Uptake of Diagnostic Technology for HIV & TB in Sub-Saharan Africa.

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TB and HIV - Twin pandemics

• Most profoundly impact the poorest and most marginalized populations

• Diagnosis, Treatment and Prevention depend on public health and health service delivery.

• Individual and family health seeking behavior vs community resilience vs. public health (government) interventions ?
Global HIV - 2006

5 million deaths per year and more than 40 million people living, today with HIV / AIDS.

Projections of > 100,000 million people living with HIV by 2020
Global TB - 2006

2 million deaths per year and ~2 billion people living with TB infection.
HIV among people with active (transmissible) TB
TB: global incidence is rising at 1%, driven by TB/HIV in Africa, and MDR-TB in Eastern Europe.
TB with multiple drug resistance (MDR TB)

The New York Times

Tuberculosis is outrunning us. The accelerated pace of resistance comes from the world’s neglect of tuberculosis. Stinginess created this problem. Generosity is needed to fix it.
- editorial - 14-Sep-2006
New reports of XDR TB (extremely drug resistant TB) in HIV pts in South Africa

- Reports of XDR (extremely drug resistant) TB in HIV pts in South Africa In August 2006, at the International AIDS Conference, researchers announced initial findings from an outbreak of particularly virulent XDR-TB in KwaZulu-Natal, South Africa.

- 52 of 53 patients died, on average within 25 days of diagnosis.
- Most of the patients were co-infected with HIV/AIDS.
- However, the deaths included those who were taking antiretroviral drugs.
- The WHO and others are now mounting an intensified global response to escalating global resistance.
Responding to pandemics diagnosis, treatment and prevention

- Efforts to improve health in developing countries have traditionally been supply-oriented, emphasizing access to health technologies, infrastructure development, and the training of health professionals.
Innovations needed?

- Acceptable, reliable and cheap point-of-care diagnostics.
- Revisiting primary care - Health service delivery for chronic disease.
- Community based mobilization, prevention and treatment(s).
Increasing resources

**Figure 5** Estimated total annual resources available for AIDS, 1996–2005

- Signing of Declaration of Commitment on HIV/AIDS
- Data include:
  - International donors, domestic spending (including public spending and out-of-pocket expenditures)
  - International Foundations and Global Fund included from 2003 onwards, PEPFAR included from 2004 onwards

*Projections based on previous pledges and commitments (range of the estimation: US$ 7.5 to US$ 8.5 billion).

Figure 5 extracted from 2006 Report on the global AIDS epidemic (UNAIDS, 2006), chapter 3.
People receiving ART treatment
As a percentage of those with AIDS

Of the ~ 25 million HIV infected individuals in sub-Saharan Africa, the usual estimate is that ~ 5 million have advanced AIDS.

Their mortality rate is ~ 50% per year.

Current estimates of treatment are ~ 1.2 million receiving ART.
Projections of TB, by region, with “best and worst case scenarios”

Figure 3. Projections of tuberculosis cases by region, 1998 to 2028, baseline, best case and worst case DOTS scenarios. Note that the graphics do not all use the same scale. (EME=Emerging Market Economies; PDE=Formerly Developing Economies of Europe; LAC=Latin America and the Caribbean; MEC=Middle Eastern Countries; AEC=China, India and Other Asia and Islander; SSA=Sub-Saharan Africa.)
17% of the world population constitutes 70% of the Market (and > 90% of the profit)

Sources: IMS Health/Population Reference Bureau (see note 3, below)

Figure 2A
Questions

• Efforts to improve health in developing countries have traditionally been supply-oriented, emphasizing access to health technologies, infrastructure development, and the training of health professionals.

• As supply has improved, however, puzzling demand-side phenomena have become evident.

• For example, even when health technologies are not costly in obvious ways (at least to outside observers), they are often not used as much as their health benefits seem to warrant.

• Understanding household decision-making about the adoption and use of health technologies is therefore essential for the development of effective health improvement strategies.

• The purpose of this session is to explore the behavioral foundations of health technology adoption (and what some consider to be their “under-use”).
HIV testing and Counseling

• Slow and Hesitant Adoption
  – Licensed diagnostics (EIA and WB) in 1985
  – “Confidentiality”, Legal - witnessed informed consent, Ethical - “duty to warn”…Taraskoff
  – Cultural implications, Financial – pensions, health insurance and disclosure.

• Tied to “Voluntary Counseling” VCT models.

• changing with rapid (point of care) tests.
Rapid testing in 20 minutes, no needles, no blood

Facts about Rapid HIV Testing

SAMHSA's new Rapid HIV Testing Initiative uses the OraQuick® ADVANCE Rapid HIV-1/2 Antibody Test. The test kit consists of a single-use test device and a single-use test developer solution. Additional items provided include a reusable test stand and disposable specimen collection loop. Test results are provided with greater than 99-percent accuracy in as little as 20 minutes.

Counseling and Testing Services

The new OraQuick Advance® rapid HIV test has greatly expanded testing options for HIV by allowing oral testing. The oral test requires users to swab their gums and then place the swab in a holder. After 20 minutes, one line appears on the strip if the HIV result is negative, and two appear if the result is positive. The oral test has been found to be simple, convenient and easy to administer in outreach and community settings.
Advantages of rapid, point of care testing
I WANT YOU TO GET A HIV TEST
www.HIVAIDSsearch.com
Uptake of HIV testing in the US

Adults Aged 18 and Older Who Have Ever Been Tested for HIV, by Age and Sex, 2002

Source (II.1): Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey
Effective marketing of HIV testing

*Women Aged 18 and Older Who Have Ever Been Tested for HIV, by Race/Ethnicity,* 2002

Source (11.1): Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey

![Bar chart showing percentages of women who have ever been tested for HIV by race/ethnicity.](chart.png)

**TALK ABOUT HIV**

Love Doesn’t Protect Against HIV. Get Tested.

USE CONDOMS.

**ME HICE LA PRUEBA DEL VIH**

para tomar control de mi salud y mi vida.

**NATIONAL HIV TESTING DAY**

tuesday, june 27 5-8pm

The Center Orange County’s HIV Testing Services Department will be open to offer testing that...

* is anonymous,
* is free,
  * is culturally sensitive
  * uses no needles and no blood!

Info: 714.534.0862 x120, Josie
Conclusions

HIV Test order
- Nurse Screening increased test order compared to Usual Care; - Slight increase w/ addition of - Rapid Test/Streamlined Counseling

Receipt of HIV results
- Nurse Screening increased receipt of results compared to Usual Care; - Significant increase w/ addition of - Rapid Test/Streamlined Counseling
CONFIDENTIALITY: Does ANY ONE take it SERIOUSLY?

Background
It is not easy for any individual to be open about his or her HIV status, in the context of the HIV/AIDS epidemic and the stigma and discrimination that surrounds it. It is regarded as a person’s right to keep his or her HIV status confidential, and he/she can easily have devastating consequences for that individual. Any breach of confidentiality deprives a person of the right to choose where, when and to whom to disclose their status.

“Where there is no case of HIV and AIDS, certain circumstances justify the protection of confidentiality by the very nature of the disease. It is essential that persons infected with HIV should seek medical advice or treatment. Disclosure of the condition has serious personal and social consequences for the patient.”

Liesl Van Wyk & Barrie 1995 (9 Sa LR 499) (Aff’d SCA)

Findings
The principle of confidentiality is often cited but seldom adequately implemented. It is all too easy to pass on information without any thought to the consequences of such an act. When speaking to organizations, health care workers, journalists, researchers, or individuals working in the field of HIV/AIDS it becomes clear that the term confidentiality is still a grey area with ill-defined boundaries.

The notion of “consent to disclosure” is often abused and many ignore the fact that such consent must be given freely and voluntarily and with full knowledge of the extent of the possible prejudice to be caused by such disclosure.

“With various codes of conduct require professionals, including health care workers and journalists, to adhere to principles of confidentiality. Their professional bodies are hesitant to respond to complaints about professional misconduct.”

Recommendations
- Much more emphasis must be placed on individuals and organisations’ legal, ethical and moral responsibility to respect and maintain confidentiality.
- There is a need for general education and information on the responsibilities of individuals with regard to confidentiality.
- The law relating to confidentiality should be seen within the context of human rights as enshrined in the Constitution. These rights require each individual who learns about the HIV status of another to respect and maintain that person’s right to confidentiality.
- In line with the International Guidelines on HIV/AIDS and Human Rights, appropriate and accessible legal remedies should be available to a person whose right to privacy has been infringed.
- Both intentional and negligent disclosure should be punished.
- No negligent disclosure should be sufficient for liability in the case of the media as well as, in certain instances, individuals.
- Openness should be encouraged but individuals should at the same time be empowered to manage any disclosure of their private information.

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The Ministry of Health in collaboration with the National AIDS Commission (NAC), development partners and civil society conducted a nationwide HIV and AIDS testing campaign. The U.S. Embassy, Centers for Disease Control (CDC), USAID and its implementing partners supported HIV Testing and Counseling (HCT).
Community-based testing, care and support

Access to local support and care is an essential part of voluntary counselling and testing programmes.
SIC imagery – HIV rapid test kits
Uptake of VCT and rapid testing

• “95% of HIV+ people in Africa do not know their status (have not been tested) ”

• In high prevalence settings What are the barriers to HIV testing ?
  – Information about prevention and treatment ?
  – Support for HIV +’s (where’s the beef) ?
  – Community stigma (still very much alive) ?
  – Denial ?, Cost ?, Access ?
  – Accessible “service” to the population at risk ?

• Will rapid test formats, opt out and screening programs change this ?
CD4 cells counts in pMTCT.

• Lower maternal CD4 count is associated with a higher risk of MTCT
  – (2-fold increased risk of infection with each 100 CD4 cell decrement in maternal CD4 cell count at 36 weeks).

• We do not know, but suspect, that pregnant women with low CD4 cell counts are less likely to benefit from SD NVP in terms of prevention of transmission.

• ART is indicated for all HIV+ women < 200 CD4 cells

• AZT+3TC+NVP is safe in pregnancy.
Easy-to-perform rapid 1-step protocol for absolute CD4+ T-cell counting using CyFlow® SL_3 with ready-to-use prefilled Partec test tubes (already including monoclonal antibody and no-lyse buffer).

Exemplary result print-out from CD4 absolute count using the Partec CD4 easy count kit (article 05-8401) on the Partec CyFlow® SL_3, directly displaying the absolute CD4 count result and the histograms as built-in visual quality control.
Thanks to a generous grant from the Gilead Foundation for Low-Cost diagnostics in AIDSETI programs in Burkina Faso, Burundi, Ghana and Zimbabwe.