9th International AIDS Economics Network Pre-conference (IAEN)

15-16 JULY 2016
SUNCOAST TOWERS, DURBAN, SOUTH AFRICA

Contents

INTRODUCTION

The 9th International AIDS Economics Network (IAEN) pre-conference took place on 15-16 July 2016 and was hosted in partnership with the Bill and Melinda Gates Foundation, IAEN, HEARD, UNAIDS, the World Bank, the University of KwaZulu-Natal and Sida/Norad. The theme of the pre-conference was 'Investing in sustainable responses to HIV and AIDS' and preceded the International AIDS Conference held in Durban on 18-22 July 2016.

This two-day pre-conference considered practical solutions to financing the epidemic in the post-MDGs era. While there are a number of initiatives globally working towards solutions, this pre-conference served a special purpose in bringing together economic decision-makers, researchers and stakeholders. These included Ministers of Finance and Health, leading activists, practitioners and scholars who have a shared understanding of the key issues and challenges, and through discussion, we hoped to develop real options for sustainable financing for AIDS.

The pre-conference included presentations of specially commissioned papers on key questions that explored innovative, country-led approaches for supporting affected countries and to prioritise, sustain and lead their national investments in HIV and AIDS responses. These were put forward for consideration and presentations by economic researchers funded by the Bill and Melinda Gates Foundation to conduct analyses in their own countries (Uganda, Kenya, Tanzania, Malawi, and Zambia). Papers selected from an open call were presented in thematic roundtable discussions/working groups/break away groups, and showcased as abstracts and posters. Open Call Contributions were based on emerging evidence and recent lessons from HIV and economic analyses, with contributions sought from theorists, analysts, practitioners and affected communities to explore new options, models and partnerships for financing the future of the epidemic – particularly in low and middle income countries. Papers were fed into an issues paper to inform the plenary session. The related research identified ways to create, optimise, and sustain fiscal space for HIV investment domestically, as well as explore innovative national and international financing mechanisms able to leverage allocated funds.

Dr Steven Forsythe
President: International AIDS Economics Network
9th International AIDS Economics Network Pre-conference

Day 1

Friday, 15 July 2016

08:00-17:30

WELCOME ADDRESS

Speakers

- **Professor Sheila Tlou**, Director, Regional Support Team for Eastern and Southern Africa, UNAIDS
- **Dr Steven Forsythe**, President, IAEN, and Director of the Health Policy Initiative Costing Task Order, Avenir Health

Prof Sheila Tlou welcomed delegates and emphasised that the response to ending AIDS should include more 'innovative methods', with 'prevention' being key to ending AIDS in our era. Prof Tlou noted the importance of understanding how political will is translated with regards to implementing the policies that are aimed to target the pandemic, and that approaches to financing should include ensuring that domestic resources are increased in African nations, and strengthening the partnerships which have emerged.

Dr Steven Forsythe noted that the people in attendance from African universities offered a far greater reward than famed international delegates. He mentioned that these researchers are 'the true heroes of AIDS economics'.

KEYNOTE ADDRESS

Speaker

- **Ambassador Deborah Birx**, U.S. Global AIDS Coordinator & U.S. Special Representative for Global Diplomacy. *Paper:* 'Sustained Epidemic Control in an Era of Flat Funding'

Summary

Ambassador Deborah Birx presented research which suggests AIDS economists should look at how and what donors and countries contribute to the financing of the pandemic, and look at the cost of activities and whether policies are being implemented in the most efficient way, in order to define an effective sustainable response. There is no prediction of an increase in funding for the pandemic currently, but the world would need a 7% increase in funding to create an effective response. HIV is not equally distributed around the world, and it is the duty of AIDS economists and politicians to do 'the right things in the right places in the right ways, right now'.

On gender and cultural issues that impede the ending of AIDS, a majority of girls worldwide experience sexual violence and, for many young women, their first sexual experience is rape. To address this, it is necessary to meet and understand young people and to reach them in effective ways. It is now the millennials who are to assert that authority.

Ambassador Birx also noted the importance of testing men and called on delegates to ask '*how can we reach men?*' Ambassador Birx announced that there are new PEPFAR targets for 2017 and noted that these targets called for the expansion of ART and more effective testing. Other targets include an increase of efficiencies and savings in financing the end of the illness, and doubling the amount of

people on treatment worldwide. Ambassador Birx's final note asked delegates to prove to policy makers why HIV/AIDS is an important business case.

Key themes

Better healthcare, access to resources, improved services, investment for the future of development and socio-economic growth, reduction in gender-based violence (GBV) and an increase in awareness of the current AIDS response, are just some of the topics covered in this session.

Highlights

A message delivered by Dr Steven Forsythe resonated deeply with what could be understood as the true power bank of the AIDS response. He hailed those researchers from African Universities as the true 'heroes of AIDS economics'.

Critical assessment

The key messages of the session, from both delegates and researchers, addressed the concern that flat funding in the AIDS response would negatively impact the ability to eradicate the disease. Researchers called for a more sustainable, efficient and investment based economic response, which relies on the domestic resources of the affected countries, rather than continued dependence on first world funding. This trend in health economics marks a new era for recognising the potential for growth and development beyond healthcare in the intended regions. Whilst the research addresses sustainable and long-term health care for those infected, the intention of health economist delegates is to provide sustainable development and growth. This is seen as a contribution to the overall Sustainable Development Goals (SDGs) mapped out by the joint UN nations as a target for the 2030 agenda. Researchers and policy makers who spoke at the session called for reforms in health and financial administration, as the current policies hinder a sustainable and targeted AIDS response.

PLENARY SESSION 1

Speakers

- **Dr Gesine Meyer-Rath,** Health Economics and Epidemiology Research Office (HE2RO), and Research Assistant Professor, Global Health, Boston University. Paper: *'Optimising South Africa's HIV and TB response: Results of the HIV and TB investment case'.*
- **Mr Aggrey Mukose**, Department of Epidemics and Biostatistics, School of Public Health, Makarere University. Paper: *'Costs on retaining a mother-baby pair on Option B+ (Lifelong ART) in care at Walukuba Health Centre, Jinja District, Uganda'*.
- **Dr Steven Forsythe**, President, IAEN, and Director of the Health Policy Initiative Costing Task Order, Avenir Health. Paper: *'Scaling up ART in Tanzania efficiently'.*
- **Dr Ivdity Chikovani**, Head of Research, Curatio International Foundation. Paper: *'Evaluating transition readiness towards a sustainable HIV/AIDS response: Evidence from four Eastern European countries'.*
- **Ms Michelle Remme**, Assistant Professor in Health Economics, Social and Mathematical Epidemiology (SaME) Group, Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London. Paper: *'Financing the HIV response in sub-Saharan Africa from domestic sources: Moving beyond norms to a 'real world' analysis'*.
- **Mr Erik Lamontagne**, Health Economist, UNAIDS, Geneva. Paper: *'The economic returns of ending the AIDS epidemic: The full income approach'.*

Summary

Dr Gesine Meyer-Rath delivered a presentation on optimising the HIV response in South Africa. The key message concerned devising a plan that would 'Repay HIV' as an investment case, asking *'what is the optimal mix of interventions to reach the current target?".* **Mr Aggrey Mukose** looked at the costs of retaining a mother-baby pair on lifelong ART (Option B+), which was adopted in Uganda in June 2012. **Dr Steven Forsythe** presented on various ways in which the costs of delivering ART services in Tanzania could be achieved more efficiently, including assessing the benefits of multi-month scripts and changing the laboratory procedures currently required of ART patients. **Dr Ivdity Chikovani** discussed readiness towards sustainability in the HIV/AIDS response using examples from Eastern Europe. Using a Transition Preparedness Assessment (TPA) framework for a Post-Global Fund context, this model looks at the external and internal environment in which inputs, governance and programmes frame the outcome. **Ms Michelle Remme** presented research on financing the HIV response in sub-Saharan Africa from domestic sources, motivated by the idea that Africa should try to invest in the eradication of the illness without foreign donations and become more self-sufficient. **Mr Eric Lamontagne** addressed the economic returns of ending the AIDS epidemic, asking *'What are the economic benefits of such an investment? Is ending AIDS a "good deal"?* It is important to identify whether, currently, there is an improvement in efficiencies. Using a 'full income approach', his research considers whether the economic returns after investing in the HIV/AIDS response are far higher than the initial investment.

Critical assessment

While the well-known names in the global HIV/AIDS response presented their key issues, it is important to consider the cases presented by African researchers in an African context to provide a more effective response. These presentations, such as from Mr Mukose from Makerere University on lifelong ART for mother-baby pairs, show how costing can help people to live better with better health care. Mr Mukose's case of a life-long response also highlights the necessity of the AIDS response to transcend time barriers, and improve the lives of generations to come. The work focuses on what has been emphasised throughout the session, i.e. looking at the financing and economic response of HIV/AIDS as an investment in the long-term future. With healthier citizens, African nations, which have the highest youth population in the world, would be able to create and develop the continent beyond its current state. Therefore, investing in health care would translate into investing in education, infrastructure, social systems, and more. Healthier, more productive youth would mean a richer continent in terms of development, which in turn reflects the sentiment and case for the UN 2030 Sustainable Development Goals.

PLENARY SESSION 2

Speakers

- **Dr Nalinee Sangrujee**, Health Economics, Systems and Integration Branch, Centers for Disease Control and Prevention. Paper: *'Are HIV costing data influencing policy and service delivery?'*.
- **Ms Marelize Gorgens**, Senior Monitoring and Evaluation Specialist at the World Bank Group in the Health, Nutrition and Population Global Practice. Paper: *'Are we spending on the right places, on the right things and for the right people?'.*
- **Dr José Antonio-Izazola**, Health Economist, UNAIDS Geneva. Paper: '*Can we finance the end of AIDS?'.*
- **Ms Claire Chaumont**, Research Manager in the Center of Evaluation Research and Surveys (CIEE), National Institute of Public Health, Mexico. Paper: *'Showcasing 15 high burden country HIV governance and financing profiles'.*

Key themes

This session, moderated by David Wilson from the World Bank, focused on resource needs, allocative efficiency, maximising effective policy engagement and a need for a unified dashboard towards achieving the "End of AIDS as a global public threat by twenty thirty."

Highlights

Cost analyses that have influenced HIV policy and service delivery, show that health systems are able to absorb additional scale up of patients with differentiated service delivery, greater efficiency of integration in higher volume sites, and that Implementing Test and Treat rapidly will result in a reduction in TB and Drug Resistant TB cases.
Challenges facing HIV financing include: flat lined international financing in part complemented by recent increases in domestic investments, other development challenges, and uncertainties in future domestic financing for health.

Critical assessment

Key challenges regarding allocative efficiency analyses include:

- assumptions about relationships between costs, outcomes and impact;
- individual level efficacy vs population level, real life effectiveness;
- coordination of allocative efficiency TA to countries;
- allocative efficiency and technical efficiency inter-play; and,
- service integration makes HIV AE analyses less meaningful.

Traditional domestic financing schemes are insufficient to meet the needs. There is need of sustained (and increasing) funding from international sources in addition to domestic funding.

PLENARY SESSION 3

The Global Health Cost Consortium (GHCC)

Robust estimates of costing information are very important for decision making with regards to economies of scope and scale, as well as quality and efficiency, and therefore crucial to plan for the future of health. The question arises whether enough costing information exists. Costing information is scarce for a number of reasons:

There is missing information.

- Information is scattered.
- It differs largely across contexts and geographic settings.
- Since there is no standard of reporting, comparisons are impossible.

Due to the vast amounts of costing information needed and the limited resources available, it would not be possible to cost out all interventions in all countries. However, there are many costing studies in existence, as well as many researchers, and an environment for collaboration. Thus an opportunity emerges.

Hence the development of the Global Health Cost Consortium (GHCC) with the primary activities as follows. First, to extract data from selected published costing studies, to standardize data and improve where possible, and to compile this costing data. Second, to collect, compile and report on the methods used to obtain costing information. Third, to analyze the cost data so that any gaps

found are filled by collecting high quality raw primary data. Lastly, to develop the tools necessary to access and visualize the cost data. What this project strives to achieve is the generation of a dataset of datasets by combining costing information from many studies to obtain the most robust estimates that cannot be found in one study.

This is a University of Washington initiative, partnered with Avenir Health, London School of Hygiene and Tropical Medicine and the University of Cape Town, among others. The timeline of the project is from 2016 to 2018. Institutions such as PEPFAR, WHO, UNAIDS, governments and NGOs would use the GHCC for the validation of funding, as well as planning, projecting and the allocation of resources. In the academic realms, it can be used by researchers and academics to further understand costing information and assist with further research.

PARALLEL SESSION A

Speakers

- **Ms Juliana Namutundu**, Research Associate, School of Public Health, Makerere University. Paper: *'Estimating viral load test cost for Uganda's centralised testing model: Implications for scale up of viral load testing for monitoring patients on HIV treatment in Uganda'.*
- **Dr Sudha Chandrashekar**, London School of Hygiene and Tropical Medicine, and Karnataka Health Promotion Trust. Paper: '*Cost analysis of violence reduction interventions for female sex workers in Karnataka, India'.*
- **Mr Lawrence Mwenge**, Zambart research centre. Paper: '*Developing a routine cost database for HIV/AIDS programmes in Zambia'.*
- **Mr Dereck Chitama**, Muhimbili University of Health and Allied Sciences. Paper: *'HIV/AIDS interventions unit cost data in Tanzania: A systematic review'.*
- **Ms Shiba Kanoowe**, HealthNet Consulting. Paper: *'Establishing a unit cost repository for HIV interventions in Uganda'.*

Key themes

Costing studies and database development are needed for efficient planning and decision making in HIV/AIDS prevention, treatment and care. Collaboration of diverse stakeholders and the integration of structural interventions focused on vulnerable populations are necessary.

Highlights

In most low and middle income countries, planners and decision makers do not have access to costing repository databases. There is a need to integrate data and continuously maintain those databases as there could be standard variations. Use easy to interpret costing measurements to bring more funders on board. Increase in domestic resources towards HIV/AIDS is ideal, but may be limited by low level of domestic income sustainability.

Critical Assessment

There has been a greater focus on treatment and care, and less on structural prevention measures. Response in some cases is not based on evidence. Infections in adults is not going down in some populations.

There is a need to:

- overcome prevention barriers by understanding them;
- improve the demand for HIV/AIDS services by men;
- sustain retention for all users of HIV/AIDS services;

- decentralise and decongest service delivery; and,
- evaluate delivery costs and services

PARALLEL SESSION B

Speakers

- **Ms Michelle Remme**, Assistant Professor in Health Economics, Social and Mathematical Epidemiology (SaME) Group, Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London. Paper: *'How could investments in the global goal to end hunger to contribute to the goal of ending the AIDS epidemic'*.
- **Mr Dominic Nkhoma**, Health Economist, Policy Development Unit Department of Planning and Policy Development, Malawi. Paper: *'Estimating household spending on HIV/AIDS in Malawi'*.
- **Dr Zoe McLaren**, Assistant Professor, Health Management and Policy, School of Public Health, University of Michigan. Paper: '*The impact of AIDS treatment on Tuberculosis detection at the national level in South Africa'.*
- **Dr Jacob Bor**, Assistant Professor, Global Health, Boston University Paper, and affiliate of Health Economics and Epidemiology Research Office (HE2RO). Paper: *'District prevalence of unsuppressed HIV South African women: Monitoring programme performance and progress towards 90-90-90'.*
- **Mr Charles Birungi**, Health Economist, UNAIDS, Malawi. Paper: '*Assessing the prospects for fiscal space for HIV and AIDS in Malawi'.*

Summary

Ms Michelle Remme spoke about how nutrition and food insecurity are associated with risky sexual behavior and poor ART adherence. **Dr Zoe McLaren** presented on the prevalence HIV/TB co-infection in South Africa where TB has been the leading cause of death for over a decade. The 2004-2008 national rollout of ART provides a unique opportunity to examine the population-level impact of ART on the TB epidemic. **Dr Jacob Bor** found that the districts with the greatest unmet needs were not those with highest HIV prevalence. This suggested successful targeting, but also a need for renewed focus on districts with high prevalence of unsuppressed HIV.

Key themes

Key themes in this session focused around:

- food security in relation to retention in care and adherence to ART;
- how AIDS treatment impacts on detecting TB;
- population prevalence of unsuppressed HIV;
- the creation and expansion of fiscal space for HIV and AIDS; and
- a look into incidence and distribution of out-of-pocket HIV/AIDS costs in Malawi.

Critical assessment

Mr Charles Birungi proposed that options exist for policy makers to create, expand, optimize, and sustain fiscal space for national HIV/AIDS. However, strong political will for investments is pivotal to implementation. It is possible for Malawi to substantially increase domestic funding for its AIDS programme, although it is likely to continue to depend and need external funding. **Ms Michelle Remme** noted that, given the importance of interlinkages and the indivisibility of the Sustainable Development Goals, preliminary results suggest that investments in reducing food insecurity and ending hunger could contribute to better HIV outcomes. This could be through improved treatment adherence and retention in care, especially reducing HIV transmission. Collaboration over

competition - instead of competing, the HIV response might consider co-investing in SDGs to ensure they reach optimal scale and enhance the efficiency of HIV treatment and prevention efforts. **Dr Zoe McLaren** observed that the availability of ART in South Africa increased attention to TB screening and drew new patients into the health care system.

Day 2

Saturday, 16 July 2016

KEYNOTE ADDRESS

Speaker

- **Ms Marelize Gorgens**, Senior Monitoring and Evaluation Specialist at the World Bank Group in the Health, Nutrition and Population Global Practice. Paper: *'Are we spending on the right places, on the right things and for the right people?'.*

Summary

Ms Marelize Gorgens presented a summary of the work of the HIV Economics reference group's technical working group on allocative efficiency. The work of this technical working group and the tools presented in this session are vital in the context of flat funding for HIV, the other development challenges faced by countries, especially in southern and eastern Africa.

Highlights

An overview of work products was presented. These included:

- Inventory of HIV allocative efficiency tools which enable users to compare different approaches to allocative efficiency analyses, and select suitable tools for generating the information they require.
- A fit-for-purpose assessment of the main allocative efficiency tools which will help users to understand the most suitable tool for different contexts and types of analysis.
- A case study of a real life example of an allocative efficiency analysis from Sudan.
- A case study of HIV service integration into UHC in Indonesia.
- A model in development with the University of York This is currently a concept paper on using HIV allocative efficiency models in UHC benefits package determination.

Details of the products can be found at the Economic Reference Group website: www.hiv-erg.com

Critical assessment

This session was a good opportunity for economists, researchers, implementers and policy makers to bring themselves up to speed with the work currently being undertaken by the Economic Reference Group, and engage with some of the most current ways of thinking about the allocation of funding for HIV. This work is timely and fits in well with the current global agenda which is to increase the efficiency of HIV programmes, especially in an era where resources are becoming increasingly limited and contested, not only for HIV but for health more generally. However, models that are intended to inform allocation decisions need to be used with caution and a good understanding of

context. Allocative efficiency tools are highly dependent on the quality of the data used in the analysis, and the validity of the assumptions used to parametrize the models. Thus increasing the quality of data will be vital for the tools to have maximum impact in guiding policy and implementation of shifts in focus and funding.

PLENARY SESSION 4

Speakers

- **Mr Michael Chaitkin**, Senior Program Officer, Results for Development Institute. Paper: 'Should South Africa integrate HIV financing into National Health Insurance, and how? A framework-driven approach to facilitating policy dialogue'.
- **Dr Fern Terris-Prestholt**, Associate Professor in Economics of HIV, London School of Hygiene and Tropical Medicine, Clinton Health Access Initiative, South Africa. Paper: *'Spending more to spend less: The unit costs of a tailored demand creation intervention to increase uptake of voluntary medical male circumcision'.*
- **Dr Eran Bendavid**, Assistant Professor of Medicine, Stanford University. Paper: *'Future financing of health'.*
- **Mr David Burrows**, APM Global Health. Paper: 'Applying payment-for-results to opioid substitution treatment in the Global Fund HIV grant to the Ukraine'.
- **Ms Jeanne-Marie Tucker**,Programme Manager, Sustainable Health Financing - Clinton Health Access Initiative. Paper: *'Modelling the cost and impact of interventions for early infant diagnosis of HIV in South Africa'.*

There were five presentations in this session. The first session looked at whether South Africa should integrate HIV financing into a single fund, and a national health insurance (NHI). The question *'and if so then how?'* was asked. A framework-driven approach is necessary to facilitate policy dialogue about sustainable financing. HIV budgets are large and growing faster than the rest of the primary health care and overall DOH budgets in South Africa. Since HIV spending crowds out other important spending in health, and particularly in light of the hope to reach 90-90-90 by 2020, money allocated, would need to be pooled into a single fund. But how could this process be integrated? A suggestion is to use the Conditional Grant as the seed for NHI. There are however other integrative responses.

The second presentation looked at how to spend more, to spend less in terms of a unit cost of a tailored demand creation intervention to increase uptake of Voluntary Medical Male Circumcision (VMMC). To generate demand towards VMMC in Rural Tanzania, a Discrete Choice Experiment (DCE) was conducted. Since there is a large uptake of VMMC (mainly amongst adolescents), it is important to determine how to increase demand amongst adults. The results attempted to observe preferences for different attributes of VMMC to see what is significantly preferred.

The third presentation looked at the future financing of health. To sustain the response to HIV, Global Fund has 3 main areas of spending: 1) supplying global public goods such as new product development, 2) managing cross boarder externalities such as disease spread, and 3) exercising leadership in terms of aid effectiveness. These are all country-specific functions with regards to providing support such as assisting during transitions from low to middle income countries.

The fourth presentation looked at the application of payment for results from a case study in Ukraine, looking at opiate substitution treatment (OST) in the global fund HIV grant. OST uses methadone instead of injecting for drug users. The government and NGOs incentivized injecting drug users to stay on OST for 6 to 12 months. The study found that results improved when payments were offered. This can be applied since providing incentives increases results.

The final presentation looked at modelling the cost and impact of interventions for early infant diagnosis of HIV in South Africa. If HIV tests are performed too late after birth, then treatment is significantly delayed and mortality increases. There is new technology, but is it feasible? The case study compared the standard of care of PCR test to point of care (POC). The study was performed using a top-down, provider perspective of 360,000 babies. Costs were lower for PCR, but there was a large amount of treatment for POC, which results in large expenses. There is however, still an argument for POC. Due to the large number on treatment, there is an increase in the survival rate. There is also a decrease loss to follow up as well as less wastage in POC when compared to PCR. Therefore, despite high start-up costs, POC saves in efficiency.

PARALLEL SESSION C

Speakers

- **Ms Cathy Barker**, Senior Associate – Health, The Palladium Group. Paper: *'Reaching 90-90-90 modelled uncertainty in the costs of scaling up antiretroviral therapy (ART) and projected funding gaps in 97 countries'.*
- **Ms Teresa Guthrie**, Independent Consultant. Paper: '*Analysing current funding for HIV and TB in South Africa to improve the allocative efficiency of the response'.*
- **Ms Sarah Khanakwa**, Head, Resource Mobilization, Uganda AIDS Commission. Paper: *'Institutionalising the National AIDS resource tracking in Uganda'.*
- **Ms Cathy Barker**, Senior Associate – Health, The Palladium Group. Paper: *'Assessment of the need for and related costs of human resources for HIV in Tanzania, 2016-2020'.*
- **Dr Mthuli Ncube**, Oxford University. Paper: *'Facing up to HIV-financing liabilities: The wider economic benefits of investing in the response in Africa'.*

Summary

Ms Cathy Barker presented two presentations in this session on behalf of The Palladium Group. The first of which looked at the global 90-90-90 treatment targets and the call for rapid scale up of ART for HIV. Scaling up ART to ambitious levels has significant cost implications, but few studies have projected the global resources needed or available for ART. We modelled the number of people eligible for and receiving ART from 2015 to 2020 in 97 countries, along with the facility-level resources required, taking into account context-specific data on treatment failure and regimen switching, and recent commodity prices paid by region. Current coverage and future scale-up patterns were based on country-specific data. Simulated annual numbers of individuals on treatment were derived from three scenarios: (1) continuation of countries' current ART eligibility policies, (2) universal adoption of the WHO 2013 eligibility guidelines, and (3) expanded eligibility as per the WHO 2015 guidelines and meeting the 90-90-90 ART targets. We modeled uncertainty in the annual costs of antiretroviral drugs, laboratory tests, and facility-level personnel and overhead, while assuming efficiency gain in site-level costs and uncertain annual declines in ARV and laboratory commodity costs based on recent trends. We compared the estimated financial requirements to estimated funding available from PEPFAR, the Global Fund, and domestic sources, using recent data. *Conclusions:* Across all scenarios, projected ART resource needs are greater than those available, even with ambitious assumptions for domestic contributions and modeled efficiency gains. Our estimates suggest that the financial sustainability of scaling up ART globally may be at risk without either additional resource mobilization or efficiency and effectiveness gains.

Ms Teresa Guthrie's presentation looked at the South African government's increasing allocation of resources for HIV. In order to better assess past spending and determine the most impactful future allocations across ten interventions, the South African government and UNAIDS undertook an

Investment Case. The study concluded that tracking provided an innovative approach to consolidating data from domestic and international funders into a database compatible with public finance data, potentially enabling routine and real-time analysis for use by the government and partners.

Ms Sarah Khanakwa's presentation focused on institutionalising national aids resource tracking in Uganda. Funding sources in the country included government, development partners and private contributions which increased exponentially from around US$40million in 2003/04 to nearly US$360million in 2012/13 in Uganda (GARPR, 2014). Despite this the mechanisms and capacity for tracking efficiency and effectiveness in the utilization of HIV/AIDS resources remain weak and uncoordinated with data deficiencies particularly in relation to consistency, timeliness and accuracy at all levels. Lessons learned from the study included linking HIV resource tracking data with existing Health M&E Systems could provide synergies for more effective assessment and a more detailed picture of funding flows all the way from funding source down to facility level expenditure. Study recommendations included making NASA a routine and active component of the country's health system in Uganda to ensure; regular reporting of financial data related to the amounts, channels used to access, thematic disaggregation, ultimate beneficiary population, the different factors of production employed and the allocation and use of the funds.

The second presentation by **Ms Cathy Barker** looked at the assessment of the need for and related costs of human resources for HIV in Tanzania, 2016-2020. Although donors fund the majority of the costs of Tanzania's HIV response, the government of Tanzania (GoT) substantially funds human resources for health (HRH). Exact estimates of the relative share of GoT funding are difficult to obtain, including from national health accounts, due to poor knowledge of the monetary value of government spending on the labor component of HIV services. At constant productivity, this spending will need to rise to meet ambitious GoT targets. Establishing the labour intensity of HIV services is a critical first step before estimating the need for HRH or monetizing the GoT contribution. The study concluded that recent national guidelines in Tanzania recommend HIV service delivery models that are more efficient, especially for ART. HRH labor intensity for HIV may decrease as more health facilities adhere to national guidelines. The HRH time saved per patient, per year may allow for more HIV services or other critical health services to be provided, given the projected workforce. Across scenarios for 2016, the GoT contribution for HRH costs, net of constant levels of PEPFAR support for salary and benefits, could be 47–108% of the projected external funding for HIV commodities (US$121 million).

PARALLEL SESSION D

Speakers

- **Dr Fern Terris-Prestholt**, Associate Professor in Economics of HIV, London School of Hygiene and Tropical Medicine, Clinton Health Access Initiative, South Africa. Paper: 'How to sell a condom? The impact of demand creation tools on male and female condom sales in resource limited settings'.
- **Dr Hyacinthe Kankeu Tchewonpi**, Health Economist, AIx-Marseille School of Economics, Aix-Marseille University, France. Paper: *'How do supply-side factors influence informal payments for healthcare? The case of HIV patients in Cameroon'.*
- **Dr Jacob Bor**, Assistant Professor, Global Health, Boston University Paper, and affiliate of Health Economics and Epidemiology Research Office (HE2RO). Paper: *'Distance elasticity of demand for HIV treatment: Sex disparities in utilisation'.*

- **Mr David Contreras-Loya**, Health Economist, National Institute of Public Health, Mexico. Paper: 'The impact of integrated production on the efficiency of HIV prevention services: Econometric estimates from the ORPHEA/ ORPHENT project in a five-country sample'.
- **Mr Thomas Fagan**, Health Financing and Policy Analyst, The Palladium Group. Paper: 'Understanding need s and realistic prospects for domestic resource mobilization to fund HIV responses in Uganda and Zambia'.

Summary

This session, moderated by Sergio Bautista from the National Institute of Public Health in Mexico, focused on demand relating to condom sales, distance travelled to nearest health facility and linkage to care, use of informal payments for health care, integrated production and prospects for resource mobilisation to fund HIV responses.

Highlights

- Demand stimulation tools affect demand products differently: No one-size fits all marketing for new products.
- A need to improve payment schemes for health workers to better fit the remuneration to the actual workload (e.g. through pay-for-performance). Increasing salaries alone may not be effective. An additional advantage is implementing task shifting in HIV-care, particularly in a context where the number of doctors is low compared to the growing number of PLWHA
- The ORPHEA data shows evidence of economies of scope. Big scale effects – particularly for small facilities. Next steps: Identification of policy variables and other "cost shifters", and analysing the relationship between 'quality' and costs variation.
- Among women, living one additional kilometre away from the nearest clinic was associated with: 6.6% reduction in the rate of linkage to care, 6.5% reduction in the rate of ART initiation, 5.4% reduction in rate of retention on ART. Conditional on linkage to care, there was no association between distance and ART initiation and retention. There was also no association between distance and care-seeking for men. Sex*distance interaction was significant at all stages. Distance matters, but only for women. There was further work needed to understand differential patterns by sex.

Critical Assessment

Countries in resource-constrained settings are facing a plateau in donor resources. Some ways in which they may still achieve their current ART targets and long term sustainability in their HIV responses include (i) promoting macroeconomic stability and growth to protect and increase fiscal space for HIV and health overall; (ii) strengthening the tax administration system to reach tax capacity and increase fiscal space for HIV and health, and; (iii) promote value for money in HRH through improved training, task shifting, and salary structure.

HIGH LEVEL MINISTERIAL PANEL

Panelists

- **Mr Michel Sidibe**, Executive Director, UNAIDS.
- **Dr Dorcas Makgato** (Chair), Botswana Minister of Health.
- **Dr Molotsi Monyamane**, Lesotho Minister of Health.
- **Dr David Parirenyatwa**, Zimbabwe Minister of Health.
- **Mr Emmanuel Etim**, Panafrican Coordinator of the African Civil Society Platform for Health.

- **Ms Rosemary Mburu**, Executive Director, World AIDS Campaign.
- **Judge Oagile Key Dingake**, Co-chair African Think Tank on HIV, Health and Social Justice.
- **Mr Linden Morrison**, Head of High Impact Africa II Department, The Global Fund.

Meeting summary

The 2016 IAEN Preconference (15-16 July) - ahead of the 2016 International AIDS Conference (Durban, South Africa) - was the site of a unique dialogue between African Health Ministers, HEAD of UNAIDS, senior members of Global Fund and Civil Society. Brought together by the Health Economics and AIDS Research Division of the University of Kwazulu-Natal (HEARD), UNAIDS Regional Support Team for the Eastern and Southern Africa [UNAIDS RST ESA], the Swedish International Development Corporation (SIDA), in collaboration with the Bill and Melinda Gates Foundation, the World Bank and IAEN, the gathering considered the 'Future of HIV Financing' in the region most affected by the epidemic – Southern Africa.

Points of convergence

The Honorable Minister of Health Botswana opened the panel discussion, facilitated by **Professor Shela Tlou (UNAIDS) and Professor Nana Poku (HEARD)**, with a short overview arising from a prior meeting organized by HEARD, UNAIDS and SIDA in February at Ditchley (UK). Drawing from the Ditchley meeting (also attended by all the Ministers on the panel), she highlighted three contextual issues to frame the discussions: First, recognition that funding for HIV and AIDS is now sited within the very large and encompassing Sustainable Development Goals; with cost implications of any combination of the larger agenda issues (climate change; ending poverty in all its forms) sharpening the unavoidable political differences over prioritization (both human and fiscal).

Second, while the logic of front loading resources to achieve 'Fast Track' targets was indisputable, the call by UNAIDS for greatly increased funding must be set against the reality of donor intentions and domestic prioritizations. It seems likely that at best, funding levels will flat-line and perhaps suffer a decline of as much as 10 per cent over the next five years. As such the role of efficiency, prioritization and increase in domestic financing becomes even more pressing; with a dialogue with Ministries of Finance – a priority.

Third, and allied to the second element, is the imperative of establishing or greatly extending and improving Universal Health Coverage (UHC). Although the political commitment to the SDGs was acknowledged their impacts are likely to be less immediately pressing than either the UNAIDS agenda and how African states might best ensure that no ground is lost to AIDS; and reconciling the costs of expanding the fight against AIDS to the demands of UHC.

The three observations highlight the enduring, fundamental tension at the heart of the global AIDS response. The first is *'fair share'*: how much can low - and middle-income countries be expected to contribute to their HIV and AIDS programs, given the rapid economic growth across the regions? The second is *'global solidarity'* - the responsibility and capacity donors have to honor their existing commitments and continue to contribute financially to the fight against HIV and AIDS.

Panelists agreed that the call for improved programmatic efficiencies is much to be lauded (and indeed, expected); however, because of the success to date of ART—and the emphasis on donor-directed (as well as financed) biomedical interventions more generally, we have lost sight of something quite fundamental. The most important efficiency that can be achieved is to greatly reduce the number of new infections. Historically, we know that the steepest declines in new HIV infections have arisen from behavioral change, but identifying what is most effective has proved difficult to identify and is very likely to be highly context-dependent.

This makes more research into effective and enduring behavioral change for the purpose of reducing infections a first-order priority. A further, unintended and unfortunate consequence of the rapid

scale-up of ART regimes has been the debilitation of community (often voluntary) programs and responses, especially those dedicated to prevention. It will not be an easy matter to revitalize or reconstitute them; and the voluntary ethos might not be recoverable.

Key Messages

Accelerating Fast Track implementation in the next five years is key to preserving the gains made against the epidemic and to prevent it from rebounding in the years ahead. For this purpose, a clarification of country-by-country fiscal gaps (read investment cases) is essential for transitional planning, not least so that whatever sums can be secured by country-level financial innovation and efficiency savings can be prioritized and allocated effectively. It was agreed that such an approach would require a differentiated methodology to reflect country contexts and needs. A country scorecard will be necessary to track Fast Track implementation and strengthen accountability and transparency.

The 'fair share' principle is not exhausted by African states absorbing an ever-larger portion of AIDS expenditure, and nor did the Doha Declaration signal the end of 'global solidarity.' Both will need to be invoked at the difficult junctures we will inevitably face. In particular, a watchful eye needs to be kept on new trade agreements that would place new obstacles in the way of African states securing affordable access to improved ARVs as well as second- and third-line treatments. And perhaps 'global solidarity' begins at home, efficiency gains, the creation of fiscal space and domestic resources, stronger governance mechanisms and innovate forms of funding will all be required.

It is important to capitalize on the vibrant community movement and results generated through the AIDS response to access treatment, reach with HIV prevention and treatment services the key populations, and more importantly to reduce stigma and address the human rights and social justice as part of the response. Countries need to explore community involvement and its role in the UHC as interface between key populations and health services, and explore potential social contracting of community organizations based on a results and accountability framework.

Next steps

Ministers proposed the establishment of an East and Southern African Policy Group for HIV Financing, led by the Ministers of Health of Botswana, Namibia, Zimbabwe and Lesotho. The Policy Group is to be mandated to pursue three key priorities in the region:

a) Support Country HIV Financing Dialogue;
b) Engage in increased efficiencies through pooled regional procurement systems;
c) Lead dialogue and leverage partnership with the Ministers of Finance.

A secretariat is to be established within HEARD, jointly managed with UNAIDS, with the purpose of following up similar political dialogues at country level with Ministers of Finance, Parliamentarians, Central Banks and partners to contextualize the means to a more effective and sustainable AIDS response.

PARALLEL SESSION E

- **Dr Sergio Bautista**, Director of the Division of Health Economics and Health Systems Innovations, The National Public Health Institute of Mexico. Paper: *'Optimising the response of prevention and treatment: Estimation of antiretroviral costs of HIV/AIDS treatment in Nigeria.'*
- **Mr John Fieno**, Human Capacity Development and Health System Strengthening Advisor, USAID - Southern Africa Regional HIV/AIDS Program (RHAP). Paper: '*The cost effectiveness of*

community based antiretroviral therapy (CBART) in South Africa and its implications for viral suppression.'

- **Dr Japheth Awiti**, Health Economist, School of Economics, The University of Nairobi. Paper: *'Efficiency of HIV/AIDS spending in Kenya'.*
- **Dr Sergio Bautista**, Director of the Division of Health Economics and Health Systems Innovations, The National Public Health Institute of Mexico. Paper: *'Examining the relationship between quality and efficiency of HTC and PMTCT services supply in Kenya and Zambia using data envelopment analysis (DEA)'.*

Dr Sergio Bautista's presentation's objectives included estimating the average annual cost per HIV patient treated and factors associated with their variation by analysing data from a cross-sectional study carried out in 200 health facilities providing integrated HIV services located in seventeen States with the highest HIV prevalence in Nigeria, between December 2014 and May 2015. Results revealed that the national average weighted cost/patient was $156.6, while the average annual cost/patient across facilities was $231.4 and the median was $159.1. Average unweighted costs were $257.2 in secondary level facilities and $158.7 in tertiary level facilities. Staff, ARVs and laboratory tests were the most important components of the ART costs/patient (38%, 40.4% and 16.5% respectively). Additionally, the cost per patient per facility decreases as the size of facility increases. The study revealed that there was a wide variability in the average annual ART costs/patient. Results from the study will help design intervention to improve efficiency in the delivery of comprehensive HIV services in Nigeria.

Mr John Fieno's presentation's study objective was to measure the efficiency of HIV/AIDS spending in Kenya with respect to HIV incidence rate, AIDS-related mortality, antiretroviral treatment (ART) coverage, and maternal prophylaxis coverage. The study focused on Kenya and utilised data collected from the Kenya National AIDS spending assessment reports for the financial years 2009/2010 to 2011/2012, Kenya HIV estimates 2014 and Kenya HIV county profiles 2014. The data is mainly analysed using the Stochastic Frontier Analysis (SFA) technique. Preliminary results indicated that HIV/AIDs spending is significant in influencing HIV incidence rate, AIDS-related mortality and ART coverage. Dr Awiti concluded that it was crucial to address the endogeneity problem of HIV/AIDS spending before commenting on its efficiency implications. Dr Fieno's study methodology included an incremental cost-effectiveness ratio (ICER) which was used to compare each intervention with the default of a standard clinical approach to HAART with no CBART program. Results revealed that both CBART interventions were highly cost-effective: the ICER for adherence clubs was $82 per HIV infection averted, and the ICER for community level case management was $882. Sensitivity analysis showed that both interventions remained cost-effectiveness across a wide range of costs and levels of efficacy.

The last presentation for the session focused on the HIV epidemic in Mexico. **Dr Sergio Bautista** indicated that HIV is concentrated in specific groups, one of which is the population of men who have sex with men (MSM). In addition to a higher prevalence of HIV Dr Bautista indicated that MSM beared an elevated perception of stigma and discrimination. This study sought to address the potential problem of endogeneity in this association due to omitted variables, measurement error or simultaneity if use of health care services influenced their perception of stigma and discrimination.

Data used in this study came from a seroprevalence survey of a representative sample of MSM that gathers in meeting places (2011) and from the Mexican National Survey on Discrimination (2010) using a two-stage model with instrumental variables. The study concluded that a greater perception of stigma was associated with a lower probability for getting tested for HIV, due both to the implicit disclosure of sexual preference provided by the testing and also to the stigma associated with HIV, particularly in a high-risk population such as MSM.

PARALLEL SESSION F

Speakers

- **Mr John Stover**, Vice President and founder, Avenir Health. Paper: *'Why on earth should we continue to invest in condoms?'.*
- **Mr Jeremy Barofsky**, Non-resident Fellow, Brookings Institution. Paper: 'The end of AIDS: Antiretroviral therapy and economic spill in Malawi.'
- **Ms Julieth Karirao**, Acting Deputy Director: Multisectoral HIV Response, Ministry of Health and Social Services, Namibia. Paper: *'Investment case from Namibia.'*

Summary

This session, moderated by Regina Ombam from the National AIDS Control Council in Kenya, focused on evidence for cost effectiveness of various HIV interventions in Southern and Eastern Africa. Presentations focused on how understanding and increasing cost-effectiveness of interventions could potentially save money, which could be used on scale up.

Highlights

Modelling shows that condoms remain one of the most cost-effective HIV prevention interventions, and although condom use is not well understood, scale up of the global HIV response must continue to focus on increasing distribution and changing attitudes towards condom use. Presentations also focused on the importance of ART in the HIV response. In Malawi, modelling showed that investing in the health benefits of ART was highly cost effective, and in South Africa, community based ART programmes could help to decrease the burden of treatment and care on healthcare workers, although these would need to be designed carefully according to the needs of clients and keeping in mind the availability and skills of healthcare workers to manage such programmes. The Namibia Investment Case showed how a small increase in funding and increased focus on efficiency could help reach the UNAIDS Fast Track targets, and incur the lowest costs in the long term.

Critical assessment

Understanding how to gain efficiency and ensure the cost-effectiveness of interventions is vital in an era of declining donor funding for HIV, increasing competition for domestic funding for health under the new SDG agenda, and increased fiscal pressure in countries in Southern and Eastern Africa. However, increasing efficiencies will require an initial commitment of resources to see gains in the future. Increasing cost-effectiveness is vital for the long term sustainability of the HIV response and the individual interventions of which it is comprised. However, short term sacrifices must be made to restructure and strengthen systems and develop implementation plans to ensure the HIV response is optimal and reactive to changes in evidence as interventions evolve. Cost-effectiveness analyses must be translated into policy and implementation if they are to see maximum impact in increasing the sustainability of the HIV response.

APPENDIX A

IAEN pre-conference list of attendees

Delegate name	**Affiliation/s**
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