^3 and to include people with active hepatitis B or C infection, cardiovascular disease risk, or compromised kidney function.[27] The panel set no upper CD4 limit on when treatment should begin. A growing data stream from recent trials suggests that earlier ART may ward off not only AIDS-defining diseases, but also non-AIDS cancers and heart, liver, or kidney diseases.[28,29,30]

A cohort study at AIDS 2008 added to accumulating evidence favouring earlier ART. This 1,679-person analysis of the US HIV Outpatient Study cohort found that a CD4 count under 350 cells/mm^3 when first measured independently raised the risk of new cardiovascular disease more than 75%.[31] Additional evidence supporting the clinical value of earlier intervention with antiretrovirals could lead World Health Organization (WHO) advisors to review guidelines on when to start ART in resource-limited countries. WHO currently recommends ART for anyone with a CD4 count below 200 cells/mm3, while suggesting clinicians should "consider treatment" for people with 200 to 350 cells/mm^3 and defer treatment for people with more than 350 cells/mm3.[32]

During AIDS 2008 incoming IAS President Julio Montaner predicted that revamped treatment guidelines for high-income countries could "revolutionize the treatment of HIV" by recognizing HIV infection as a chronic inflammatory disease that "affects the heart, liver, kidneys, and in due course we are going to learn the rest of the assorted organs in the body."[33,34] Montaner cautioned that raising the CD4-cell threshold for starting ART could further widen the treatment-access gap between developed and developing countries unless experience confirms his modeling study, which suggests that expanding ART access will help limit the growth of the HIV epidemic and its associated costs by reducing infectivity. If this hypothesis proves true, the preventive effect of ART will be a powerful new argument for rolling out antiretroviral therapy more aggressively.[35]

Related to the growing debate regarding optimal start and switch times is the issue of how and what information to use in clinical decision-making regarding switching drug regimens. A Haitian study raised concerns about relying on clinical or immunological criteria to detect ART failure, based on WHO treatment guidelines, in the absence of VL and CD4+ laboratory monitoring. In this study almost half (47%) the participants had HIV RNA levels below the limit of detection after being assessed as failing ART using clinical criteria, suggesting that the lack of VL PCR and other laboratory diagnostics in clinical decision-making could lead to premature switching.[36]

When to Start ART in TB Co-infected Patients

In many parts of the world, tuberculosis is the first AIDS diagnosis and a leading cause of death among people living with HIV. Yet the best time to start ART in HIV/TB-co-infected individuals remains controversial. Two studies presented at AIDS 2008 – one in Brazil and one in Argentina – addressed this question but did not reach the same conclusion.

Valéria Saraceni's 632-person analysis of THRio, a Brazilian observational cohort study, found that starting ART *at any point* after beginning anti-TB therapy independently halved the risk of death, while completing the course of anti-TB drugs independently lowered the risk of death more than 85%[37] (Figure 6). A study of 142 HIV/TB co-infected people in Argentina recorded a higher overall death rate in those beginning ART within 8 weeks of starting anti-TB medications compared with those starting ART later (14.4% versus 6.8%, P = 0.013).[38] However, TB-related mortality was the same in the two groups, a pre-ART clinical AIDS diagnosis was twice as common in the early-ART group, and the investigators did not perform multivariate analyses to determine whether the timing of ART affected mortality independent of other risk factors. Both of these studies were observational; ongoing randomized trials to address the optimal time to start ART during TB treatment are ongoing.

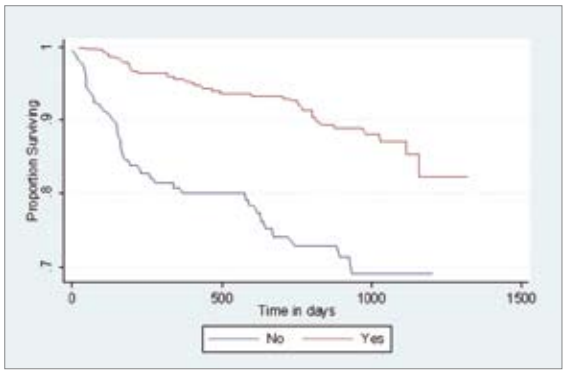


Fig 6. Kaplan-Meier: Survival After a TB diagnosis, by exposure to HAART (Log-rank test-p<.001)
Source: Saraceni, V et al. Tuberculosis, HAART use and survival in the THRio Cohort, Rio de Janeiro, Brazil. (MOAB0305)

The Brazilian study linked delayed HIV diagnosis in TB patients with a lower chance of receiving ART. That finding underscores the critical need to integrate HIV and TB care, a policy emphasized in the WHO/IAS/Global Fund/World Bank consensus statement on knowledge gaps in the public

health approach to delivering ART and care.[39] The Brazilian investigators recommended universal opt-out HIV testing for everyone with TB. UNAIDS already recommends HIV testing and counselling for all TB patients and screening of all HIV-infected people for TB. Because TB is such an important co-morbidity throughout the world, more rigorous prospective research is needed to optimize the role of ART for co-infected people.

In a post-conference development related to this issue, the South African chief director of HIV and AIDS, Dr Nomonde Xundu, confirmed that, as a result of evidence presented at the conference, a recommendation was under discussion about potential changes to South Africa's national treatment guidelines, including whether to recommend earlier initiation of ART, and whether additional clinical guidance for individuals co-infected with TB is also required.[40]

Task Shifting to Widen Access to Care and Treatment

Acute shortages of health professionals remain a stumbling block to wider HIV care in many low-income countries. New research presented by several groups at AIDS 2008 examined the role of task shifting – transferring certain physician responsibilities to other health workers – as a way to improve overall access to care.

In Malawi's rural Thyolo district, shifting some counselling work from nurses to lay counselors – then shifting ARV initiation duties from physicians to nurses – helped the region reach universal access targets.[41] The region has 600,000 people with HIV infection, including 9,000 to 12,000 who urgently needed antiretrovirals, when task shifting began. Médecins Sans Frontières set an initial target of treating 10,000 people. Shifting antiretroviral care duties away from physicians more than doubled the number of people tested for HIV, and, from 2004 through 2007, boosted the number of people starting ART from 2,000 to 12,000 (Figure 7). Universal access in Thyolo cost 3 Euros per district inhabitant per year.

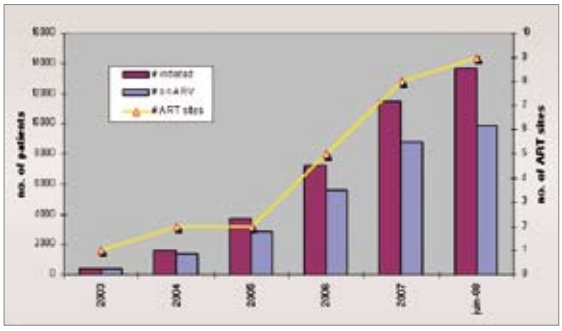


Fig 7. ART Initiation in Thyolo District 2003-2008
Source: Massaquoi, M et al. Achieving universal access to antiretroviral therapy in a rural district in Malawi: how was it done? (TUAB0303).

A study comparing nurse-led primary care-based ART with specialist hospital-based care in rural Swaziland documented lower mortality in the nurse-led setting and comparable dropout rates. A separate modeling study predicting the impact of a pilot task-shifting project in Rwanda estimated that the number of physicians needed to provide ART by the end of 2008 will drop from 77 physicians working 30 hours per week to 17 physicians working the same number of hours. That change represents a 78% decline in physician demand for HIV care and a 183% gain in physician capacity for non-HIV care (Figure 8).

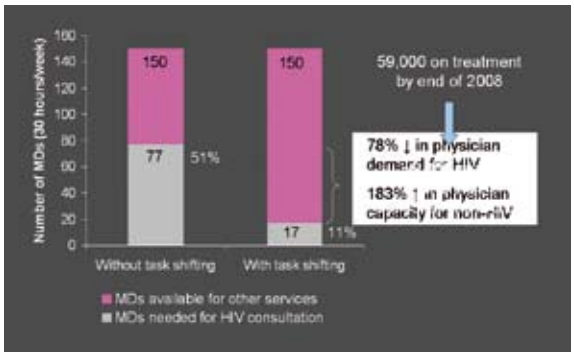


Fig 8. Roll Up to National Level
Source: Chung, J et al. Quantification of physician-time saved in a task shifting pilot programme in Rwanda. (WEAB0205)

Task shifting to nurses will not solve ARV access problems in sub-Saharan Africa because the region also suffers from a servere shortage of nurses. However, as the study in Malawi found, certain nursing tasks can be assigned to other workers, and greater community involvement can also expand HIV care.[44] By showing that task shifting may free physicians to manage other diseases, the Rwandan study demonstrates that robust AIDS funding need not mean neglect of other pressing clinical issues.[45]

Risk of Resistance in High-prevalence Countries

With respect to ART, one of the most important AIDS 2008 studies assessed the emergence of resistance-related mutations in Malawi sites that rely on CD4 counts and clinical symptoms to assess treatment response – because routine viral load monitoring remains too expensive.[46] Resistance testing of samples from 96 people whose first ARVs failed uncovered an array of mutations that could severely compromise nucleoside use in second-line regimens.

Viral load monitoring would have detected ARV failure earlier and prevented the emergence of many mutations that developed while these patients continued a failing regimen. But viral load testing – and often CD4-cell assays – remain rare in many resource-poor clinics, and their absence limits optimal ART. Second-line antiretrovirals are more scarce than

first-line agents in many of these same regions, and rampant resistance will threaten their use.[47] A recent modeling study by A Phillips suggested that tracking symptoms and CD4 counts may do as well as viral load testing in increasing potential life-years survived in low-income countries.[48] But that analysis may have underestimated the impact of certain mutations detected in the Malawi study.

A 2008 consensus statement by WHO, IAS, World Bank and the Global Fund underscored the need to prioritize research to address two concerns raised by this study – determining the optimal time and criteria for switching to second-line therapy, and defining the most appropriate use of viral load and CD4-cell monitoring in resource-constrained regions.[49] The answers to these questions will be key in shaping the "second wave" of ART rollout and the clinical approach to treatment and care in low- and middle-income countries.

Trials of Preferred ARV Regimens

Many randomized ARV trials recruit patients from across the globe. Often, however, these trials enrol patients from the same well-established clinics in low- and middle-income countries. Rigorously testing promising ARV tactics in diverse settings is critical to establishing their value in countries with differing demographics and standards of care. Two ongoing trials tackling this issue were presented at AIDS 2008.

The multinational PEARLS trial led by the US AIDS Clinical Trials Group set out to compare three first-line regimens in 1,361 adults in Brazil, Haiti, Peru, Malawi, South Africa, Zimbabwe, India, and Thailand, and 210 adults in the United States.[50] Patients randomized to once-daily didanosine, emtricitabine, and atazanavir (without a ritonavir boost) had a higher risk of treatment failure after 72 weeks than patients randomized to twice-daily zidovudine plus lamivudine and once-daily efavirenz (Figure 9). Failure rates differed from country to country and were higher among people with prior or current tuberculosis. Two points stand out: First, the atazanavir regimen failed by viral load criteria before clinical failure criteria became statistically significant – a finding emphasizing the value of viral load monitoring. Second, although atazanavir is licensed for use with or without ritonavir, most patients in the US and Western Europe take the drug with ritonavir to keep atazanavir concentrations even.

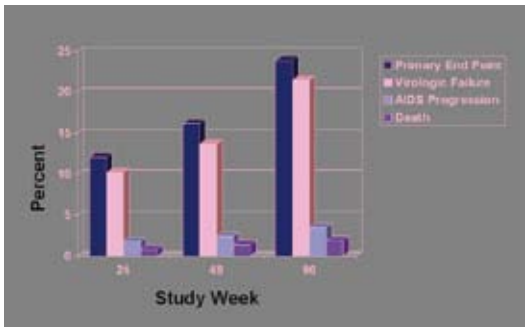


Fig 9. Cumulative Probability of Treatment Failure ddI-EC+FTC+ATV
Source: Campbell, T et al. ACTG A5175: a multinational study of ddI-EC, FTC and atazanavir vs. co-formulated AZT/3TC and efavirenz for initial treatment of HIV-1 infection. (THAB0404)

In a recent US trial published before the conference an efavirenz-based combination controlled HIV better than lopinavir/ritonavir in previously untreated people, even in those starting ART with a viral load above 100,000 copies/mL.[51] A 48-week Mexican trial led by independent investigators confirmed better viral control with efavirenz than with lopinavir/ritonavir in ARV-naive people with advanced HIV infection (Figure 10).[52] The Mexican study enrolled only patients with fewer than 200 CD4 cells/mm^3, and the median pre-treatment count stood well under 100 cells/mm^3. Discovery of compelling country-specific results in such studies should inspire further randomized controlled trials outside high-income countries.

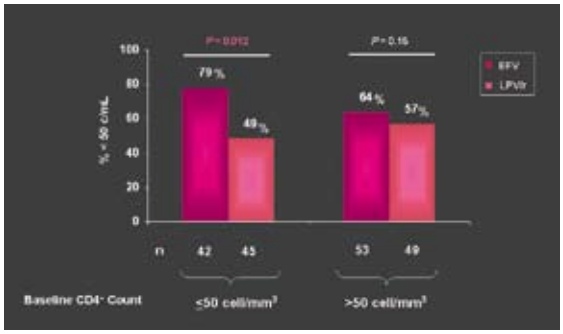


Fig 10. Virological Suppression Sratified by Baseline CD4$^+$ Counts (>/≤ 50 cell/mm^3)
Source: Madero, S. et al. A prospective, randomized, open label trial of efavirenz versus lopinavir/ritonavir based HAART among antiretroviral therapy naïve, HIV infected individuals presenting for care with CD4 cell counts. (TUAB0104)

Prevention Research

Research into new HIV prevention technologies in the years leading up to AIDS 2008 has been discouraging. Between 2006 and 2008, five advanced stage trials (four for broad-spectrum microbicides and one for a vaccine) announced nil or negative results, and there are currently no vaccine candidates ready for field-testing. The long-term circumcision results reported at AIDS 2008 indicated that prevention interventions do have the potential to substantially reduce new infections. Other presentations mapped out prevention strategies using antiretroviral agents, which could be introduced in the field relatively quickly.

More Evidence that Circumcision Works

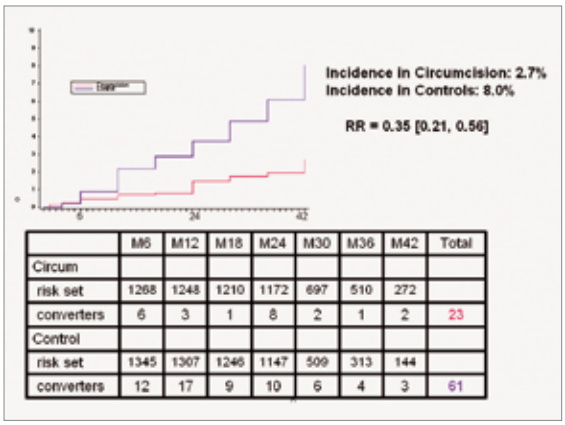
Most optimistically, Robert Bailey reported results from extended follow-up of participants in their randomized controlled trial of male circumcision in Kisumu, Kenya at a late-breaker session. Previously, participants in the three trials of circumcision had data up to only 21 – 24 months post-randomization. Now, with the inclusion of 42 months of follow-up, Bailey and his colleagues reported a 65% protective effect of circumcision against HIV acquisition in young men in Kisumu (Figure 11). The Kisumu trial also attempted to gauge the effect of circumcision on sexual pleasure and performance. They found that there was no appreciable difference between circumcised and uncircumcised men in their reports concerning various measures of sexual function and satisfaction of female partners.[53]

Bertran Auvert presented the results of a study subsequent to his group's circumcision trial in Orange Farm, South Africa. After counselling 1,207 men on safe sex and treating them for sexually transmitted infections, the researchers offered free circumcisions in a medical clinic. Among the uncircumcised men (68% of the total), 65% eventually accepted the offer.[54]

Auvert's group and the Kisumu trial also attempted to gauge the effect of circumcision on sexual pleasure and performance. They found that there was no appreciable difference between circumcised and uncircumcised men, according to reports from both males and females.[55]

Fred Sawe in addition reported that HIV prevention and reproductive health training was very well received during traditional male rites of passage in the Great Rift Valley.[56] These ceremonies include circumcision. In the interest of safety, medically trained personnel are increasingly invited to perform the actual circumcisions during maturation ceremonies.

Auvert presented the results of the first circumcision randomized clinical trial three years ago at the 3rd IAS Conference on HIV Pathogenesis and Treatment in Rio de Janeiro.[57] Studies began reporting a correlation between higher circumcision rates and lower HIV in parts of Africa 20 years ago.[58] WHO has since then developed a "Male Circumcision Quality Assurance Guide" providing a framework for safe mass circumcision programs, including infection control and risk reduction guidelines.[59] Yet there are still no large-scale circumcision programmes for high HIV prevalence areas. Richard White presented a model predicting that in sub-Saharan Africa, the lowest cost per HIV infection averted in the next ten years, around US$1,000, would occur if the target circumcision age group were 25-34 year-olds.[60] This is the male age range with the highest immediate HIV risk and somewhat older than the WHO recommended target group (12-30 year-old males). White and a poster presented by Agnes Binagwaho advocated also circumcising newborns, although the benefits of doing so would not be visible for approximately 25 years.[61]



	M6	M12	M18	M24	M30	M36	M42	Total
Circum								
risk set	1268	1248	1210	1172	697	510	272	
converters	6	3	1	8	2	1	2	23
Control								
risk set	1345	1307	1246	1147	509	313	144	
converters	12	17	9	10	6	4	3	61

Fig 11. Cumulative HIV Seroincidence over 42 Months by Circumcision Status
Source: Bailey, RC et al. The protective effect of male circumcision is sustained for at least 42 months: results from the Kisumu, Kenya trial (THAC0501).

Harnessing Antiretroviral Treatment for Prevention

While the implementation of circumcision as a viable prevention strategy lags, a debate has emerged about using antiretroviral therapy as a prevention tool. In January 2008, Switzerland's Federal Commission on AIDS-Related Issues (EKAF) released a statement indicating that people living with HIV who were taking an effective (maximally suppressive) antiretroviral regimen could not transmit the virus.[62,63] There were several strict conditions attached to that position, including at least six months of undetectable viral load, no other sexually transmitted disease, and ensuring HIV-negative sex partners were able to make an informed choice to dispense with condoms.

Nonetheless, arguments ensued over the Swiss statement's implications at an EKAF-sponsored satellite symposium that took place just before the official opening of AIDS 2008. EKAF president Pietro Vernazza presented his Commission's point of view, which places the position in a very carefully-defined context.[64] He said that EKAF was merely standardizing what physicians were already telling their patients. In addition, Swiss law is very strict about exposing other people to HIV, even if transmission does not occur. Vernazza's point was not that the risk of transmission under suppressive therapy was nil, rather that it was very small, comparable with the risk of transmitting while using condoms. Successful ART should therefore be a reasonable defence against laws criminalizing HIV exposure.

Suzanna Attia presented the results of a meta-analysis of studies investigating transmission risk under ART.[65] There have been no studies of patients on successful ART or in men who have sex with men. There have been a few studies concerning HIV-discordant heterosexual couples in which the HIV-positive partner has an untreated viral load below 400 copies/mL. One transmission was noted in a total of approximately 900 patient-years. Information on condom use and sexually transmitted infections in these studies was unavailable. Attia argued for further research before drawing any conclusion.

A randomised controlled trial is currently under way to quantify the relationship between the level of treatment-suppressed viral load and HIV transmission. The trial, sponsored by the US National Institutes of Health, will follow 1,750 HIV sero-discordant couples assigned to immediate or deferred treatment. Results will not be available before 2016, a problematic timeline given the research suggesting that persons with treatment-suppressed HIV are already reducing their condom use.[66]

The Tantalizing Promise of PrEP

In addition to viewing ART as a potentially effective prevention modality involving those already infected, at the conference there was also discussion of administering ART as pre-exposure prophylaxis (PrEP) for HIV-negative persons who are at high risk for infection, including members of HIV-discordant couples.[67] Although it faced some activist opposition in the first round of Phase III clinical trials, when some trials were prematurely halted, support for the concept has grown, no doubt at least partly due to the failure of several other biomedical prevention modalities and improvements in the engagement of civil society in the design and implementation of PrEP clinical trial protocols.

There are a number of on-going and planned PrEP trials testing daily regimens (Figure 12). Although PrEP was first discussed in the mid 1990s, it will be at least four more years before we see PrEP's benefits fully evaluated in several populations using multiple dosing strategies. The utility of intermittent precoital regimens is only now coming under consideration.[68,69] There was one preliminary human trial reported at AIDS 2008 involving long-term injectable PrEP. This trial found than an intramuscular sustained-release form of rilpivirine (TMC278, a new reverse transcriptase inhibitor nearing licensure for HIV treatment) could deliver protective drug levels for over 12 weeks.

Sponsor/Study Name	Expected Results	Product(s) Tested	Sites	Status	Study Population
CDC: *Tenofovir Extended Safety Study*	2009	Tenofovir	USA (N=400)	Fully enrolled	MSM
NIH: *MTN-001*	2009	Tenofovir Tenofovir vaginal gel/Both	South Africa, Uganda, US (N=144)	Enrolling	Women
CDC:Bangkok Tenofovir Study	2009-2010	Oral tenofovir	Thailand (N=2400)	90% enrolled	Male and female injection drug users
CDC: *TDF-2*	2010	Tenofovir + emtricitabine	Botswana (N=2000)	Enrolling	Heterosexual men & women
NIH, Univ. Calif., Gates Foundation: *iPrEx*	2010	Tenofovir + emtricitabine	Brazil, Ecuador, Peru, US, other (N=3000)	Enrolling	MSM
Univ. Washington, Gates Foundation: *Partners PrEP*	2011	Tenofovir Truvada	Kenya, Uganda (N=3900 couples)	First sites activated	HIV-discordant heterosexual couples
NIH: *VOICE*	2012	Tenofovir Tenofovir + emtricitabine Tenofovir vaginal gel	Malawi, South Africa, Uganda, Zambia, Zimbabwe (N=4200)	Not yet enrolling	Women
Family Health International: *FEM-PrEP*	2012	Truvada	Kenya, Malawi, South Africa, Tanzania (N=3900)	Not yet enrolling	Women

Fig 12. Current PrEP Trials
Source: Mastro, T. Pre-exposure prophylaxis: Overview of current and planned trials. (THSY0603)

There are obvious safety and economic concerns about supplying antiretroviral drugs to large HIV-negative populations. If it proves effective, topical application to genital and anal areas might be more feasible. As conference attendees heard, tenofovir gel applied locally yields vaginal drug concentrations 100- to 1,000-fold higher than systemic oral administration.[71] In contrast, blood plasma concentrations are more than 10-fold lower with the gel.

Topical microbicides have not performed well in human HIV prevention studies, with 10 trials of surfactant and polyanionic compounds yielding negative results. These non-specific, broad-spectrum compounds inactivate bacteria, viruses and even sperm by emulsifying (surfactants) or coating (polyanions) their outer layers.

The field is clearly moving forward. AIDS 2008 marked the shift from broad-spectrum to antiretroviral microbicides.[72,73] Besides the VOICE study testing oral PrEP versus tenofovir gel, another large, advanced-stage trial will start in the next two years. This is IPM009, still in its planning phase. It will study the efficacy of the reverse transcriptase inhibitor dapivirine, either as a short-acting vaginal gel or as a long-lasting vaginal ring. The latter is a new, innovative mechanism for delivering anti-HIV microbicides. IPM009's sponsor, the International Partnership for Microbicides, eventually plans to combine dapivirine with the licensed entry inhibitor maraviroc.

But the results of many of these trials are not expected until 2010-12. The only encouraging microbicide *in vivo* results at AIDS 2008 came from a small macaque trial of a vaginal gel, combining two antiretrovirals, tenofovir and emtricitabine. The trial applied this combination gel 30 minutes before exposure to HIV. Six out of six macaques were protected from 20 vaginal challenges over ten weeks. In contrast, seven of eight control macaques became infected after a median of 3.5 challenges.[74]

Vaccines: The Role of Protective Immunity

Recent setbacks in both the vaccine and microbicides field have required a refocus of research efforts in both fields. At the conference, Seth Berkley reviewed the International AIDS Vaccine Initiative's (IAVI) efforts to screen human subjects for broadly neutralizing antibodies against HIV.[75] These antibodies would prevent new cells from becoming infected and might be the key to a vaccine that creates "sterilizing immunity" against a wide variety of HIV isolates. Berkley says that advanced mass screening techniques have now permitted IAVI's antibody project to select promising candidates. Even if such antibodies were isolated in a few individuals, the problem would remain how to induce them in the entire human population. A vaccine based on these antibodies is not expected soon. Berkley also promoted the concept of using replicating viral vectors. These vectors would consist of a carrier virus containing recombinant HIV genes that would induce a potent immune response.

Current HIV vaccine vectors are all nonreplicating. Among these is the adenovirus vector used in the Merck vaccine that yielded negative results in the well-known STEP trial terminated last year. A US National Institutes of Health study comparing chimpanzee responses to replicating and nonreplicating adenovirus-based HIV vaccines was one of the early warnings about the Merck vaccine design.[76] The replicating adenovirus vector elicited markedly superior immune responses. Switching to live vectors now will entail considerable delay as various technical and safety concerns are resolved.

A New Emphasis on Prevention Cocktails or "Combination Prevention"

Combination prevention strategies was a popular topic of discussion at the conference.[77] Circumcision programmes can be combined with condom promotion and other structural and socio-behavioural approaches to preventing HIV. More detail on combination prevention is outlined in the following section.

As the Kisumu trial results show, circumcision alone will not eradicate HIV incidence in men. There is some optimism that adding antiretroviral agents in one of the forms described above may have a major impact in reducing incidence. Research is moving forward slowly despite this potential, and mass implementation will likely also be slow, if the circumcision experience is any example. The prevention research legacy of AIDS 2008 is an increasing recognition that fulfilling the promise of emerging prevention technologies requires a renewed sense of urgency.

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SOCIAL, BEHAVIOURAL AND ECONOMIC SCIENCE AND POLICY AND POLITICAL SCIENCE

Social, Behavioural and Economic Science

Track D presentations emphasized how social, economic and other contextual processes shape both the HIV epidemic and programme and policy responses to it. To a much greater extent than at previous International AIDS Conferences, HIV-related stigma and discrimination were widely highlighted as primary obstacles to controlling the epidemic. In particular, such discussions explored the intersection of stigma and discrimination with forms of structural inequality based on race, class, gender, age and sexual orientation.

Other AIDS 2008 presentations emphasized the need for "combination prevention", an emerging approach that emphasizes the need to employ multiple, context-specific biomedical, behavioural and structural interventions simultaneously, rather than relying solely on any single intervention. In addition, new research by and for marginalized communities emphasized how progress toward universal access is dependent upon the participation of women, sex workers, IDUs, MSM and other marginalized social groups.

Prioritizing Stigma and Discrimination

AIDS 2008 firmly established stigma and discrimination as fundamental priorities in the push for universal access to HIV prevention, treatment, care and support. At a session on evidence-based approaches to stigma and discrimination a strong call was made to elevate the importance of stigma and discrimination reduction in national and international funding, policy development and programming.[1] This call followed the recent publication of a systematic review of scientific research on HIV-related stigma.[2] Mahajan and colleagues note that while HIV-related stigma is widely regarded as a significant barrier to epidemic management, additional research is needed in the areas of defining and measuring stigma, understanding the relationship between stigma and HIV testing and treatment rollout, and the impact of stigma-reducing initiatives. These findings are consistent with the *2008 Global Report on AIDS*, which stressed the extent to which stigma, discrimination and human rights violations were impeding progress on universal access targets.[3]

Although references to stigma proliferated at the conference, there is often little attempt to conceptualize what is meant by that term, particularly in the context of social science research which attempts to identify and evaluate, through scientific inquiry, its forms, impacts and potential remedies. Two important directions for how stigma is conceptualized were suggested by multiple presentations. The first is to abandon the pursuit of either individual or structural level approaches to stigma reduction in favour of a conceptual approach emphasizing their interconnectedness.[4,5,6,7,8] The second is to approach HIV-related stigma as a layered phenomenon fundamentally linked with and enabled by sexism, racism, homophobia, the stigmatization of IDUs and sex workers, and other forms of social inequality.[9,10,11,12,13] Further developing these key approaches to stigma through conceptually-focused work and developing ways to operationalize them are important objectives for social science research in the area. One of the more tangible structural implications of stigma and discrimination are the travel restrictions imposed by many countries on PLHIV (see Travel Restrictions sidebar). Many countries commit rhetorically to addressing stigma and discrimination faced by people living with HIV while ignoring some of the most obvious and tangible legislative and policy demonstrations of such stigma, such as travel restrictions aimed at PLHIV.

Travel Restrictions for PLHIV

The US, as part of its reauthorization of the US$48B PEPFAR programme, removed the entry ban on short term visitors to the US shortly before AIDS 2008. Although this is an unprecedented achievement for advocates who had been fighting the ban since it was signed into law in 1987, it must still be implemented through regulatory change at the US Department of Health and Human Services (DHHS). Meanwhile some 67 countries retain some form of travel restrictions on PLHIV, policies which contradict the advice of public health experts on the issue – including WHO – and unfairly discriminate against PLHIV. Aside from reinforcing HIV-related stigma, such bans contribute to other HIV-related human rights violations, such as mandatory testing and summary deportations. It appears, however, that momentum on this issue is gaining: China announced at the conference that it will remove its own entry ban on PLHIV in 2009.

At the conference, important progress was reported in developing standardized tools for assessing levels of stigma. Research from Puerto Rico and India described validation processes for stigma indices involving PLHIV and rural men, respectively.[14,15] While these instruments focus on

sociocognitive dimensions of stigma, another exciting initiative designed to assess stigma at both the individual and structural levels – the People Living with HIV Stigma Index – was reported by Yuvaraj and colleagues.[16,17] The PLHIV Stigma Index is intended to measure change in stigma over time and to allow for country comparisons to inform programme and policy interventions, as well as advocacy. The index combines research with empowerment by placing PLHIVs at the centre of the process as interviewers, interviewees and as local users of the information generated. The lessons learned from the global roll-out of the instrument, currently underway, will help clarify the potential of this unique community-centred approach to stigma surveillance and response.

Research presented at AIDS 2008 also highlighted the complex relationship between stigma and access to prevention, treatment, care and support. Two key debates in the field were the focus of considerable discussion: the relationship between HIV-related stigma and routine (provider-initiated or "opt-out") HIV testing and the extent to which broader access to ART affects the level of HIV-related stigma. With regard to routine testing, several studies pointed to the need to harmonize tensions between population-based and rights-based approaches to HIV testing, including how to interpret research results.[18,19,20,21,22,23] Two additional studies on whether treatment rollout itself contributes to stigma reduction yielded contradictory results, with one pointing to increased perceived stigma with treatment use and the other suggesting a decline in stigmatizing attitudes with increased availability and access to ART.[24,25] The contradictory nature of these studies points to the need for future research that can more effectively identify the mix of individual and structural conditions that mediate the relationship between HIV-related stigma and treatment uptake.

AIDS 2008 also featured research on HIV-related stigma among health care workers. Pilot testing of a stigma reduction programme conducted in Yunnan Province, China showed high levels of fear of infection among health care workers and little knowledge of universal precautions.[26] Following the intervention, an improvement was observed in maintaining the confidentiality of HIV-positive clients and for voluntary counselling and testing (VCT). A second study in Vietnam assessed the outcomes of a community-led stigma reduction campaign.[27] Results at 16-months following baseline demonstrated a positive relationship between exposure to the number of campaign initiatives (e.g. community education, billboards, fact sheets) and reductions in stigma scores and fear of transmission. By focusing on the health care sector, these two initiatives help assess structural dimensions of stigma. They provide an important example for future research targeting other structural sources of stigma, including government policy, religious institutions, and criminal justice systems.

Combination Prevention

There is no magic bullet for HIV prevention. The fact that this critical assessment of prevention marked the first AIDS Conference in Latin America and the Caribbean should be a lesson for everyone working on HIV in the region. Instead of a myriad of isolated solutions, we need to develop multi-pronged programs, implement interventions that also address the determinants of the epidemic, scale up proven strategies, and focus on the most vulnerable groups. "Combination prevention" works. Latin America and the Caribbean have the necessary conditions to demonstrate that to the global community.

Gottfried Hirnschall, Project Coordinator, HIV/STI, PAHO

New Consensus: "Combination HIV Prevention"

AIDS 2008 underscored a new direction in HIV prevention. In place of prevention interventions focused exclusively on individual behaviour change, numerous speakers called for "combination HIV prevention", which calls for a more long-term approach to reducing HIV risk and vulnerability by addressing both individual and contextual factors.[28] Combination prevention draws on multiple risk reduction strategies rather than relying upon a single "magic bullet", and takes into consideration the relationship between prevention programming and politics, particularly at the level of community involvement and activism.[29] Research and commentary at AIDS 2008 contributed to this new direction in HIV prevention in two important ways.

First, analyses of the political, social, and cultural implications of specific prevention strategies helped temper widespread assumptions about their universal application. For example, in a session on male circumcision, speakers argued that insufficient attention is given to anthropological research on the body, culture and on masculinity by those considering the impact of scaling up this intervention.[30] Similarly, Beloqui noted the limited reach of HIV prevention efforts targeting

individuals who are HIV-positive (also referred to as positive prevention) in the Brazilian context, where most PLHIV do not know their HIV status. Beloqui suggested that when restricted to the level of individual behaviour change, positive prevention can have the effect of "blaming" PLHIV for transmission, while also eroding traditions of mutual responsibility. He argued instead for a vision of positive prevention that enhances the social capital of PLHIV, as well as their access to treatment and prevention technologies, while also working at the policy level to reduce stigma and enhance human rights.[31]

Second, AIDS 2008 generated considerable interest in structural forms of HIV prevention and their relationship to behavioural and biomedical prevention strategies. Research on a range of structural interventions was presented at the conference, including efforts to reform policing practices affecting IDUs, to introduce micro-financing initiatives for at risk women, and to enhance community mobilization of sex workers.[32,33,34] In a session on rethinking the role of structural issues in HIV prevention, several analyses of innovative developments in prevention programming were offered.[35] Birungi described a Kenyan initiative that seeks to shift the organization of HIV programming. In a context where the response to the epidemic has been built primarily around paediatric and adult HIV care and prevention, Birungi and colleagues turned their attention to the relatively neglected population of HIV-positive youth. Rather than seeking individual behaviour change, they have worked to better understand the gendered construction of sexuality among HIV-positive youth, addressing research questions about their sexual desires, relationship expectations and hopes for love and parenthood in an effort to establish a knowledge base on which to build relevant interventions.

The most significant impact of social science research on combination prevention likely lies ahead. Future research might turn to the strengths of contemporary sociological theory on the relationship between structure and agency to deepen our understanding of the concept of structure as it is deployed in the emerging discourse on combination prevention.[36,37] At the same time, social science approaches such as social networking, actor network theory, and the analysis of causal pathways have much to offer in better understanding how structures relate one with another and how structural interventions interact with biomedical and behavioural interventions. Finally, as Ogden noted, methodological innovation in the social sciences is needed to understand whether and how structural HIV prevention interventions reduce HIV transmission.[38]

Research on, for and by Marginalized Communities

Another important development at AIDS 2008 was the expansion in HIV research involving vulnerable and marginalized communities, particularly in contexts where sex work, injecting drug use, and homosexuality are criminalized and/or are not officially recognized as significant issues for HIV prevention. Critical analyses and commentaries articulating the perspectives of marginalized communities offered important insight into the political, economic and social conditions that heighten HIV vulnerability for MSM, sex workers and IDUs, while also shedding light on efforts to change those conditions. Within Track D, particular attention was paid to MSM and male and transgender sex workers.[39,40]

In his Jonathan Mann Memorial Lecture, Jorge Saavedra, Director of Mexico's National Centre for HIV/AIDS Prevention and Control (CENSIDA) presented an overview of research demonstrating that HIV prevalence among MSM is significantly higher than in the general population, even in Africa and other areas with generalized epidemics. He presented other studies to illustrate the relative paucity of resources dedicated to MSM prevention. Saavedra argued forcefully that homophobia – from common forms of discrimination to more extreme forms such as laws criminalizing sex between men – fuels the spread of HIV.[41] He also called on Ugandan authorities to drop the charges against three gay and lesbian rights activists who were arrested at the June 2008 HIV/AIDS Implementers Meeting in Kampala (one of whom was tortured); on August 15 all charges against the three were dropped and the regional chair of the International Gay and Lesbian Human Rights Commission (IGLHRC) attributed it directly to advocacy at AIDS 2008.[42]

International AIDS Society/Mondaphoto

Peter Piot, AIDS 2008; this was Piot's last International AIDS Conference in his role as UNAIDS Executive Director.

Saavedra's plenary presentation built on a two-day pre-conference on issues facing gay and other MSM in the global response to the epidemic. One of the sessions at the pre-conference outlined an innovative approach to forging government support among countries in the Greater Mekong Sub-region (Thailand, Vietnam, Cambodia, Laos, Myanmar and two southern provinces of China). The programme, which involved compromises in the language used with government officials (e.g., use of "male sexual health" rather than "MSM" in initial meetings), strong local coordination and support,

and a coalition between government, civil society and donors resulted in fundamental policy shifts within governments, and the inclusion of MSM as a priority within all national AIDS plans in the Greater Mekong Sub-region.[43] Similar successes were reported by Shivinanda Khan, who outlined an iterative process involving a series of meetings – including informal park gatherings – that resulted in growing support among MSM, government and civil society groups that led to hosting the Asia-Pacific Consultation on Male Sexual Health in September 2006.[44] These examples, while critical, also serve to underscore the structural barriers that MSM communities and networks face in developing an appropriate policy or programmatic response.

The title of the MSM pre-conference, The Invisible Men: Gay Men and Other MSM in the Global HIV/AIDS Epidemic, highlighted the notion of invisibility, which often characterizes these communities, particularly in generalized and low-level epidemics. Research conducted in Togo illustrated the challenge of investigating same-sex HIV issues in climates of invisibility. The research team was told by Togo government officials not to bother with their proposal to research MSM because they did not exist. The team persisted with a community-based ethnographic approach that identified 122 MSM and discovered key gaps in their knowledge of HIV risk. One of the results of the research project was the development of new MSM networks and programmes.[45]

Sexual Minorities and Global Fund CCMs

The Global Fund recently held a consultation on how its country-led priority setting process, which relies on Country Coordinating Mechanisms, can better address the needs of sexual minorities. The consultation confirmed that most at risk and other marginalized populations may be ill-served by such a process, particularly in countries with generalized epidemics. Potential strategies to address this include stronger oversight of proposal development, removing the need for CCM organizations to be "legal entities", and strengthening the role of civil society groups as an "intermediary" conduit for these populations.

Reports from another popular session on MSM issues at AIDS 2008 yielded positive evaluation data on: an Australian five minute, five question assessment tool to screen for likely sexual risk behaviour;[46] use of a mobile van to provide HIV tests for hard-to-reach Peruvian MSM;[47] and an interactive internet quiz to help French and Dutch gay men identify their triggers for non-premeditated risk taking.[48]

In an abstract driven session on male and transgender sex workers held at an International AIDS Conference, pioneering research was presented on the HIV risks faced by these two populations and on important initiatives designed to intervene in conditions that heighten their risk. Hunter underscored the invisibility of such groups at all levels of the HIV response.[49] He noted that few national HIV/AIDS programmes explicitly target these groups, and argued that subsuming programmes for transgendered sex workers in MSM funding streams has created obstacles for HIV programming that responds to the particular needs of these sex workers.

Suggesting a way forward, research from Thailand and Peru offered examples of early efforts to establish an evidence base from which to inform targeted programming that better responds to the HIV risks faced by transgender and male sex workers.[50,51] Other research profiled interventions designed to alleviate structural factors that heighten HIV risk. In Columbia, transgender sex workers often choose not to carry a national identification card – a legal requirement and a condition for receiving health care – because of the mismatch between biological sex at birth and later gender identity. Riascos Sanchez described a project initiated by Fundación Santamaría, a community-based organization of transgender people, that responds to the vulnerabilities this creates.[52] By providing an alternative identification card that includes the bearer's chosen name, and by engaging in training and advocacy with the police and health care providers, the project has enhanced transgender sex workers' access to health services and contributed to decreased police harassment.

The research on, for and by marginalized communities presented at AIDS 2008 will have important implications for future policy and research. At the epidemiological level, a refinement of the concept of "generalized epidemics", or at least a greater understanding of its potentially exclusionary effect, was strongly suggested by research pointing to the high burden of HIV among MSM in countries designated as such. The conference's increased focus on the role of structural factors that contribute to HIV risk and vulnerability also underscored the need for global advocacy on such issues, and for additional social science research and new analyses that are able to capture the complex interaction between individual risk behaviour and social vulnerabilities. Finally, the opportunity for community activists and members of marginalized groups to present their research in an international forum, and to be able to discuss how to use such evidence to inform global advocacy, will continue to have important implications for the regional and international mobilization of MSM, IDUs and sex workers.

The Role of Social Science Research and Acceptable Evidence

International AIDS Society/Mondaphoto

International Rally for Human Rights, AIDS 2008.

AIDS 2008 included a number of important debates about the role and presence of the social sciences in HIV/AIDS research, and the related question of what types of scientific research evidence are privileged in responding to the epidemic. Given the dominance of biomedical and health sciences, the social sciences are often viewed as junior partners in HIV/AIDS research. Although the conference dedicates a separate track to the social and behavioural sciences, the actual social science content of presentations in the track is not always apparent, although this may be a reflection of less robust investments in social science compared to biomedical research in the HIV field. While presentations referenced social science disciplines (such as sociology), the full range of social sciences was not well-represented at the conference, with contributions from history, geography, economics and anthropology most obviously absent. Attracting relevant social science research and realizing its potential in the response to the epidemic remains an ongoing challenge.

Debates about what are considered acceptable forms of evidence and alternative ways of producing useful knowledge that can be used to move us closer to universal access occurred in a number of sessions at the conference.[53,54,55,57] In a symposium on the current scientific and political challenges of evidence-based HIV prevention sponsored by the Caucus for Evidence-based Prevention, presenters questioned the use of the randomized control trial (RCT) as the accepted gold standard for research evidence.[58] Judith Auerbach noted that the RCT is not well-suited to addressing the interplay of physiological, social, cultural and structural factors that is increasingly recognized as fundamental to HIV prevention. Rafael Diaz further argued that the institutionalization of the RCT as a funding criterion for HIV prevention, particularly in the US context, has resulted in fidelity to a "standardized protocol", which creates obstacles for creative prevention research that begins with local communities in a "bottom up" rather than "top down" fashion.[59] The session made a strong case that exploring the significance of poverty, gender, economic inequality, racism and other structural relations for HIV prevention initiatives will require moving beyond the RCT and traditional research methods to include a range of social science disciplines, innovative evaluation designs, and community-based research.

Policy and Political Sciences

Track E featured new research and commentary on key barriers to universal access to HIV prevention, treatment, care and support. In multiple presentations, speakers reiterated the growing concern that international and national financial commitments are falling short of what is needed to deliver on universal access goals.[60,61,62] In addition, the conference highlighted key findings and research on human rights and health systems strengthening, and has contributed to more widespread awareness of the fundamental importance of these issues for achieving universal access.

AIDS 2008 brought to the forefront the importance of a health and human rights-based approach to HIV. Human rights were a focal point of many activities in Mexico City, including: marches on homophobia, women's rights, and housing; the first ever Global Village "Human Rights Networking Zone"; and the circulation of key UNAIDS and Open Society Institute publications on human rights and HIV.[63,64,65] The importance of securing human rights as a prerequisite to achieving progress towards universal access was emphasized through new research on topics such as workplace discrimination, travel restrictions, and the denial of women's property and inheritance rights.[66,67,68]

Key themes emerging from AIDS 2008 addressed the human rights context of drug use and sex work, the criminalization of HIV transmission/exposure, and the challenge of incorporating human-rights principles in HIV programming. The contentious issue of patent protection and drug pricing, including a new initiative that is focused on bridging differences between stakeholders on this topic, were also among prominent issues of discussion.

Injection Drug Use, Sex Work and Human Rights

AIDS 2008 featured important work documenting the magnitude and nature of human rights abuses faced by drug users and sex workers. It also explored the institutional sources of such rights abuses and highlighted key areas of advocacy and policy reform. Suwannawong reported on field research conducted in five Thai provinces demonstrating that drug users are systematically denied access to ART and HIV/AIDS information, and routinely face police harassment.[69]

Other research presented by plenary speakers pointed to regular police harassment of clients and workers at needle exchange programs, even in contexts where such services are legal.[70] In the first plenary address on sex work given by a sex worker at an International AIDS Conference, Elena Reynaga gave a powerful account of human rights abuses faced by sex workers, including mandatory testing, denial of health services and coercive health interventions.[71] Results of participatory action research conducted by sex workers in twelve countries and presented at the conference by Anna-Louise Crago reinforced Reynaga's claim. The study documented widespread police harassment of sex workers, with 41% of participants reporting physical violence by police in the past year.[72]

Multiple presentations at the conference drew attention to how public health and human rights-based approaches to sex work and drug use have been displaced by strategies emphasizing criminalization and law enforcement.[73,74,75] This has fuelled problematic police practices such as confiscation of needles obtained from syringe programmes, police raids and violence against sex workers. Police often treat condoms in a woman's possession as evidence of prostitution thereby discouraging condom use. Such practices place drug users and sex workers at elevated risk for HIV transmission. Research indicated that a "law and order" response to sex work and drug use leads to laws, regulations and policies that hinder access to HIV services for sex workers, injection drug users and other marginalized populations in 63% of countries that submitted UNGASS progress reports.[76] Such evidence highlights the growing tension in the policy arena between human-rights based approaches to health and criminal law/policing strategies. In response, numerous speakers at AIDS 2008 articulated a strong call to decriminalize sex work and drug use, and to remove all legal restrictions to harm reduction services.

A session on policy responses to IDUs illustrated the challenge of collecting meaningful data on injecting drug use and HIV that can be used to affect public policy. The Reference Group to the UN on HIV and Injecting Drug Use presented the results of recent efforts to assemble global data on the prevalence of injecting drug use and of HIV prevalence within IDU populations. The reference group was able to conduct a detailed analysis of 3,000 peer-reviewed and grey literature, from an initial total of 15,000.[77] The reference group concluded that injection drug use is well-established in many regions (with particularly high rates of injecting drug use in Russia, China and the US), and that HIV prevalence among IDUs is high and growing: between 700,000 and 6.6 million of the 11 million to 21.2 million IDUs globally are HIV-positive.

The data on HIV prevalence among IDUs and evidence-based interventions for this population are only sporadically

International AIDS Society/Mondaphoto

Demonstration for universal action, AIDS 2008.

reflected in national public policy responses to drug use. Human Rights Watch reported on efforts to influence drug policy in the Russian Federation. Russia's policies – from criminalizing drug use, to banning substitution therapy and providing dangerously ineffective treatment options – contradict scientific evidence, and Russian authorities are openly hostile to dissent on the topic.[78] The recently-formed International Network of Drug Consumption Rooms reported that, despite considerable evidence of their positive impact, consumption rooms exist in only eight countries and, as Canada's Minister of Health demonstrated in his forceful opposition to such facilities at the conference, even these are subject to intense political opposition.[79] A review of evaluations of prison needle exchange programs (PNEPs), which currently operate in 60 prisons in 11 countries found that needle sharing was sharply reduced and that there were no cases where a needle had been used as a weapon, a frequently cited concern of corrections staff.[80] The evaluations also demonstrate improved health outcomes and disprove fears that PNEPs lead to increased drug use. Despite this evidence, governments continue to resist expanding the number or scope of PNEPs.[81]

International AIDS Society/Mondaphoto

US Representative Barbara Lee (California), AIDS 2008.

Research presented in Track E also described how international policy can exacerbate the human rights context of drug use and sex work. One particular set of concerns focused on the resulting confusion and lack of direction stemming from contradictory and inconsistent international policies. Mina Seshu opined that, while UNAIDS formally recognizes sex workers as key partners in policy formation, its own 2006 *Guidance Note on Sex Work* ignored sex worker input. Rather than stressing the need to decriminalize sex work and emphasizing that HIV incidence among sex workers is declining, the report instead focused on eliminating sex work altogether.[82] Another concern was raised about funding structures that marginalize sexual and reproductive rights. For example, drawing on interviews and policy research, Sippel and colleagues reported that PEPFAR's anti-prostitution policies and ideological commitment to abstinence and "faithfulness" have complicated local efforts to respond to gender-based violence, and have impeded comprehensive sexual and reproductive health services for marginalized PLHIV, including women, immigrants and sex workers.[83,84] The reform of PEPFAR funding priorities and restrictions was identified as a critical area of policy advocacy in the future.

Criminalization of HIV Transmission

AIDS 2008 established the use of criminal laws to prosecute PLHIV who transmit HIV or expose others to HIV infection as one of the most pressing issues facing the global AIDS movement. Presentations coalesced around the argument that criminalization of HIV transmission is bad public policy, and emphasized that there is a lack of evidence demonstrating that the application of criminal law will prevent HIV transmission, and the very real possibility that it will heighten stigma and discrimination. Justice Edwin Cameron's plenary presentation on the issue provided an incisive and sobering global overview of the growing trend towards criminalizing HIV transmission, even in cases where transmission does not occur, and the multiple ways in which this undermines an effective response to HIV.[85]

New research contributed to the understanding of the issue of criminalization of HIV transmission three central ways. First, Pearshouse presented monitoring data on the uptake of criminal laws for HIV transmission/exposure at the global level and offered an incisive critique of the USAID-sponsored Model Law process.[86] He argued that the process has produced a rash of HIV-specific laws in Western Africa, many of which exceed the provisions of the Model Law itself. Recently passed laws include problematic restrictions on youth-directed HIV education and overly broad provisions for criminalizing HIV transmission and exposure that in some instances extend to mother-to-child transmission. Several presentations at AIDS 2008 challenged the merits of the Model Law process and other initiatives that heighten criminalization of HIV transmission/exposure. Rather than proliferating HIV-specific laws with a dubious relationship to HIV prevention, various presenters argued that criminal law be applied only to cases of intentional and actual HIV

transmission, and that law reform be redirected to address key drivers of HIV transmission, including violence against women and the criminalization of same-sex relationships.[87,88,89,90]

Second, serious questions were raised about the presumed protective value for women of criminal laws against HIV transmission/exposure. In sub-Saharan and East Africa, much of the impetus for criminalizing HIV transmission has come from women's organizations trying to protect women from infection through the statutes. Clayton and Gathumbi argued that newly generated criminal laws do not realize such good intentions but, instead, threaten women's health and human rights.[91,92] They noted, for example, that criminal prosecutions will likely fall disproportionately on women, who are often the first in heterosexual relationships to learn of their HIV status in antenatal clinics, and who are often blamed for "bringing HIV into the home."[93] Due to the threat of violence and mistreatment, many women are disinclined to disclose their HIV status. Rather than protecting women, the broad disclosure requirements in some criminal statutes – for example the current Tanzanian requirement for immediate disclosure to a spouse or sexual partner – places them at risk for criminal prosecution.[94]

LIVING 2008 Positive Leadership Summit

A summit of 300 HIV-positive leaders was organized immediately prior to AIDS 2008. Living with HIV is dramatically different for people depending on geography, gender, sexual orientation, income, education, access to information and health services, and other variables. From mid-2007 to July 2008, when the summit was held, PLHIV from around the world came together to develop advocacy consensus statements on four key areas:

- Access to Care Treatment and Support
- Sexual and Reproductive Health for PLHIV
- Positive Prevention
- Criminalization of HIV transmission.

Future strategies for advocacy in these four thematic areas can be found at the LIVING2008 website at www.living2008.org.

Finally, an important discussion arose during AIDS 2008 about the state of research on criminalization of HIV transmission/exposure. Most new research presented at the conference took the form of surveys of national developments related to criminalization or human rights analyses of legal texts and processes. To further arguments against the criminalization of HIV, additional research that explores the claims that such laws: (1) increase HIV-related stigma; (2) deter people from testing for HIV infection; and (3) promote a false sense of security amongst those who are uninfected is needed.[95,96,97,98,99] Progress towards these research questions will be much anticipated at AIDS 2010.

Moving Beyond Rhetoric

The Ntwenge Initiative

In 2006, Ntwenge, an NGO in Zimbabwe, began a process of participatory research and advocacy to identify the factors that limit women and girls from realizing property and inheritance rights. It subsequently trained women and girls as educators to deliver community legal workshops and monitor observance of property and inheritance rights. Some 385 cases have since been handled resulting in 600 widows and families regaining their inheritance.

Adopting a health and human rights framework for responding to the HIV pandemic involves more than rhetorically embracing human rights principles; it involves operationalizing such principles in the delivery and assessment of HIV services.[100] Research presented at AIDS 2008 showed that there has been mixed results in this regard. On one hand, research presented at the conference identified a range of rights-based programmes currently in use. For example, Patel described an ambitious attempt in Africa to intervene in legal proceedings using an impact litigation framework.[101] Established in 2007, the Strategic Litigation Fund, which operates everywhere in Southern Africa except South Africa, seeks to strengthen human rights by providing monetary and technical assistance to lawyers, and by mobilizing communities around human rights issues. Thus far the Fund has successfully intervened in cases dealing with issues such as inequity in women's property rights and discrimination against people living with HIV in the military.

Markham Ntwenge, an NGO in Zimbabwe that engages in programmes related to the health and economic rights of women, girls and orphans, provides another interesting example (see box on the Ntwenge Initiative).[102] Mary Robinson identified gender inequality and violence against women – particularly the devastating impact of rape and other forms of assault on women living in conflict settings – as a human security issue with profound implications for women's access to HIV and other health services.[103]

While there are promising examples of tangible programmes, research presented at AIDS 2008 demonstrated that operationalizing human rights-based HIV programming remains underdeveloped. The conference made important,

if preliminary, progress toward that end on two fronts. First, Bogecho and colleagues pushed the discussion of what a human rights-based approach actually means in practice by developing an operationalization framework for use at the country level that includes items about how key human rights principles have been integrated in the design, delivery and evaluation of programmes.[104] Second, Ferguson and colleagues discussed how to define suitable indicators for use in formally evaluating rights-based approaches.[105] Their research emphasized the utility of drawing on the publicly available National Composite Policy Index, which includes indicators that capture information on key human rights principles such as non-discrimination, participation and accountability.

Martin Flynn

March against homophobia.

Access, Drug Costs & Patents

A number of studies and presentations examined the complex issue of the cost of pharmaceutical medicines as it affects access to treatment. Presenters described a variety of approaches that have significantly reduced the price of treatments in most developing countries. Many challenges and debates remain on this highly contested terrain, especially as the need for second-line therapies increases and the demand for simplified or fixed drug formulations, pediatric formulations and therapies to address TB escalates.

A session on "Universal Access, Universal Crises and Universal Prices" presented specific approaches and challenges to the access and patent issue. A Brazilian report described that country's experience in financing universal ARV access by applying strategic pressure on the industry – negotiating for the lowest possible brand-name price in some instances, and importing or producing generics in others. The report noted that the increasing need for and cost of second line therapies is straining the country's resources.[106] A Canadian report illustrated the limitations of "Canada's Access to Medicines Regime" legislation intended to provide generic products for export to low income countries. Elements of the legislation and its regulations – such as regulations requiring a review of the requested generic import by Canada's Therapeutic Products Directorate after the manufacturer and requesting country have already reached agreement on price and quantity – produce significant barriers to achieving its goals, to the extent that so far only one drug has been approved for export.[107]

Médicines Sans Frontières (MSF) described the successes, failures and frustrations of the "hand-to-hand combat" approach – strategic battles on each drug and each combination in each country. MSF and other NGOs are now proposing a model called "patent pooling" whereby pharmaceutical companies would, in return for a negotiated royalty, allow access to their patent formulas for public suppliers and generic manufacturers to supply lower cost drugs to low-income nations. According to MSF the concept is receiving positive responses from some donors, governments and pharmaceutical companies and momentum appears to be growing in support of this initiative.[108]

Global HIV/AIDS Initiatives and Health Systems Strengthening

AIDS 2008 firmly established the intersection between HIV-specific global programmes and sector-wide health care provision and reform as a fundamental issue for the global HIV/AIDS movement. The attention paid to the issue at the conference followed the publication of articles claiming that HIV-specific global initiatives are over-resourced compared to other health issues, poorly integrated with general health systems, cost-ineffective and that vertical funding for AIDS distorts global health priorities.[109,110,111] A number of speakers challenged the underlying rational of this debate, arguing that scaling up and sustaining universal access to HIV prevention, treatment, care and support will only be achieved by substantially investing in and strengthening comprehensive primary care and general health systems.[112,113,114] This position was supported and elaborated in three important ways. First, the polarized and polemic nature of the debate was reframed. Second, important research on the effects of HIV-specific funding on global health systems was presented. Finally,

speakers identified key directions for future research and programmatic responses to this issue (see box on Evaluating Health Systems for their HIV Response).

Evaluating Health Systems for their HIV Response

The Pan-American Health Organization (PAHO) launched a new initiative aimed at evaluating national health systems' response to the HIV epidemic. The methodology is being applied for the first time in the Dominican Republic, where it identified achievements, gaps in coverage, funding needs and missed opportunities, as well as their financial cost. Based on an analysis from the perspective of health system functions, the evaluation methodology provides recommendations for management and public policy aimed at more effective use of resources and support for achieving universal access goals. The publication Evaluation of the National Health System Response to HIV in the Dominican Republic reports the results of the first evaluation, undertaken with participation of different levels of the national health system, as well as cooperation agencies and civil society representatives.

Reframing the Health Systems Debate

At AIDS 2008 numerous speakers challenged the false dichotomy between HIV programmes and global health services. Tedros Ghebeysus, Julio Frenk and others challenged this framework at the most basic level, noting that HIV services are themselves health services that do not exist independently of a general health system.[115,116] Frenk traced the roots of this dichotomy to the distinction between a health system with explicit priorities, termed a vertical approach, and a horizontal approach, which "strengthens the health system in general, but without priorities." He cautioned against the latter, noting that horizontal approaches typically are most beneficial for the most affluent members of society.

Multiple presenters argued that framing the debate as one of HIV-specific services versus the general health system is an outmoded and overly simplistic approach.[117,118,119] Instead, a diagonal strategy was recommended in which targeted improvements in prioritized services generate spill-over effects to other areas of health services delivery. According to Frenk, "diagonal thinking" shifts the debate from an oversimplified dyad to the question of which explicit mix of prioritized services are most appropriate, and what degree of integration among them is needed to form a unified health system suitable for a given context.

A related effort to reframe the debate focused on claims that HIV-specific funding initiatives and the successful lobbying efforts of international AIDS activists have damaged global health by preventing the development of robust primary health services in developing countries. In a compelling critique of this argument, Gregg Gonsalves noted that, while HIV/AIDS has exposed health systems weaknesses, those weaknesses predated the emergence of HIV/AIDS as a global health problem.[120] Rather than blaming AIDS activists, a more historically accurate argument would draw attention to the structural adjustment policies of international financial institutions that drained resources from public health and welfare systems in developing countries. Gonsalves and other presenters further noted that the HIV response has, in fact, revitalized global public health, helping to focus attention on the problem of underfunded health services in low-income countries while fostering strong civil society demands for greater involvement in improved health services generally.[121,122]

The Impact of HIV-Specific Initiatives

Presenters at AIDS 2008 also urged a more nuanced consideration of the impact of HIV-specific programmes on overall health systems. Much of the discussion focused on demonstrating how "vertical" HIV services have generalizing effects (Figure 14). For example, Michel Kazatchkine, Executive Director of the Global Fund, argued that HIV-specific funding has a significant impact on the burden of disease, one important effect of which is to free up hospitals from the pressures of caring for HIV-positive patients and "allowing hospitals to become hospitals again."[123] Others noted that HIV-specific health funds help to train and support health workers, build infrastructure for the delivery of primary health care, develop procurement and distribution systems for a wide variety of medications, and strengthen health care monitoring and evaluation.[124]

Fig 14. Source: Dybul, M. Human capacity development in the US President Emergency Plan for AIDS Relief (MOSAT1605)

At the same time, it was acknowledged that HIV-specific initiatives can complicate health systems integration. In some countries HIV-specific funding has strained government/NGO relationships and has not been sufficiently integrated with public health systems, poverty reduction strategies and other efforts to build human resource capacity and develop infrastructure.[125,126,127] A study of six African countries documented an explosion of new organizations responding to HIV, most with little infrastructure and short-term projects that provide little in the way of a sustainable programme.[128] A study of Global Health Initiative (GHI) funding in Uganda found virtually no coordination or alignment between funders and in-country coordination mechanisms,[129] and a separate review of GHI programmes in Malawi and Zimbabwe noted that these new resources had little positive impact on health care worker shortages.[130] Another report showed that one small country, Kyrgyzstan, had funds flowing in from no less than 17 different international funding bodies, with different application and reporting mechanisms.[131] In another study on the proliferation of independent funding streams, Mphu Ramatlapeng and Ghebeysus noted that different financial, reporting and accountability procedures across donor agencies create problems of harmonization at country levels.[132,133] Drawing on this critique, the authors emphasized the importance of moving quickly to implement the recommendations of the Paris Declaration on AID Effectiveness.

Moving Forward on a Shared Agenda

AIDS 2008 laid the foundation for moving forward on a revitalized approach to the relationship between HIV-specific initiatives and other health services. At the programmatic level, considerable attention was paid to measures with the potential to enhance access to HIV prevention, treatment, care and support, while also strengthening primary health care capacity. Addressing the widespread shortage of health-related human resources in low-income countries was a particularly prominent theme. A number of presentations emphasized the need to enhance donor support for health workforce training and compensation, while also responding to the ongoing drain of professional health workers due to burnout, migration and the movement out of the public sector to NGOs, faith-based organizations and the private sector.[134,135,136] Other presenters noted the positive impacts of providing treatment to HIV-positive health care workers to keep them in the workforce.[137] Decentralizing testing and care, in an effort to bring primary care to the front-lines, was advocated by several presenters.[138]

Two systematic reviews of the literature presented at AIDS 2008 showed mixed results on the health system effects of global HIV/AIDS initiatives. Atun noted that a recent Cochrane review provided limited evidence either for or against general health system effects, while a review of the evidence in seven countries presented by Rao showed positive health system effects in civil society decision-making and in national decentralization initiatives.[139,140] Both reviews suggest the need for additional empirical research that will provide an evidence-base for answering the question of how best to enact the integration of disease-specific health priorities in given contexts. Kim described an emerging research programme that seeks to do just that.[141] It involves a multi-institution partnership that will draw on new forms of expertise, including systems engineering and operations research, qualitative and quantitative data, theory building and innovative methodologies of assessment to comparatively explore how global health initiative investments are used. The goal is to identify the context-specific and context-independent principles behind successful integration that might help guide future health systems decision-making.

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[124] Ghebeysus, T. Perspectives of recipient countries and implementers. Special session (TUSS0101), XVII International AIDS Conference 2008.
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[126] Johnson, W et al. Call for an international NGO code of conduct for health systems strengthening. Poster exhibition (TUPE1043), XVII International AIDS Conference 2008.
[127] Spicer, N. The effects of global health initiatives in concentrated epidemics: emerging findings from the Global HIV/AIDS Initiative Network. Abstract session (TUAX0205), XVII International AIDS Conference 2008.
[128] Kelly, K. et al. The effects of changing aid architecture on civil society responses to HIV/AIDS. Abstract session (TUAX0202), XVII International AIDS Conference 2008.
[129] Cruz, V. et al. Are global health initiatives for HIV/AIDS in Uganda by-passing the government's policies and systems? Abstract session (TUAX0203), XVII International AIDS Conference 2008.
[130] Mwapasa, V. et al. HIV/AIDS workload and staff motivation in Zambia and Malawi: comparative effects of global HIV/AIDS initiatives (GHIs) Abstract session (TUAX0206), XVII International AIDS Conference 2008.
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International AIDS Society/Mondaphoto

Demonstration for Universal Action, AIDS 2008.

[134] Kruse, G et al. Healthcare workers in Lusaka district, Zambia: utilization of HIV services and burnout. Poster exhibition (MOPE0786), XVII International AIDS Conference 2008.

[135] Kasozi, M. Challenges of human resources and capacity building in HIV/AIDS programming: a case study of the AIDS support organization. Poster discussion (WEPDB105), XVII International AIDS Conference 2008.

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[139] Atun, R. Panel 2. Satellite (MOSAT16), XVII International AIDS Conference 2008.

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REGIONAL FOCUS

This section summarizes key presentations, discussion and debate addressing major policy and programmatic responses to HIV in six geographical regions:

- Sub-Saharan Africa
- Asia and the Pacific
- Eastern Europe and Central Asia
- Latin America
- Caribbean
- Middle East and North Africa

This section draws primarily on presentations and discussion from the AIDS 2008 Leadership and Community Programmes, particularly the six regional sessions organized by the IAS. It also draws on relevant programme activities in the Global Village and other conference programme activities. Each of the regional sub-sections is introduced by a box with 2007 epidemiological estimates from the 2008 Global Report on the AIDS Epidemic.

Sub-Saharan Africa

Sub-Saharan Africa remains the region most heavily affected by the epidemic, accounting for 67% of all PLHIV and nearly 75% of all AIDS deaths in 2007. Almost 90% of the children with HIV worldwide live in sub-Saharan Africa, and HIV is the underlying cause of almost one-third of all child deaths in some highly-burden countries.[1]

South Africa has the world's largest epidemic, with an estimated 5.7 million PLHIV. Approximately 500,000 people are newly infected each year and 1,000 people die every day from AIDS-related illnesses. Young women in South Africa face a substantially greater risk of becoming infected than men.[2]

Sub-Saharan Africa

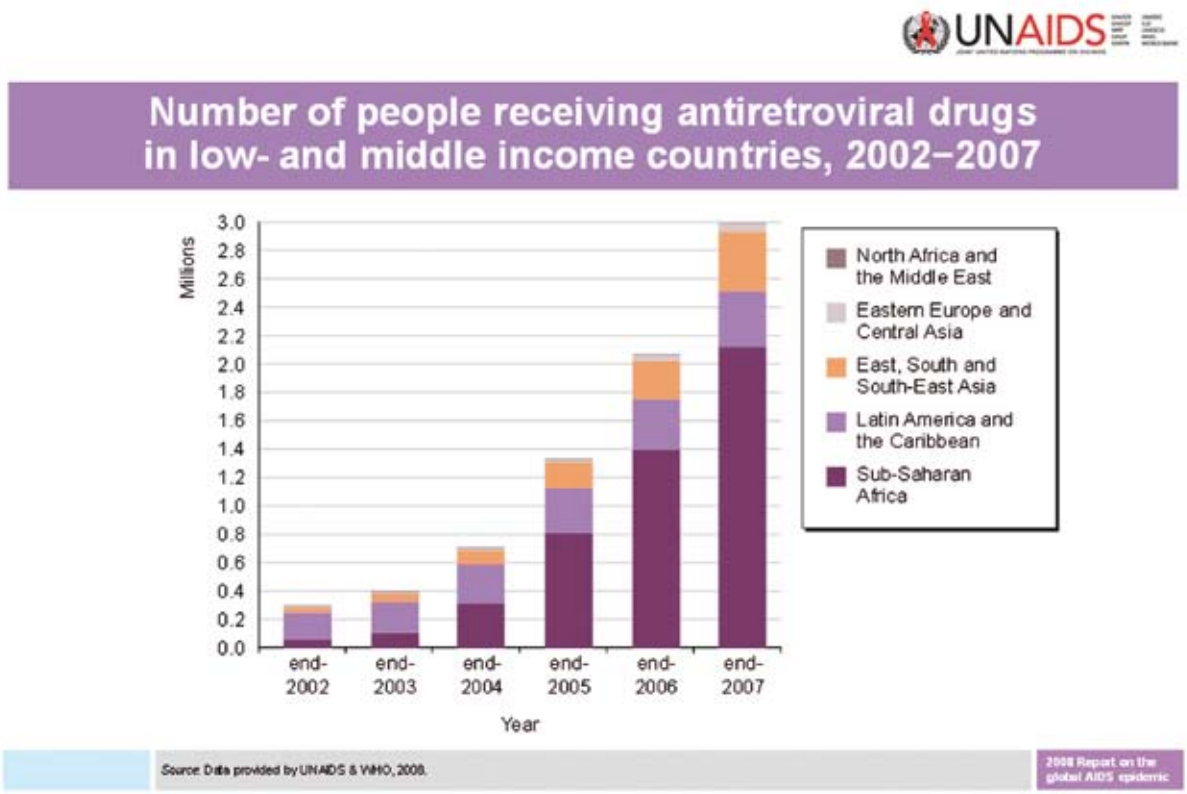
- People living with HIV: 22 million
- AIDS-related deaths (2007): 1.5 million
- New infections (2007): 1.9 million
- Vulnerable populations: women and girls; children; youth

Lessons Learned

The regional session on sub-Saharan Africa acknowledged the tremendous progress in national responses to AIDS in the past few years, including substantial increases in ART coverage.[3] Declining HIV prevalence has been observed in several countries, particularly in the smaller HIV epidemic of West Africa. In his overview of the regional response, Lazare Kaptue from Cameroon praised the achievements of countries such as Botswana, Kenya, Malawi, Namibia and Zambia, where political commitment, multisectoral coordination and the active participation of civil society have shown success in spite of limited resources.[4] However, stabilizing or declining

UNAIDS/G.Pirozzi

Traditional birth attendants, Egypt.



HIV prevalence may at least partially be due to approximate parity between AIDS mortality and new infections, raising questions about the extent of the efficacy of prevention interventions. Countries facing civil war and/or severe economic and political crisis have produced data suggesting that HIV is on the decline when the opposite may in fact be occurring. As such, speakers noted that recent HIV prevention successes cited by UNAIDS in Zimbabwe should be viewed with caution, as emigration and dispersal of HIV-positive people may mask actual HIV prevalence rates. A late-breaker study addressing the impact of conflict – specifically post-election civil unrest in Kenya – revealed a significant negative impact on ART adherence and other health outcomes.[5]

In Tanzania, the President and First Lady launched a national HIV testing and counselling campaign in July 2007 by taking a voluntary HIV test. By April 2008, the number of people who took an HIV test was nearly 10 times the total average number of people who take a test in a year. Namibia's recent Demographic and Health Survey reported one of the highest rates of HIV testing in the region.[6]

In Cameroon, where the national antiretroviral therapy programme has been implemented with progressive decentralization, a study concluded that district-level HIV services performed as well as the central and provincial services.[7] A study in Swaziland found that providing community-based antiretroviral therapy reduced the number of missed appointments among patients.[8]

In 2005 the Botswana government contracted a private management company to outsource antiretroviral therapy provision to the private health sector and ease congestion in public facilities. By May 2007, almost 6,000 patients had been enrolled in antiretroviral therapy and the waiting lists in the public sector reduced dramatically.[9] Also in Botswana, more than 90% of HIV-positive pregnant women received antiretrovirals in 2007 to prevent transmission to their children.[10]

Other speakers cautioned against complacency in this region's response to HIV/AIDS. Elizabeth Mataka, UN Special Envoy for AIDS in Africa, called for raising awareness on the risks of multiple, concurrent partnerships, and noted the resurgence in sexual risk behaviour in countries such as Uganda, where the epidemic had begun to stabilize.[11] The report-back from the 11th meeting of the Society for Women against AIDS in Africa (SWAA) by Soulymane Mboup noted that, while there had been significant improvement in mainstreaming gender issues into policies and plans, implementation leaves much to be desired; promoting the sexual, reproductive, and human rights of women infected and affected by HIV/AIDS and addressing gender-based violence will be integral in effectively addressing gender equity issues and – ultimately – the overall response to AIDS in this region.[12]

Challenges and Opportunities

HIV programmes in sub-Saharan Africa continue to face a critical shortage of health workers and health care infrastructure. Speakers from Uganda and Malawi – countries which have

both made substantial progress in expanding their HIV response in recent years – described how the "second wave" of scale-up will not be sustainable without building human resource capacity and providing better working conditions and other incentives aimed at staff retention.[13] They also emphasized the need to strengthen infrastructure at all levels of the health care delivery system, reach out to rural areas and hard-to-reach populations, and integrate HIV services within the public health care delivery system, and issue that, as Bience Gawanse noted, is complicated by the enormous challenges posed by the dual epidemic of TB and HIV.

Advocates emphasized that respect and recognition of human rights, irrespective of gender, sexual orientation or ethnicity, must become central to the response in the region. Mataka and other speakers argued that HIV programmes in sub-Saharan Africa have largely neglected the needs of men who have sex with men, held back by denial and homophobia, as well as the needs of IDUs. While political leaders at the conference expressed support for addressing the needs of these groups, future conferences will judge whether the rhetoric will translate into badly needed legal and policy reforms. To date, the actions of national governments – from the homophobic statements of the President of Gambia to the arrest of three Ugandan gay activists at the June 2008 HIV/AIDS Implementers' Meeting – seem to more accurately reflect the position of many policymakers in this region.[14,15]

The importance of sound strategic information was also raised during a number of sessions, both as the basis for designing and improving programmes, as well as a gauge of transparency and accountability. Estimates of the size of populations at high risk of infection are limited, and data on coverage of services among these groups were absent from many country reports. Speakers noted that community-based organizations can play a greater role in monitoring progress and holding governments accountable at future conferences, but to do so must have access to greater technical support and capacity to undertake "shadow-reporting" alongside official government reports.

The take-away message is that while important and substantial progress has been made in scaling up priority HIV interventions in sub-Saharan Africa, that progress is fragile and more attention and resources are required to address health system capacity issues and the needs of vulnerable and most at risk populations.

Asia and the Pacific

The HIV epidemic in Asia and the Pacific is one of the most diverse in the world, with epidemiological trends varying widely depending on the country and sub-region. Epidemics in Cambodia, Thailand and Myanmar show declining HIV prevalence, while those in Viet Nam, Indonesia and Papua New Guinea are growing. New infections are also increasing in populous countries such as China and Bangladesh.

Asia and the Pacific

- Number of people living with HIV: 5 million in Asia, 74,000 in the Pacific
- AIDS-related deaths (2007): 380,000 in Asia, 1,000 in the Pacific
- New infections (2007): 380,000 in Asia, 13,000 in the Pacific
- Populations most at risk: sex workers, IDUs, MSM

Lessons Learned

Countries such as Thailand, Cambodia and some Indian states were widely recognized for their effective and focused HIV responses, especially their campaigns encouraging 100% condom use in sex work settings. In Tamil Nadu, India, a programme targeting sex workers introduced in 1995 under a tripartite agreement between government, community organizations and funding agencies has resulted in a dramatic increase in condom use among female sex workers and truckers.[16]

In Malaysia, the government allowed the introduction of harm reduction programmes in 2005, and by 2008, there were more than 22,000 drug users on opioid substitution therapy, more than one million needles distributed, and a methadone programme introduced in prisons.[17] In China, Viet Nam and Indonesia, the response has recently begun to gather pace and has shown moderate success. Harm reduction programmes for injecting drug users are gradually expanding in the region; however, men who have sex with men have been largely overlooked.

Wipas Wimonsate from Thailand reported rapidly growing rates of HIV incidence among MSM in a cohort from Bangkok. 1,000 HIV-negative MSM were recruited and tested for HIV every four months. To date in the on-going study, the annual HIV incidence in the group is estimated at 5.1%.[19]

In Bangladesh, information on HIV prevention was integrated into the school education curriculum, taking into the account the local cultural and religious context.[20] Papua New Guinea faces a generalized HIV epidemic, which is expanding rapidly in a context of weak health infrastructure, insufficient political commitment, and high rates of violence against women. While there have been some recent achievements in the national response, effective advocacy is constrained by the challenges of mobilizing civil society, involving PLHIV, and the geographical and linguistic heterogeneity of the country.

The Avahan Initiative

Since 2003, Avahan has supported prevention programmes for nearly 280,000 individuals at high risk – including female sex workers, their male clients and injecting drug users – in 605 towns in the six targeted states of India.

Avahan's success is driven by a business-oriented scale-up model. Beginning with a detailed assessment of the "market size" of populations of high-risk groups, Avahan identified key locations which contained large concentrations of high-risk behaviour, developed a common minimum programme, and worked with a wide range of implementing partners to roll out interventions. Community volunteers were recruited to conduct social mapping of networks of high-risk groups, and engage them directly in service delivery. For example, in each district, a peer sex worker manages service demand for between 35-50 of her colleagues, and tracks outcomes on a weekly basis. Avahan also uses a routine programme monitoring system to track progress and improve its services.

The Avahan initiative was launched in India by the Bill & Melinda Gates Foundation in 2003, with the objective of increasing access to HIV prevention in six states with India's highest HIV prevalence rates. Working with the national, local and district governments and major non-governmental organizations, Avahan provides funding and technical support to distribute condoms, provide screening and treatment for sexually transmitted infections, and expand peer outreach within communities of high-risk groups. Additional detail on this project is outlined in the box on the Avahan Initiative.[21]

Challenges and Opportunities

An independent Commission on AIDS in Asia presented its recommendations at an AIDS 2008 satellite session.[22] The Commission's recommendations emphasize the urgent need to focus on populations most at risk, and calls on political leaders to acquire a complete understanding of the dynamics of the epidemic in their countries and to invest in evidence-based interventions. The recommendations were echoed by speakers at the regional session on Asia and the Pacific.[23]

International AIDS Society, Mondaphoto

Pedro Cahn, AIDS 2008

Several sessions also highlighted a number of cases where law enforcement activities that criminalize drug use, sex work and homosexuality continue to obstruct HIV service provision. In Thailand and Myanmar, for example, drug users continue to face incarceration and even death at the hands of law enforcement officers.[24] In Cambodia and China, sex workers face violence and human rights violations.[25] Sex between men remains illegal in most of Asia and is therefore driven underground. Some examples of progress are emerging: in India, for instance, the Minister of Health expressed support at the conference for changing the Indian Penal Code, which criminalizes homosexuality.[26] However it is clear that a stronger commitment from political leadership is needed to ensure equal access to HIV services for these groups.

Other priorities in the region include expanding the provision of treatment and care, including access to affordable second-line drugs; maintaining treatment adherence; strengthening linkages with TB and HCV programmes; and integrating HIV services with services for maternal and reproductive health. The expansion of HIV testing and counselling is key, with the need for the right balance between protecting the individual's right to confidentiality on the one hand, and facilitating access to services on the other. Impact mitigation programmes, especially for women and children, were also mentioned.

The need for reliable data on the populations affected by HIV and their access to services was also raised by speakers. Greater investment is needed not only in generating data to evaluate and improve programmes, but in building capacity to analyse and use data from different sources. The extensive work undertaken by the Commission on AIDS in Asia to review existing evidence and make recommendations will serve as the basis for expanding the response to the epidemic in the region, and for assessing progress at future conferences.

Eastern Europe and Central Asia

This region includes one of the fastest-growing HIV epidemics, particularly in the Russian Federation and Ukraine, and is concentrated primarily among IDUs, with significant overlap between injecting drug use and sex work. While political attention and resources allocated to HIV are growing, the policy and programmatic response – including government efforts to include civil society groups in decision-making – has been uncoordinated and inconsistent.

Eastern Europe and Central Asia

- People living with HIV: 1.5 million
- AIDS-related deaths (2007): 58,000
- New infections (2007): 110,000
- Most at risk populations: IDU, sex workers, MSM

Lessons Learned

In the Russian Federation, domestic resources allocated to the HIV response have increased fifty-seven fold from 2005 to 2007 (up to 10.7 billion roubles or US$444.8 million in total), based on Russia's 2008 Country Progress Report.[27] In Uzbekistan, IDU "trust points", which offer needle and syringe programmes and substitution therapy, are slowly being scaled up.[28] In Moldova, harm reduction interventions are being expanded in prison settings.[29]

Ukraine has the highest estimated HIV prevalence in the region, with very high infection levels among IDUs. The Ukrainian government has demonstrated strong political commitment to address the epidemic, and access to substitution therapy and antiretroviral therapy for injecting drug users is slowly scaling up. The first pilot substitution therapy project was introduced in Ukraine in 2004, and had expanded to 11 sites by 2007. A national operational plan to scale up opioid substitution therapy in Ukraine between 2007 and 2011 is being finalized.[30]

Also in the Ukraine, the number of people receiving ART expanded from 137 in 2004 to nearly 8,000 people in 2007 after stewardship of a grant from the Global Fund was transferred from the Ministry of Health to the HIV/AIDS Alliance, a nongovernmental organization, due to problems with grant management by the government recipient. The Alliance, working in close collaboration with the Ministry of Health, the Ukrainian AIDS Centre and the All-Ukrainian Network of People Living with HIV/AIDS, has demonstrated how a multidisciplinary approach with shared responsibility is successful in scaling up service delivery at a national level.

Challenges and Opportunities

Universal access to HIV prevention, treatment and care in Eastern Europe and Central Asia will not be achieved unless policy and legislative changes take place that decriminalize homosexuality and sex work, and increase evidence-based drug treatment and prevention services for IDUs (including making buprenorphrine and methadone available as OSTs). The overall access to these services for IDUs remains unacceptably low.

Although access to prevention and treatment services for IDUs are expanding, many projects are still in the pilot phase. Consistent access to NSPs remains limited, and some countries, including the Russian Federation, still do not provide OST. At the conference Global Fund Executive Director Michel Kazatchkine called on the international community to engage in dialogue with the Russian Federation on the effectiveness of harm reduction interventions, including OST.[31]

Data on the epidemic among MSM is very limited, although evidence suggests that the epidemic among this population may be substantially larger than official figures estimate. The Ukrainian HIV surveillance system, for example, only reported 159 HIV transmissions from sex between men since reporting began, even though there are an estimated 40,000 MSM living with HIV in the country.[32] The region has made better progress in PMTCT, with coverage at 71% in 2007. Access to antiretroviral therapy is also increasing, although coverage was only 17% in 2007, and drug prices remain high. Co-infection with TB and hepatitis B and C are highly prevalent in the region.[33]

International AIDS Society, Mondaphoto

Michel Kazatchkine, AIDS 2008.

At the conference speakers advocated for improved HIV surveillance and monitoring, including a disaggregation of service indicators by sex and by risk group, and monitoring of treatment outcomes and drug resistance. Participants also cautioned that while the epidemics in the region were categorized as concentrated, large numbers of people

were infected, drawing attention to the probability of an underestimation of the burden of disease, especially among MSM, sex workers and prisoners.

Speakers also called for integrating HIV prevention and care within overall health systems strengthening and service quality assurance measures in these countries. Civil society representatives also called for greater cooperation between civil society organizations and government agencies in policy and decision-making processes; meaningful civil society in this region – particularly PLHIV – remains low. The issues in this region have been complicated in some countries by rapid economic growth and less reliance on the Global Fund and other external donors; however, this could jeopardize the continuity of existing grants and programmes.[34]

Latin America

As the local host of AIDS 2008, Latin America's response to HIV was at the centre of discussion and debate at the conference. Local AIDS 2008 Co-Chair Luís Soto-Ramírez noted that, "the conference has had an enormous impact in Mexico and throughout Latin America. People here are now talking openly about HIV and AIDS. It is really going to help not only men who have sex with men, sex workers and drug users but also migrants and indigenous communities in Mexico."[35] Significant numbers of new infections continue to occur among MSM, sex workers and, to a lesser extent, IDUs. An estimated 200,000 people are living with HIV in Mexico alone.

Latin America

- People living with HIV: 1.7 million
- AIDS-related deaths (2007): 63,000
- New infections (2007): 140,000
- Populations most at risk: MSM; sex workers

Lessons Learned

AIDS 2008 provided an opportune platform to bring Latin American issues to the forefront and demand action. Just prior to the start of the conference, the 1st International March against Stigma, Discrimination and Homophobia was held in Mexico City and Latin American and Caribbean Ministers of Education and Health signed a declaration pledging to implement comprehensive sex education and sexual health promotion programmes among young people.[36] At the conference, the Director of CENSIDA, Mexico's national HIV programme, Jorge Saavedra presented a plenary focused on sex between men.[37] The founder of the Argentine Association of Female Sex Workers presented a plenary address focusing on issues related to sex work, gender inequality, sexual violence and labour rights.[38] Panama, the last Latin American country criminalizing homosexuality, announced during the conference a legislative order to repeal the law.

UNAIDS/C.Sattlberger

Sex workers, Guatemala.

The conference highlighted a number of successes in the region. Brazil, widely acknowledged for its successful ART programme, has also taken steps to protect the rights of sex workers. Sex work is not a crime in Brazil, and the government promotes HIV prevention education and self-esteem among sex workers, including a high profile communications campaign with the tagline, "no shame girl, you're a professional".[39] RedTraSex, the Latin American and Caribbean Network of Female Sex Workers, supports member organizations in the region to conduct peer outreach and promote sex workers rights. In Ecuador, sex workers recently obtained the right to carry the same healthcare card as everyone else, guaranteeing the same access to essential health services as all women.[40] In Peru, a research project in Lima is using new approaches to reach out to MSM and women to promote HIV prevention and care.[41]

Mexico's Response

The epidemic in Mexico is concentrated among MSM and sex workers and is growing among IDUs. In response, the government and nongovernmental organizations have

undertaken several prevention efforts among sex workers and gay and other MSM. Mexico City has gone even farther in addressing discrimination against gay/MSM by legalizing gay marriage, one of the first jurisdictions to do so in the region, and implementing an HIV awareness campaign to coincide with AIDS 2008. Mexican civil society groups have been actively engaged in collaborating on these issues with government, and Mexico City Mayor Marcelo Ebrard specifically spoke out against discrimination and homophobia during his speech at the Closing Session.

Antiretroviral therapy, provided free of charge in the public sector since 2003, covered about 57% of estimated need in Mexico at the end of 2007.[42] During the conference, Mexican President Felipe Calderón announced the lifting of restrictions on foreign pharmaceutical companies to produce and sell antiretrovirals in the country.[43] Needle and syringe programmes have been expanded, such as in Tijuana on the Mexico-United States border.[44] The Mexican government also agreed to provide participants who use drugs with methadone during the conference, even though methadone is illegal under Mexican law.

Under the leadership of Jorge Saavedra, Mexico's first openly gay government official in a senior position, the country has taken a number of steps to address homophobia and discrimination against MSM and improve their access to health services. Overall spending on HIV programmes increased substantially in Mexico between 2001 and 2005, including funding for programmes targeting MSM. In 2005, Mexico launched a government-endorsed nationwide anti-homophobia campaign, and is now working towards declaring the 51 new HIV ambulatory care clinics in Mexico as "homophobia-free services".[45]

Challenges and Opportunities

In an overview of the regional response, Cesar Nunez from UNAIDS called for scaling up the regional response with sustained political leadership, resource mobilization, and greater involvement of civil society to fight stigma, discrimination and homophobia.[46]

Despite progress in many countries, sex workers and MSM continue to face denial, exclusion and violence. The Latin America and Caribbean Sex Worker Network recorded the killing of 34 sex workers in Latin America in the ten months preceding the conference.[47] Hidden epidemics among MSM are spreading due to homophobia and lack of awareness. Speakers also called for greater attention to the needs of indigenous people and migrant workers.[48]

While several countries have made progress in scaling up access to treatment and care for people living with HIV, the region still faces the challenge of limited trained human resources and inadequate health infrastructure, especially in rural areas. Sustainable financing is necessary, both from domestic and international sources, including for countries which are not eligible for grants from multilateral agencies such as the Global Fund.

Many speakers also emphasized the need for better strategic information on the epidemic and the response. There is limited data on the dynamics and trends of the epidemic among groups at high risk, and little is known about their access to HIV services. Alessandra Nilo noted that many countries in the region do not have common, agreed national monitoring and evaluation plans for the HIV response, which compromises both decision-making and accountability.[49] Greater capacity to interpret and use data, including among civil society organizations, is also necessary to strengthen programmes and assess outcomes.

The Caribbean

The Caribbean has the highest HIV prevalence of any region outside sub-Saharan Africa, with approximately 75% of Caribbeans living with HIV residing in Haiti (the poorest country in the Western hemisphere) or the Dominican Republic. Overall prevalence in the region is approximately 1%.[50] Poverty, unemployment, early initiation of sexual activity and lack of HIV awareness are all contributing to new infections in this region, among which over 50% are women.[51,52]

The Caribbean

- People living with HIV: 230,000
- AIDS-related deaths (2007): 14,000
- New infections (2007): 20,000
- Populations most at risk: women, sex workers, MSM

Lessons Learned

In 2001, Caribbean countries adopted the Caribbean Regional Strategic Framework for HIV/AIDS, a coordinated, regional approach to addressing the HIV epidemic. Many have developed national strategic plans and legislation, and have expanded HIV services. Speakers at AIDS 2008 reaffirmed their commitment to the strategy and to their national and regional plans. Public health authorities also committed to eliminate the vertical transmission of HIV and syphilis in the Caribbean by 2015.[53]

The coordinated, regional approach to addressing the HIV epidemic in this region includes a number of partnerships, including the Pan Caribbean Partnership Against HIV/AIDS, the Caribbean Broadcast Media Partnership, Caribbean AIDS Testing Day (in 2008) and UNAIDS' collaborations to promote HIV awareness during the Cricket World Cup held in the Caribbean in 2007.

Peter Figureoa also noted the substantial progress in scaling up access to antiretroviral therapy in countries such as Cuba, Barbados and Jamaica, as well as the decline in rates of mother-to-child transmission.[54] However, he also highlighted the lack of data on the epidemic among most at risk populations, largely because of stigma and the difficulty in reaching these groups.

"It will also not be possible to effectively do prevention work in HIV/AIDS if we do not, in the Caribbean, decriminalize men having sex with men."

Mario Kleinmoedig, Netherlands Antilles

Community-based Strategies in Haiti

The HIV response in Haiti has evolved with strong community participation. Claude Pean from Haiti presented the experience of the Fame Pereo Institute, a non-profit organization providing HIV services to communities in high-density, low-income urban areas in Haiti.[55] The Institute provides HIV education, testing and counseling, prevention of mother-to-child transmission, treatment and support through mobile teams of health workers who approach low-income communities in households, schools, churches and other public places. They have also conducted campaigns against stigma and discrimination.

Community-based approaches are being used to scale up access to ART in the country. A study conducted in clinics managed by Partners in Health concluded that task-shifting using a nurse-centred approach to HIV care in rural Haiti was an effective model of scale-up, and resulted in good outcomes for patients.[56] Another study found that regular support and follow-up by community health workers helped to improve retention in HIV care.[57]

Challenges and Opportunities

Many speakers emphasized the imperative of addressing homophobia, stigma and discrimination in the Caribbean, and decriminalizing sex work and sex between men if countries are to achieve universal access. Without a change in public attitudes and relevant legislation, high-risk groups will continue to face barriers in accessing basic health care. Speakers also noted the critical importance of addressing the needs of young people and finding ways to engage them in HIV prevention and control efforts.

Participants also agreed on the importance of strengthening HIV surveillance and monitoring in the region, especially in relation to high-risk groups. There is also a need to address broader developmental issues in the region to reduce vulnerabilities and expand access to services. Many countries in the Caribbean are limited by poor public infrastructure and fragile economies, and poverty and unemployment contribute to the rise of transactional sex, population mobility and gender inequalities.

Middle East and North Africa

At the Regional Session on the Middle East and North Africa, Oussama Tawil emphasized that there is no single HIV epidemic in this region, and that the response has been shaped by diverse socio-political and epidemiological contexts.[58] He described the regional response in three overlapping categories: a "comprehensive" response in countries such as Djibouti, Iran, Morocco, Somalia and Sudan; an "adaptive and potentially effective" response in countries such as Jordan, Lebanon, Tunisia and Yemen; and responses "limited" either by political constraints (such as Egypt and the Libyan Arab Jamahiriya), or by war or post-war contexts (Afghanistan, Iraq, Occupied Palestinian Territories).

Middle East and North Africa

- People living with HIV: 380,000
- AIDS-related deaths (2007): 27,000
- New infections (2007): 40,000
- Populations most at risk: sex workers, IDUs, MSM

Lessons Learned

Nawel Lahouel of Algeria emphasized the importance of involving PLHIV in the national response and developing their capacity to participate in planning and implementation, including efforts to fight stigma and build linkages with religious leaders.[59] She highlighted the importance of the Algiers Declaration of People Living with HIV, adopted in 2005, which brought together people living with HIV from different countries in the region, and the subsequent establishment of support groups in many countries, including the Islamic Republic of Iran, Morocco, Tunisia and Yemen.

The Moroccan Example

Outreach activities among sex workers have been conducted through nongovernmental organizations, and have included the distribution of condoms, HIV testing, and diagnosis and treatment of sexually transmitted infections. The *Association de Lutte Contre le Sida*, a local NGO, increased its voluntary testing and counselling centres from 5 in 2001 to 20 in 2007, with a ten-fold increase in the number of clients. Morocco was also among the first countries in the region to introduce harm reduction programmes for IDUs, including the provision of substitution therapy in pilot sites. Morocco also hosts a sub-regional knowledge hub of the Middle and North Africa Harm Reduction Network, which conducts training, advocacy and information sharing activities across the region.

Amal Karaouaoui of Morocco presented perspectives from the field on providing HIV prevention services to populations at high risk.[60] She noted that while homosexuality and sex work lie within a "forbidden zone" in the socio-political and religious context of the region, a number of countries were using community approaches to reach out to risk groups. In the Sultanate of Oman, community workers approach sex workers and MSM, engage them in awareness efforts, and create a bridge between these vulnerable groups and health services. In Sudan, outreach workers disseminate health information among tea-sellers and sex workers. She called on other countries in the region to follow these examples, acknowledging both the difficulty and promise inherent in the work.

Other speakers noted the achievements in the Islamic Republic of Iran, where prevention and treatment services for IDUs are provided in 600 addiction clinics in the country and more than a 100,000 IDUS are receiving substitution therapy, including in prisons.[61]
Morocco is recognized for its comprehensive response to HIV, with a strong participation of community based organizations and the backing of political leadership.[62,63]

Challenges and Opportunities

The main challenge in scaling up the HIV response in North Africa and the Middle East remains the social stigma and marginalization faced by the population groups at high risk. Access to health information among high risk groups is very limited, as is their access to health, social and judicial services. Effective outreach must be linked with facilitating their access to HIV testing, treatment and care, and dispelling stigma and taboos. Many speakers also called for expanding dialogue with political and religious leaders and building the capacity of civil society organizations for more effective outreach to such groups.

Participants also raised the need to strengthen surveillance and monitoring in the region. Little is known about the nature and scope of the epidemic among high risk groups, due to both inadequate surveillance systems and stigma associated with these groups. Community based organizations, which play a crucial role in providing outreach to marginalized populations in the region, can also play a greater role in monitoring their access to services and health outcomes. This will require greater investments to build their capacity and equip them with the skills and resources needed.

Conclusions

The conference raised a number of policy and advocacy issues that must be addressed to achieve universal access to HIV prevention, treatment and care. While some issues are specific to the epidemiological and socio-economic context in a particular country or a region, a consensus emerged on several overarching themes that must be addressed in the scale-up of national HIV responses:

1. Advance universal human rights

The need to address basic human rights for women and girls, gay and other MSM, IDUs and sex workers in country-level AIDS planning was echoed repeatedly in a number of the country and regional presentations at AIDS 2008. National governments must acknowledge the needs of the groups most affected by HIV, expand their access to health services, and most importantly, remove legal and policy barriers to scale-up by decriminalizing sex work and homosexuality, taking concrete measures to address the root causes of gender inequality, and embracing the implementation of effective harm reduction strategies for IDUs, including NSPs and OST. Governments must also build more meaningful collaboration with civil society groups, especially groups representing people living with HIV, in the development, implementation and monitoring of programmes. The early mantra of AIDS activism, "nothing about us, without us", became a common theme at the conference.

2. Ensure the sustainability of the HIV response and strengthen health systems

Many countries in resource-limited settings stressed the need to strengthen human resource capacity and provide training and incentives for health workers to scale up the HIV response. Strategies such as task-shifting, which is showing positive outcomes, must be rolled out with due attention

UNAIDS/L.Taylor

World AIDS Day, Ukraine.

to ensuring service quality and protecting patient rights. Sustained scale-up of HIV programmes also requires adequate health infrastructure, including drug procurement and supply systems, laboratories, and service provision to rural and other hard to reach populations. Presentations throughout the conference echoed the need for building synergies between HIV prevention and treatment programmes and broader health systems strengthening. Advocates also called for the removal of ceilings on health expenditure imposed by the International Monetary Fund, and called on countries to step up their own domestic expenditures on health. A sustained response to HIV will also rely on continued financial support from the international community, including the Global Fund to Fight AIDS, TB and Malaria.

3. Invest in strategic health information and improve accountability

There was clear consensus on the need for more robust data to understand the burden and trends of the epidemic, to inform programme development, and to measure outcomes. The lack of data regarding populations at high risk of HIV, especially MSM, was evident in all country sessions. The health needs of these groups will continue to be neglected unless countries commit to knowing the size of populations at risk, monitoring disease trends, and tracking their access to services. It was also apparent from many sessions that data needs to be interpreted with caution – for example, in a number of country presentations, coverage of treatment services was measured only against the number of people who know their HIV status and are enrolled in public services; overlooking the many who are not yet diagnosed. The international community must play its part to ensure that accurate, complete data are being collected and reported by countries. Civil society organizations are increasingly willing to build their own capacity to monitor progress and hold governments and international agencies accountable.

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AIDS 2008 AND THE GLOBAL RESPONSE TO AIDS

Tracking Progress and Strengthening Accountability

In an effort to strengthen the role of the conference as an accountability mechanism, the AIDS 2008 Conference Coordinating Committee organized several sessions and meetings that focused on tracking progress on existing commitments and developing strategies for increased accountability among stakeholders. In a session reviewing progress on UNGASS targets, several speakers reminded participants that, while the UNGASS process has been essential to scale-up efforts, it is hampered by the fact that both the goals themselves and the reports on progress towards meeting the commitments are drafted by UN Member States, over which both multilateral institutions and civil society have limited influence.[1] Kieran Daly observed that many countries do not report on UNGASS indicators related to policies and laws prohibiting discrimination and protecting key populations, and that data on some most at risk populations are often absent from such reports.[2] While 147 Member States submitted reports for the most recent UNGASS meeting in 2008, only one submitted data on all 25 indicators and more than 40 countries did not submit any national progress reports.[3,4] The intransigence among some Member States to specifically identify the populations most vulnerable to HIV in the 2001 and 2006 UNGASS declarations – or report on them in subsequent progress reports – is only one example of the limitations of the UNGASS process. The absence of such information compromises efforts to address some of the underlying drivers of the epidemic.

The International AIDS Conference offers a civil society forum complementary to UNGASS for tracking progress on universal access and Millennium Development Goal (MDG) targets and strengthening accountability among all stakeholders. As a multidisciplinary meeting that brings together scientific, political and community leadership as equal partners in the global response, the conference has inherent advantages compared to UNGASS meetings. The current size and complexity of the conference programme, however, brings with it significant challenges to restructuring part or all of the conference to serve as a more formal accountability mechanism, with a more systematic monitoring component. If – as some speakers suggested – the conference is evolving into a broader health and development meeting, it will doubtless add additional complexity to such an effort.

At a meeting of key stakeholders at the conference hosted by the IAS, there was strong support for a more strategic and structured approach to monitoring progress on universal access targets and MDGs, particularly at AIDS 2010, which coincides with the deadline for meeting UNGASS commitments. However, the suggestion that the conference issue report cards on a select group of countries using a set of core indicators, an approach similar to that proposed by AIDS Accountability International,[5] raised concerns about a parallel UNGASS process when the UN system has already invested heavily in infrastructure and capacity building to support country-level reporting on the UNGASS National Composite Policy Index.

Civil Society Accountability: UNITAID

UNITAID presented its novel approach to ensuring accountability and transparency for civil society members on its board during a session that addressed whether AIDS governance structures were accountable to communities. Working with the selection panel from the Global Fund, which had established the original criteria for the positions, as well as activists who were observers at board meetings, civil society board members and their alternates developed a performance evaluation framework that included both qualitative and quantitative assessment criteria.

Once an evaluation framework was established, a 360 degree review was conducted, with inputs obtained from NGO and non-NGO board members, as well as secretariat staff and activist observers. Each delegate was also asked to conduct a self-review. The questionnaire addressed attendance, the number of times the delegate sought input on board issues from their constituency, the number and quality of documents submitted to the board, tangible accomplishments as a result of their participation, and other performance indicators. The first completed evaluation of civil society board delegates and alternates resulted in the removal of one civil society representative from the UNITAID board.

The process is now being reviewed by the Global Fund for potential use with its own civil society board positions.

Potential strategies for formalizing the role of the International AIDS Conference as an accountability mechanism include establishing a separate accountability track or restructuring the Leadership Programme. The issue of securing the participation of senior political leaders in a forum where their commitments to most at risk populations,

controversial prevention interventions (such as drug consumption rooms), or structural drivers of the epidemic will be scritinized, is an ongoing challenge for conference organizers.[6] IAS Executive Director Craig McClure agreed that the existing charter, which outlines the roles and responsibilities of the CCC and other governance structures of the International AIDS Conference may need to be reviewed. While there is substantial interest in shaping AIDS 2010 into a more formal accountability mechanism, the likelihood of drawing senior government officials into a forum with a strong activist presence and many opportunities for public criticism will remain a challenge for organizers.

Not all accountability discussions focused on political leaders and government policymakers. and a session on whether governance structures are accountable to communities provided an opportunity to address civil society accountability to its constituencies. Mogha Yanni outlined an innovative performance evaluation process established by civil society representatives on the UNITAID board to assess civil society accountability (see sidebar on Civil Society Accountability).[7,8]

Strengthening Links Between Conferences

The plethora of regional AIDS conferences and other scientific meetings is presenting donors and HIV professionals with increasingly difficult decisions about whether to fund and participate in these resource-intensive events. The IAS has devoted significant work and resources to regional partnerships over the last several years and is providing financial, organizational and technical support – with support from the Bill & Melinda Gates Foundation – to several regional conferences. The purpose of this approach is not only to strengthen knowledge transfer between these conferences and the larger International AIDS Conference – through such mechanisms as the regional sessions organized for AIDS 2008 – but to leverage donor investments in knowledge exchange and networking while ensuring that regional-specific issues are adequately addressed.

At a meeting that focused on how to strengthen the impact of international and regional AIDS conferences in the global response, several speakers noted the growing scepticism among media and experienced delegates about the benefits of these meetings relative to their cost, and emphasized the need to more clearly differentiate the respective merits and comparative advantage of each meeting.[9] This was underscored by a post-conference report on media coverage indicating that some major media outlets were relying on local news bureaus and wire services for coverage rather than sending specialist reporters to cover the conference, at least partly due to cost considerations.[10] Relatively new conferences, such as the PEPFFAR-initiated HIV/AIDS Implementers Meeting, are adding to the complex topography of HIV-related meetings and conferences. While interest and participation in the International AIDS Conference has remained high, several observers suggested that the timetable of regional and international AIDS conferences – as well as other scientific meetings – be reviewed and amalgamated where feasible.[11] The challenges of such a process, in a context where each conference includes multiple organizing partners and competing agendas and financial interests, is formidable. Challenges notwithstanding, the IAS indicated its support for such an initiative and UNAIDS agreed to use its convening power to facilitate follow-up discussions in an effort to move the field towards a more rational and cost-effective approach to these meetings.

Education and Mentoring Programme

The IAS, the AIDS Vaccine Advocacy Coalition and networks of PLHIV organized an education and mentoring programme for 25 community advocates attending the conference for the first time. The goal was to provide them with professional development resources required to help them engage their communities in understanding and promoting biomedical prevention research. Expert speakers provided the latest insights and practical advice on the science and advocacy skills required for enhancing community participation in biomedical prevention discussions at a one-day pre-conference training course and mentoring and daily debriefing sessions at the conference itself. After AIDS 2008, participants joined a global Advocates Network to facilitate continuous learning and knowledge transfer and exchange to their local communities.

The Media and the Message

Undoubtedly one of the primary goals of the International AIDS Conference is to raise HIV awareness among the general public, policymakers and other decision-makers through widespread media coverage. AIDS 2008 brought worldwide media to Mexico City, with almost 2,500 journalists filing stories on every aspect of the conference and affiliated activities. Over 11,000 stories were filed in English language print media alone.

One of the most important functions of the conference is to increase awareness of HIV in communities around the world, through stories that address every aspect of the response to AIDS. Although it is difficult to assess the impact of this coverage on the global response to AIDS, the prospect of negative media coverage almost certainly ensures attention from political leaders for whom the media is an essential conduit

of public opinion. With this in mind, several policy or regulatory changes were announced by both political and business leaders immediately prior to or during AIDS 2008, including:

- Panama's President repealed the law which made sex between men a criminal act, the last country in Latin America (not including the Caribbean) to remove homosexual acts from the criminal code.
- Mexican President Felipe Calderón announced removal of the regulatory barrier which required pharmaceutical companies to have a manufacturing plant in Mexico in order to sell their drugs in the country, and to making low drug pricing a priority for his government.
- Mexico City Mayor Marcello Ebrard spoke out against homophobia in his Closing Session speech and announced that local government will be distributing new text books on health that address sex education in public schools.
- Indian Health Minister Anbumani Ramadoss publicly urged the Indian parliament to repeal section 377 of its criminal codes, which criminalizes "unnatural acts" (including homosexual acts), reinforcing an earlier statement to that effect by India's High Court Judge, Bilal Nazki.
- China announced that in 2009 it would lift its ban prohibiting people living with HIV from entering the country.
- The Coalition of First Ladies and Women Leaders of Latin America on HIV announced their commitment to eliminating MTCT and syphilis by 2015.
- Representatives from 30 Ministries of Health and 25 Ministries of Education in Latin America announced they would prioritize HIV prevention education and sex education in schools as part of their regional strategy on HIV/AIDS.
- Merck and Company announced it would cut its price of Stocrin (efavirenz) in Mexico by 40% from 777 pesos per patient monthly to 468 pesos (roughly from US $77.50 to US $46), and on Isentress (raltegravir) by 30% from 9.05 pesos to 6.85 pesos per patient monthly (approximately US $903 to US $683).
- Spanish Vice President Maria Teresa Fernandez de la Vega announced her country's contribution of €10.2 million to UNAIDS, of which €3 million will support the activities of the International AIDS Vaccine Initiative and €1.5 million will go to the International Partnership for Microbicides.
- The Spanish government announced the inclusion of lipoatrophy treatment to the list of services covered by the National Health System.

Beyond the tangible policy and funding announcements, analysis of the news coverage revealed an unprecedented amount of media attention to stigma and discrimination, particularly related to the Opening Session keynote on this issue by UN Secretary-General Ban-Ki moon. Other topics that received considerable media attention internationally include the challenges faced globally by gay and other MSM, and the ongoing debate regarding whether AIDS receives a disproportionate amount of funding relative to other health and development issues. Coverage by Mexican and other Latin American media focused particularly on barriers to delivering prevention, care and treatment to gay and other MSM, an issue which emerged as a dominant theme of AIDS 2008.

Conference Hubs

For the first time in the history of the conference, the IAS also expanded the reach of the conference through a series of conference "hubs", remote session halls in geographic locations around the world where conference sessions were downloaded, screened and discussed by a moderator and participants. The official hub was located in KwaZuluNatal province, South Africa, with partner and independent hubs in 122 other locations in 44 countries. Several hubs were also organized for a three-day event from 7 – 9 October 2008 in partnership with the Global Development Learning Network; participants in seven locations across the globe had an opportunity to review conference highlights and discuss how best to implement the research and lessons learned from the conference across disciplines and intervention areas.

The need to address homophobia and the challenges faced by the gay and other MSM populations was underlined in a statement released by the Episcopal Social Pastoral Commission of the Mexican Catholic Church. The statement condemned the stigma and discrimination faced by PLHIV and pledged to work with other social actors in the response, particularly those targeting socially vulnerable communities, "such as indigenous people, women, prisoners, young people, those excluded from the education and health systems, rural dwellers, migrants and their families, children and young homeless people."[12] Notably absent from the list was the group with the highest HIV prevalence of any population in Mexico: gay and other MSM.

South African news coverage focused on conference sessions that addressed the dangers of criminalizing HIV, covering Justice Edwin Cameron's plenary speech on this topic, as well as the promising potential of task-shifting to address health system capacity issues in low- and middle-income countries.

As part of its ongoing strategy to expand the reach and impact of the conference through use of the Internet, the IAS relied on its online partners Clinical Care Options, which once again provided official online scientific coverage, and Kaisernetwork.org, which produced over 75 webcasts, daily news reports, and other news summaries to a global online audience.

Looking Ahead Towards 2010

AIDS 2008 addressed some of the most pressing issues facing the HIV field as it moves ever closer to the 2010 deadline for meeting universal access targets. Among the many tangible impacts of the conference, some of the most important are: recognition of the need for policymakers to take steps to move beyond rhetorical commitments to human rights for vulnerable populations to concrete legislative and policy changes that will have an impact on the environmental and structural drivers of the epidemic; new evidence that demonstrable health system-strengthening effects of HIV-specific funding can lead to greater synergies with other areas of the health care system and help deconstruct the polemic of vertical versus horizontal investments; a new consensus on the need for "combination prevention", which integrates existing biomedical, behavioural and community-based approaches with interventions that address the social and structural inequalities which continue to drive infections; new clinical evidence suggesting that ART should be initiated earlier and used aggressively to curb mortality and morbidity, and to maximize its potential impact on reducing transmission; the enticing promise of PrEP as a potential new biomedical prevention tool on the horizon; and new basic science research that is exploring cellular dynamics in the inflammatory response to HIV that could lead to new therapeutic applications and – perhaps – new insights into viral eradication.

Without a doubt, the impact of AIDS 2008 was strongest in the host country and in Latin America, from the policy changes announced by President Calderón on pharmaceutical manufacturing to the focus on sex workers and gay and other MSM in marches, activism and the conference programme.

The next two years will determine whether the successes reported in Mexico are sustained and whether the challenges identified are overcome. AIDS 2010 in Vienna will take place at the deadline of the target of universal access to HIV prevention, treatment, care and support. The world will be watching.

Endnotes

1 Where are we in achieving UNGASS targets? Symposium (MOSY08), XVII International AIDS Conference 2008.

2 Daly, K. Where are we in achieving UNGASS targets? Symposium (MOSY08), XVII International AIDS Conference 2008.

3 Garay, R. Are AIDS governance structures accountable to communities? Satellite (SUSAT22), XVII International AIDS Conference 2008.

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