

HIV/AIDS will remain a major challenge in global health for decades to come

Kevin M De Cock delivers a 'State of the HIV Universe' address as he steps down from WHO



Mr Chairman, colleagues, friends,

I bring greetings from the Director General of the World Health Organization and thank the organisers for the honour of speaking here, at what should be a conference of optimism. To borrow from Jonathan Mann, WHO's first HIV Director – despite the challenges, I remain, as I hope you do, squarely on the side of those who intervene in the present, believing that the future can be different. I will review some recent insights from epidemiology; discuss biomedical advances in prevention; describe challenges in treatment; and conclude. More than ever we need interventions to be based on evidence, not magical thinking; this can be no better expressed than by quoting from the inaugural address of the 44th President of the United States – 'We will restore science to its rightful place and wield technology's wonders to raise healthcare's quality...'

At end-2007, 33 million persons were estimated to be living with HIV, 2.7 million became newly infected that year, and 2 million died from HIV disease. Sixty-eight percent of all persons infected reside in sub-Saharan Africa, almost 35% in eight countries of this southern sub-region. Epidemiologic heterogeneity is reflected in the mean percent prevalence in adults in sub-Saharan Africa and in other regions shown on this slide. UNAIDS and WHO will issue revised epidemic estimates at the end of 2009.

Despite emphasis on 'knowing your epidemic', it remains difficult to answer the simple, essential questions – of the last 1000 infections, in whom did they occur, how were they acquired, where, and from whom? In these six African countries, casual sex or multiple partners (grey and yellow), and transmission in long term discordant relationships (red), are the major sources of infection. The proportion of infections in stable relationships (in red) is higher in the countries with the highest prevalence levels. Such analyses are essential for appropriate targeting of interventions to where transmission is occurring.

The proportion of HIV infections in Africa attributable to male-to-male sex is uncertain; I would guess it is substantially more than due to unsafe blood transfusion. About 2 to 3% of African men report same sex behaviour, well over half also reporting sex with women.

Kevin M De Cock recently stepped down as Director of the HIV/AIDS Department at WHO. This lecture (slightly abridged for space) was delivered in Windhoek, Namibia in June 2009. He is now Director of CDC-Kenya.

In a review by Smith and colleagues from Oxford, HIV prevalence rates of 9 to 34% were reported from 17 studies of men who have sex with men (MSM) in 13 countries. In Mombasa, Kenya, HIV incidence was 20 per 100 person-years among men who practiced both insertive and receptive anal intercourse, a rate similar to that in MSM in the earliest days of the American epidemic. HIV in MSM in Africa not only needs urgent scientific and programmatic attention but should be a priority human rights issue: male to male sex is illegal in over half of all African countries, and in four is punishable by death.

Almost 90% of HIV infections in pregnant women are found in just 20 countries, all but one in sub-Saharan Africa, highlighting the need to focus prevention efforts. A study in Botswana presented by Lu et al at the recent Conference on Retroviruses and Opportunistic Infections (CROI) showed 1 to 2% annual HIV incidence in women during pregnancy and the breastfeeding period. These incident infections were associated with high transmission rates, and accounted for an estimated total of 43% of all maternal transmissions in this otherwise successful PMTCT programme. This modelled survival curve for children infected from their mothers – work of Brian Williams at WHO – illustrates that close to one-sixth of such children may survive to age 15 years or more. As epidemics decline, as in Zimbabwe, or prevention of mother-to-child transmission becomes more successful, the epidemic of HIV in adolescents in the highest burden countries will become more evident.

WHO's 2009 *Global Tuberculosis Report* released in March contained new estimates concerning HIV-associated tuberculosis, doubling earlier figures. In 2007 there were about 1.4 million HIV-positive tuberculosis cases, representing 15% of global TB incidence. Twenty-six percent of global TB deaths were estimated to be HIV-associated, and 23% of HIV deaths were likely from tuberculosis. This slide showing the percent distribution of HIV-associated tuberculosis cases by region and country on a logarithmic scale is reminiscent of distribution of HIV in pregnant women – heavy concentration in Africa, about 80%, the majority of cases in high HIV-prevalence countries of southern Africa, in moderate HIV-prevalence eastern Africa, and in lower prevalence, large-population countries such as Nigeria and India.

There is now clearer interpretation of HIV/AIDS epidemic trends. Global HIV prevalence has been stable

at approximately 0.8% since the turn of the century. Absolute annual incidence globally, the upper curve on the left, likely peaked in the mid-90s. The absolute number of people living with HIV, the panel on the right, may not have peaked and in Africa it likely continues to grow. The higher HIV incidence rate in Africa than elsewhere, combined with its higher population growth rate, will result in the disparity in HIV burden continuing to widen. The shape of these epidemic curves, with their long tails stretching into the future, indicate that HIV/AIDS will remain a major challenge in global health for decades to come or longer.

By end 2007, 3 million persons in low- and middle-income countries were receiving antiretroviral therapy, almost 70% in Africa; and 200 000 children were on ART, more than two and half times the total in 2005. WHO, with UNAIDS and UNICEF, will publish updated estimates of the health sector's response in the fall. WHO strongly supports the adoption by Michel Sidibe of universal access as the overarching vision for UNAIDS. Worryingly, however, at end-2007, 6.7 million people were in danger of their lives for lack of treatment, and 23 million were waiting, mostly unknowingly, to become treatment-eligible, sicken or die. With 1 million people newly on therapy but 2.7 million newly infected in 2007, treatment need continues to escalate. Without substantial reduction in HIV incidence, universal access risks becoming ever more remote.

In medicine, hope is a good companion but a poor guide; we need prevention and treatment to be based on evidence, and must be prepared to examine difficult options. Evidence-based prevention interventions are limited in number and efficacy, simple biomedical interventions are lacking, research findings are incompletely implemented, interventions are not targeted. There has been inadequate emphasis on prevention for positives, yet every transmission event concerns two serologically discordant individuals. For the magnitude of the problem, funding, political will and coverage are insufficient – consider, for example, access to science-based harm reduction for drug injectors or services for sex workers. Combination prevention encompasses individual and group, community and structural interventions, and HIV testing and linkage to care; the rest of my focus is on testing and biomedical interventions.

The 2008 *Towards Universal Access* progress report showed that in 12 countries with adequate data, a median of 20% of HIV-infected persons knew their HIV status. The percentage of pregnant women tested for HIV in low- and middle-income countries in 2007 was only 18%. WHO and UNAIDS guidelines state that HIV testing should be recommended to all healthcare attenders, adults and children, in generalised epidemic settings. This should be considered a critical measure of performance in any African HIV/AIDS programme funded by PEPFAR or the Global Fund – universal access is impossible without greatly increased knowledge of HIV status.

There has been inadequate attention to the prevention benefit of HIV testing. In the United States, Marks et al reported 68% reduction in unprotected sex for HIV-infected persons aware of their HIV status. A cross-sectional survey in Uganda showed that infected

persons aware of their own serostatus and that of their partners were 3 times and 2.3 times more likely, respectively, to have used a condom at last sex; and persons enrolled into a treatment programme reduced risky sexual behaviour by 70% at 6 months. A plausible generalisation is that everywhere the majority of persons will try to avoid transmitting HIV to others. Other novel approaches for increasing testing uptake include testing of partners and families, mobile and community testing, and door-to-door testing. Recently in Kibera, this large slum in Nairobi, home testing was offered to 7000 people with 96% uptake.

Research on biomedical interventions to interrupt sexual transmission has been discouraging though recent experience is more hopeful. Of 26 randomised controlled trials of different interventions including 4 vaccine, 10 microbicide, and 3 herpes suppression trials, 22 failed to show efficacy. The four positive trials included three on male circumcision, and the STI intervention trial in Mwanza, Tanzania, over a decade ago, of limited generalisability. At CROI in February, Karim and colleagues presented results from HPTN 035 assessing the microbicide gel Pro 2000. Though not reaching statistical significance, a 30% reduction in HIV incidence was observed in gel users. When analyses were stratified by degree of gel and condom use, women who were high gel but low condom users had a 78% lower HIV incidence than other women. These really are the first encouraging data from a human microbicide trial.

Moving to pre-exposure prophylaxis, this can be provided through topical as well as oral antiretroviral agents. CDC scientists examined the efficacy of a vaginal gel containing tenofovir alone and tenofovir combined with emtricitabine (Truvada) against repeated intravaginal exposure to simian HIV in macaques. Applied a half hour before exposure, the ART containing gel gave complete protection in the 12 animals that were challenged twice weekly for 10 continuous weeks. Encouraging animal data were also presented at CROI concerning combined pre- and post-exposure prophylaxis in macaques rectally exposed to SHIV, raising hopes for an eventual rectally protective product. The efficacy of oral PrEP is being assessed in ten ongoing or planned randomised controlled trials involving some 20 000 participants internationally, first results expected in late 2009 or 2010.

It is important we prepare for how would we use these intervention if efficacious – but some concerns need highlighting. Assumptions are made about microbicides and women's control – these products are not necessarily that easy to use discreetly, store unobtrusively, or dispose of invisibly, potentially challenging for the most vulnerable. We need to discuss targeting of interventions to where infection incidence is highest – adolescent girls seem to be missed in these trials.

A topic of recent focus has been the role of treatment for prevention. The rationale is clear: transmission only occurs from infected persons; viral load is the major risk factor for all modes of transmission; ART lowers viral load; prevention of mother-to-child transmission offers proof of concept; and there is supportive observational evidence from discordant heterosexual couples. These data from CROI showing reduced transmission rates in

discordant couples in East and Central Africa when the infected partner was on ART are consistent with earlier published observations from Europe.

Impetus was given to the longstanding suggestion that ART could lower HIV incidence at the population level by a *Lancet* publication in late 2008 by WHO scientists. Brian Williams' mathematical model predicted that in an epidemic of southern African severity, annual, universal voluntary HIV testing, followed by immediate ART for those infected, would reduce HIV incidence by 95% within a decade, reduce prevalence to below 1% within 50 years, and be cost-saving compared to current treatment scenarios after about 25 years. This publication, described by the *New York Times* as 'a thought experiment', does not advocate any change in WHO policy but should stimulate research and discussion.

All this concerns the longer term public health, but WHO also has to give recommendations on ART use here and now, for individual health. We will revise treatment and prevention of mother-to-child transmission guidelines later this year, based on the best current information; in that regard we have to be like 'time travellers', advising for the present under current reality – the red arrow – but able simultaneously to discuss future theoretical choices on ART use, based on evolving science, over a different time frame.

Considerations for ART guidance include specific needs of patient populations; defining critical outcomes; and assessing criteria such as evidence, risks and benefits, and acceptability. Priority questions are how best to diagnose and monitor, when to start ART, and the optimal nature of first- and second-line regimens. We have long known of increased mortality in African patients on ART compared with outcomes elsewhere. At CROI, Lawn and colleagues from South Africa showed a steeply increasing risk of death in patients on ART with time lived below 200 CD4+ cells per cubic mm, reaching almost 40/100 person-years when the CD4+ count is less than 50. Although mortality rates at the higher levels may be relatively low, applied to large numbers of people living with HIV, this converts into many absolute deaths. A similar analysis from the same group for tuberculosis incidence suggests increasing incidence when the CD4+ count falls below 500 per cumm, rising thereafter. A conclusion would seem that if the future is to be different, we have to intervene earlier, before people with HIV fall into or spend too long in these CD4+ danger zones for death and tuberculosis.

The question of when to start ART is actually two questions; when to start in relation to acute opportunistic events, and when to start according to CD4 staging. Two recent studies examined timing of ART initiation in relation to acute illness. ACTG A 1564, conducted predominantly in the United States and published just recently in *PLoS One*, compared early with deferred ART in patients treated for various opportunistic events. These survival curves show 47% reduced progression or death in patients receiving immediate as opposed to deferred ART. Slim Karim presented preliminary results of the South African SAPIT trial at CROI, which compared outcome of ART integrated with TB treatment versus deferred treatment till TB therapy was completed, in patients with CD4+ counts below 500/cu mm. There was a 56%



Who's next? At the end of 2007, 6.7 million people were in danger of their lives for lack of treatment, and 23 million were waiting, almost unknowingly to become treatment eligible.

reduction in mortality in the integrated group, and this applied across the whole CD4+ spectrum in a stratified analysis. The emerging evidence suggests ART should be initiated as soon as possible in acute illness.

This slide summarises general treatment initiation criteria according to different international guidelines. Most advise initiation at a CD4+ count below 350/cumm, the 2006 WHO guidelines being permissive but specifically advising initiation before the CD4+ drops below 200/cu mm. Presented at CROI and published recently in the *New England Journal*, this paper by Kitahata et al showed a 69% increased risk of death in persons deferring treatment till CD4+ was 350 or less compared with starting starting at 351 to 500/cu mm; and a 94% increased risk in those starting at 351 to 500 compared with above 500/cu mm. These data are susceptible to bias and confounding in view of their observational nature, but nonetheless, the pressure for earlier initiation of therapy is palpable. Just on Monday this week, results of an NIH-sponsored randomised controlled trial in Haiti showed that starting ART at CD4+ counts between 200 and 350/cu mm yielded substantially better outcomes than deferring treatment till counts dropped below 200/cu mm. The mortality rate in this well conducted study was four times lower in the early treatment group, and tuberculosis incidence was halved. The Data and Safety Monitoring Board recommended that the trial be stopped and all patients offered ART.

Changing starting criteria has major implications for cost and choice of drugs. Starting at a CD4+ of 350cumm in countries like Kenya or Zambia will double treatment need, and there will be the communications challenge of explaining an apparent decline in coverage because of the expanded denominator. This slide from Matthias Egger shows proportional use of different regimens by geographic region. Stavudine containing regimens are in red and brown and account

for over 80% of treatment in Africa, though this drug is hardly used at all in the industrialised world. Calls to move away from stavudine to friendlier first-line regimens such as tenofovir-containing combinations stress funding still further. The most widely used regimen containing d4T, 3TC and nevirapine, for example, is available for less than 100USD per patient-year, some tenofovir-based regimens costing four times as much.

In the revision of guidelines for prevention of mother-to-child transmission, the most pressing issue is how to prevent breast-feeding transmission, responsible for about 40% of all paediatric infections. For women not requiring treatment for their own health, the choices will be between extended infant prophylaxis, shown effective in the recent PEPI trial in Malawi, or extended maternal ART as assessed in the Kisumu Breast Feeding Study, the Kesho Bora study, and the DREAM experience in Mozambique.

It is tempting to look to revision of guidelines as the answer - but patients don't read guidelines, and guidelines don't build health systems. Late diagnosis and weak maternal and child health services are more important barriers than lack of guidance. PMTCT depends on the same systems that are failing to deliver on MDG 5, reduction in maternal mortality, highest in Africa, unchanged over the last two decades, one of the greatest disparities in global health. A story is told of a new CEO some years ago taking over a large aluminium company which was performing badly. After much reflection, the director requested frequent updates from his staff on one indicator only - surprisingly, worker injuries. He argued that if worker safety was assured, other systems would have to be performing, and he was right. Maternal mortality may be the analogous single most important indicator for the future of AIDS in women and children, perhaps for global health overall.

So where do we go from here? As always, there is more, a lot more, to AIDS than just technical work. Martin Luther King said that the arc of the moral universe is long but it bends towards justice. If public health is rooted in the science of epidemiology, its philosophic values are equity and social justice. We are entering perilous ethical and political waters, and current practice for poor people of colour in the global South will not be judged well by history if it does not evolve with science and practice in the richer North. As a long-term CDC employee currently with WHO, I do not raise the memory of Tuskegee lightly, but cite it to warn all countries that others, no matter how unfairly, may draw analogy between earlier and today's events. The world cannot allow a permanently two-tiered system of global AIDS treatment with late initiation of outmoded drugs reserved for the South. Nor can we hide behind lack of knowledge or the attitude of 'let's wait and see'. Equipoise no longer exists in the debate about early or late initiation, and today's questions are 'treat how early?' and 'with what?'

It is unacceptable, in view of what is at stake - millions of lives, billions of dollars - that despite over 3 million people in the world on ART, we cannot definitively answer the question of when to start treatment. Allocation of Global Fund and PEPFAR resources must be based on evidence. There is ethical as well as medical need for a randomised

controlled trial to determine optimal starting criteria in Africa, including assessment of the impact of immediate treatment on tuberculosis incidence. PEPFAR and the Global Fund could resolve these questions once and for all through applied research under field conditions, through a large simple trial, for example, with hard endpoints such as tuberculosis, AIDS, death. Some argue such a study is not needed because we will never have resources to treat more people earlier with better drugs. This is unpersuasive; rationing of healthcare is a universal reality but let rationing decisions be made transparently, with the involvement of all stakeholders, based on scientific understanding of cost and benefit.

Despite challenges, political will and science could get us closer to one, or a few, global, once-daily, first-line regimens, with the best drugs. That it can be done was shown by the tuberculosis community a decade ago. Today, if you get tuberculosis in Jakarta, Kampala, or Los Angeles, you receive the same four-drug regimen. Drugs with unacceptable toxicity such as thiacetazone, were phased out because collectively we said 'Enough, now,' even as some argued against change citing cost or drug resistance.

Raymond Biggs, New York Commissioner for Health a century ago, famously said that public health is purchasable and every society can determine its own death rate. We need imaginative thinking, renewed advocacy, innovative financing, and more efficient implementation.

In closing, we are again entering uncharted territory in HIV/AIDS, challenged by inadequate prevention, uncertainties around treatment, a widening but incompletely defined role for ART, and increasing inequity. Universal access will slip through our fingers unless we reframe it in the broader context of all health-related Millennium Development Goals. Sustainability should be redefined in terms of technical sustainability nationally but financial sustainability at the international level, acknowledging that global health needs global financing. From disjointed prevention and treatment of the past we must move towards more intelligent use of ART for treatment as well as prevention, guided by science, stratified by individual serostatus, with all infected persons knowing their rights to health, including sexual and reproductive health. What else is universal access?

Robert Kennedy, said 'Only those who dare to fail greatly can ever achieve greatly.' That is the spirit of PEPFAR and the Global Fund. And for all here working on the front lines, far from the halls of power, remember that all public health is local and change is often driven from small places - places that you may not find on any map of the world, but where ordinary people take risks. There is comfort in those other words of Robert Kennedy: 'Few will have the greatness to bend history itself; but each of us can work to change a small portion of events, and in the total of all those acts will be written the history of this generation.'

To which one could add: And so also, one day, will be written the history of this pandemic.



Africa HEALTH CPD Challenge
See page 77 to test yourself on this article

Triple ARVs can reduce MTCT and HIV

Kesho Bora study reveals how infection rate can be reduced by more than 40% with a new drug combination



In high-income countries, mothers with HIV avoid breastfeeding and feed their infants with formula. But in many developing countries, there are barriers to formula feeding. Sanitation is often poor, and clean water to mix formula may not be available. Some families cannot afford the cost of infant formula. Others are unable to provide wood or charcoal for cooking fires to boil the water needed for formula.

A study led by the World Health Organization (WHO) offers new hope to HIV-positive mothers who breastfeed. The study, named Kesho Bora ('a better future,' in Swahili), involved 1140 women and was carried out at five sites in Burkina Faso, Kenya, and South Africa between June 2005 and August 2008. Its purpose was to assess whether the risk of HIV transmission through breastfeeding could be safely reduced.

Initial findings of the study – released at the 2009 International AIDS Society conference in Cape Town, South Africa – showed that a combination of three antiretroviral (ARV) drugs (zidovudine, lamivudine, and lopinavir) administered to breastfeeding mothers is a safe and effective way to reduce HIV infection among infants. By following the three-drug regimen from late in pregnancy through birth and 6 months of breastfeeding, HIV infection in infants could be reduced by 42%, compared with the current WHO-recommended practice of a two-drug regimen that stops at delivery, the study found. 'The study is an important milestone in understanding how to make breastfeeding by women with HIV infection safer,' said Dr Tim Farley, Project Leader of the Kesho Bora study and a scientist in WHO's Department of Reproductive Health and Research. 'The study is the first directly to compare the safety and

effectiveness of the two approaches to reducing the risk of transmission in women who breastfeed their babies.'

Women participating in this randomised study had a CD4 count between 200–500 cells/mm³. The best results (largest number of HIV infections prevented) were recorded among those with a CD4 count in the range of 200 to 350 cells/mm³. Women with a CD4 count below 200 cells/mm³ were offered long-term ARV therapy, in line with current WHO recommendations, and were not randomised in the study. In such women, ARV therapy is necessary for the mother's health and will also reduce the risk of HIV transmission to the baby. Similarly, women with early stage disease (CD4 count above 500 cells/mm³) were not randomised since the WHO-recommended two-drug regimen is already highly effective at reducing the risk of HIV transmission.

The health of mothers was an important consideration in the design of the Kesho Bora study. There was no increase in risk to the health of the mother or infant associated with the triple-ARV regimen, the study found. Follow-up of mothers and their babies is continuing so that long-term risks to the mother's health of taking the ARV drugs for 7–8 months and then stopping can be identified.

'This study is particularly important because it is the first randomised controlled trial to directly compare triple-ARVs during breastfeeding with no ARVs during breastfeeding. It has a high strength of evidence compared with observational studies and other programme data,' said Dr Ying-Ru Lo, Coordinator of WHO's HIV/AIDS prevention work.

WHO collaborated on the study with a wide range of partners, including the French National Agency for Research on AIDS and Viral Hepatitis (ANRS), US Centers for Disease Control and Prevention (CDC), and *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) of the National Institutes of Health. Additional funds were provided by the European and Developing Countries Clinical Trials Partnership, the Thrasher Foundation, the UK Department for International Development, UNICEF, and the Belgian Government.

WHO is currently reviewing its recommendations for preventing mother-to-child transmission, ARV therapy, and infant feeding in a harmonised fashion. Recent findings from the Kesho Bora study will be considered in this guideline review process, together with other new data released since the guidelines were last updated in 2006.



Monika, 30, learned that she was HIV-positive 2 years ago. Though she was able to prevent HIV transmission in pregnancy by taking ART, her child later became infected through breastfeeding

Web resources

1. WHO HIV/AIDS Department: <http://www.who.int/hiv>
2. Mother-to-child transmission of HIV: <http://www.who.int/hiv/topics/mct/en/index.html>
3. <http://www.ias2009.org/pag/PDF/3631.pdf>

Towards universal access: latest figures for the HIV/AIDS pandemic



- An estimated 4 million people in low- and middle-income countries were receiving antiretroviral therapy (ART) at the end of 2008, compared to 3 million in 2007 and 400 000 in 2003, according to preliminary data compiled by WHO, UNAIDS, and UNICEF.
- Approximately 285 000 children benefited from paediatric ART programmes in 2008, a 45% increase over the previous year.
- In sub-Saharan Africa, nearly 3 million people were



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Nearly 3 million people accessed treatment in sub-Saharan Africa in 2008: ARTs at a clinic in Windhoek, Namibia

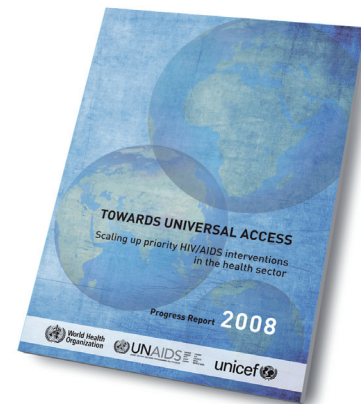
accessing treatment in 2008, a 38% increase over 2007.

These and other figures—presented on 22 July at the International AIDS Society conference in Cape Town, South Africa—are based on an analysis of data collected from 127 low- and middle-income countries. In collaboration with countries, WHO, UNAIDS, and UNICEF are still completing the analysis. Final figures on ART access will be published in the September 2009

Towards Universal Access progress report, together with an in-depth analysis of a broad range of health sector HIV/AIDS interventions.

Towards Universal Access is an annual report that monitors the health sector response to HIV/AIDS.

To access the 2008 report in English or French, please visit the following link:
www.who.int/hiv/pub/2008progressreport/



Priority interventions: a 'one-stop-shop' for priority HIV interventions in the health sector

In 2005, leaders of G8 countries meeting in Gleneagles, Scotland, committed to working with international organisations to develop and implement a 'package' of interventions, with a view to achieving universal access to HIV prevention, treatment, care and support – a goal later endorsed by Member States at the UN General Assembly. However, the nature of this essential package had yet to be defined.

In the pursuit of universal access to HIV prevention, treatment and care, the crucial role of the health sector is unquestioned. The original call by G8 leaders for a package of interventions – coupled with the need for ongoing and updated user-friendly technical guidance – led WHO to develop an umbrella report that brings together key WHO guidance and references for the health sector response to HIV/AIDS.

'Priority Interventions responds to a clear country need,' says Dr Teguest Guerma, Director ad interim of the WHO HIV/AIDS Department. 'In one place, it captures WHO's best guidance on what the global health sector needs to deliver in response to HIV/AIDS.'

This web-based resource includes technical information on a range of topics, from expanding condom programming to the latest in treatment guidelines and standards. It also provides direction on prioritising and applying interventions according to epidemic setting and health system capacity.

Priority Interventions is intended for a broad audience of public health decision makers, national AIDS programme managers, healthcare providers and workers, civil society groups, non-governmental organisations, international donors, and people living with, and affected by, HIV/AIDS. It is a 'living' resource that will be updated periodically based on the rapidly-evolving experience of health sector scale-up.

WHO released an initial version of Priority Interventions in August 2008, at the 17th International AIDS Conference in Mexico City, and updated the report in December 2008 and April 2009.

To access the latest report online in English and French, visit: <http://www.who.int/hiv/pub/priorityinterventions/en/index.html>