

The Myth of a General AIDS Pandemic

How billions are wasted on unnecessary
AIDS prevention programmes

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Summary

Since its inception in the mid-1990s, UNAIDS and its scientific advisors have been misleading the public and policy makers regarding the scope and trend of the AIDS pandemic. In addition to these miscalculations UNAIDS has exaggerated the potential for HIV epidemics in “general” populations. As a self-avowed advocacy agency, UNAIDS deserves high marks for its dedicated and effective advocacy, but its understanding of HIV epidemiology is inconsistent with what has occurred. In mid-2005, UNAIDS issued a warning about the “quantum worsening” of the AIDS pandemic’s trajectory. Yet, in its 2007 update report in November, it finally admitted that global HIV incidence (new infections) peaked by the late 1990s and has been decreasing since.

However, UNAIDS’ either honest misunderstanding or deliberate distortions of HIV epidemiology should not be permitted to compromise the global response to this unprecedented pandemic. Global HIV incidence may well have peaked about a decade ago, but the global impact of close to 30 million persons living with HIV as of 2008, still requires an unprecedented global response. The international support that has been mobilized for the Global Fund should not be reduced since, even with the lowest possible HIV prevalence estimates, there will probably be insufficient funds to meet the needs of HIV treatment programs in resource-poor countries.

UNAIDS and AIDS programs outside of sub-Saharan Africa (SSA), need to stop wasting billions of dollars annually on programs directed to the general public, especially all youth, who outside of SSA are at, minimal to no risk, of epidemic HIV transmission. The “glorious” myths that are still perpetuated by UNAIDS, that the AIDS pandemic is fueled or driven by poverty and discrimination and the “next waves” of HIV epidemics in some heterosexual populations are inevitable, will sooner or later, all have to be abandoned. If not, there may be a backlash from the public and policymakers to the detriment of AIDS programmes everywhere.

The Myth of a General AIDS Pandemic

How billions are wasted on unnecessary AIDS prevention programmes

The AIDS pandemic has not changed dramatically over the past year nor within the last few months. However, the current picture of the pandemic, which the Joint United Nations Programme on HIV/AIDS (UNAIDS) was finally forced to acknowledge in its 2007 update report released on November 21, 2007,¹ is almost completely opposite of what UNAIDS had been describing for the past decade.

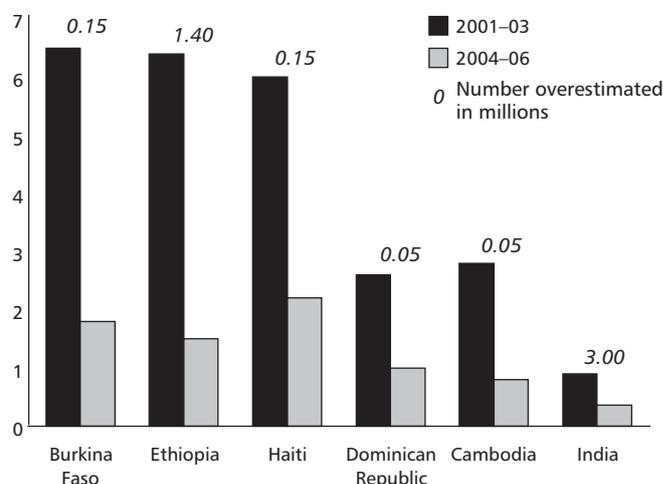
The AIDS pandemic continues to be one of the most severe infectious disease pandemics in the modern era, but its impact has been and will continue to be very uneven. Disastrous demographic impact has and will continue to occur in severely affected sub-Saharan African (SSA) populations, in men who have sex with men (MSM), and injecting drug user (IDU) networks throughout the world; but minimal to no demographic impact in most other populations. Over the past decade, I have had the following major disagreements with UNAIDS.² I believe that UNAIDS has: (1) grossly overestimated HIV prevalence (the number of persons living with an HIV infection); (2) maintained, until about a year ago, that the AIDS pandemic was on a relentlessly increasing trajectory when it was actually decreasing over the past decade; and (3) exaggerated the potential for HIV epidemics in “general” populations.

The UNAIDS’ November 2007 update report acknowledged that it had made or accepted unrealistically high HIV prevalence estimates, and that the AIDS pandemic is not ever-increasing and ever-expanding since global HIV incidence peaked by the late 1990s and has been decreasing since! UNAIDS’ estimate of global HIV prevalence for 2007 (33.2 million) was lower by over 6 million from its 2006 estimate (39.5

million). However, the enormity of UNAIDS’ overestimation of global HIV numbers and rates can be better appreciated by looking at UNAIDS’ estimate of global HIV incidence (new infections) in 2006 with its estimate for 2007. UNAIDS estimated that global HIV incidence in 2006 was 4.3 million (about 12,000 new infections daily) and lowered the estimate for 2007 by almost half to 2.5 million (about 7,000 new infections daily). Figure 1 shows the enormous overestimation of HIV prevalence in selected countries in SSA, the Caribbean and Asia. Additional details about the extent of overestimation of the scope and trend of the AIDS pandemic in SSA and Asia are provided in the appendix.

“UNAIDS has grossly overestimated HIV prevalence ... and exaggerated the potential for HIV epidemics in ‘general’ populations.”

Figure 1 HIV prevalence rates in selected African, Caribbean and Asian countries
% adult population HIV positive



UNAIDS has finally admitted misgauging both the scope and trend of the AIDS pandemic – the first two of my three major disagreements with UNAIDS. However, UNAIDS continues to beat the drums about HIV being “on the brink” of “bridging” into “general” populations from high foci of HIV prevalence in MSM or IDU networks to ignite heterosexual HIV epidemics. This article provides my evaluation of and response to this and other related “glorious”³ AIDS myths to which UNAIDS continues to cling.

Before exposing these myths and misconceptions, it would be helpful to first review HIV transmission and the major determinants of epidemic HIV transmission.

HIV transmission⁴

HIV is transmitted from person to person primarily via blood and sexual fluids, such as semen, as well as any other body fluids that may contain some blood. The probability or risk of HIV transmission for any single exposure is directly related to the amount of infected blood or semen that is exchanged. This risk ranges from a low of less than 1 per 1,000 coital acts from an HIV-infected female to her male sex partner, up to about 90 percent or more from receiving a transfusion of HIV-infected blood. The vast majority (up to 90 percent) of persons in any “general” population are not at any measurable risk of any exposure to HIV. However, the following persons or groups may be, at varying risk of exposure to and, thus, at some risk of acquiring or transmitting an HIV infection.

A. Those exposed to HIV-infected sexual fluids and blood during sexual intercourse

1. Heterosexuals or MSM who have unprotected sex with multiple and concurrent sex partners, especially within large and overlapping sex networks.
2. All regular/steady sex partners of HIV-infected persons – regardless of how the infected partner may have acquired his/her HIV infection – i.e., HIV discordant couples.

B. Those exposed to HIV-infected blood or blood products

1. Infants born to HIV-infected mothers
2. Persons who receive HIV-infected blood or blood products and persons in healthcare settings who are accidentally injected with HIV-infected medical equipment, including persons who are infected by faulty plasma collection methods.
3. IDU who share needles/syringes with other IDU, especially within large IDU networks

Major determinants of epidemic HIV transmission

A major problem in the understanding of HIV transmission dynamics is the definition of epidemic spread. The general definition of “epidemic” found in most dictionaries – a disease or condition that affects many individuals in an area or a population at the same time – is not helpful in understanding the major differences inherent in different patterns of HIV transmission. The epidemiologic concept of the reproductive number (R_0) of an infectious disease agent is very specific and is more useful to describe HIV transmission dynamics, especially the difference between epidemic and non-epidemic HIV transmission. R_0 describes in a single value the epidemic potential of an infectious agent. When, *on average*, one infected person infects more than one other person, R_0 is greater than ($>$) 1 and the result will be epidemic spread of the agent. However, when, *on average*, one infected person does not infect more than one other person, R_0 is less than ($<$) 1 and epidemic spread does not occur. When R_0 is < 1 , the infectious agent will slowly disappear and if R_0 stays close to 1 the agent will maintain itself in the population with no or minimal growth (i.e., becomes endemic). Epidemic ($R_0 > 1$) HIV transmission occurs primarily as a result of those human behaviors that place an individual at high risk of acquiring or transmitting an HIV infection.

Patterns of sex partner exchange and the prevalence of persons who regularly have *multiple* and *concurrent* sex partners are the primary determinants of the rapidity and extent of epidemic ($R_0 > 1$) sexual HIV transmission.

If sexually active persons have many different sex partners, but only one at a time for months or years (i.e., serial sex partner exchange as in most developed countries), it would be difficult for HIV to spread rapidly in persons whose only risk of infection is through sexual intercourse. When multiple sex partners are usually concurrent, HIV or any other sexually transmitted infection (STI) can spread rapidly and extensively. Commercial sex is a prime example of having multiple and concurrent sex partners. In some developed countries, many persons may have, on average, more different sex partners during their life-time than most Africans, but the long-term (many years) concurrency of sex partners in many SSA populations enables HIV to spread more rapidly and extensively.

Another major factor in epidemic ($R_0 > 1$) sexual spread of HIV is the size and pattern of sex networks and the extent of mixing (or “overlap”) between different networks. In populations with a high risk pattern and prevalence of sexual risk behaviors, there will invariably be a relatively high prevalence of STI and other factors that can greatly facilitate sexual HIV transmission. Sustained epidemic ($R_0 > 1$) sexual HIV transmission can occur only in populations with large numbers of persons who routinely have unprotected sex with **multiple** and **concurrent** sex partners. How high HIV prevalence may reach in these populations depends on the prevalence of **facilitating factors** that can increase the amount of blood and sexual fluids exchanged (traumatic sex, “dry” sex, concurrent ulcerative sexually transmitted diseases [STD] such as chancroid and genital herpes, etc.) and the prevalence of **protective factors** that limit the exchange of HIV or HIV-infected fluids (male circumcision and consistent condom use).

The risks of sexual HIV transmission are illustrated in Figure 2.

Myths or misconceptions of HIV transmission dynamics

The following are what I consider to be the major HIV/AIDS myths or misconceptions that continue to be used

Figure 2 Risk of sexual HIV transmission based on patterns of sex partner exchange

Annual number (frequency/exchange)	Pattern of exchange	Risk of HIV transmission*	Examples
1 or none (no partner exchange)	Monogamous or abstinent	Zero or close to zero	Most heterosexuals and many MSM
Up to dozens (months to years)	Mostly serial	Low ($R_0 < 1$)	Up to 20% of adults in western countries
Up to dozens (weekly to monthly)	Mostly concurrent	Moderate to high ($R_0 > 1$)	20–40% of adults in SSA countries and most MSM
Up to several hundred (daily to weekly)	Concurrent	High ($R_0 > 1$)	FSW and MSM in small sex networks
Up to 1000 or more (daily)	Concurrent	Highest ($R_0 > 1$)	Brothel-based FSW, MSM in bathhouses
Discordant HIV couples (few, if any, sex partner exchange)	No exchange or serial	Annual risk < 10%	Spouse or regular sex partner of an HIV-infected person

*Risk of sexual HIV transmission is directly correlated with HIV prevalence and the prevalence of facilitating and protective factors in specific sex networks.

by UNAIDS, mainstream AIDS agencies, and activists to support the prevailing socially and politically correct, but epidemiologically incorrect, UNAIDS paradigm – *if effective HIV/AIDS prevention programs are not directed to the general public, especially all youth, epidemic heterosexual HIV transmission will inevitably break out in most populations where HIV epidemics have not yet occurred.*

Socially and politically correct determinants of high HIV prevalence

Poverty and discrimination are major determinants of high HIV prevalence - this litany used by UNAIDS and most AIDS programs is socially and politically correct but there are no epidemiologic data to support this myth or misconception about HIV transmission. Poverty is a socially and politically attractive hypothesis to account for high HIV prevalence, but available data support the opposite. Persons in the top 20 percentile for income in Kenya, Tanzania, and Ethiopia have HIV infection rates several times higher compared to persons in the lowest 20 percentile – probably because the wealthiest persons, both males and females, have a greater number of sex partners. The richest countries in SSA have the highest HIV prevalence rates and most of the poorest countries

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in the world have the lowest rates. Poverty as a major determinant of HIV transmission is a glorious myth that is not easily dispelled even though there are no epidemiologic data to support this myth.

In 1987, Jon Mann, the first Director of the Global Programme on AIDS of the World Health Organization (GPA/WHO) appropriately declared that the quest for effective treatment and a possible cure for AIDS was an inherent basic human right of all persons living with HIV. However, he went on to say: "... Being excluded from the mainstream of society, or being discriminated against on grounds of race/ethnicity, national origin, religion, gender, or sexual preference, led [leads] to an increase of HIV infection." From my perspective, discrimination clearly raises barriers to HIV/AIDS prevention and treatment programs, but discrimination is not a determinant of HIV risk behaviors and, thus, not a determinant of epidemic HIV transmission. This glorious myth was quickly and uncritically accepted by AIDS activists, and is the centerpiece of UNAIDS' litany that poverty, discrimination, and lack of access to healthcare are major determinants of high HIV prevalence.

The myth of "generalized" heterosexual HIV epidemics

The origin of this glorious myth derives from the initial short doubling times for reported AIDS cases in the early 1980s that led to the false conclusion that AIDS was caused by a highly infectious agent. Observations that HIV risk behaviors (high sex partner exchange rates in many MSM and some heterosexual populations and routine sharing of injecting drug equipment) are present in virtually all countries throughout the world also led to the belief that HIV epidemics would eventually occur in all populations. However, it does not follow logically that the potential for extensive HIV epidemics in MSM, IDU, female sex workers (FSW) and their male clients is equally present in all populations and countries. Further, it is not possible for HIV to jump into any "general"

population from these high risk groups to spread in epidemic fashion in "ordinary" people. There are no credible STD experts who are concerned that genital herpes virus, which may be a hundred times more infectious per coital contact than HIV, could ever become a "generalized" infection capable of sweeping through general populations.

At the 1997 AIDS in Asia Conference in Manila, Peter Piot, the director of UNAIDS, warned in his keynote lecture that when HIV epidemics break out in Asian

countries, "*HIV will cut through Asian populations like a hot knife through cold butter.*" Aside from many HIV epidemics in IDU and MSM populations, there have not been any significant heterosexual HIV epidemics in any Asian country

other than those detected in the late 1980s and early 1990s in Thailand, Myanmar, Cambodia, and several Indian states, since Dr. Piot's dire and colorful prediction. Dr. Piot is, undoubtedly, the most prominent and influential advocate for AIDS programs. His understanding or, in my opinion, misunderstanding of HIV epidemiology serves as the major driver of HIV prevention programs. In one of his speeches about AIDS in Asia he said, "*Let's stop the nonsense of trying to determine a 'natural limit' to the [HIV/AIDS] epidemic in Asia and the Pacific ...*" My response is that it is epidemiologic nonsense to deny that there are no natural limits to epidemic HIV transmission based on the patterns and prevalence of HIV risk behaviors!

HIV transmission usually requires the exchange of a significant amount of infected blood or sexual fluids.

Thus, only a small percent of most general populations or "ordinary" persons would be at moderate to high risk of exposure to and infection with HIV. By contrast, a pandemic influenza virus would be capable of **generalized** spread in any population because virtually all infants, children, and adults (young

or old) would be at moderate to high risk of infection to such an agent. Exaggeration of the potential for HIV to spread into the "general" population is a "glorious"

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"This major focus on preventing "generalized" HIV epidemics means that there are fewer resources available to prevent HIV transmission in persons with the highest HIV risk behaviors."

myth perpetuated by UNAIDS and most AIDS activists partly to avoid further stigmatization of persons with the highest levels of HIV risk behaviors (MSM, IDU, and FSW and their clients).

This myth of a high potential for “generalized” HIV epidemics has resulted in a large and unnecessary amount of effort and funds being used for programs directed to the general population and, especially, youth who outside of SSA are at minimal to no risk of any exposure to HIV. This major focus on preventing “generalized” HIV epidemics means that there are fewer resources available to prevent HIV transmission in persons with the highest HIV risk behaviors. UNAIDS, and AIDS activists have used this myth effectively to gain an increasing share of the limited global health budget at the expense of other urgent public health needs.

Specific examples of such waste include the \$US 100 million that the Global Fund (GFATM) allocated to support an AIDS awareness program for schoolchildren in Bangladesh last year. These funds would have been better spent to scale up outreach programs to IDU, MSM, and FSW in Bangladesh. In addition, UNAIDS’ perceived budget requirement for HIV prevention in low- and middle-income countries for 2008 is over \$US11 billion and includes over \$1 billion for programs directed to out-of-school youth! This budget designation for out-of-school youth is an unwarranted and wasteful use of public health funds.

The UNAIDS proposed budget provides proposed allocations for different interventions and for 2008 proposes \$1.126 billion for out-of-school youth, \$108 million for youth in school, and \$628 million for workplace prevention.⁵ While some of these funds will be usefully spent in SSA, those spent outside of this region will be largely wasted. At least \$5 billion have been wasted just for these categories over the last five years, and currently the waste annually is about \$1 billion and increasing each year.

These funds are particularly wasteful because several childhood diseases - diarrheal diseases, malaria, measles, whooping cough, and tetanus - collectively

account for about a quarter (about 4 million) of annual global child deaths. Effective and relatively inexpensive preventive measures and/or treatments are available for these infectious diseases. That these easily preventable diseases are still killing millions of children each year, while billions of dollars are being squandered annually by AIDS programs to prevent HIV epidemics in populations who are not at risk of epidemic ($R_0 > 1$) HIV transmission is a clear indication that there is a serious flaw in the development of global health priorities.

The major characteristic of HIV as an infectious disease agent is that its risk of transmission is, in the absence of facilitating factors, very low for any single sex encounter. This characteristic of HIV is not something that AIDS programs usually include in their educational messages about HIV transmission. Both Jon Mann, and his successor Mike Merson, specifically instructed me not to distribute a table I had prepared on the risk of HIV transmission since this table indicated that, in the absence of facilitating factors, the risk of HIV transmission per single coital act was about 1 per 1000 or lower. They were both aware that my table was accurate, but both believed that distributing this information to the public would be sending the public a mixed message about the risk of HIV transmission via unprotected sexual intercourse.

Aside from the low infectivity of HIV, the pattern and prevalence of HIV risk behaviors differ markedly from country to country. GPA/WHO surveys of sexual knowledge, attitudes, behaviors, and practices (KABP) carried out in the late 1980s found that the pattern of sex partner exchange in most SSA populations is mainly on a concurrent basis (i.e., within small, but overlapping sex networks), whereas, in most developed countries, sex partner exchange is mainly serial, not concurrent. The KABP studies also found that a large percent (up to 40 percent) of females in some SSA countries have sex outside of marriage, whereas less than 2 percent of Asian females reported such behavior.

These findings, as well as the observation that the prevalence of multiple facilitating factors that can

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greatly increase the risk of sexual HIV transmission, are collectively at least more than 10 and up to 100 times higher in some SSA populations compared with most other populations explains why epidemic ($R_0 > 1$) heterosexual HIV transmission has occurred in many SSA countries but not in most other populations. In the few Asian countries where epidemic heterosexual HIV transmission has been documented in FSW and their clients, these epidemics can be attributed to the large commercial sex networks that were present.

UNAIDS has arbitrarily and inappropriately classified an HIV prevalence of one percent or greater in the 15–49 year old population as a “generalized” HIV epidemic. The false implication of this classification is that virtually all sexually active adults are at almost equal or “generalized” risk of acquiring an HIV infection. UNAIDS and most AIDS activists have either intentionally, or out of honest ignorance, ignored the fact that HIV is very difficult to transmit sexually. By refusing to accept the fact that HIV is very difficult to transmit sexually without the highest risk patterns and levels of sexual risk behaviors, AIDS programs have avoided labeling some populations as being more promiscuous than others. It is a much more socially and politically correct public health message to say that sexual promiscuity exists in all populations and, thus, the risk of epidemic heterosexual HIV transmission to the “general” public, or to “ordinary” people, can be prevented only by aggressive Abstinence only, Be faithful to one’s spouse, and consistent Condom use (ABC) programs directed at the general population and, especially, to youth.

It should be noted that in a population like the state of California, even if a sexual abstinence program directed at adolescents and young adults were to be almost 100 percent effective, such a remarkable achievement would have virtually no impact on HIV infection rates in California. In low prevalence countries, general HIV/AIDS education programs that focus on youth are not essential. As a card carrying United Methodist, I believe the avoidance of premarital and extramarital sex is as vital and needed in low HIV prevalence populations as it

is in high prevalence populations. However, as an objective infectious disease epidemiologist, I believe the prohibition of all sinful sex in low prevalence populations is not needed to prevent epidemic sexual HIV transmission.

A parallel pandemic of AIDS “experts” (most without any epidemiologic training), have used a variety of epidemic models to project large heterosexual epidemics in countries where HIV prevalence rates in the general population are still very low. These “experts” have sounded alarms that the “next waves” of HIV epidemics are imminent, or HIV is “on the brink” of jumping into the general population from existing foci in MSM and IDU populations. The “next waves” of HIV epidemics predicted for general heterosexual populations in developed countries during the 1980s never materialized. Most of these AIDS “experts” have given up sounding alarms about heterosexual HIV epidemics in developed countries and have turned their attention to large countries in Asia.

The following response of a policy person in the WHO Office in Beijing, China, after my March 2003 debriefing on the HIV/AIDS situation in China is typical of what I have come to expect from most AIDS program advocates. She said that my conclusions about the low potential for heterosexual HIV epidemics in China might well be accurate, but that she could not be certain that it was really an accurate picture of HIV/AIDS in China since UNAIDS paints an entirely different picture. She also said, “What is the harm in keeping the public and policy makers fearful of impending heterosexual HIV epidemics erupting in China if sexual risk behaviors are not reduced or eliminated?” The basic harm, from my perspective, is that in China and in virtually all countries outside of SSA HIV prevention efforts are misdirected and essentially wasted on the general public and youth who are at little or no risk of epidemic ($R_0 > 1$) heterosexual HIV transmission.

HIV “bridges” to nowhere

Another major misconception about HIV transmission dynamics is that infected bisexual males or infected IDU

“The “next waves” of HIV epidemics predicted for general heterosexual populations in developed countries during the 1980s never materialized.”

(male or female) serve as the “bridge” population for HIV entry into the general heterosexual population.

For instance, Patricio Marquez, lead health specialist and Team Leader of a World Bank financed Russia Tuberculosis and HIV/AIDS control project told a World Bank informational publication about the risks resulting from intravenous drug use: “We are at a turning point. There is some evidence that Russia, like its neighbor Ukraine, is already experiencing the epidemic’s “second wave,” when the virus breaks out of a concentrated high risk group.”⁶

What has been virtually ignored over the past few decades is that such “bridging” has and continues to occur from “non-epidemic” transmission ($R_0 < 1$) among HIV-discordant couples, i.e., HIV transmission from an infected person (regardless of how infection was acquired) to his/her spouse or regular sex partner. As of 2008, this is probably the predominant mode of HIV transmission throughout the world, but such transmissions usually represent

“bridges to nowhere.” This is because epidemic ($R_0 > 1$) heterosexual HIV transmission has not and cannot occur in any population without the presence of a very high risk pattern and frequency (daily or at least weekly) of sex partner exchanges. In the absence of such patterns of sex partner exchange there will not be any significant epidemic ($R_0 > 1$) spread. This is exactly what has happened following the hundreds of HIV epidemics that have been documented in MSM and IDU populations throughout the world since the early 1980s. This also happened with the many HIV-infected persons who traveled out of Africa during the 1960s and 1970s. There were probably hundreds or thousands of such “sparks” or “bridges” that introduced HIV into many populations but they did not start any significant epidemic spread until such “sparks” were introduced into gay bathhouses, IDU “shooting galleries”, and/or large brothel type establishments.

Discussion and policy implications

As the primary global AIDS advocacy agency since the mid-1990s, UNAIDS has been very successful in

capturing unprecedented global support for HIV/AIDS programs. However, it has achieved this success in large part by grossly exaggerating the scope and trend of the AIDS pandemic. UNAIDS spokespersons have said “UNAIDS does not exaggerate data for the sake of advocacy.”⁷ UNAIDS continues to defend itself by saying that it has always used the best epidemiologic data and methods available and has been regularly advised by the best international AIDS experts.

UNAIDS attributes its acceptance of the lower estimates and the decreasing global HIV incidence trend to “a better understanding of the AIDS pandemic”⁸ resulting from improved data and methods. UNAIDS and its defenders would have us believe that it has been in the forefront of collecting better HIV data and developing better methods for estimating HIV prevalence. However, from my perspective, UNAIDS has been literally dragged kicking and screaming to accept more realistic HIV numbers and trends. To what can we attribute the lower HIV

prevalence estimates and the decreasing global incidence that UNAIDS finally admitted to in its 2007 update report? Were these merely honest mistakes due to simple epidemiologic incompetence, or to deliberate “glorious” misinterpretation of flawed and non-representative HIV data, or to a mix of these factors by both UNAIDS

and its best scientific advisors? The bottom line is that UNAIDS was clearly wrong and the lower numbers and decreasing global incidence trend were obvious, even using UNAIDS’ prior faulty HIV datasets and methods! Jim Shelton and colleagues, using data collected in the 1990s, showed that annual HIV incidence peaked in most of the severely affected SSA countries during the 1990s!⁹

Global HIV incidence may well have peaked about a decade ago, but the global impact of close to 30 million persons living with HIV as of 2008, still requires a massive global response. My future HIV/AIDS scenarios include generally decreasing HIV prevalence with no significant change in regional patterns of HIV transmission that were established during the 1980s and 1990s. In marked contrast to UNAIDS’ lingering myth of the next waves of “generalized” HIV epidemics, I don’t expect or forecast

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any significant heterosexual HIV epidemics in populations where such epidemics have not occurred.

A few months after Shelton's article about peaking of global HIV incidence was published in the *Lancet*, UNAIDS in its May 2006 report to a special session of the UN General Assembly on AIDS (UNGASS), was forced to acknowledge that annual global HIV incidence peaked by the late 1990s. I personally doubt if UNAIDS would have informed UNGASS that global HIV incidence had peaked about a decade ago if the *Lancet* article had not been published. However, UNAIDS has been totally silent as to whether this peaking and decreasing of annual global HIV incidence means that the UN Millennium Development goal for HIV/AIDS – Have halted by 2015 and begun to reverse the spread of HIV/AIDS – was achieved about a decade ago.

Where epidemic HIV transmission has occurred in MSM, IDU, and in heterosexual networks of persons with multiple and concurrent sex partners (in many SSA populations and in some FSW and their clients), my scenarios project very slow declines in HIV prevalence; but in some of these populations, there may be a stable or slightly increasing prevalence due to effective anti-HIV treatment programs.

Effective prevention of epidemic HIV transmission will remain a difficult goal. This is because most HIV-risk behaviors cannot be eliminated. Public health interventions for harm reduction in IDU networks (needle exchange, etc.) are still illegal or opposed in many countries and local communities. Risk reduction (for sexual transmission) continues to be opposed or, at least, not actively supported by faith-based organizations, particularly by the present US administration. HIV prevention programs in SSA have been severely compromised because most African leaders have fully accepted the myth that poverty and discrimination are the major driving forces of HIV epidemics. Effective prevention of HIV transmission in SSA will, in my opinion, not be achieved until African national and community leaders can be convinced that HIV prevention requires reduction of risky sex behaviors.

“UNAIDS and AIDS programs outside of SSA need to stop wasting limited global funds on AIDS programs directed at the general public, especially all youth.”

In addition to these problems confronting prevention of epidemic HIV transmission, there will continue to be a steady increasing incidence of non-epidemic sexual transmission from persons infected as a result of their risk behaviors to their spouse or regular sex partners. Thus, there will be an unacceptably high endemic HIV level in many SSA countries, several Caribbean countries, a few Asian countries, and in most MSM and IDU populations throughout the world.

HIV incidence in most MSM populations has been reduced from the high rates present during the 1980s to much lower “endemic” levels, but annual incidence rates in most MSM populations are still unacceptably high. All MSM communities and public health programs will need to work together to reduce annual HIV incidence in MSM populations throughout the world to as low a level as possible. In addition to behavior changes, such as reducing the number of sex partners and consistent use of condoms for penetrative sexual intercourse, much more can and should be done to reduce the amount of blood or semen that is exchanged during MSM sex contacts.¹⁰

In countries with low HIV prevalence, primary prevention must focus on persons with the highest HIV risk behaviors to prevent the start of any epidemic transmission. If epidemic transmission does not occur in heterosexuals who have the highest sex partner exchange rates then there is no reason to expect epidemic transmission to occur in heterosexuals with lower sex partner exchange rates. HIV/AIDS programs must consider all available public health or medical measures to reduce the risk of

HIV transmission in persons with the highest risk pattern and prevalence of HIV-risk behaviors regardless of whether or not epidemic HIV transmission has occurred. This involves, in addition to behavioral change measures (sex partner reduction), reduction of major facilitating factors such as other STI

and provision of male circumcision (MC) services where appropriate. If routine MC programs had been aggressively developed in SSA a decade ago, it is conceivable that this simple measure could have prevented millions of HIV infections.

Many AIDS programs may be awaiting the availability of an effective HIV vaccine, but the almost mythical HIV vaccine is constantly about a decade away. It needs to be also noted that even if an HIV vaccine were to be developed, all currently available measures for prevention of HIV transmission could not and should not be eliminated or reduced since any HIV vaccine might, at best, be only about 60–70 percent effective. Thus, the program cost for an HIV vaccine will have to be added to the prevention budget and should not displace any of the prevention measures currently used. This is not to say that an HIV/AIDS vaccine should not be developed, but to point out that an effective HIV/AIDS vaccine, if and when one may become available will not be the “magic bullet” that the public and policy makers are hoping for.

I realize that I have to walk a fine line in criticizing UNAIDS since I do not want its honest misunderstanding or deliberate distortions of HIV epidemiology to compromise the needed global response to this unprecedented pandemic. The international support that has been mobilized for the Global Fund should not be reduced since, even with the lowest possible HIV prevalence estimates, there will probably be insufficient funds to meet the needs of HIV treatment programs in all resource-poor countries. However, UNAIDS and AIDS programs outside of SSA need to stop wasting limited global funds on AIDS programs directed to the general public, especially all youth! In particular, workplace HIV awareness and prevention programs outside of SSA are too general and unless very specifically targeted (i.e., long distance truck drivers, etc.) are a waste of time and money.

Without all the “doom and gloom” HIV scenarios and without the alarming news releases that warn about constantly increasing HIV infections, UNAIDS and AIDS activists apparently fear that the public and policy makers will not continue to give AIDS programs the high priority that they have received up to now. They are justifiably concerned that the public and policy makers might become complacent about the need to prevent HIV transmission if the potential risk of HIV epidemics in general populations is minimal or close to zero. They are concerned that support to AIDS programs might be reduced if most regional HIV rates are stable or

decreasing and HIV remains concentrated in MSM, IDU, FSW and their clients, and in SSA populations. These are realistic concerns but global and regional HIV rates have remained stable or have been decreasing during the past decade; HIV has indeed continued to be concentrated in populations with the highest levels of HIV risk behaviors; and HIV is incapable of epidemic spread in the vast majority of heterosexual populations.

Continued denial of these realities will lead to further erosion of whatever credibility UNAIDS and other mainstream AIDS agencies and experts may still have, thereby seriously damaging the future fight against this disease.

Appendix

This appendix summarizes the major overestimation of HIV prevalence and HIV projections made by UNAIDS and other agencies for SSA and Asia. During the past decade, UNAIDS, its scientific advisors, and numerous AIDS “experts”, most without any epidemiologic training, have been leading the public and policy makers down a prim rose path of unrealistically high HIV numbers. There was intense news media coverage of UNAIDS’ 2007 update report, especially the reduction of the global HIV prevalence estimate of close to 40 million in 2006 down to about 33 million for 2007. However, the reduction of global HIV numbers at the end of last year is but the most recent of a series of revisions forced upon UNAIDS and other AIDS “experts” since 2001.

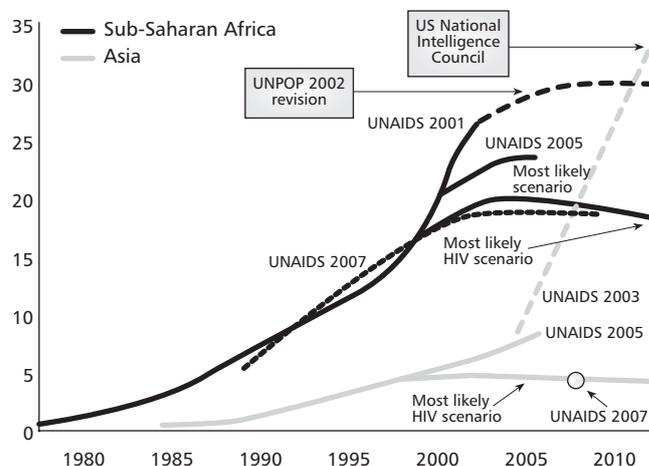
To derive the prevalence trends shown in figure A, assumptions were made as to when epidemic transmission started in each region; then an epidemic curve was fitted to the most recent prevalence estimate. In reviewing the top curve for SSA, it appears that HIV prevalence increased steadily almost on a straight line from 1980 to shortly past 1995: then during the late 1990s, the slope of the prevalence curve for SSA took a sharper upward climb. One obvious conclusion is that HIV transmission in SSA increased markedly during the late 1990s to account for this shift in the rate of increase noted in the prevalence curve. Another possible, and what I believe is the more probable explanation for this sharp increase, is that there were significant changes in calculating annual HIV prevalence estimates for SSA by UNAIDS in the late 1990s. This marked upward turn of HIV prevalence in SSA occurred shortly after UNAIDS assumed responsibility for developing global and regional HIV/AIDS estimates.¹¹

The Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (UNPOP) prepares official estimates and projections of

the world population every 2 years. UNPOP’ 2002 Revision of the world population estimates and projections included projections of the impact of AIDS deaths in SSA up to 2050. This *Revision* used UNAIDS’ initial 2001 prevalence estimate for SSA and also accepted UNAIDS’ assumption that HIV prevalence would continue to increase up through 2010. Projections based on overestimation of HIV prevalence and then compounded by the assumption that prevalence will not begin to decline until after 2010, when most prevalence rates leveled off or began to decrease by the late 1990s, results in highly inflated projections of AIDS deaths.

UNPOP, based on UNAIDS’ 2001 estimates projected that there would be about 30 million HIV infected adults in SSA in 2007 but the UNAIDS update report last year reduced this number by almost half (18.5 million for 2007). UNPOP had to significantly reduce its projected impact of AIDS on demographic patterns in SSA in the

Figure A **Estimate and projections of HIV prevalence**
15–49 year old population, millions



year 2050 by several folds in its *2004 Revision*, and also in its *2006 Revision*. Moreover, UNPOP will probably have to revise its projected impact of AIDS in SSA even lower in its *2008 Revision* because UNAIDS' estimates of HIV prevalence in SSA are slowly but steadily getting closer to more realistic levels!

The initial UNAIDS 2001 HIV prevalence estimate for SSA was clearly grossly overestimated. Based on better data and methods for HIV prevalence estimates, UNAIDS in 2005 revised its initial 2001 estimate for SSA from 26 million down to 22 million and, in its November 2007 update report, further lowered the 2001 estimate to 18.5 million. In 2005, there were still many SSA countries where population based HIV surveys had not been carried out. I therefore believed, at that time, that 22 million was still a high HIV prevalence estimate for 2001 and 19 million was more likely. I used this latter number in what I consider to be the most likely HIV scenario for SSA (the bottom thick curve for SSA in figure A). In its November 2007 update report, UNAIDS estimated HIV prevalence in the 15–49 year old population in SSA to be almost identical to my most likely HIV scenario – 18.5 million in 2001 and 18.4 million in 2007 (the thin dotted line in figure A).

The US National Intelligence Council (NIC) using selected US Government officials and outside experts developed estimates and projections of HIV/AIDS in five countries, of major strategic interest to the USA.¹² HIV prevalence estimates and projections for Asia are the curves at the bottom of figure A. The NIC projected in 2002 that there would be from 30 to 40 million HIV infections, in China and India alone, by 2010. As of 2008, the UNAIDS estimate of HIV prevalence in all of Asia was lowered from about 8 million in 2006 to less than 5 million in 2007. This was primarily due to the revision of India's prevalence estimate of close to 6 million in 2005 lowered to about 2.5 million in 2007. Thus, by the year 2010, the NIC projection for all of Asia will probably be about an order of magnitude greater than what the actual prevalence might be. I doubt very much if the NIC or any of its experts will have the courage to stand up and admit that they were dead wrong regarding their outrageously high HIV projections for Asia.

UNAIDS and many pseudo AIDS "experts" falsely proclaimed that global HIV incidence and prevalence

were relentlessly increasing during the past decade when, in reality, they were leveling or decreasing. It's not too surprising that some of these "pseudo experts" are now proclaiming unqualified success for their HIV prevention programs as HIV incidence and prevalence continue to decrease. However, how much of the decreasing AIDS pandemic trend can be attributed to public health interventions and how much to a natural decline in the AIDS pandemic will definitely be vigorously debated during the coming decade.

Notes

1. Available at <http://www.unaids.org/en/KnowledgeCentre/HIVData/EpiUpdate/EpiUpdArchive/2007default.asp>
2. These disagreements plus others were described in my book – *The AIDS Pandemic: the collision of epidemiology with political correctness* published in early 2007 (Radcliffe-Oxford, 2007). <http://www.theaids pandemic.com> provides updates on these issues.
3. Glorious myths are those used for a good cause, i.e., *splendide mendax* (splendidly or gloriously false)
4. My understanding of HIV transmission is consistent with most “mainstream” epidemiologists. I was the principal author of the HIV/AIDS chapter in the 17th edition (2000) of the Control of Communicable Diseases Manual, published by the American Public Health Association.
5. Available at http://data.unaids.org/pub/GlobalReport/2006/2006_GR_CH10_en.pdf
6. <http://siteresources.worldbank.org/INTHIVAIDS/Resources/375798-1132695455908/GRHarmReductionRussia0915.pdf>
7. UNAIDS 2007 AIDS epidemic update, Q&A document, available at http://data.unaids.org/pub/EPISlides/2007/071118_qa_final_en.pdf
8. UNAIDS press release, 21 November 2007, available at http://data.unaids.org/pub/EPISlides/2007/071119_epi_pressrelease_en.pdf
9. Shelton JD, Halperin DT, Wilson D. Has global HIV incidence peaked? *Lancet* 2006; 367 (9517):1102–2
10. Alternatives to anal sex for MSM can be found at: <http://www.man2manalliance.org/>
11. I was told by a colleague involved with developing HIV prevalence estimates for UNAIDS that there was a clear administrative decision made in 1997 to use the higher range of HIV estimates rather than the lower or mid-range that were used by GPA/WHO.
12. <http://www.fas.org/irp/ric/hiv-aids.html>

Since its inception in the mid-1990s, UNAIDS and its scientific advisors have been misleading the public and policy makers regarding the scope and trend of the AIDS pandemic. In addition to these miscalculations UNAIDS has exaggerated the potential for HIV epidemics in “general” populations. As a self-avowed advocacy agency, UNAIDS deserves high marks for its dedicated and effective advocacy, but its understanding of HIV epidemiology is inconsistent with what has occurred. In mid-2005, UNAIDS issued a warning about the “quantum worsening” of the AIDS pandemic’s trajectory. Yet, in its 2007 update report in November, it finally admitted that global HIV incidence (new infections) peaked by the late 1990s and has been decreasing since.

However, UNAIDS’ either honest misunderstanding or deliberate distortions of HIV epidemiology should not be permitted to compromise the global response to this unprecedented pandemic. Global HIV incidence may well have peaked about a decade ago,

but the global impact of close to 30 million persons living with HIV as of 2008, still requires an unprecedented global response. The international support that has been mobilized for the Global Fund should not be reduced since, even with the lowest possible HIV prevalence estimates, there will probably be insufficient funds to meet the needs of HIV treatment programs in resource-poor countries.

UNAIDS and AIDS programs outside of sub-Saharan Africa (SSA), need to stop wasting billions of dollars annually on programs directed to the general public, especially all youth, who outside of SSA are at, minimal to no risk, of epidemic HIV transmission. The “glorious” myths that are still perpetuated by UNAIDS, that the AIDS pandemic is fueled or driven by poverty and discrimination and the “next waves” of HIV epidemics in some heterosexual populations are inevitable, will sooner or later, all have to be abandoned – or risk destroying what credibility UNAIDS may still have.

