



Round-table Conference Report

Health systems and antiretroviral access

Key findings and
policy recommendations

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HEALTH SYSTEMS AND ANTIRETROVIRAL ACCESS

KEY FINDINGS AND POLICY RECOMMENDATIONS

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ROUND-TABLE
CONFERENCE
REPORT

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Compilers of Report

This report has been written by the organisers of the Round Table – Helen Schneider, Dingie van Rensburg and David Coetzee. The report is based on detailed notes and a draft conference report compiled by the following team: Antoinette Ntuli (team leader), David Mametja, Jo Stein, Liz Thomas, Liz McGregor, Francois Steyn, Hlengiwe Hlophe, Bulelwa Ngoma and Nicolette Naido. We, the organisers of the Round Table, gladly express our gratitude to this team for the time and work invested in recording the proceedings of the conference.

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- UK Department for International Development (DFID)
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Executive summary

The Centre for Health Systems Research & Development (University of the Free State), the Centre for Health Policy (University of the Witwatersrand) and the Infectious Disease Epidemiology Unit (University of Cape Town) organised this Round-table Conference on health systems aspects of antiretroviral access on 22 and 23 October in Bloemfontein.

The Round Table sought to bring together, debate and disseminate current understanding on developments in health systems aspects of HIV in South Africa and, on the basis of this, to make recommendations for future policy and operational research. The intention was to construct a more comprehensive picture of the health systems aspects of ART, which could feed into and support our engagement – as universities and researchers – with the South African National AIDS Council (SANAC) and also with the implementation of the *National Strategic Plan*.

Arrangement of contents

The materials abstracted from the presentations and debates of the Round Table are organised along lines suggested by the following questions and themes:

- Universal access to ART: Is it possible?
- What do we know about the quality and the outcomes of ART?
- Is access equitable?
- User and household perspectives
- Health systems strengthening and ART
- Prevention and ART

Main insights and messages

Some of the main insights and messages regarding the health systems aspects of ART roll-out and scale-up that emerged from the Round Table include the following:

- Universal access is still some way to being achieved in South Africa and most of sub-Saharan Africa. However, there is now sufficient evidence from individual countries in the rest of Africa and from local/district programmes in South Africa, to show that with concerted action, rapid scale up to universal access is possible.

- The ART programme has thus far demonstrated that the South African health system (and those of other developing countries in Southern Africa) is capable of innovation and performance.
- Patients on ART show significant improvements both in their health and ability to continue with normal activities, including participation in the labour force. Retention of those on treatment is a critical future challenge.
- There is insufficient evidence as to whether and to what extent the ART programme is benefiting the overall health system.
- Models of care vary greatly across the different contexts and levels of care within the larger health system – in governmental and civil society frameworks, and at provincial, district, and facility levels. Most of the existing models in South Africa, however, are to a large extent still doctor- and pharmacist-dependent.
- The ART programme has mostly been implemented in a vertical manner, thus leading to some undesirable consequences, including that of service fragmentation.
- Integrating ART with other HIV-related PHC services – particularly with TB, PMTCT and maternal and child health services within a district health system – remains critical.
- The shortage, distribution, management and supervision of skilled personnel in the public health sector pose serious impediments to efficient ART provision and expansion.
- New sources of human capacity are emerging but require further exploration and refinement, for example, the use of community health workers to ease the burden on professionals.
- Prevention efforts, in particular, the prevention of mother to child transmission, have to be strengthened.
- An effective monitoring and evaluation system is required to ensure proper progress measurement, as well as to generate information for evidence-based planning and decision making.

Challenges in future ART roll-out and scale-up

From a health systems perspective, the following challenges could be expected in future ART roll-out and scale-up:

- Expanding access to ART, while maintaining quality and innovation

- Shifting the perspective from site-based to district-/population-based in a comprehensive programme of prevention and treatment
- Developing integrated approaches to service delivery at a district level
- Addressing human resource constraints and obstacles
- Ensuring appropriate monitoring systems are in place

Key lessons and recommendations

In summary, nine key overall lessons and recommendations for policy arose from evidence presented at the Round Table:

- **Recommendation 1:** Shift the focus of ART implementation from ART sites to district/subdistrict-based approaches.
- **Recommendation 2:** Mobilise and strengthen the existing PHC system by reviewing the composition, staffing and support systems of PHC teams.
- **Recommendation 3:** Integrate HIV and TB care, and provide both as one service within PHC settings.
- **Recommendation 4:** Focus on PMTCT, and integrate the programme into the treatment of children and pregnant women.
- **Recommendation 5:** Address loss to follow-up by introducing services more widely spread across the system and by strengthening systems for tracing dropouts.
- **Recommendation 6:** Build trust in the public health system by seeing the system from the household and patient's perspective so as to better understand barriers to utilisation of services.
- **Recommendation 7:** Simplify and standardise approaches to implementation for patients, programme governors and local providers to promote better access and enhanced quality.
- **Recommendation 8:** Strengthen prevention and the health system response to other diseases and build the PHC and district health system.
- **Recommendation 9:** Improve dialogue among researchers, policy makers and service providers to promote the transfer of lessons, and to harmonise and simplify approaches.

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Preface

Background to the Round-table Conference

The *Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa*¹ (hereinafter *Comprehensive Plan*) implemented in South Africa since 2004, sought to place access to antiretroviral therapy (ART) in a broader context. Access to antiretroviral therapy has to be seen, firstly, as part of a continuum of HIV/AIDS prevention, care and support activities and, secondly, in relation to the health system. On the one hand, this system has created the conditions for access and, on the other, the system has in multiple ways been impacted upon by the very implementation of a new programme of such magnitude. Since 2004, according to official figures, more than 400,000 people have been initiated into ART in the South African public health system. This has been a massive undertaking by any standards and has required the mobilisation of new resources (financial, human, managerial, etc.), as well as new forms of functioning of chronic care services (e.g. better systems for adherence and long-term follow-up).

While ART access is just one element in the response to HIV, the ART programme, from a systems point of view, is clearly the most costly and demanding. It is unprecedented in scope and ambition – it represents, for example, by far the biggest element of expenditure in the *HIV & AIDS and STI Strategic Plan for South Africa, 2007-2011* (hereinafter *National Strategic Plan*)², and is also attempting to meet a need that is itself unprecedented in scale. As this programme expands, we need to ask:

- What evidence do we have that these enormous challenges are being met?
- What are the outcomes to date of ART access?
- What are the prospects of achieving universal access?
- How do users see and value the programme?
- What are the broader social impacts of the programme to both providers and users?

¹ Department of Health. 2003. *The Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa*. Pretoria: Department of Health.

² Department of Health. 2007. *HIV & AIDS and STI Strategic Plan for South Africa, 2007-2011*. Pretoria: Department of Health.

- Are there signs that ART access is leading to a comprehensive response (for example, through improved PMTCT and TB care) and to the prevention of HIV?
- Has the health system been strengthened or undermined by the implementation of the *Comprehensive Plan*, and, if so, how?

The Round Table – purpose, organisation and contents

These and other questions were considered during a Round Table of researchers, policy makers, managers and providers held in Bloemfontein (Free State Province, South Africa) on 22 and 23 October 2007. The Round Table thus provided a platform for researchers and health policy implementers to share information, experiences and strategies regarding access, delivery and scale-up of antiretroviral treatment (ART).

The Round Table was jointly planned and organised by the Centre for Health Policy (University of the Witwatersrand), the Centre for Health Systems Research & Development (University of the Free State) and the Infectious Diseases Epidemiology Unit (University of Cape Town). The event followed a similar conference in Bloemfontein in 2005, organised by the Centre for Health Systems Research & Development. In the period since the first event, our three units – both individually and collaboratively – have been involved in researching and thinking about the health systems aspects of ART. We were also aware that others in the field were doing the same.

The specific objectives of the Roundtable were to:

- Promote dialogue, exchange and collaboration among stakeholders involved in ART and HIV care.
- Share insights and experiences of researchers and implementers on ART and HIV care.
- Disseminate research results on the implementation, impact and challenges of ART.
- Facilitate reception and implementation of research results in policy, management and practice.
- Identify new agendas for future operational research.

A total of 210 invited delegates attended the Round Table. They came from across South Africa – representing all spheres of government, research institutions and NGOs involved in and with

interest in the field of ART – as well as from several SADC countries, Europe and North America. Delegates from these countries provided important international perspectives on the themes. The

programme for the Round Table was divided into twelve thematic sessions, with 43 presentations and 16 responses from discussants and panelists. The full programme is given below.

Programme of the Round Table

Keynote address	Helen Schneider	Health systems and the Comprehensive Plan: four years on
Guest speech	Simon Makombe	The national scale-up of ART in Malawi
Theme: Perspectives on scaling up		
Chairperson	Pat Naidoo	
Presenters	Peter Barron	ARVs and the MDGs: What are the health system priorities?
	Andrew Boulle	The evolution of ART scale-up programmes in Southern Africa – evidence from the leDEA-SA cohort collaboration
	Susan Cleary	Achieving universal access to antiretroviral treatment: What contribution from health economics?
	Mary-Ann Davies	Is there anything special about ART for children? (How) Can it be provided in the primary care setting?
Discussant	Brian Pazvakavambwa	
Theme: Increasing access for pregnant women and children		
Chairperson	Laché Katzen	
Presenters	Beverly Draper	PMTCT services as both the gateway and the link to ART for HIV-positive mothers and children
	Mickey Chopra	PMTCT integration
	Sibongile Mkhize	Experiences of women participating in the Mothers2Mothers (m2m) programme and its impact on their lives
	Christine Varga & Heather Brookes	Psycho-social aspects of early infant PCR testing: implications for scale-up
Discussant	Yvonne Botma	
Theme: Equity and access		
Chairperson	Mosa Moshabela	
Presenters	Lot Jata Nyirenda, Talumba Banda, Ireen Makwiza, John Arbele-Grasse, Bethany Heft & Erik Schouten	Monitoring equity in the provision of antiretroviral therapy in Malawi
	Kobus Meyer, Sydney Rosen, Jane Goudge, Susan Cleary, Nicolette Naido, Marianela Castillo & Helen Schneider	Equity of and access to public sector antiretroviral services – a meta-analysis
	Jane Goudge, Tebogo Gumedde, Steve Russell, Lucy Gilson & Anne Mills	Falling through the social welfare net: illness-induced impoverishment (The SACOCO Study)
Discussant	David Sanders	

Theme: Demand-side perspectives: patients and communities		
Chairperson	Alison Munro	
Presenters	Mosilo Machere	Community perspectives on the ARV programme in the Free State
	Christo Heunis	Predictors of dissatisfaction with ART services in the Free State
	Edwin Wouters & Herman Meulemans	Social capital and public HIV disclosure among public sector ART patients in the Free State Province (South Africa): A cross-lagged model
	Bulelwa Ngoma	Accepting the new life: perspectives of patients on ART
Discussant	Mary Crewe	

Theme: Human resource challenges and strategies		
Chairperson	Norbert Dreesch	
Presenters	Alok Bhargava & Frederic Docquier	HIV pandemic, medical brain drain and economic development in sub-Saharan Africa
	Francois Steyn & Dingie van Rensburg	Managing staff shortages for ART: experiences from the Free State
	Sharonann Lynch	Providing free HIV/AIDS treatment and care at PHC level in context of HR shortage: MSF experience in Lesotho
Discussant	Uta Lehmann	

Theme: Human resource challenges and strategies		
Chairperson	Kathy Dennill	
Presenters	Uta Lehmann & David Sanders	Lay and community health workers and the response to HIV – Are we learning from the past?
	Hlengiwe Hlophe & Helen Schneider	Community health workers in the Free State: Integral members of the primary health care system?
	Emmanuelle Daviaud	Remuneration and integration of community health workers involved in HIV/TB work
Discussant	Irwin Friedman	

Theme: Measuring progress: success and challenges		
Chairperson	David Coetzee	
Presenters	Meg Osler	Monitoring the ART programme: lessons learned from the past five years in the Western Cape
	Ruth Stark, Marisa Wilke, Alison Munro, Robin Wood & Des Martin	Monitoring an ART programme in resource-limited settings – issues and lessons
	Frikkie Booysen & Michele Pappin	Trajectories of some clinical, socio-behavioural, psycho-social and economic outcomes of ARV treatment
Discussant	Laeitia Rispel	

Theme: Models of care for ART		
Chairperson	Portia Shai-Mhatu	
Presenters	Sydney Rosen, Lawrence Long & Ian Sanne	Costs and outcomes of AIDS treatment delivery in South Africa: how much does it cost to keep a patient in care and responding?
	Michelle Engelbrecht, David Coetzee & Helen Schneider	Models of ART care across three provinces
	Lara Fairall	Decentralisation and integration of HIV services to expand HIV care and antiretroviral treatment: the STRETCH project.
	Pierre Barker	Engaging primary care clinics for district-based comprehensive HIV care
Discussant	Eric Goemaere	

Theme: Integration of HIV and TB		
Chairperson	Ntombi Mhlongo	
Presenters	Refiloe Matji	Provision of ART in TB services – challenges, possibilities and the way forward
	Ester Carolus & Liz Thebus	“You must tune your TB programme well”. Integrating TB, HIV and ARV care in a Cape Town primary care setting.
	Judy Caldwell & Salla Munro	Enhanced TB adherence pilot project
	Doris Macharia	TB/HIV integration: models of care in the Eastern Cape
Discussant	Neil Cameron	

Theme: Labour market and social security aspects of ART		
Chairperson	Alok Bhargava	
Presenters	Frikkie Booysen	Labour force participation and access to disability grants: lessons from the experiences of Free State ART patients
	Sydney Rosen, Mpefe Kethapile, Ian Sanne & Mary Bachman DeSilva	Rapid improvement in normal activities, symptom prevalence, and job performance among patients initiating ART
	Karl Peltzer & Refilwe Phaswana-Mafuya	Impact of disability grant on people living with HIV/AIDS in the Eastern Cape
Discussant	Mead Over	

Theme: Challenges in rural settings		
Chairperson	Vincent Tihon	
Presenters	Bernard Gaede	ART services in rural areas – learning from the successes
	Elma de Vries	Integration of HIV services, based on some rural models that work well
	Neil Martinson	What can we learn from cohorts transitioning to HAART?
Discussant	Janet Giddy	

Theme: Social and preventive aspects of ART		
Chairperson	Celicia Serenata	
Presenters	Celeste Coetzee	Having the HAART to live: a preliminary profile of patients in Khayelitsha who have been on highly active antiretroviral therapy (HAART) for more than three years
	Karen Jennings	Informed consent (instead of standard VCT) for HIV testing: a pilot aimed at increasing HIV testing
	Mead Over, Damien De Walgue & Harounan Kazianga	The impact of ART awareness on risk behavior among non-patients: India, Thailand and Burkina Faso
Discussant	Francis Akpan	

Panel discussion		
Facilitator	David Coetzee	
Panelists	Yogan Pillay, Peter Barron, Mary Kawonga & Brian Pazvakavambwa	

Structure of this post-conference report

For purposes of this post-conference report, content was arranged along the following broad themes:

- National perspectives on access to ART and implementation of the *Comprehensive Plan*
- Provincial and local/district perspectives on access and outcomes of ART
- Perspectives of users and households on ART
- Social and behavioural impacts of ART
- Human resource impacts and challenges of the *Comprehensive Plan*
- Monitoring and evaluation systems
- Integration of TB and HIV care
- PMTCT strengthening

The report gives highlights of the presentations made at the Round Table. For those who are interested in the details concerning the individual presentations, these are available on the following website:

<http://www.ufs.ac.za/faculties/content.php?id=5709&FCODE=01&DCODE=161>

Presenters, co-presenters and presentations

The presenters, co-presenters and/or collaborators of papers, and their affiliations, are provided as footnotes in the text on those pages where they – or their work – are cited for the first time. Note that not all co-presenters and collaborators attended the Round Table. The presenters (and the topics of their presentations) cited in the report are listed under **Presenters Cited** at the end of the report.

Acknowledgements

We, the organisers of the Round Table, gladly extend our gratitude to the team of report writers – Antoinette Ntuli, David Mametja, Jo Stein, Liz Thomas, Liz McGregor, Francois Steyn, Hlengiwe Hlophe, Bulelwa Ngoma and Nicky Naidoo – for the time and work invested – before, during and after the event – in recording the proceedings.

We are grateful for generous sponsorship and support received from the following international donor agencies:

- UK Department for International Development (DFID)
- Centers for Disease Control and Prevention (CDC)
- Canadian International Development Agency (CIDA)

We are indebted to Caren van Vuuren, the conference manager, who arranged and administered the Round-table event with exemplary efficiency and good humour. Also, we thank Marius Pretorius and Liezel Meintjies, respectively for meticulous language editing and technical layout of the final report.

*Helen Schneider
Dingie van Rensburg
David Coetzee*

Organisers of the Round Table
May 2008

1. Health systems and the Comprehensive Plan: four years on

Helen Schneider³ introduced the meeting on behalf of the organisers by reviewing implementation of the *Comprehensive Plan*'s from a health systems perspective. She defined a *health system* as that vehicle through which proven interventions are delivered, and the underlying processes required to support such delivery. According to the World Health Organization, health systems consist of (1) *goals* – building access, equity and responsiveness – and (2) *functions* – organisational arrangements for service delivery (primary health care [PHC], hospitals, management structures, public/private sectors), resources (financial, human, infrastructural), institutional intelligence (research, monitoring and evaluation) and stewardship (leadership, governance, legislation and regulation). With such a wide set of structures and processes, opinions on the functioning of the health system will depend on which specific aspect of the system you are looking at and from what point of view. It has become common, for example, to describe the health system as being “in crisis”. Yet, a public sector user, a manager, a politician, a private medical specialist or a UN representative will portray this crisis and its causes in very different ways. Others may altogether reject the notion of a “crisis”.

With these words of caution, Schneider proposed four observations regarding health systems and four years of *Comprehensive Plan* implementation in South Africa:

1. The ART programme has demonstrated that the health system is indeed capable of innovation and performance.
2. We are still far from achieving universal access to ART through this health system.
3. The existing models of service provision are unable to meet the prevailing needs.
4. The ART programme has had a number of impacts on the health system, not all of which are positive.

The early evidence from the ART programme in South Africa suggests that, once enrolled, patients enjoy increased levels of survival, viral load

³ Helen Schneider – Centre for Health Policy (University of the Witwatersrand)/Centre for Health Systems Research & Development (University of the Free State).

suppression, self-reported adherence and retention in treatment that is on a par with levels in the developed world, and even much better than those for several other chronic diseases. With 300,000 people initiated onto treatment, the *Comprehensive Plan* is arguably one of the better performing programmes in the South African health system. Possible reasons for this are:

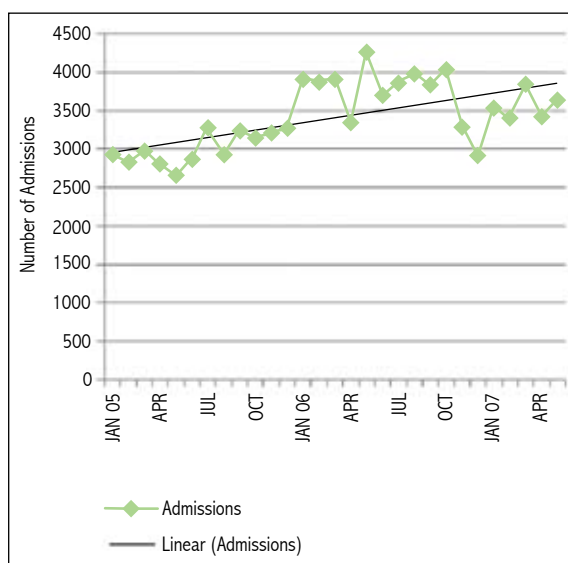
- The presence of ring-fenced resources, the attention to systems (such as drug supplies and laboratory services), and the standards for inputs set through the accreditation process.
- The possibility of saving and improving the quality of life through ART has fired the imagination of scores of providers, clinicians and middle-level managers across the country. The programme has thus benefited from a widespread process of bottom-up service development where local actors have actively experimented with new ways of doing things in order to expand access.
- New ways of functioning have been introduced into the health system. These include treatment preparation/literacy programmes, patient empowerment processes, and new relationships with providers, often through the mediating role of lay workers/people living with HIV/AIDS. In the context of widespread stigma, ART services represent rare spaces where people with HIV experience acceptance.

Despite these gains, however, universal access to ART is still far from being achieved. The *National Strategic Plan* defined universal access to ART as the enrolment of 80% of people entering the AIDS-phase of illness (according to models of the Actuarial Society of South Africa) in a specific year. A report issued by the national Treasury reveals that only 120,000 people were enrolled onto treatment between April 2006 and March 2007, i.e. a mere one-quarter of persons with AIDS, i.e. WHO classification Stage 4 Disease (although excluding private sector enrolment). Who is thus gaining access to services and who is not? In other words, what measures of implicit rationing are being applied in the health system? And are these leading to systematic inequities along geographical, socio-economic, age or gender lines?

Although much attention and huge resources have been devoted to ART access, coverage levels have not been high enough to alter fundamentally the experience of HIV in the mainstream of the health system. Hospital admissions in high burden areas, for example, have continued to rise (**Figure 1**), resulting mostly from an increase in the tuberculosis

epidemic and from difficulties with diagnosing and managing HIV-associated tuberculosis.

Figure 1 Medical admissions to Chris Hani Baragwanath Hospital, 2005-07



Source: Jassat W: An evaluation of a public private partnership (PPP) involving outsourced clinical services. Unpublished presentation, 2007.

Universal access to ART is unlikely to be achieved with the predominant model of ART service delivery currently being implemented in the public health system, namely, vertical services funded through ring-fenced resources and provided in 313 (at the time of presentation) accredited CCMT (comprehensive care, management and treatment) sites, based in hospitals, community health centres or PHC clinics, and provided by doctors, professional nurses and pharmacists. The need for ART is expanding by about 500,000 people per annum. In order to meet 80% of this need, each of the existing 313 accredited sites would have to enrol more than 100 new patients each month with current use of resources. Very few CCMT sites are able to achieve this level of enrolment. Quite the converse is true: as sites become more saturated, the rates of enrolment tend to decline – and simultaneously the ability to ensure retention in care.

A number of responses to these challenges have emerged from experiences on the ground. These include:

- Reorganising provider roles across the phases of treatment (staging, preparation, initiation and follow-up) to remove delays and bottlenecks in accessing ART

- Simplifying follow-up routines, through triage processes that identify those who are stable and adherent
- Maximising the use of scarce resources
- Spreading the patient and work load more widely among facilities by positioning the service in the PHC system (much like the TB programme at present) and managed principally by nurses
- Mobilising the resources of the private sector for public service purposes.

Despite the endorsement of such approaches through the PHC system, there are still many barriers to implementation at the political, the professional and the bureaucratic levels.

The health system impacts of ART access are still either poorly understood or poorly researched. As suggested above, the ART programme has been a source of innovation and hope in the health system. At the same time, ART coverage levels remain too low to alter the impacts of HIV significantly where they have been felt most, in hospitals. In the Free State Province there is evidence to suggest displacement of nursing staff from the general PHC system into the ART programme, and in some provinces, a significant non-governmental sector – funded through mechanisms such as PEPFAR – has recruited scarce skills from the public health system. On the other hand, there has been a significant increase in administrative and support staff, and greater involvement of lay health workers in the PHC system. The impacts of these human resource shifts on other programmes – as a result of the *Comprehensive Plan* – are unclear. TB treatment outcomes in the Free State, for example, did not change between 2004 and 2006. In contrast to other new programmes and reforms implemented since 1994, the subjective response of front-line providers to the ART programme has been largely positive.

From a health systems perspective, Schneider hinted at the next generation or next order of health systems challenges:

- Expanding access to ART while maintaining quality and innovation.
- Shifting the perspective of the programme from a site-based to a district, population-based one. This will require the development of new programme frameworks, methodologies, implementation strategies and training, e.g. planning, monitoring, supervision.

- Developing integrated approaches to service delivery at a district level: in particular, finding ways to ensure that the investments in treatment mobilise a preventive response – without which the ART programme will become unsustainable – as well as integrating ART with TB and maternal-child health services.
- Addressing human resource constraints and obstacles, including nursing governance/regulations and training, better integration of lay workers through career pathing and, more broadly, a review of the norms for PHC teams.

Addressing these challenges will, according to Schneider, require a new cycle of innovation, learning and policy adaptation. There is the ever-present risk of losing momentum and entering a phase of despondency, stasis and inertia. The above observations and issues prompted the choice of themes and sessions for the Round Table.

2. Perspectives on universal access to ART: Is it possible?

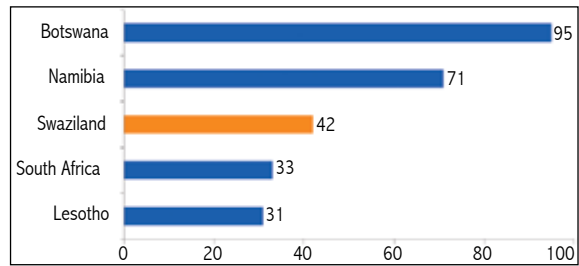
Both the *Comprehensive Plan* and the *National Strategic Plan* have universal access to ART as one of the main goals. The prospects of and challenges in meeting this goal constituted a key aspect of deliberations at the Round Table.

2.1 Regional and country perspectives

Brian Pazvakavambwa⁴, presented data on ART access in the southern African region. He highlighted the examples of Botswana and Namibia, where 95% and 71% of people in need, respectively, were receiving ART in 2006 (Figure 2). This shows that progress towards universal access is indeed possible and attainable, though highly differential at the country level.

⁴ Brian Pazvakavambwa – AIDS Program Team Leader: WHO Inter-Country Support Team for Eastern and Southern Africa.

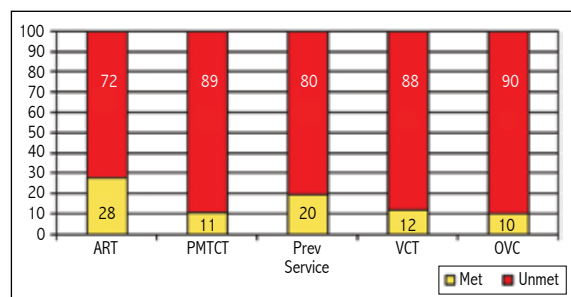
Figure 2 Treatment – % of people in need receiving ART in Southern Africa, 2006



Source: B Pazvakavambwa: *Closing Plenary of Round Table*.

Pazvakavambwa reminded the delegates that, despite the commendable achievements of a number of African countries, access to ART and other essential HIV interventions remains low across sub-Saharan Africa as a whole, which indicates that there is still considerable unmet need on the continent (Figure 3).

Figure 3 Universal access progress in sub-Saharan Africa, 2006



Source: B Pazvakavambwa: *Closing Plenary of Round-table*.

Simon Makombe⁵, guest speaker at the Round Table, gave a detailed account of Malawi's approach to building access to ART. Malawi has a population of 11.5 million people with a per capita Gross National Product of US\$200 (compared with US\$5,000 for South Africa). Over a period of three years (2004 to 2007), more than 110,000 people (65% out of 170,000 people in need) were initiated onto ART, mainly – but not exclusively – through the public health system. These achievements were made possible by recognising that rapid and massive scale-up will not be achieved by a “medical model” that relies on doctors to deliver ARV treatment, or that gives providers a free choice of ARV regimens, or that requires mandatory laboratory monitoring and utilises computers to track patient follow-up. Instead, a “*keep-it-simple*” strategy was adopted, comprising the following principles:

⁵ Simon Makombe – HIV Unit, Ministry of Health, Malawi.

- Provision of one first-line ART regimen for the country through the public health system – the Cipla-manufactured combination drug, Triomune, consisting of Lamivudine, Stavudine and Nevirapine, provided in customised packaging
- Free ART to HIV-positive eligible patients
- Making ART widely accessible through the PHC system and integrating it with other services, such as the TB service
- A standardised system of monitoring/reporting, consisting of a patient master card, registers and cohort reporting
- Quarterly structured supervision.

The programme was implemented by requesting health facilities to submit applications to become sites, followed by intensive training and accreditation. Between 2004 and 2007, the number of sites providing antiretroviral therapy expanded from 4 to 109.

Makombe summarised the challenges to future scale-up in Malawi as:

- Human resources
- Physical infrastructure – rooms and pharmacies
- Drug supplies
- Adequate finances
- Ability to continue with national M&E
- Sustainability of the first-line regimen (as a result of drug resistance and long-term side effects)
- Centralised *versus* decentralised management.

During the course of the conference proceedings, the strategy of “keep-it-simple” was reiterated by participants, especially when discussing South Africa’s scale-up strategy and models of care.

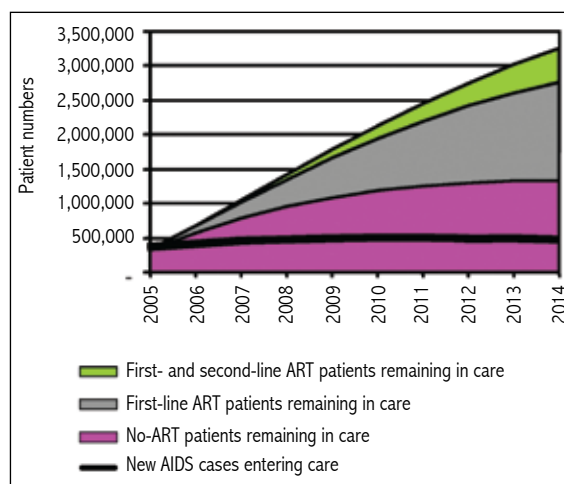
2.2 Future costs and affordability of ART

Susan Cleary⁶ addressed the question: What proportion of South Africa’s health budget is required to achieve a policy of universal access to ART? Based on empirical data from Khayelitsha (Cape Town), she modelled the impact on the budget of universal access to first- and second-line ART regimens over a ten-year period (2004-2014).

⁶ Susan Cleary – Health Economics Unit (School of Public Health and Family Medicine, University of Cape Town).

Universal access was defined as meeting 100% of need for the whole period, i.e. it assumes that the ART programme was able to achieve 100% coverage from the moment it was introduced in 2004 (not the levels actually achieved). If this hypothetical condition of universal access were met, a cumulative total of 3.3 million people would be remaining in care by 2014 (Figure 4) at a cumulative cost of US\$12.5 billion. If the health budget was constant (in real terms) over the period, 16% and 47% of the budget would need to be allocated to the ART programme in 2006 and in 2014, respectively. This rise in proportion is due to the addition of approximately 0.5 million to the pool of people needing care each year over the period (black line in Figure 4 below). If a strategy of providing only first-line drugs was pursued, 2.8 million would be remaining in care at a cumulative cost of US\$11 billion in 2014. A strategy of no ART provision also has a cost of US\$7.6 billion for the 1.3 million people remaining in care, and consuming 20% of the health budget in 2014.

Figure 4 Patient numbers on treatment, if total need met 2004-2014 for three hypothetical intervention scenarios



Source: S Cleary: *Achieving universal access to antiretroviral treatment: What contribution from health economics?*

Cleary’s analysis does not represent actual developments. In reality, far less than 100% of need has been met since 2004, and the *National Strategic Plan* has proposed a national access target of 80% (not 100%) by 2011. Moreover, health expenditure has also increased in real terms since 2004, much of it on conditional grants for HIV. The analysis however does serve to highlight that as scale-up proceeds, ART may become difficult to finance, unless there is a considerable increase in the health budget or a decrease in the costs of the programme,

e.g. in the staffing and in the use of tests and drugs. It is also important to note that the increased costs of HIV cannot be avoided: even if no ART was provided, HIV care would still consume 20% of the health budget in 2014, for only 1.3 million people remaining in care. If budget resources remain finite, then choices will need to be made that maximise the equity of access, such as deciding to provide only one first-line regimen as in Malawi.

2.3 District-based experiences of building universal access in rural areas

One of the striking features of the Round Table was the emerging evidence of subdistrict and district experiences in rapidly expanding access to ART and other HIV interventions in resource-constrained rural areas of South Africa and Lesotho. Four examples were presented at the meeting – Umkhanyakude District (KwaZulu-Natal) and Mhlontlo Subdistrict (Eastern Cape), discussed by Pierre Barker⁷ and Elma de Vries⁸; Okhahlamba Subdistrict (KwaZulu-Natal), presented by Bernhard Gaede⁹; and Scott Hospital Service Area (HSA)

⁷ *Pierre Barker* – Institute for Healthcare Improvement (Cambridge University, Massachusetts)/ Department of Paediatrics (UNC School of Medicine, University of North Carolina at Chapel Hill, USA).

⁸ *Elma de Vries* – School of Public Health and Family Medicine (University of Cape Town).

⁹ *Bernhard Gaede* – Emmaus Hospital/Rural Doctors' Association of South Africa.

(Lesotho), presented by Sharonann Lynch¹⁰ (Table 1).

The three South African areas are already meeting the 2011 *National Strategic Plan* target (and beyond) for ART access. Umkhanyakude District (northern KwaZulu-Natal), for example, had a rapid increase in rates of enrolment into HIV care over three years (2004-7) (Figure 5). At the time of the Round Table, the subdistrict served by Mseleni Hospital and its referring clinics was providing ART to nearly 3,000 people, meeting 95% of current need. In total, 2.5% of the population in this subdistrict are on ART. Similarly, Emmaus Hospital and its clinics (Okhahlamba Subdistrict, KwaZulu-Natal) are currently reaching enrolment targets of 80% of new need for ART, as is the Mhlontlo Subdistrict (Eastern Cape) (Figure 6). In rural Lesotho, the Scott Hospital Service Area has reached a monthly ART enrolment rate of 110 new patients per month, 18 months after inception of the programme, representing 40% of need, and against a backdrop of extreme healthworker shortages (*Cf* section on human resources later).

These experiences demonstrate that rapid scale-up can be achieved at district and subdistrict levels, even in low-resource settings. They also mirror that of the Lusikisiki Subdistrict (Eastern Cape) reported at a meeting convened by MSF and the Nelson Mandela Foundation in 2006.

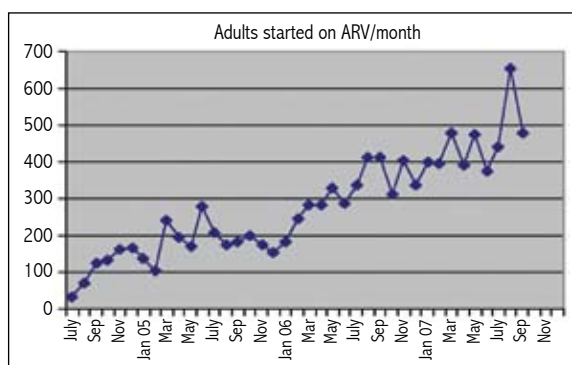
¹⁰ *Sharonann Lynch* – Scott Hospital Service Area (*Médecins Sans Frontières*, Lesotho).

Table 1 Profiles and achievements of rural districts/subdistricts in ART roll-out

District/subdistrict	Population	HIV prevalence, need for care	Facilities	Monthly enrolment onto ART
Umkhanyakude District (KwaZulu-Natal), consisting of five subdistricts	±500,000	Antenatal HIV prevalence: 35%; 6,000 additional people need ART annually	5 hospitals, 49 clinics	±500
Emmaus Hospital (Okhahlamba Subdistrict, Uthukela District, KwaZulu-Natal)	±150,000	Antenatal HIV prevalence: 35%	1 hospital, 5 clinics	100-120
Mhlontlo Subdistrict (OR Tambo District, Eastern Cape)	±200,000	Antenatal HIV prevalence: 26%; 1,600 additional people need ART annually	2 hospitals, 27 clinics	60-80
Scott HSA (Maseru and Mafeteng districts, Lesotho)	±220,000	HIV+: 33,000; 3,300 additional people need ART annually	1 hospital, 14 rural health centres	110

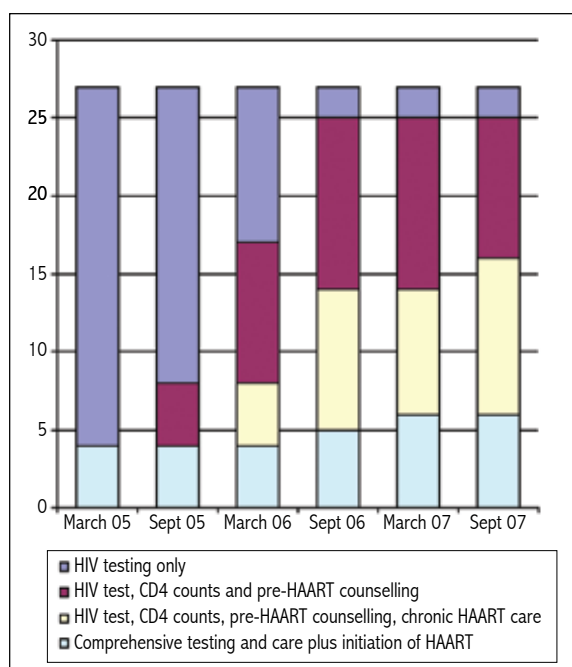
Sources: P Barker: *Engaging primary care clinics for district-based comprehensive HIV care*; B Gaede: *ART services in rural areas – learning from the successes*; S Lynch: *Providing free HIV/AIDS treatment and care at PHC-level in context of HR shortage: MSF experience in Lesotho*.

Figure 5 Monthly enrolments onto ART in Umkhanyakude District (KwaZulu-Natal), 2004-2007



Source: P Barker: *Engaging primary care clinics for district-based comprehensive HIV care.*

Figure 6 Numbers of facilities providing services in Mhlontlo Subdistrict (Eastern Cape)



Source: P Barker: *Engaging primary care clinics for district-based comprehensive HIV care.*

In the above-mentioned districts/subdistricts – and as lessons for wider application – the following strategies and principles were implemented in order to expand access at the local level:

- **A district-wide or subdistrict-wide approach to implementation through all available facilities, rather than the concept of separate “ART sites”**

All the areas aimed to provide a full package of services (testing, initiation and follow-up) in a decentralised fashion through the PHC system. In the Scott HSA, the full package of HIV care was implemented in PHC facilities from the outset, while in the other areas the process of

decentralisation of tasks has occurred in a more incremental fashion. In the Mhlontlo Subdistrict, for example, the provision of ART was broken down into five key steps – testing, staging, preparation, initiation and long-term follow-up. Providers were not only encouraged to see their contribution as part of a whole, but were also supported to take increased responsibility for each of the steps over time (Figure 6). In Emmaus, decentralisation of care was facilitated by making maximum use of existing mechanisms, such as the established chronic care system to prescribe ARVs for six months at a time.

- **An integrated and holistic approach to service provision**

For example, in Emmaus Hospital and Scott HSA, TB and HIV services are provided together in PHC clinics, on the same day, by the same clinician and using common records. Combined TB/HIV lay counsellors adopt a single approach to treatment preparation and adherence management for the two diseases. All the subdistricts have focused on improving PMTCT services.

- **A population-based approach to defining need and setting targets for HIV services**

Extrapolating from district antenatal HIV prevalence, estimates of numbers of HIV-infected people and those in need of ART can be established for the population of the subdistrict. From this the rate of enrolment required to address both existing and new need is calculated, and targets are set for the district/subdistrict. In Umkhanyakude and Mhlontlo, monthly enrolment targets were set for each individual facility.

- **Investment in strengthening existing district-based support systems rather than creating parallel or new systems**

In Emmaus Hospital and Scott HSA, investments were made in improving the drug supply, laboratory, transport, referral and clinical support, and supervision systems to PHC facilities.

- **Using existing professional staff establishments, but improving the efficiency of resource use through task shifting**

Such task shifting was from doctors to nurses, and from professionals to lay workers and support staff (Cf section on human resources later).

- **Instituting simple monitoring and evaluation systems and using the analysis of information for management**

- **Clear strategies for programme implementation**

In Scott HSA, the implementation process involved intensive theoretical and in-service and on-site training; the development of nurse-oriented guidelines; weekly visits from a clinician whose role was defined primarily as providing in-service training; and support for the management of difficult cases. In Umkhanyakude and Mhlontlo, Barker described the methodology of the Institute for Healthcare Improvement (IHI) as follows: connecting clinics throughout a district in a network so they can learn from one another; defining the scope of the problem; setting goals linked to *need*; simplifying clinical care into discrete, linked processes that will lead to a clearly identified outcome/goal; and empowering local health care workers to improve their local health systems through the use of change methods and engaging them in the M&E process.

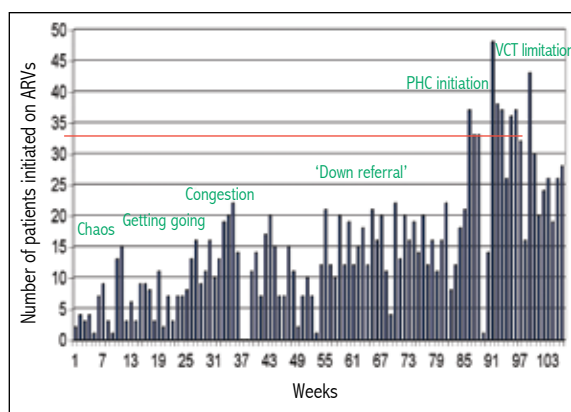
- **An active process of learning by doing**

In Emmaus, a positive (“*we can do it*”) attitude and an ability to identify and learn from problems enabled local actors to improve access to ART over time, eventually reaching universal access targets (Figure 7).

- **The presence of change agents and champions for innovation**

The Scott HSA programme was supported externally by MSF, and IHI supported implementation in Umkhanyakude and Mhlontlo. In all areas strong local champions were key to successful and sustained implementation.

Figure 7 Implementation of ART at Emmaus, April 2005-May 2007



Source: B Gaede: *ART services in rural areas – learning from the successes*.

Barker summarised his input by concluding that PHC services could be successfully integrated into cohesive district-based comprehensive HIV/

AIDS care and that the current resources in the district health system could provide most of HIV/AIDS needs for South Africa. Gaede, in turn, concluded that the district/PHC approach to ARV provisioning required a policy shift from vertical to integrated approaches to HIV services. He highlighted the importance of designing systems (forms, roles, processes) “*for people*”, and “*with those*” required to implement them. Priorities, for the short term, thus comprise improving VCT and dealing with the regulations preventing lay workers performing HIV tests; the development of standard treatment guidelines for nurse-initiation of ARVs; building linkages with community structures (home-based carers, traditional healers, NGOs); and systematising integration of HIV care into PHC and TB services. In the medium term, the PHC infrastructure, including staffing, has to be reviewed with future workloads in mind.

2.4 Other models of ART provision: provincial, NGO and private

A number of presentations at the Round Table described models of ART provision and outcomes in other parts of South Africa.

Michelle Engelbrecht *et al.*¹¹ presented a review of 16 typical, mostly public sector-based ART sites across three provinces (Western Cape, Free State and Gauteng). These site reviews, conducted between 2005 and 2007, formed part of three separate provincial studies of models of ART care, using similar tools. In the Western Cape, the sites included PHC and hospital, single purpose and integrated, and first-line and referral ART sites. In the Free State, four sites were selected for closer study: one so-called “assessment” (PHC-based CD4 screening and ART maintenance), one “treatment” (initiation and referral), one “combined” (all functions) site, and one comprehensive faith-based service site (provided by the Catholic Relief Services). In Gauteng, two community health centres (CHCs)

¹¹ Michelle Engelbrecht – Centre for Health Systems Research & Development (University of the Free State).

David Coetzee – Infectious Disease Epidemiology Unit (School of Public Health and Family Medicine, University of Cape Town).

Helen Schneider – Centre for Health Policy (University of the Witwatersrand)/Centre for Health Systems Research & Development (University of the Free State).

and two hospital-based sites representative of the public sector roll-out environment were sampled.

The sites assessed could thus be said to have covered the full range of health care facilities in the South African public health system providing ART. This was reflected in the level of skill available at the site, which ranged from professional nurse (with medical support) to specialist physicians. In most (12) cases, non-specialist medical officers were the most qualified personnel at the site. ART services were, on the whole, still largely doctor-based, although several sites had initiated steps to delegate the follow-up of stable patients to nurses. Staff:patient ratios varied considerably among the studied sites, and more than one-third had medical and nursing staffing ratios well below those of the recommended norms of the *Comprehensive Plan*.

Services were mostly provided in a vertical fashion within the studied facilities. Despite the policy intention of providing “comprehensive” HIV care across the course of the disease, most sites functioned as stand-alone HIV clinics, in three instances focusing exclusively on ART provision. None of the sites offered what could be regarded as a “full core package” of HIV services – i.e. inclusive of voluntary counselling and testing (VCT), staging of illness (CD4 counts), wellness management, prophylaxis and treatment of opportunistic infections (OI), tuberculosis (TB) care, and the prevention of mother-to-child transmission.

At all sites – according to Engelbrecht *et al.* – the management of adherence involved an intensive period of treatment preparation, provided mostly by lay workers/counsellors and nurses, but partly also by doctors. This took the form of both individual counselling and structured group education (at thirteen sites), and the building of ARV “literacy”. Patients were asked to nominate a treatment supporter or “buddy” at 14 sites, were provided with tick sheets to monitor adherence at nine sites, had access to support groups at eight sites, received home visits at five sites, and received pill-boxes at four sites. Adherence checks (self-reported adherence or pill counts) were reportedly routinely conducted at follow-up visits, a task also often delegated to lay counselling staff. Defaulters were identified in various ways (often by the dispensing pharmacist) and contacted telephonically or through home visits. As sites became larger, however, the ability to monitor and trace those lost to follow-up reportedly

became more difficult. Weak design and/or use of information/monitoring systems contributed to this. PHC-based sites were more accessible to patients (in terms of travel costs) than hospital-based sites.

Despite the variation in models and resources, rates of self-reported adherence and viral load suppression were high across all the sites. Engelbrecht *et al.*, therefore, concluded that the variation in service provision was not necessarily undesirable. Such variation also reflects and allows for different provincial and local realities. However, in subsequent discussion, the issue of whether a simpler, more standardised approach could be instituted as the core public sector model for the country was raised.

Lara Fairall¹² reported on a province-wide initiative to build PHC and nurse-based HIV care in the Free State, the so-called STRETCH (Streamlining Tasks and Roles to Expand Treatment and Care for HIV) model. In this province, a very high mortality was observed between enrolment in HIV care and initiation of ART (*Cf Figure 8* below). STRETCH aims to assess whether it is possible to improve ART treatment access and reduce waiting times without compromising quality of care. The initiative follows a nurse-training programme called PALSA Plus, which provides for the decentralisation of HIV/AIDS care by training all PHC nurses province-wide to provide integrated TB and HIV/AIDS care. It involves skilling ART-trained nurses at public clinics to take on more of the clinical tasks currently being done by doctors at hospitals. These tasks include classifying patients eligible for ART into high-risk or low-risk, based on clinical criteria, commencing treatment in low-risk patients, and expediting referral of high-risk or complex patients to doctors. STRETCH will also develop and implement a management toolkit for the phased implementation of all aspects of STRETCH, including site assessment and preparation, expanded drug prescribing provisions for PHC nurses, and the development of clinic-level interdisciplinary support teams.

¹² Lara Fairall – UCT Lung Institute (University of Cape Town).

Sydney Rosen *et al.*¹³ presented an evaluation of four less common ART provision models – one academic hospital site, and three private sector (two NGO and one private GP) sites. The purpose of the study was to compare the costs and outcomes of different delivery models in different settings. One hundred patients with follow-up data were reviewed in the four different models of ART provision (Table 2). Patients were categorised into outcomes (“no longer in care”, “in care but not responding”, and “in care and responding”), and the costs per patient “in care and responding” calculated. The NGO primary care clinic providing ART services had the best outcomes – only 13% of the patients “no longer in care” after 12 months, compared with 45% in the GP network. The cost per patient “in care and responding” was lowest for the large academic hospital and highest for the GP model.

Table 2 Outcomes and costs of four different ART delivery models

Site description	Patients on ART (mid-2007)	Patients “no longer in care” at 12 months	Average cost per patient “in care and responding”
Large, urban, public academic hospital (Gauteng)	5,700	26/100	R 7,264
Donor-funded contract between ≈ 30 private GPs and treatment NGO (multiple provinces)	1,400	45/100	R 11,715
NGO-dedicated AIDS clinic in a rural area (Mpumalanga)	900	28/100	R 10,061
NGO primary care clinic in a peri-urban area (Gauteng)	700	13/100	R 10,076

Source: S Rosen, L Long & I Sanne: *Costs and outcomes of AIDS treatment delivery in South Africa: How much does it cost to keep a patient in care and responding?*

¹³ Sydney Rosen – Center for International Health and Development (Boston University, USA)/Health Economics Research Office (Wits Health Consortium, University of the Witwatersrand).

Lawrence Long – Health Economics Research Office (Wits Health Consortium, University of the Witwatersrand).

Ian Sanne – Health Economics Research Office (Wits Health Consortium)/Clinical HIV Research Unit (University of the Witwatersrand).

3. What do we know about antiretroviral programme quality and outcomes?

Peter Barron¹⁴ challenged the meeting to consider the cost-effectiveness of ARVs. He cited a recently published meta-analysis of ARV follow-up in sub-Saharan Africa, which showed 24-month retention rates that varied from 24% to 77%. If medium-term outcomes were so uncertain and access still limited to a few, Barron questioned whether all the energy and resources devoted to the ART programme could be justified. Preventive interventions, such as PMTCT, access to condoms, safe motherhood and childhood immunisation, still remain poorly implemented. Andrew Boule¹⁵ countered this by indicating that ART access was crucial to improving PMTCT and addressing maternal mortality and infant mortality, and that these strategies should not be seen as mutually exclusive.

Outcomes data were presented on the Malawian programme, the Scott HSA programme (Lesotho), and the programmes of two provinces (Free State and Western Cape, South Africa).

3.1 Regional – Malawi

Makombe presented the outcomes of the Malawian programme. Of the more than 110,000 people enrolled onto treatment, 69% were still alive and on ART, while 22% had dropped out or died. Two-thirds (66%) of the deaths occurred within three months of initiation.

Operational research on the defaulters in one region found that half had in fact died, and that another 10% were still on treatment at another site.

¹⁴ Peter Barron – Health Systems Trust.

¹⁵ Andrew Boule – Infectious Disease Epidemiology Unit (School of Public Health and Family Medicine, University of Cape Town).

Table 3 Outcomes (cumulative analysis) in Malawi, end June 2007

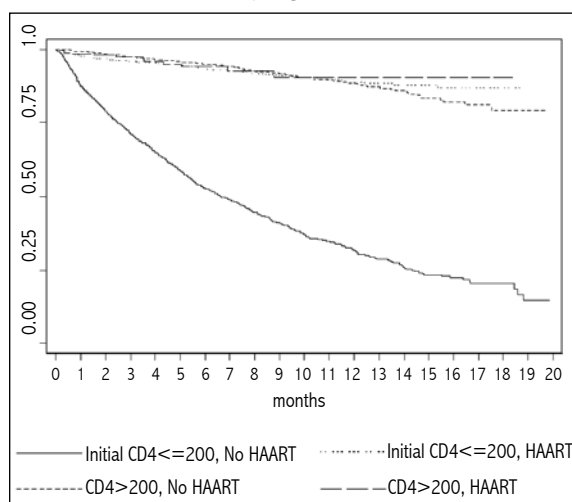
Outcome	Number	%
Enrolled to ART	110,075	
Alive on ART	76,166	69%
Dead	12,992	12%
Defaulted	10,583	10%
Stopped ART	472	<1%
Transferred-out	9,862	9%

Source: S Makombe: *The national scale-up of ART in Malawi: challenges and successes*.

3.2 Provincial – Free State

Fairall presented cohort data on the outcomes of the Free State programme. Of the 14,627 people enrolled over 18 months onto the CCMT (*Comprehensive Care, Management and Treatment*) programme, 62% were women, while 6,889 (48%) were judged as eligible for ART; only 3,619 (53% of those eligible) actually received ART. Of the 2,422 deaths recorded, 87% were in the pre-ART group. The provision of HAART resulted in an 86% drop in mortality (Figure 8). The long waiting lists and problems of delayed access once enrolled, have prompted a review of the model of service provision in this province (*Cf* STRETCH programme above).

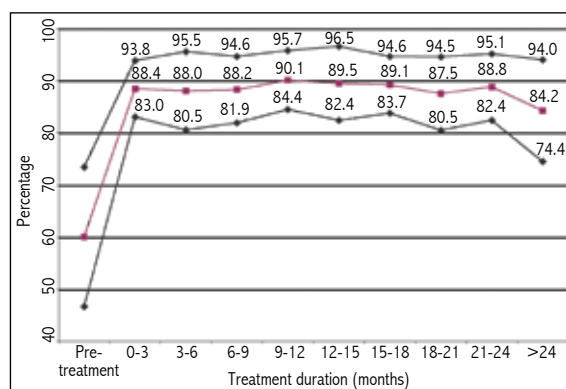
Figure 8 Kaplan-Meier survival estimates by treatment status and initial CD4 count, Free State CCMT programme



The non-clinical outcomes of ART have also been extensively studied in the Free State (*Cf* also user and household perspectives). Longitudinal

data collected on patient cohorts in this province, presented by Frikkie Booysen¹⁶, indicate steady improvements in quality of life (EQ-VAS and EQ-5ED instruments), self-reported physical health and emotional well-being, disclosure of status, labour force participation, and personal income over a 24-month period (Figure 9). However, he noted a possible early trend of a decline in self-reported health status in those on treatment for more than two years.

Figure 9 Responses to question: "Has your physical health improved?" (95% CI) by treatment duration in Free State patient cohorts



Source: F Booysen: *Trajectories of some clinical, socio-behavioural, psycho-social and economic outcomes of ARV treatment*.

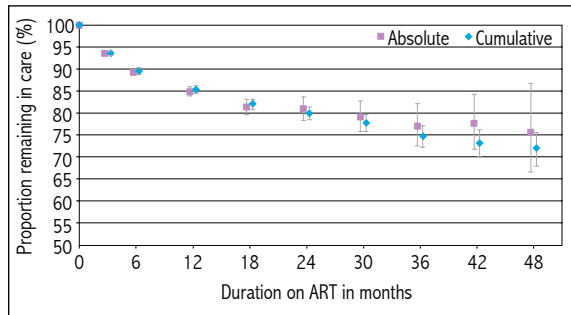
3.3 Provincial – Western Cape

Boule provided outcome data on the first 12,587 patients started on treatment between 2001 and 2005 in the Western Cape. At 24 months, 82% of the cohort remained in care, while at 48 months 72% remained in care (Figure 10). Of those remaining in care, more than 90% had undetectable viral loads (<400 copies per ml) and CD4 counts of greater than 200 after 4 years.

He also cited the analyses conducted by the Medical Research Council (presented at the 2007 Durban AIDS Conference) showing a stabilisation (and in some instances a decline) in adult female mortality rates in all but three provinces (Free State, Limpopo and Mpumalanga). This has been attributed to the ART programme and suggests that impacts at population level are beginning to emerge.

¹⁶ Frikkie Booysen – Centre for Health Systems Research & Development/Department of Economics (University of the Free State).

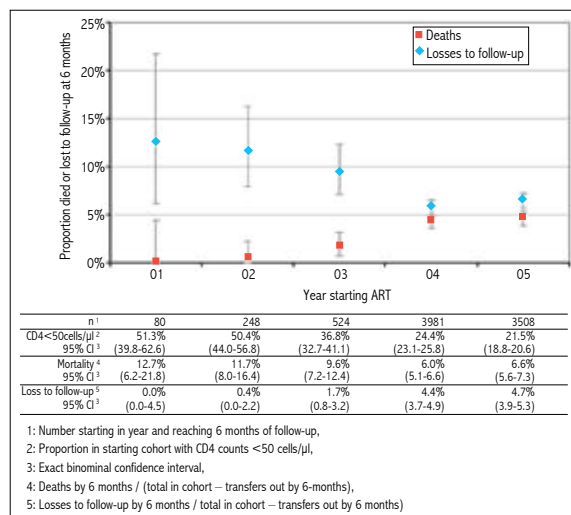
Figure 10 4-year outcomes (proportion remaining care) of adult patients starting ART in the Western Cape



Source: A Boulle: *The evolution of ART scale-up programmes in Southern Africa.*

The outcomes data from the Free State and Western Cape indicate an ART programme of high quality, despite considerable barriers having been reported to entry into the Free State programme. As scale-up proceeds, there are new challenges to be faced. With increasing access to ART in the Western Cape, the proportion of patients presenting with low CD4 counts (<50 cells/mm³) has decreased and, as a result, early mortality has declined over time (Figure 11). On the other hand, as coverage has expanded, facilities have become more and more saturated and thus less able to provide either individualised patient attention or active defaulter tracing. Early loss to follow-up has therefore increased over time.

Figure 11 Six-month mortality and loss to follow-up in Western Cape treatment cohorts, 2001-2005



Source: A Boulle: *The evolution of ART scale-up programmes in Southern Africa.*

3.4 District-based programme outcomes – Lesotho

Lynch reported data on outcomes for Scott Hospital Service Area, one of the district-based programmes represented at the Round Table. Of the 246 patients initiated onto treatment in the first two quarters of 2006, 71% were followed up at clinics and 29% at the local hospital (Table 4). Six-month retention rates for patients initiated in clinics were 91.4%, compared with 70.4% for the hospital. Less than 3% of patients in clinics were lost to follow-up, compared with 4% at the hospital. Mortality rates were also lower at clinics. In a rural context, where geographical access is a major concern, these findings suggest that well-trained nurses providing care in well-supported PHC facilities are better able to do follow up on patients than are hospitals.

Table 4 Scott Hospital Service Area: 6-month cohort: clinics and hospital for first two quarters of 2006

	Clinics	Hospital	Total
Total adults initiated on ART (% of total)	175 (71%)	71 (28.9%)	246
Women (% of total adults)	134 (76.6%)	50 (70.4%)	184 (74.8%)
Number 6 months on ART			246
Remaining in care	160 (91.4%)	50 (70.4%)	210 (85.4%)
Died	10 (5.7%)	11 (15.5%)	21 (8.5%)
Transferred out	2 (1.2%)	2 (2.8%)	4 (1.6%)
Loss to follow-up	5 (2.9%)	10 (14.1%)	15 (6.1%)

Source: S Lynch: *Providing free HIV/AIDS treatment and care at PHC level in context of HR shortage: MSF experience in Lesotho.*

4. Is access equitable?

In collaboration with the Ministry of Health, CDC and WHO, Lot Jata Nyirenda *et al.*¹⁷ analysed equity in the provision of ART in Malawi. They defined equity in health as “addressing differences in

¹⁷ Lot Jata Nyirenda, Talumba Banda, Ireem Makwiza, John Arbele-Grasse, Bethany Hedt and Erik Schouten – REACH Trust, Ministry of Health (Malawi), CDC and WHO-Geneva.

health that are unnecessary, avoidable and unfair”, and outlined the elements of an equity-oriented monitoring of ART provision as follows:

- Equitable access to ART with realistic targets
- Fair policy development, monitoring and process
- Fair, sustainable and accountable financing
- Integration into the delivery of the essential health package
- Human resource development to deliver the essential health package
- Sustainable and accountable purchase, distribution and monitoring of drugs and commodities for ART
- Ensuring private sector provision of ART is complementary to and enhances public health system capacity

The methods of the study involved analysis of routine national data, key informant interviews and a survey of five districts. One finding reported was that of gender differences in access. Sixty percent (60%) of those initiated onto treatment were women and 40% men. Relative to need, a higher proportion of women were on treatment than men. Outcomes were also poorer in men than in women (Table 5). Children represented only 7% of those on treatment.

Table 5 Treatment outcomes by gender in five districts of Malawi

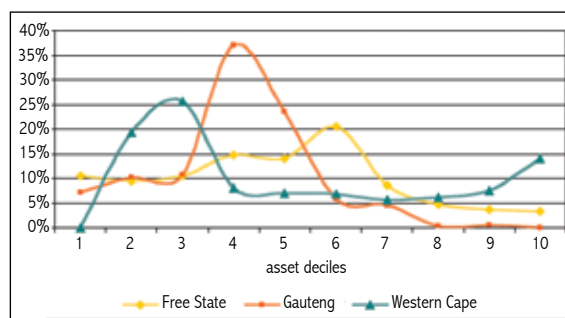
Characteristic	Male (%)	Female (%)	Chi-square	Odds ratio	P-value
Death Rate	10.4	8.5	9.12	1.25	0.003
Default Rate	6.5	5.7	3.09	1.15	0.078
Transfer Rate	6.7	10.8	12.64	1.27	<0.001

Source: L Nyirenda et al.: *Monitoring equity in the provision of antiretroviral therapy in Malawi*.

Another finding was that, despite greater access to resources, the so-called “high burden” (high volume) ART sites studied had higher death and defaulter rates than did the “low burden” sites. This may have important implications for the model of delivery of ART, and indicates that ART delivery should be integrated into all services.

Kobus Meyer et al.¹⁸ presented a pooled analysis of equity of access to ART in South Africa based on interviews with 2,427 patients at 16 ART sites across the country (Gauteng, Free State, Western Cape and Mpumalanga). The socio-economic profile (household asset index) of 1,820 of these patients attending ART services in three provinces was compared with that of the public sector-dependent population of each province (obtained from the 2005 General Household Survey). Distinct provincial patterns were observed, with the lower socio-economic groups in the Western Cape being more likely to access care, followed by Gauteng, and then the Free State (Figure 12). This could be related to the differential access to care in the three provinces. Further research is required to examine these trends and their impacts on adherence to ART.

Figure 12 Socio-economic distribution of ART clinic attenders (n=1,820) relative to public sector-dependent provincial population



Source: K Meyer et al.: *Equity of and access to public sector antiretroviral services – a meta-analysis*.

One-quarter (25%) of patients in the 16 sites were male, and 75% female. The median age was 30-40 years at all sites. The age-sex profile of the sample as a whole is provided in Figure 13, where it is compared with the modelled Actuarial Society of South Africa (ASSA) data on the age-sex profile of need. From this analysis, men represent 45% of need, yet form only 25% of the patient populations, while they are under-represented in all age groups. Women in the 20-39 year age range represent 56% of the total population of clinic attenders. A similarly skewed pattern of utilisation by gender (leaning towards

¹⁸ Kobus Meyer – Centre for Health Systems Research & Development (University of the Free State).

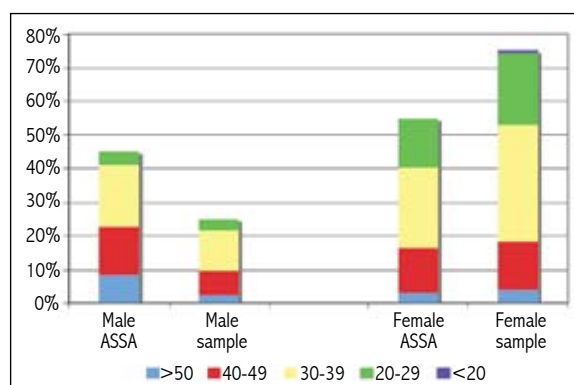
Sydney Rosen – Center for International Health and Development (Boston University, USA)/Health Economics Research Office (University of the Witwatersrand).

Jane Goudge, Nicolette Naido and Helen Schneider – Centre for Health Policy (University of the Witwatersrand).

Susan Cleary and Mariana Castillo – Health Economics Unit (University of Cape Town).

females) was also reported in Lesotho (Table 4 above). Although generally characterised as more vulnerable, women across different contexts appear to be better able to access and utilise services than their male counterparts. With reference to Malawi, Nyirenda *et al.* raised the question of whether men face greater stigma and challenges in accessing and adhering to treatment than do women.

Figure 13 Percentage age-sex distribution of patients interviewed (male and female 'sample' n=2,427), compared with modelled need



Source: K Meyer *et al.*: *Equity of and access to public sector antiretroviral services – a meta-analysis.*

5. User and household (demand-side) perspectives

A number of presentations at the Round Table explored the user, household and social context and impact of HIV and ART. Several studies, completed and ongoing, used longitudinal methods to research these effects in South Africa. Of these, the study of the Centre for Health Systems Research & Development (University of the Free State) is the most established and comprehensive in scope, and has now conducted five rounds of surveys with patients enrolled in the Free State's HIV programme. Four presentations drew on this dataset. Cohort studies examining the socio-economic impacts of ART are also in progress in Gauteng, Mpumalanga, and Khayelitsha (Cape Town), while cross-sectional studies have been completed in the Eastern Cape, Gauteng and Western Cape (Table 6).

Table 6 Employment and disability grant access in various studies

Presenters	Study sample methods	Employment rates	Disability grant access
Cohort/longitudinal studies			
Booyesen: Free State study	Cohort study (balanced) of 371 patients enrolled in Free State ART programme – 5 waves since 2004	Baseline: 15.6% At follow-up 3: 24.7%	At baseline: 49% At 24 months on ART: 72.4%
Coetzee ¹⁹ : Khayelitsha study	Longitudinal study of 242 people on ART in Khayelitsha since 2004 – 2 waves, 2 years apart	Employment rates (wage and self-employed) increased from 33%-49%	At baseline: 74% Second wave: 47%
Rosen <i>et al.</i> ²⁰ : Study in urban and rural sites	Baseline data on cohort of 1069 patients (ART plus pre-ART) at 2 urban (Gauteng) and 1 rural (Mpumalanga) site.	28% in those on ART for 1-6 months (40% pre-ART)	
Cross-sectional studies			
Peltzer & Phaswana-Mafuya: Eastern Cape study	Cross-sectional study of 607 people living with HIV/AIDS in Eastern Cape – 48% on ART	12% (formal and informal, part-time and full-time) (15% too ill to work)	35%-67% in those attending health facilities
Meyer <i>et al.</i> : Various universities	Pooled analysis of cross-sectional data on 2,427 patients attending 16 ART sites in 4 provinces, 2005-07	-	43.9% – access higher in older patients and those longer on ART

Sources: F Booyesen – *Labour force participation and access to disability grants: lessons from the experience of Free State ART patients*; C Coetzee – *Having the HAART to live: a preliminary profile of patients in Khayelitsha who have been on HAART for more than three years*; S Rosen *et al.* – *Rapid improvement in normal activities, symptom prevalence, and job performance among patients initiating ART*; K Peltzer & R Phaswana-Mafuya – *Impact of disability grant on people living with HIV/AIDS in the Eastern Cape*; K Meyer *et al.* – *Equity of and access to public sector antiretroviral services – a meta-analysis.*

¹⁹ Celeste Coetzee – Centre for Social Science Research (University of Cape Town).

²⁰ Sydney Rosen – Center for International Health and Development (Boston University, USA)/Health Economics Research Office (Wits Health Consortium, University of the Witwatersrand).

Mpefe Kethhapile – Health Economics Research Office (University of the Witwatersrand).

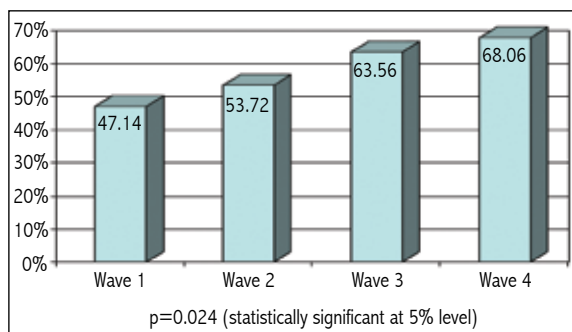
Ian Sanne – Health Economics Research Office (Wits Health Consortium)/Clinical HIV Research Unit (University of the Witwatersrand).

Mary Bachman DeSilva – Center for International Health and Development (Boston University, USA).

5.1 Patient perceptions and experiences

Christo Heunis²¹ analysed predictors of satisfaction with HIV services in the Free State cohort of patients. Of the factors he examined, a growing trend of dissatisfaction with waiting times at assessment sites was the most significant (Figure 14). Dissatisfaction with the other dimensions of the service (e.g. privacy, cleanliness, respect) remained constant over time, with roughly 30% of patients consistently expressing some form of dissatisfaction in the patient surveys.

Figure 14 Dissatisfaction with waiting times at Free State assessment sites by survey wave



Source: C Heunis: *Predictors of dissatisfaction with ART services in the Free State*.

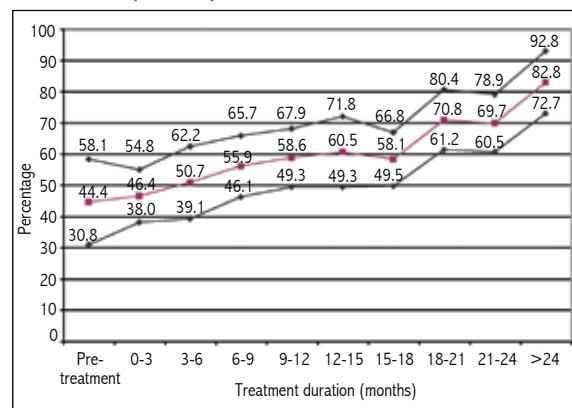
In open-ended interviews with people taking ART in Gauteng, Bulelwa Ngoma²² found that, despite a high degree of adjustment to the demands of treatment, patients continued to grapple with the management of disclosure and the ever-present threat of stigma and rejection. HIV marked a “*new life*” with new social networks (mostly other HIV-positive people) existing alongside an “*old life*”. Some interviewees led a dual life by not disclosing to any members of their prior networks, although this did not necessarily prevent them from taking treatment regularly. Family support (emotional and financial), good relations with health workers, access to grants, and the informal connections made with other HIV-positive people at HIV services – rather than formal support groups – enabled greater adjustment to and acceptance of the “*new life*”.

²¹ Christo Heunis – Centre for Health Systems Research & Development (University of the Free State).

²² Bulelwa Ngoma – Centre for Health Policy (University of the Witwatersrand).

In the Free State patient cohorts, Frikkie Booysen & Michele Pappin²³ showed that 83% of those on ART for more than two years had disclosed their status to someone outside of their family, compared with 44% in the pre-ART group (Figure 15). Reported desire to keep HIV status a secret declined from 41% in the early phases of treatment to 22% after 24 months. This suggests that being on ART promotes disclosure.

Figure 15 Disclosure to non-partners and non-family members in Free State patient cohorts (95% CI)



Source: F Booysen & M Pappin: *Trajectories of some clinical, socio-behavioural, psycho-social and economic outcomes of ARV treatment*.

Also using data from the same Free State study, Edwin Wouters & Herman Meulemans²⁴ examined the association between “*public disclosure*” (i.e. to non-family/non-partners) and social support variables in these cohorts. These variables include the presence of treatment and emotional buddies – referred to as “*bonding social capital*”, and contact with a support group or community health worker – referred to as “*bridging social capital*”. Disclosure was associated with bonding capital – but not with bridging social capital – which reinforces the importance of family social networks in emotional wellbeing.

5.2 Employment, disability grants and adherence

Most of the people attending HIV services are unemployed. Employment rates varied from 12% in a study in the Eastern Cape, to nearly half of

²³ Frikkie Booysen and Michele Pappin – Centre for Health Systems Research & Development/Department of Economics (University of the Free State).

²⁴ Edwin Wouters and Herman Meulemans – both Department of Sociology (University of Antwerp, Belgium).

those on treatment for two years in Khayelitsha (Cape Town). Employment improved over time – from 16% to 25% in the Free State cohort, and from 33% to 49% in the Khayelitsha cohort (Table 6). Booyesen noted three important “labour market transitions” in people on ART: first, from being too ill to work, to participating in the labour force (employed or unemployed); second, from being unemployed (not searching), to being unemployed (and searching); and third, from being unemployed to being employed.

Access to disability grants appears to differ greatly at various study sites. Fewer than half (44%) of the patients attending the 16 ART sites assessed by Meyer *et al.* were receiving disability grants. At an Eastern Cape site, 67% of patients attending ART services were receiving grants, compared with 35% in those not on ART. Moreover, access to the disability grant shows different trends over time in different parts of the country. In the Free State, access to grants appears to increase with duration of treatment – from 49% to 73% – while the Khayelitsha cohort displays an opposite trend of decreasing access to the disability grant – from 74% to 47%. The policy in the Western Cape limits disability grants to patients with CD4 counts <200. Meyer *et al.* found that those older (in age) and those with longer duration on treatment were more likely to receive grants than the younger and more recent enrollees into the service. A decrease in grant access in successive cohorts of patients may reflect changing national policy towards limiting access to disability grants.

Many have raised concerns regarding the disincentive to ART adherence posed by grant withdrawal or termination. Karl Peltzer & Refilwe Phaswana-Mafuya²⁵ reported on a cross-sectional study examining the impact of the disability grant on people living with HIV/AIDS in the Eastern Cape. They found no relationship between self-reported adherence to ARVs and non-receipt or withdrawal of the disability grant. However, they found a highly significant association between reported (non-) use of health services and access/withdrawal of the grant (Table 7).

²⁵ Karl Peltzer and Refilwe Phaswana-Mafuya – both Social Aspects of HIV/AIDS and Health (Human Sciences Research Council).

Table 7 Association between access to the disability grant, adherence and use of services

	Receives disability grant (DG)	Does not receive DG	χ^2	DG not stopped	DG stopped	χ^2
% ARV non-adherence (90 or less)	5.9	2.4	.75	5.1	0	1.96
% Ever stopped ARV completely	0.9	1.4	.15	1.0	1.3	.06
Often gone without medicines or medical treatment in past 12 months (%)	19.0	37.3	12.6***	16.4	40.3	18.07***

*** p<0.001

Source: K Peltzer & R Phaswana-Mafuya: *Impact of disability grant on people living with HIV/AIDS in the Eastern Cape.*

In turn, Booyesen’s data show that access to a disability grant in the Free State cohort of patients was associated with reduced labour force participation and could, therefore, promote inappropriate dependency in some patients. On the other hand, he argued, the grant also acts as a “lifeline” to the benefit of the patient, enabling retention and access to social support, which, in itself, leads to improved health and ability to participate in the labour force. He called for a thorough review of the complex interaction of incentives and disincentives associated with the disability grant.

5.3 Cost burdens of ill-health on households

The SACOCO (South African Costs and Coping) study of 280 households in rural Mpumalanga, presented by Jane Goudge *et al.*²⁶, found that one-fifth (20%) of households with ill-health of any kind incurred health expenditures above 10% of total household expenditure. Such levels of health

²⁶ Jane Goudge – Centre for Health Policy (University of the Witwatersrand).

Tebogo Gumedde – MRC/WITS Rural Public Health and Transitions Research Unit (University of the Witwatersrand).

Steve Russell – School of Development Studies, University of East Anglia (Norwich, United Kingdom).

Lucy Gilson – Centre for Health Policy (University of the Witwatersrand).

Anne Mills – London School of Hygiene and Tropical Medicine (London, United Kingdom).

expenditure are categorised as “catastrophic”, in that they could lead to household impoverishment. An in-depth study of expenditure patterns and coping strategies was conducted in a subset of 30 households with chronic illnesses (including HIV and TB) over six months. Households fell into three categories: (1) “highly vulnerable” – experienced a decline in livelihood; (2) “vulnerable” – in danger of a decline in livelihood; and (3) “secure” – livelihood not threatened. The ability to maintain household livelihood in the face of chronic illness was strongly associated with access to grants, i.e. pensions, child care and disability grants (Figure 16). Those with grants were more able to afford regular transport costs to facilities, and were, ironically, also more likely to receive exemptions when utilising hospitals.

The SACOCO study highlighted the difficulties in access faced by poorer households and families facing ill-health – many of which are currently falling through the social welfare net. Goudge *et al.*, therefore, called for a multi-faceted policy agenda to prevent illness-induced impoverishment by improving the quality of and trust in primary health services, reducing (or eliminating) user fees, increasing access to grants (such as child care grants), and subsidising transport to health facilities.

6. Health systems strengthening and ART

6.1 Human resources, HIV and ART

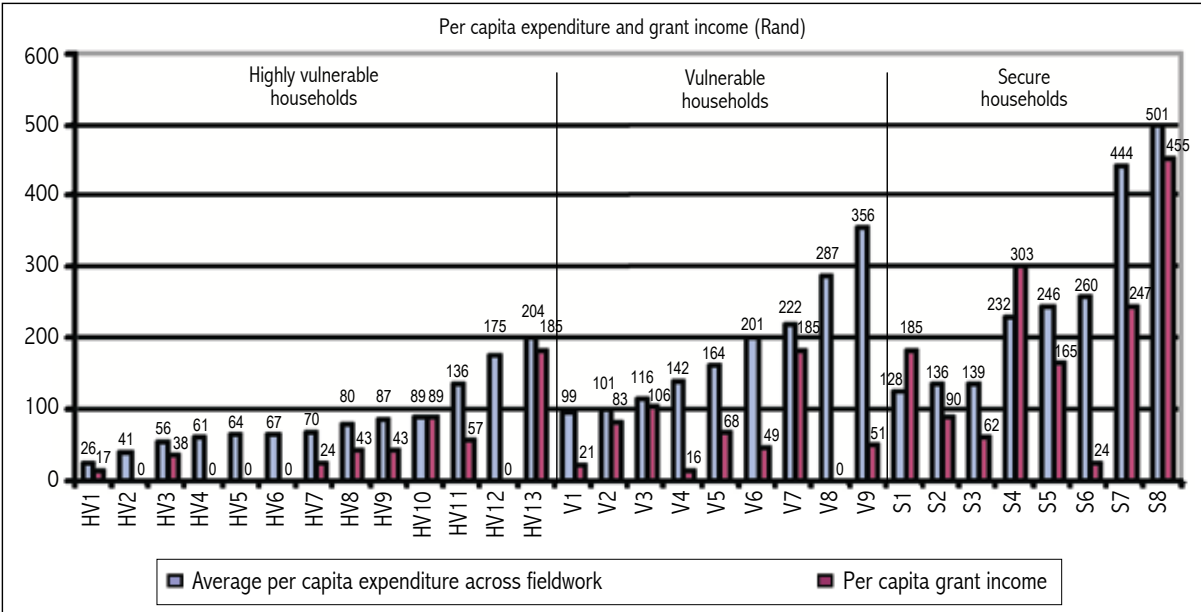
Two sessions at the Round Table were devoted to the theme of human resources. In the one session, case studies of the introduction of ART in the Free State and Scott HSA (Lesotho) in the face of severe human resource shortages, as well as a continental perspective on the role of HIV epidemic in the medical brain drain were presented. The presentations in the other session addressed specifically developments and issues in respect of lay or community health workers.

6.1.1 HIV, stress and the medical brain drain

One of the forces behind the human resource crisis is the emigration of skilled health workers from developing to developed countries. Alok Bhargava & Frederic Docquier²⁷ analysed the relationship between the HIV pandemic, the medical brain

²⁷ Alok Bhargava – Department of Economics (University of Houston, USA).
Frederic Docquier – Catholic University of Louvain (Louvain-La-Neuve, Belgium).

Figure 16 Per capita expenditure and grant income in 30 households with chronic illness



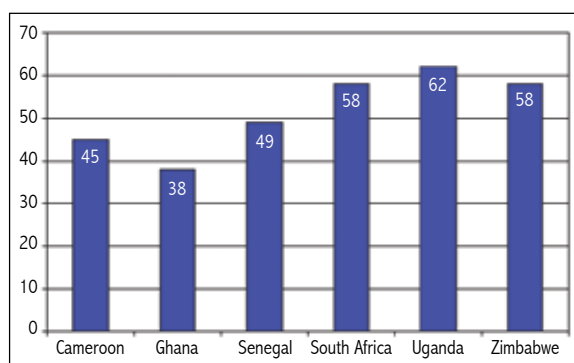
Source: J Goudge *et al.*: *Falling through the social welfare net: illness-induced impoverishment*.

drain, and economic development in sub-Saharan Africa. Combining data on medical migration with data on wages, HIV prevalence and adult mortality as a result of AIDS, they found the following associations:

- Higher wages in some African countries predict a significantly lower medical brain drain
- Higher HIV prevalence in the population can increase the emigration of physicians
- Higher medical brain drain predicts a larger number of adult deaths resulting from AIDS

As background to the presentation, Bhargava & Docquier cited results of surveys of health care workers in selected African countries, which showed that higher salaries were a key motivator for emigration. Stresses associated with caring for HIV/AIDS patients were also cited as a reason for emigration in certain (especially Southern African) countries (Figure 17).

Figure 17 Percentage of staff “stressed” as a result of caring for HIV/AIDS patients in selected African countries



Source: A Bhargava & F Docquier: *HIV pandemic, medical brain drain and economic development in sub-Saharan Africa*.

In the discussions at the Round Table, participants (especially front-line service providers) repeatedly called for greater concern about the needs of providers and in particular their health needs. AIDS-related deaths are one of the main causes of attrition among health workers in Lesotho where an estimated 20.9 health workers per 1,000 are in need of ART treatment. In Malawi, this figure stands at 44.6/1,000. Lynch called for an active approach to retain scarce skills particularly for rural areas, which would include strategies such as: occupational health and safety (HIV testing, Hep B immunisation and ART) services for nurses and nursing students; financial and non-financial incentives (hardship allowance, risk allowance, study tours, continued education, distance learning); and improved

working conditions (radios, solar panels, basic equipment and minor structural renovations).

6.1.2 Human resource impacts of ART in the Free State

Francois Steyn & Dingie van Rensburg²⁸ reviewed data on the deployment and management of human resources for the ART programme in the Free State. The data were obtained from the provincial personnel administrative system (PERSAL), as well as from a longitudinal study of the ART programme in the province. The *Comprehensive Plan* estimated that a comprehensive HIV care and treatment service in South Africa would require amongst others, 975 doctors, 2,924 professional nurses and 661 pharmacists. However, current staff production levels are nowhere near generating the required numbers of health workers. Moreover, in South Africa, nearly one-third of professional nurse posts were vacant in 2006. In early 2007, the vacancy rate for all health professional posts in the Free State stood at a staggering 40%. Not surprisingly, the ART programme in the Free State was unable to attract the required number of personnel. In 2006, 49% of doctor posts, 35% of pharmacist posts, and 31% of dietician posts approved for ART were vacant (Table 8).

Table 8 Filling of posts and vacancy rates in the Free State

Post category	ART programme (August 2006)			Free State vacancy rate – Jan 2007
	Approved	Vacant	Vacancy rate	
Doctors	39	19	48.7%	32.4%
Professional nurses	114	18	15.8%	31.3%
Pharmacists	17	6	35.3%	50.6%
Dieticians	13	4	30.8%	
Social workers	13	6	46.2%	
Total	196	53	27.0%	40.4%

Source: F Steyn & D van Rensburg: *Managing staff shortages for ART: experiences from the Free State*.

²⁸ Francois Steyn and Dingie van Rensburg – both Centre for Health Systems Research & Development (University of the Free State).

It is noteworthy that the Free State's ART programme managed to fill most of the allocated professional nurse posts – only 15.8% were vacant, compared with the provincial average of 31%. However, most of the ART posts were filled through so-called “*lateral transfers*” into the more highly graded posts of the ART programme. Of the 97 ART professional nurses posts that were filled, only 20% were new to the province's public health system – 43% of staff filling posts were drawn from within the same district, 11% from inter-district transfers, and 25% from the same facility where the post was filled. Moreover, evidence suggests that the shifts in personnel exacerbated existing rural-urban inequities within the province. Although it is not clear whether additional staff were recruited into the vacant posts created by the lateral transfers, the more likely scenario is of displacement of staff from the rest of the health system into what is in effect a vertical programme, thus potentially undermining the rest of the health system.

Steyn & Van Rensburg made the following recommendations for provincial action:

- Paying more attention to the equitable deployment of staff within and across districts
- Decentralising the ART programme to more points of care – as is currently being implemented in the STRETCH programme
- Broadening the training on ART beyond the staff in the ART programme
- Integrating the ART programme with other PHC programmes
- Substituting professional nurses increasingly with mid-level nursing cadres and shifting tasks from professional nurses to enrolled nurses and nursing assistants
- Increasing the number of professional health workers trained, including mid-level cadres, such as pharmacy assistants
- Providing more effective supervision and support.

6.1.3 Implementing ART in the context of extreme health worker shortages

Lynch summarised the human resource crisis facing Lesotho along the following lines:

- The availability of 5 doctors/100,000 people – compared with 21.4 and 29.7 doctors/100,000 public sector-dependent population in the Free

State and Gauteng provinces of South Africa, respectively.

- The availability of 0.71 nurses/1,000 population (0.4/1,000 in Scott HSA) – compared with 3.9/1,000 in South Africa.

Under such circumstances, the introduction of a separate, vertical ART programme was clearly unthinkable. The ART programme in Scott HSA was therefore implemented as a comprehensive HIV/TB service in existing structures and processes of the PHC system. It involved intensive theoretical and in-service/on-site training to nurses on the management of HIV-related conditions and ART, and the provision of nurse-oriented guidelines/tools. Additional investments were made by MSF in support systems to health centres:

- A mobile “clinical mentorship” team visiting each health centre on a weekly basis. These visits were structured not only towards clinical care, but also to in-service training, support, monitoring quality and transporting severely ill patients back to the hospital.
- The inception of structured quarterly HIV-TB supervision visits to health centres, using a Clinic Supervision Tool (CST) and TB site-visit checklist. The counselling coordinator formed part of these regular visits.
- Strengthening the laboratory and drug supply functions in the district, employing technicians for the district laboratory and pharmacy.

One of the most important changes made in the Scott HSA was the recruitment, training and employment of lay TB/HIV counsellors from amongst the patients who had been enrolled onto the programme. These workers were extensively trained and empowered to provide a range of core functions in support of the TB/HIV activities at health centres, while an intensive supervision process was instituted (Table 9). There are proposals for the formal accreditation of lay counsellors in Lesotho. While the ability to mobilise this new human resource capacity was crucial to the implementation of the ART programme in Scott HSA, Lynch warned against seeing “task shifting” to lay health workers as the panacea to the human resource crisis. Nurses and other health professionals remain crucial, and strategies to promote increased training, recruitment and retention need to be vigorously pursued.

Table 9 TB/HIV counsellor roles and support systems in Scott HSA, Lesotho

Roles
<i>Clerical support</i> Appointment system, weighing patients, folder and card systems, registers
<i>HIV testing and counselling (HTC)</i> Routing offering, administer HIV tests, family-oriented approach, follow-up counselling, enrol patients in care
<i>TB case finding and adherence counselling</i> Coughing etiquette/triage, TB screening
<i>Support sessions, treatment literacy, empowerment of PLWHAs</i>
<i>ART preparation counselling</i>
<i>Follow-up adherence counselling</i> Pill counts, self reports, adherence interventions
<i>"No Show" and defaulter identification and tracing</i>
<i>"Patient track" and case management</i> Triage of stable adults on ART >6, 12 months
Support systems
<i>Supportive supervision</i> Nurse in charge Counselling coordinator Peer support
<i>Ways to identify and deal with burnout, personal problems</i>
<i>Clear description of duties</i> TB/HIV integration
<i>Criteria for selection of lay workers</i>
<i>Training</i> Modular training curricula In-service coaching Refresher and booster training
<i>Remuneration / career development path</i> Allowance or salary payment system? Part of public service or outside of system?
<i>Time off and benefits</i>

Source: S Lynch: *Providing free HIV/AIDS treatment and care at PHC level in context of HR shortage: MSF experience in Lesotho.*

6.1.4 Experiences with lay and community health workers in other contexts

Uta Lehmann & David Sanders²⁹ reviewed the international experience with CHWs, and highlighted the recent resurgence of interest in CHWs, while also posing the question whether we are actually learning from the past. The term “community health worker” is a generic term for the wide array of agents who are “*carrying out functions related to health care delivery; trained in some way in the context of the intervention; and having no formal professional or paraprofessional certificated or degreed tertiary education*”. Although a typology of CHWs roles is not easy, distinctions can be drawn between *generalist* and *specialist* CHWs, *facility-based* and

²⁹ Uta Lehmann and David Sanders – School of Public Health (University of the Western Cape).

community-based CHWs, and *prevention* and *care* roles. Ongoing training and appropriate supervision appear to be key to successful CHW programmes. Internationally, there are two main choices in the governance of CHWs: firstly, an NGO-driven approach with financing by government, but implemented through NGOs; secondly, full integration into health services and PHC teams – as in Brazil. Historically, CHW programmes were often grafted onto existing services, without thinking through the implications for health service providers or communities. They were thus neither the panacea for weak health systems nor a cheap option to provide access to health care for under-served populations.

Hlengiwe Hlophe & Helen Schneider³⁰ presented findings on regular assessments of the CHW presence, roles and motivations in the Free State. The assessments were conducted as part of the CHSR&D’s longitudinal study in the first 16 PHC facilities involved in the ART programme in the province. Inventories of numbers and roles over time show a consistent presence of CHWs linked to clinics and performing TB/HIV-related functions (Table 10), although numbers varied considerably between facilities and districts. The research also reported a major investment in the training of CHWs, as well as a shift from single-purpose to multi-purpose HIV/TB workers, greater role clarification, the provision of stipends, and moves to create career paths for CHWs into the formal health system. By the third follow-up assessment, however, developments around CHWs appeared to have stagnated with little additional training or active management evident since the previous assessment. Relationships with nurses (designated as supervisors) were often described as difficult, while support, supervision, and possibilities for career advancement remained problematic.

³⁰ Hlengiwe Hlophe and Helen Schneider – Centre for Health Systems Research & Development (University of the Free State).

Table 10 Number and training of CHWs provided in PHC facilities (n=16) providing ART in the Free State, 2004-07

Training of CHW	Baseline	Follow-up 1	Follow-up 2	Follow-up 3
	N (%)	N (%)	N (%)	N (%)
Lay counsellors	28 (12)	10 (4)	13 (5)	18 (8)
Home-based carers	74 (32)	29 (11)	0 (0)	0 (0)
DOTS supporters	72 (31)	21 (8)	22 (9)	12 (5)
ART supporters	0 (0)	5 (2)	1 (1)	0 (0)
Combinations of the above	57 (25)	195 (75)	202 (85)	194 (87)
Total	231 (100)	260 (100)	238 (100)	224 (100)

Source: H Hlophe & H Schneider. *Community Health Workers in the Free State: Integral members of the primary health care system?*

Emmanuelle Daviaud³¹ reviewed the management and integration of CHWs in the Western Cape. She identified two main types of TB/HIV workers in this province:

- Lay and adherence counsellors, supervised and employed through a non-profit organisation (NPO), and funded by the provincial government on annually renewable contracts. These counsellors work full-time and earn R2,000-3,000/month, which is half the monthly package of an entry-level nursing assistant in the formal health system. Supervision and debriefing occur every two weeks with a senior adherence counsellor from the NPO; however, other facility members are not involved.
- Community-based workers who provide home-based care through NPOs funded by the province or the EU “partnership” programme in three-year contract cycles. These CBWs are trained by the Expanded Public Works Programme and paid R1,000/month. Entry requirements are high, i.e. Grade 12. There is insufficient provision of training and also limited funding for professional supervision or administration.

Daviaud’s conclusion is that the approach to NPO contracting and to CHW employment, training and supervision would need drastic change if continuity, quality of services, and sustainability of the system was to be achieved.

³¹ *Emmanuelle Daviaud* – Medical Research Council of South Africa.

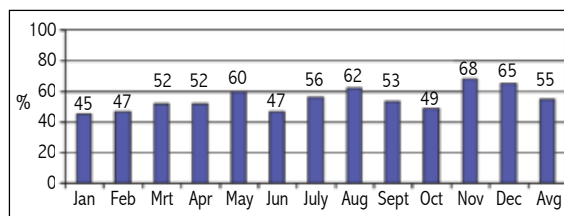
6.2 Integration

6.2.1 Maternal and child health

In separate presentations, Mickey Chopra³², Mary-Ann Davies³³ and Beverly Draper³⁴ argued that the vertical provision of PMTCT and ART services and the weak integration into maternal child health (MCH) services resulted in poor access to HIV care and outcomes in pregnant women and children. Despite the large impact of HIV on maternal and child morbidity and mortality, as well as high levels of utilisation of maternal and MCH, opportunities for HIV prevention and care were nonetheless frequently missed.

Referring to a situational analysis of MCH services in the Amajuba District (KwaZulu-Natal) in 2006, Chopra indicated that although almost all women accepted HIV testing, only 47% to 68% of HIV-positive women ultimately received Nevirapine (Figure 18). Observations of consultations in this district revealed very little active communication with women during pregnancy and in child health services.

Figure 18 Uptake of Nevirapine in pregnant women in Amajuba District (KwaZulu-Natal), 2006



Source: M Chopra: *PMTCT integration*.

Chopra further posed the following questions concerning the integration of PMTCT into MCH:

- What are the human resource requirements to implement an integrated essential package of care?
- What processes need to be undertaken at the provincial/district/facility level in order to ensure good quality integrated care?

³² *Mickey Chopra* – Health Systems Research Unit (Medical Research Council of South Africa).

³³ *Mary-Ann Davies* – Infectious Disease Epidemiology Unit (School of Public Health and Family Medicine, University of Cape Town).

³⁴ *Beverly Draper* – Children’s Institute (University of Cape Town).

- Who will take ownership and drive the integration of PMTCT into MCH?

In her presentation, Davies highlighted the following barriers to children's access to ART: poor communication between antenatal, delivery and post-natal services; low PMTCT programme coverage; the absence of VCT in child health services; and, a lack of confidence in diagnosis, staging and management of children. She described how a programme of outreach and support in the Western Cape enabled PHC services to take increased responsibility for follow-up HIV care in children. She called for greater integration of HIV, starting with testing, in child health services.

Draper, in turn, outlined the current delivery models for pregnant women requiring HAART:

- Introducing a "satellite" of the ARV clinic within the maternal health facility
- Referring pregnant women to a "general" ARV service within the same facility
- Referring women to another facility in the same area or outside of the area.

Of these options, the first provides the best opportunity for continuity of care, while simultaneously addressing the specialised needs of pregnant women. This however, requires better networking between maternal health and ARV/HIV services.

The Mother2Mothers (M2M) programme is a community-based education and mentoring programme for HIV-positive pregnant women and new mothers, provided by other women who recently delivered. The programme seeks to address the barriers to access created by the many service "transitions" from antenatal to delivery, postnatal, child health and HIV services by empowering the users themselves. An evaluation of M2M – presented by Sibongile Mkhize³⁵ – found that, compared with non-participants, participants in M2M had greater uptake of Nevirapine; were more likely to have undergone CD4 counts during pregnancy; report better psychosocial wellbeing; disclose their HIV status; report exclusive infant feeding intentions; and use contraceptives.

Christine Varga & Heather Brookes³⁶ reported research findings on attitudes to early infant HIV

³⁵ *Sibongile Mkhize* – Health Systems Trust.

³⁶ *Christine Varga* – Nozizwe Consulting.
Heather Brookes – Department of Anthropology and Development Studies (University of Johannesburg).

testing in Gauteng facilities. Early testing was perceived as beneficial both by mothers and health care workers. However, stigma, fear and denial remained key challenges that were made more complex by the fact that decisions on whether or not to test the child were "channeled" or "mediated" by the mother and the pressures she herself faced.

6.2.2 Integration of HIV and TB

A large overlap in patient populations and the widespread availability of TB services present significant opportunities for expanding access to HIV services. Refiloe Matji³⁷ outlined the policy and system barriers to achieving this:

- TB and HIV services are well established vertical programmes with limited horizontal integration and synergies between them.
- TB services are decentralised and TB treatment is available in virtually all health services (hospitals and all types of PHC clinics), whereas HIV services are centralised mainly in hospitals and CHCs.
- Bringing HIV care and ART into TB services adds to workloads.
- Monitoring and evaluation systems are not integrated.

Two initiatives that have overcome these barriers were presented. First, Doris Macharia³⁸ outlined various initiatives to integrate HIV and TB in the Eastern Cape. These include introducing HIV care into a large (610 bed) TB hospital managed by a private contractor; a TB screening questionnaire for people newly diagnosed with HIV in PHC facilities; the development of structured clinical records for pre-ART care; and guidelines for TB infection control. Macharia's data show that 70% of HIV-infected TB patients in the hospital had a CD4 count <200, i.e. they were eligible for ART.

Second, Ester Carolus & Liz Thebus³⁹ described the successful introduction of HIV care – including ART – into the TB service at Hout Bay Clinic, a comprehensive PHC clinic serving a population of 20,000 people in Cape Town. The six professional nurses and one pharmacist are supported by a part-

³⁷ *Refiloe Matji* – University Research Corporation.

³⁸ *Doris Macharia* – International Center for AIDS Care and Treatment Programs (Mailman School of Public Health, Columbia University, USA).

³⁹ *Ester Carolus* and *Liz Thebus* – both Cape Town City Counsel.

time doctor and lay workers. At this clinic, 77% of TB patients were co-infected with HIV. All aspects of the service, from patient consultations to programme management were integrated. This resulted in increased case finding, and a reduction in time from presentation to diagnosis of TB – from 32% down to only 12% taking more than 30 days to be diagnosed. With the increased case load there was, however, a decline in treatment success (combined cure and treatment completion) rates – from 90% to 82.4%.

Judy Caldwell & Salla Munro⁴⁰ provided an example of lessons learned and of transfer of innovation from HIV to TB services. Against a background of growing concern with poor TB cure rates, the conventional “daily DOTS” approach to TB was replaced by an “enhanced adherence” model in selected facilities. This new model combined intensive education by adherence counsellors, supported by good quality teaching materials, treatment buddies, systems for self-monitoring, and community-based outreach by treatment supporters. The new model was implemented in the third quarter of 2005 and was followed by significant improvements in TB cure rates – from 54% to 79% in one of the pilot facilities – although treatment completion rates had already been high in these facilities for some time (Figure 19).

⁴⁰ Judy Caldwell – Cape Town City Council.
Salla Munro – Medical Research Council of South Africa.

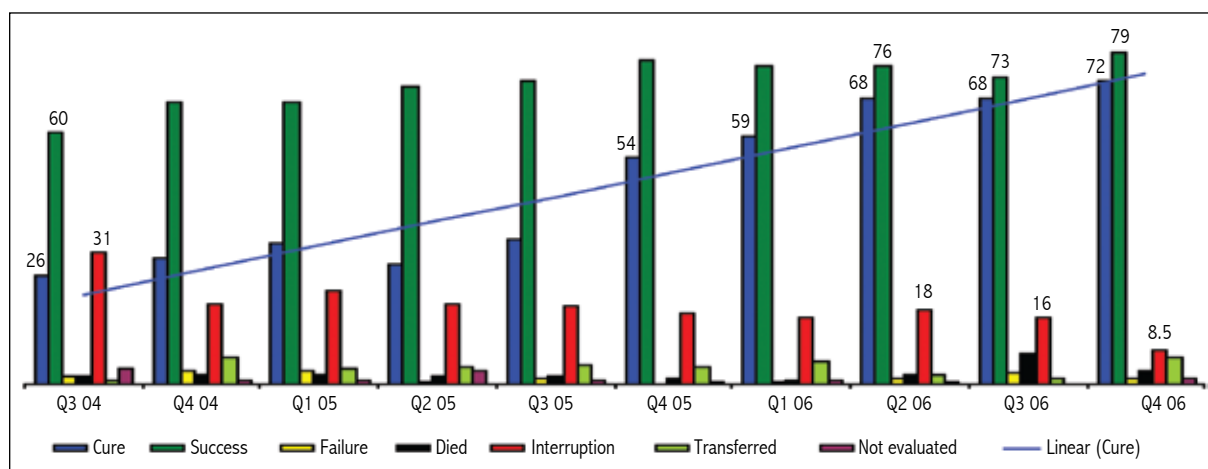
6.3 Monitoring and evaluation systems

The urgent need for a standardised, simple and robust monitoring and evaluation (M&E) system for ART in South Africa was repeatedly raised at the Round Table. In his presentation on the Malawian ART programme, Makombe emphasised the importance of a well designed M&E system. While most provincial ART M&E systems provide information regarding initiation onto ART, systems are not standardised, and there are still major information gaps, such as knowledge of retention. Some provinces fail to collect data analysable in a cohort format data and, as a result, there is little understanding of what is actually being achieved from the programme.

Meg Olsler⁴¹ described the ART M&E system developed and implemented in the Western Cape over the past five years. As with the Malawian programme, this system includes structured clinical records, patient cards, patient registers, and cohort reporting (Figure 20). Apart from the sites involved in sentinel surveillance, it is a manual system at the point of use in facilities, with central entry into an electronic database. Careful attention has been paid to limiting the data elements routinely reported, as well as to simplifying procedures as much as possible.

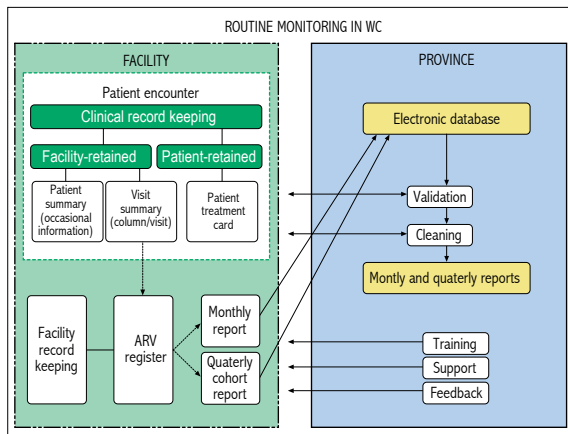
⁴¹ Meg Olsler – Infectious Disease Epidemiology Unit (School of Public Health and Family Medicine, University of Cape Town).

Figure 19 TB outcomes at Site B Clinic, Khayelitsha (Cape Town)



Source: J Caldwell & S Munro: *Enhanced TB adherence pilot project*.

Figure 20 Western Cape approach to M&E of ART programme



Source: M Osler. *Monitoring the ART programme: lessons learned from the past five years in the Western Cape*.

The Catholic Relief Services (South Africa) – the largest faith-based provider of HIV care in South Africa – had by September 2007 enrolled nearly 30,000 people onto HIV care (13,118 on ART) at its 25 treatment sites across eight provinces. Ruth Stark *et al.*⁴² described the M&E system for this programme: it consists of a manual paper-based system; recording of a “*minimum dataset*” in clinical records; a register (that incorporates pre-ART and ART care); monthly reporting and feedback; and, structured annual site evaluations.

Based on the inputs and discussions in this session, the following key M&E issues were identified:

- The need to shift responsibility for the management of the M&E system from the provincial to the subdistrict level, and building cultures of M&E at all the levels of the system.
- The absence of career paths in the M&E system. Meg Osler proposed a career path from entry-level at Grade 4 (reception clerk) to Grade 8 (subdistrict M&E officer). Such a career structure would be made possible by ensuring that sufficient resources were allocated to M&E in provincial budgets – recommended in the *National Strategic Plan* as 4-7% of programme budget.
- The need for stewardship at the national level to simplify and streamline reporting and indicators. In the Western Cape, facilities are required to report on an unrealistic number of indicators in different formats. These include: a *National Monthly CCMT Data Collection Tool* (157 data elements); the provincial *Routine Monthly*

⁴² Ruth Stark and Marisa Wilke – both Catholic Relief Services South Africa.

Alison Munro – South African Catholic Bishops’ Conference (AIDS Office, Pretoria).

Robin Wood and Des Martin – both Kimera Solutions.

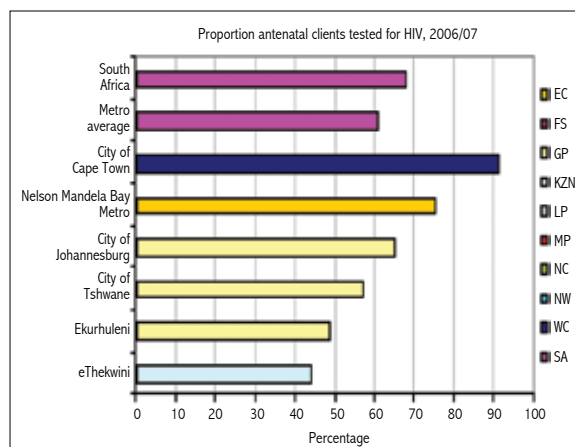
Reports (13 data elements); the quarterly *DORA* (Division of Revenue Act) reports (30 data elements); and quarterly CCMT reports involving long and short responses. The pressure to provide these reports often led to submission of poor quality data.

- A well designed and simple paper-based ART monitoring system can be extremely effective, while electronic systems do not always provide the best solutions. Both approaches require good basic systems, i.e. data collection, reporting, etc. In graduating to electronic systems, the systems already available in the country should be built upon, rather than creating new systems.
- ART programmes provide excellent opportunities for strengthening M&E systems more generally.

7. Prevention, HIV testing and ART

The Round Table conceded that, from a national perspective, South Africa had largely failed in the prevention of mother to child transmission (PMTCT) of HIV. As already discussed, one of the reasons was the inability of a vertically implemented PMTCT programme to address the many points of fall-out along the PMTCT “cascade”. However, as Barron pointed out, the entry-point – i.e. antenatal testing – still remains a problem in many parts of South Africa, even in metropolitan areas where, on average, only 60% of pregnant women attending public antenatal services were tested in 2006/7 (Figure 21).

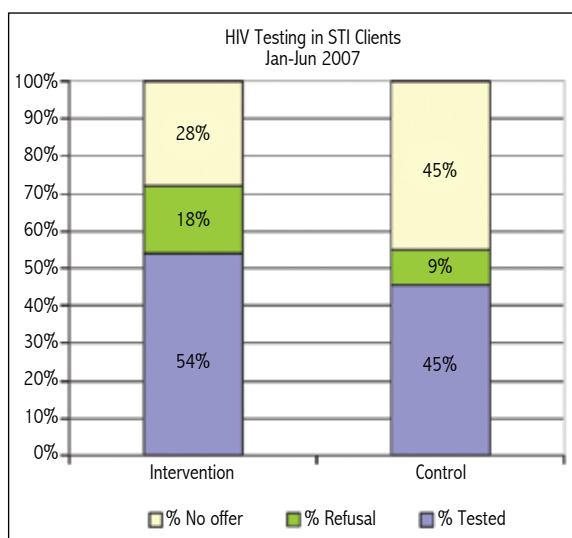
Figure 21 Antenatal HIV testing in South Africa



Source: P Barron: *ARVs and the MDGs: What are the health system priorities?*

Karen Jennings⁴³ reported on a pilot project of provider-initiated testing and counselling (PITC) in STI services of the City of Cape Town. In this model, nurses routinely provide information to patients and solicit informed consent. They also perform the HIV test. A counsellor then gives the test result, and does post-test counselling. In clinics implementing the model, there was an increase in offers of testing and also in uptake of testing, compared with matched controls (Figure 22). Interviews with patients showed a high degree of acceptance of the process: patients felt they had received enough information; they understood their right to refuse a test; and they had had sufficient time to consider what they would do if the test result was positive.

Figure 22 Uptake of HIV testing amongst STI clients in clinics implementing provider-initiated testing compared with controls providing standard VCT



Source: K Jennings: *Informed consent model for HIV testing in STI clients: preliminary report of pilot.*

Two presentations directly addressed the prevention effects of ART. In the first instance, Neil Martinson⁴⁴ found that people attending ART services in urban Soweto were more likely always to use condoms with regular or casual partners than in rural Tintswalo. Disclosure of HIV status was associated with a three-fold increase in condom use with regular partners.

⁴³ Karen Jennings – Cape Town City Council.

⁴⁴ Neil Martinson – Perinatal HIV Research Unit (University of the Witwatersrand).

Table 11 Condom use in urban and rural ART cohorts

Site	Partners	Gender	Always (%)
Soweto (urban)	Regular partner	women	77
		men	81
	Casual partners	women	68
		men	71
Tintswalo (rural)	Regular partner	women	46
		men	52
	Casual partners	women	51
		men	43

Source: N Martinson: *What can we learn from an urban/rural cohort of HIV-infected adults transitioning onto HAART?*

In the second instance, Mead Over *et al.*⁴⁵ presented data on the role of ART awareness on risk behaviour among non-patients in the general populations of India, Thailand, Burkina Faso and Ghana. They outlined a typology of the population effects of ART on HIV transmission as either behavioural or biological, and as either potentially beneficial or adverse (Table 12).

Table 12 Possible effects of ART on HIV transmission: (“externalities”)

Type of Effect	Direction of effect	
	Beneficial (Slow transmission)	Adverse (Speed transmission)
Biological	<p>Reduce infectiousness. ART may lower viral loads and may therefore lower the risk of transmission per sexual contact.</p>	<p>Select for resistance. Imperfect adherence to ART selects for resistant strains of the virus, which can then be transmitted.</p> <p>Longer duration of infectivity. The greater longevity of HIV infected people taking ART has the unintended negative consequence of increasing the period in which the patient can transmit the virus.</p>
Behavioral	<p>Encourage prevention, especially diagnostic testing. ART may increase the uptake rates of prevention activities, particularly voluntary counseling and testing.</p>	<p>Off-setting behavior. People receiving ART, and HIV positives and negatives in the surrounding community, may engage in more risky behaviors than they would if ART were unavailable.</p>

Source: M Over *et al.*: *The impact of ART awareness on risk behavior among non-patients: India, Thailand and Burkina Faso.*

⁴⁵ Mead Over – Center for Global Development (USA).

Damien De Walgüe and Harounan Kazianga – Development Research Group (World Bank, USA).

Findings from cross-sectional surveys have established a strong association between perceived availability of ART and uptake of VCT and, in some contexts, an increase in risky sexual behaviour. However, cross-sectional surveys suffer the potential problem of “*reverse causality*” i.e. people who have risky behaviour may selectively seek out knowledge of ART services, rather than awareness of ART being the cause of risky behaviour. Mead *et al.* called for longitudinal surveys to determine the impact of ART access on HIV-negative populations, and for the routine inclusion of questions on ART awareness in HIV behavioural surveys.

8. Conclusions and recommendations

In a concluding session four panelists – Brian Pazvakavambwa (WHO), Mary Kawonga (Wits School of Public Health), Peter Barron (Health Systems Trust) and Yogan Pillay (Department of Health) – were asked to identify their key insights and recommendations from the Round Table. These panelists were chosen because of the broader perspective they offered on health systems and HIV, rather than specifically ART. All four advocated a move away from a narrow focus on ART, and that the programme be more firmly located within a comprehensive approach to HIV, health systems development and social policy. The momentum provided by the ART programme could be better harnessed to accelerate prevention – PMTCT, positive prevention, condom distribution, etc. – and to strengthen the health system. To achieve this would require that

- a population- and district-based approach to implementation be established
- care and prevention strategies be addressed in an integrated manner
- PHC teams be strengthened
- red tape and regulatory barriers to efficient use of human resources be removed
- supervision be improved
- simplified and standardised approaches to M&E be introduced.

Greater coherence in implementation was required. One panellist proposed the following key elements of a “*keep-it-simple*” approach:

- Implement routine provider-initiated HIV testing and counselling at all available opportunities in the health system
- Focus on preventing mother-to-child transmission
- Provide HIV/ART treatment in all health facilities, and integrate such treatment into TB and MCH services
- Implement a simplified and standardised national M&E system

In summary, the following key recommendations for policy could be drawn from the deliberations during the Round Table:

1. Shift the focus of ART implementation from ART sites to districts and sub-districts

At the meeting compelling evidence was provided of district-/subdistrict-based approaches to implementation that have achieved high levels of ART access by strengthening the existing systems, and specifically the PHC system of the district. Delegates indicated that they had defined needs and set targets for the response at the population level, and had invested in strengthening (sub)district capacity in planning, managing and monitoring and evaluation systems. The meeting called for a move from site accreditation processes to district accreditation processes.

2. Mobilise and strengthen the PHC system

By adopting simplified approaches to HIV care, such as breaking it up into key steps, the existing PHC system can be mobilised to provide for most HIV care needs. However, this requires investment in strengthening systems and PHC teams. Several examples of enhanced training and support systems – including ongoing on-site mentoring and decision-support tools – to enable this were provided at the meeting. Increasing the numbers of the support staff, employing community health workers – such as adherence counsellors – and considering the most effective use of existing personnel were key short-term strategies. Steps to overcome regulatory barriers, such as incorporating ART into the standard treatment guidelines and the PHC Essential Drugs List, need to be addressed. In the medium term, the composition and numbers of staff in PHC facilities need to be reviewed in the light of the new demands and expanding workloads at this level.

The potential for task shifting to community health workers is high. Removing regulatory barriers to “pricking” by lay counsellors will greatly expand access to testing. Yet, there are a number of challenges to the effective and sustainable use of CHWs in South Africa: support systems, supervision and integration into facility teams are weak and do not promote quality, continuity and sustainability. A greater understanding of different approaches to roles, to management and to contracting of CHWs is required across the nine provinces.

3. Integrate HIV and TB care

HIV and TB care can be provided as one service within PHC settings. In urban areas, HIV care can be introduced into existing local government TB services. A key challenge is to shift from two historically vertical services to one integrated approach, thereby bringing together separate management lines and M&E systems. TB services will definitely benefit from approaches to adherence management followed in HIV services.

4. Focus on PMTCT, and the treatment of children and pregnant women

The barriers to PMTCT will only be overcome if the programme is fully integrated into existing maternal and child health services. As a first step, concerted efforts are required to increase the offer and uptake of HIV testing (including PCR testing of infants) in these services. Peer support strategies that seek to inform and empower women, starting in the antenatal period, may be an effective way to surmount the difficulties of access.

5. Address loss to follow-up

In a rapidly expanding programme, where facilities may become congested, systems for tracing drop-outs come under strain and waiting times increase. The consequence is that patients drop out of care more easily. Strategies to minimise the loss to follow-up thus need to be developed and implemented. These include reducing barriers to regular access – such as opening hours, transport costs, patient-retained records, three-month prescriptions and fast queues. It appears that smaller, more accessible services spread more widely across the system – rather than large, high-volume, central ART facilities – promote access and adherence to ART.

6. See the system from the household and patient’s perspective

Understanding household barriers to utilisation of services (such as transport costs) and seeing the system from the patient’s perspective (difficulty of taking time off work to attend services) will minimise negative outcomes and build trust in the public health system. Ways of promoting access to user-friendly services need to be identified.

7. Simplify and standardise approaches to implementation

Access and quality will be promoted by simplifying approaches to programme implementation for patients (limiting the complexity of care pathways), programme governance (identifying key priorities), and local providers (breaking the process down into manageable steps). The systems that require standardisation – such as M&E – need to be identified, while always taking into account specific local and provincial needs and systems.

8. Strengthen prevention and the health system response to other diseases

The large investments in HIV treatment and ART are only sustainable if they enhance prevention (provider-initiated testing, PMTCT, positive prevention), strengthen TB control and chronic disease care, and build the PHC and the district health system.

9. Improve dialogue

Implementation of these recommendations can only occur if there is improved dialogue between researchers, policy makers and service providers. Dialogue will promote the transfer of lessons between subdistricts, districts and provinces, and will ultimately harmonise and simplify approaches.

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