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Re- engineering of Primary Health Care in South Africa

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Cervical Cancer and HIV

December 2012 Volume 3 No. 4

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inside

SOUTHERN AFRICAN HIV CLINICIANS SOCIETY

HIV Nursing matters
Focuses on Primary Health Care Re-engineering

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Cervical Cancer and HIV

guest editorial

Dr René English

Health Systems Trust Cape Town, MBChB (UCT), MMED (UCT), FCPHM (SA), PhD (UCT)

Primary Health Care (PHC) has once again been thrust into the spotlight in South Africa through the recent introduction of a range of policy reforms, the most notable being the Negotiated Service Delivery Agreement (NSDA), a performance agreement signed by the Minister of Health, which underpins the National Department of Health's goal to improve the health status of all South Africans through attaining the Cabinet-approved outcome of "A long and healthy life for all South Africans (Outcome 2)". The four strategic outputs of the NSDA are to increase life expectancy; decrease maternal and child mortality; to combat HIV and AIDS and decrease the burden of disease from TB; and to strengthen health system effectiveness. The concept of PHC re-engineering has been identified as the mechanism for transforming the health system to achieve these goals and is embedded in Output 4 (strengthening health system effectiveness). Three streams were identified to implement PHC re-engineering: electoral ward-based PHC outreach teams, district based specialist teams, and school health services.

Since 2010, much progress has been made in the implementation of the three streams. Pillay, in his October 2012 newsletter, reported that 472 teams in 337 wards in seven provinces were established-5000 CHWs had completed field training-more than 200 teams had started to visit homes since March 2012-team leaders were orientated and 25 trainers trained to orientate ward teams. On the 11 October 2012 the School Health Programme was officially launched and school health mobile sets were procured (each set including PHC, Eye Care and Dental mobiles). The District Clinical Specialist Teams were launched in September 2012, a national induction programme was held, and more than 170 doctors and nurses were appointed by the provinces. Thirty-four advanced midwives, 23 paediatric nurses and 35 PHC nurses were included in this number.

As is evident from the above, on-going implementation both nationally and provincially is steadily progressing. Furthermore, it is clear that nurses are critical for strengthening PHC and are indeed the backbone of the health system. But in this new era of policy reform, we should take care to learn from past experiences. Walker reported that the implementation of the removal of user fees and other South African national health policies in 1996 was impacted by nurses' values and norms and this in turn weakened the policy translation process at the local level. Similar observations were reported in other studies.

Three streams were identified to implement PHC re-engineering: electoral ward-based PHC outreach teams, district based specialist teams& school health services.

Thus, in the light of the above discussion a few questions emerge. How will it be ensured that PHC re-engineering is translated into action by health professionals, mainly nurses (the street-level bureaucrats) who work at the coalface? Furthermore, which factors pertaining to implementation at this level will serve to act as barriers and facilitators? Finally, what are the best ways to identify and disseminate good translation practices? It can be argued that the answers to these questions could inform and further enhance the implementation of a broad range of nursing-related activities and policies.

This edition, dedicated to PHC, contains articles ranging from screening activities, a PHC guideline for nurses, management of clinical conditions and pharmacological matters amongst others, further highlighting the multitude of services and activities health professionals, particularly nurses, working at that level are expected to deliver and possess knowledge of. The articles speak to issues pertaining to task-sharing and task-shifting, the requirement for improved leadership and management, clinical and corporate governance and training, and reflect the complexity of the health system and the additional responsibilities policy

reforms coupled with a quadruple burden of disease put on nurses.

Given these complexities these articles call to mind the need to promote methods of scientific enquiry, such as Health Policy System Research (HPSR), which will enable policymakers to support PHC implementation through identifying local solutions for policy translation, developing tailored innovations which address identified barriers and bottlenecks, and identifying and disseminating good implementation practices.

By Dr René English, Senior Programme Manager

REFERENCES

National Department of Health. Negotiated Service Delivery Agreement. A long and healthy life for all South Africans. Pretoria: National Department of Health; 2012.

National Department of Health. Provincial guidelines for the implementation of the three streams of PHC re-engineering. Pretoria: National Department of Health 2011.

Pillay Y. DHS News. Newsletter of the District Health System. October 2012. Vol 5. No 1. Accessed on 10 October 2012. URL: http://www.doh.gov.za/docs/newsletters/2012/District_Health_System_Newsletter.pdf.

Walker L, Gilson L. 'We are bitter but we are satisfied': nurses as street-level bureaucrats in South Africa. Soc Sci Med.2004;59(6):1251-61

Lehmann U, Gilson L. Actor interfaces and practices of power in a community health worker programme: a South African study of unintended policy outcomes. Health Policy and Planning. 2012:23:1-9. doi:10.1093/heapol/czs066

Scott L, Mathews V, Gilson L. Constraints to implementing an equity-promoting staff allocation policy: understanding mid-level managers' and nurses' perspectives affecting implementation in South Africa. Health Policy and Planning 2012;27:138–146. doi:10.1093/heapol/czr020

Message from the president

Dr Francesca Conradie:
President Southern African Clinicians Society

What is all the hype about Primary Health Care Re-engineering? I think that if I am going to put into simple terms, it is really about getting it right the first time. The goals are to increase life expectancy, decrease child and maternal mortality, combating HIV and TB and the burden caused by these diseases and finally health systems strengthening. It means that instead of waiting for people to come to us, we will be sending community health care worker to people's home and schools. We will find the most at risk individuals right where they live and just get the basics right. If we find a person who is HIV infected when they are well, we know that it is much easier to keep them well with early initiation of ART, exclusion of TB and starting IPT if needed. Then we need to help these people to adhere to their medicines. If we find someone who has TB, they must finish their TB treatment. 85% cure rate is not good enough. As I have said, get it right the first time. This is how we will improve the health of South Africans. As usual, our Minister of Health has got it right in his vision. And the good part is that we will all have role to play in this ambitious project.

And finally, the end of the year is almost here. Do not forget the conference in Cape Town. This will be a chance to meet some of the most amazing HIV Clinicians of all types working in diverse areas. There are great speakers and some very challenging debates.

Community Health Care workers will be sent to people's home and school

HIV Nursing matters

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Plan to distr condoms at s

October 5 2012 at 01:28pm
By Bheki Mbanjwa

The national Department of Health, with consent from parents, plans to distribute condoms at schools.

Related Stories

- Parents to decide on condoms for pupils

Pietermaritzburg, KwaZulu-Natal - The national Department of Health, with consent from parents, is to forge ahead with its plans to distribute condoms at schools.

ribute schools

Health Minister Aaron Motsoaledi said after a meeting of the South African National Aids Council in Pietermaritzburg on Thursday that those opposed to the plan were introducing a "silly debate to a very serious issue".

Motsoaledi said the distribution of condoms at schools would be done in a responsible manner.

"We are not going to park a truck outside a school and line up children and say to them 'come get condoms'."

He said pupils would be offered counselling as part of the department's Integrated School Health Programme.

The minister said the matter had been discussed with principals and school governing bodies across the country, and that there was proof that making condoms available to schoolchildren would benefit them.

At one KwaZulu-Natal school, about 60 pregnancies had been reported he said, adding that the number of pregnant pupils fell by half after the first year of distributing condoms. The idea of condoms at schools has not been well received in some quarters.

The IFP was concerned that it would promote sexual promiscuity among under-aged youth.

"Government seems to have forgotten that the age of sexual consent is 16," said IFP MP Alfred Mpontshane. "Giving condoms to kids is encouraging them to break the law."

Basic Education Department spokesman Panyaza Lesufi said a joint meeting of the departments had resolved that condoms would be distributed to schools, as and when parents' permission was obtained.

He said his department would however; continue to prioritise promoting abstinence from sex.

Meanwhile, Motsoaledi also announced a government plan to introduce a fixed dose combination (FDC) of anti-retroviral drugs to replace the multi-pill regimen available to HIV-positive people.

HIV-positive people on ARVS would now have to take one tablet, either once or twice a day, rather than the three tablets currently taken.

The minister said FDC would be part of the new ARV tender which comes into effect next year.

Lobby groups, such as the Treatment Action Campaign (TAC), have recommended the Health Department include a fixed dose combination on the new tender.

"FDCs make prescribing, dispensing and monitoring treatment easier for nurses and pharmacists. Also, widespread use of FDCs makes ordering and monitoring ARV stocks simpler," the TAC said.

Motsoaledi said his department had yet to decide on the brand of the FDC drug. -

Daily News
From IOL Newsletter, www.iol.co.za

Primary Health Care

To strengthen the health system, the department needs to undertake a number of equally important initiatives. This includes the need to change health service delivery from a curative model to one that promotes cost-effective primary healthcare (PHC) as close to the community and households as possible. This must be supported by strong enhancements in management and supervision of facilities.

The department, with the help of key partners, will develop and implement a model for delivering PHC services that gives incentives for health promotion and disease prevention at the household and community level.

The department will determine the sphere of government that should be responsible for delivering PHC services and environmental health services at local level.

All PHC facilities will undergo quality assessments and accreditation processes.

The department will develop a policy framework that delineates the scope of services within PHC and the personnel that should form part of the PHC team Ⓡ

HIV and AIDS

HIV, AIDS and Tuberculosis contribute significantly to the burden of disease faced by South Africans. This is particularly true for poor and vulnerable groups.

This is why the government has decided to put a huge effort into addressing HIV and AIDS and TB in an integrated manner. The most important strategy to combat these diseases is the HIV and AIDS Counselling and Testing (HCT) Campaign. The HCT campaign will scale up the integrated prevention strategy based on:

- behaviour change
- use of barrier methods
- providing medical male circumcision
- scaling up syndrome management of STI
- early prevention of mother-to-child transmission (PMTCT).

Another aim of the HCT Campaign is that people should know their status early. This will be done by massively scaling up HCT services in public and private facilities, homes, workplaces and public spaces.

Once people know their status, the government will show people the benefits of prevention and early access to treatment. To achieve this the department will work closely with social partners to promote open dialogue among communities, civil society and social partners.

To achieve results the department will have to increase the number of people on Anti-Retroviral Therapy (ART).

The focus of the health system's HIV, AIDS and TB programmes will be to provide health services by taking advantage of the re-engineered primary healthcare (PHC) approach that is centred around communities and households. HIV, AIDS and TB services will be completely integrated with PHC services. Ⓡ

National Health Insurance

The National Health Insurance (NHI) is a financing system that will make sure that all citizens of South Africa (and legal long-term residents) are provided with essential healthcare, regardless of their employment status and ability to make a direct monetary contribution to the NHI Fund.

Why does South Africa need national health insurance?

Healthcare is a human right – this is a widely accepted international principle. This right should not depend on how rich we are or where we happen to live. The right to obtain healthcare is written into our Constitution.

But large numbers of our people continue to die prematurely and to suffer unnecessarily from poor health. Treatable conditions are not being treated on time and preventable diseases are not being prevented.

This is in spite of the fact that government has tried its utmost since 1994 to ensure that everyone in this country has equitable access to necessary healthcare services. There are still serious challenges mainly caused by a skewed healthcare financing system. Without NHI, the burden of disease in the country will not be reduced because the majority of the population – and the section suffering the greatest ill health – will not access good quality healthcare.

What healthcare services will be funded by NHI?

The NHI will offer all South Africans and legal residents access to a defined package of comprehensive health services. The state is committed to offering as wide a range of services as possible. Although the NHI service package will not include anything and everything, it will offer care at all levels, from primary health care, to specialised secondary care, and highly specialised tertiary and quaternary levels of care.

Examples of what the NHI package will exclude are:

- Cosmetic surgery that is not necessary or medically indicated but done as a matter of choice – for instance, botox, liposuction and face-lifts.
- Expensive dental procedures performed for aesthetic purposes.
- Expensive eye-care devices like trendy spectacle frames.
- Medicines not included in the National Essential Drug List except in circumstances where the complementary list has been approved by the Minister of Health.
- Diagnostic procedures outside the approved guidelines and protocols as advised by expert groups.

The benefits provided will cover preventive, promotive, curative and rehabilitative health services. It is important to note that emphasis will be placed on prevention of disease and promotion of health. The present healthcare system places undue focus on curing of disease and performance of procedures when people have developed complications.

Will the NHI destroy the private sector?

No, the NHI is not intended to destroy the private sector. It will actually make the sector more sustainable by making it levy reasonable fees. The intention of NHI is rather to make sure that citizens are able to use both the public and private sectors in such a way that they complement each other rather than one undermining the other. At the present moment, private healthcare is only for the rich. NHI is trying to blend the two in a more sustainable manner that benefits the population.

Will private medical schemes be abolished and will private healthcare providers be forced to contract with NHI?

Government does not intend to abolish private medical schemes if individuals members wish to keep them.

Participation in NHI is solely a matter of choice for the individual healthcare provider. However, those that choose

The NHI does not intend to destroy the private sector, it will make it more sustainable by making it levy reasonable fees.

to participate will need to meet certain requirements that will be prescribed under the NHI policy. These will include compliance with quality standards, provision of a package of services that will extend to prevention of diseases and promotion of health, acceptance of capitation as a method of payment instead of fee for service and appropriate pricing mechanisms.

If people can afford to buy private healthcare, will they have to participate in NHI?

We need to make a distinction between a citizen participating in the NHI as a contributor and a citizen participating in NHI as a patient. If you earn above a certain income you will be required by law to make a contribution to the NHI Fund. It will not be possible to opt out of this responsibility.

However, as a patient, if you wish to make use of services of a healthcare provider who is not accredited and/or who chooses not to contract to NHI, you would have to pay the provider directly or else maintain medical scheme cover (in addition to making NHI contributions).

How will the quality of healthcare be ensured under the NHI?

Quality will be ensured through three mechanisms:

Firstly, there needs to be a radical improvement in the quality of services in the public health facilities. This means massive investment in improvement of *health infrastructure*, both buildings and equipment.

Then, in every single health institution, certain basic *core standards* must be complied with. To *ensure adherence* to standards, an independent "watchdog" body called the Office of Health Standards Compliance will be established by an Act of Parliament.

Thirdly, there needs to be a radical change to *healthcare management* within the public healthcare system in line with the 10 Point Programme of the Department of Health: *"Overhauling the health care system and improve its management"*. Regulations will include measures to standardise hospital care across the country and to ensure that managers of different categories of hospitals have specific skills, competencies and appropriate qualifications.

What are the processes going forward after the publication of the Green paper?

The purpose of the Green Paper is to outline the broad policy proposals for the implementation of NHI. The document is published for public comment and engagement on the broad principles. After the consultation process the policy document or White Paper will be finalised. Thereafter draft legislation will be developed and published for public engagement. After public engagement the legislation will be finalised and submitted to Parliament for consideration. After Parliamentary approval, the Bill has to be approved by the President of the Republic.

What will happen in April 2012?

Piloting of NHI will commence in ten selected districts. The Department of Health is busy conducting an audit of all public health facilities in our country. The selection of the 10 districts will be based on the results of the audit. Consideration will be given to a combination of factors such as the district's health profile, demographics, income levels and other social factors impacting on health, health delivery performance, management of health institutions and compliance with quality standards.

Will people be required to pay NHI contributions in 2012?

No. In 2012 we will start piloting NHI to help us finalise how the service benefits will be designed, how the population will be covered and how the services will be delivered. A special Conditional Grant will be provided in the 2012 budget to fund the pilot projects.

What will happen in the first five years of NHI implementation?

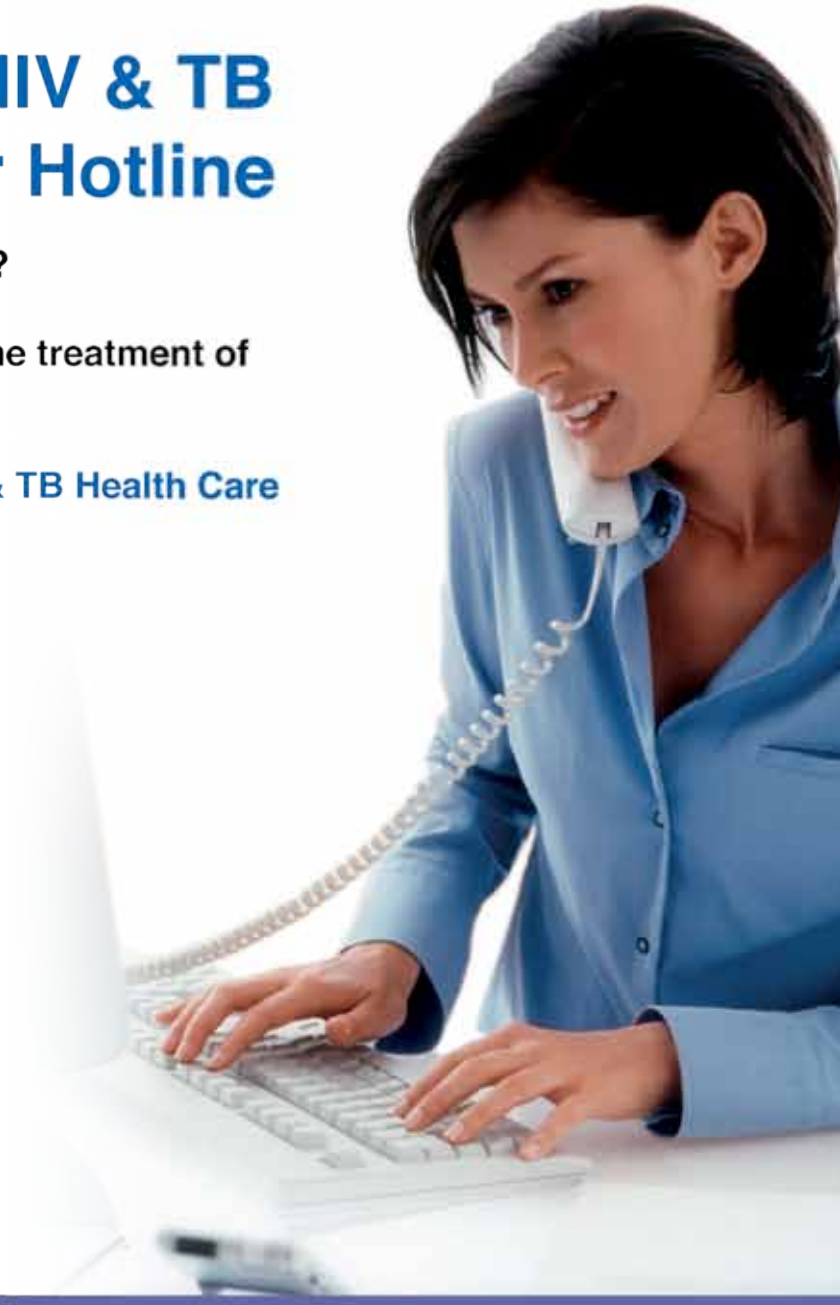
The first five years of NHI will include pilot studies and strengthening the health system in the following areas:

- Management of health facilities and health districts
- Quality improvement
- Infrastructure development
- Medical devices including equipment
- Human Resources planning, development and management
- Information management and systems support
- Establishment of an NHI Fund.

The news article is from The National Department of Health website ®

If a person earn above a certain income he/she will be required by law to make a contribution to the NHI fund.

Toll-Free National HIV & TB Health Care Worker Hotline



Are you a doctor, nurse or pharmacist?

Do you need clinical assistance with the treatment of your HIV or TB patients?

Contact the TOLL-FREE National HIV & TB Health Care Worker Hotline

NATIONAL HIV & TB HEALTH CARE WORKER HOTLINE
0800 212 506

0800 212 506 / 021 406 6782

Alternatively send an SMS or "Please Call Me" to 071 840 1572

www.hivhotline.uct.ac.za

The Medicines Information Centre (MIC) situated within the Division of Clinical Pharmacology, Department of Medicine at the University of Cape Town is the largest and only clinically-based medicine information centre in South Africa.

In collaboration with the Foundation for Professional Development and USAID/PEPFAR, the MIC provides a toll-free national HIV & TB hotline to all health care workers in South Africa for patient treatment related enquiries.

What questions can you ask?

The toll-free national HIV & TB health care worker hotline provides information on queries relating to:

- HIV testing
- Post exposure prophylaxis: health care workers and sexual assault victims
- Management of HIV in pregnancy, and prevention of mother-to-child transmission
- Antiretroviral Therapy
  - When to initiate
  - Treatment selection
  - Recommendations for laboratory and clinical monitoring
  - How to interpret and respond to laboratory results
  - Management of adverse events
- Drug interactions
- Treatment and prophylaxis of opportunistic infections
- Drug availability
- Adherence support
- Management of tuberculosis and its problems

When is this free service available?

The hotline operates from Mondays to Fridays 8.30am – 4.30pm.

Who answers the questions?

The centre is staffed by specially-trained drug information pharmacists who share 50 years of drug information experience between them. They have direct access to:

- The latest information databases and reference sources
- The clinical expertise of consultants at the University of Cape Town's Faculty of Health Sciences, Groote Schuur Hospital and the Red Cross War Memorial Children's Hospital

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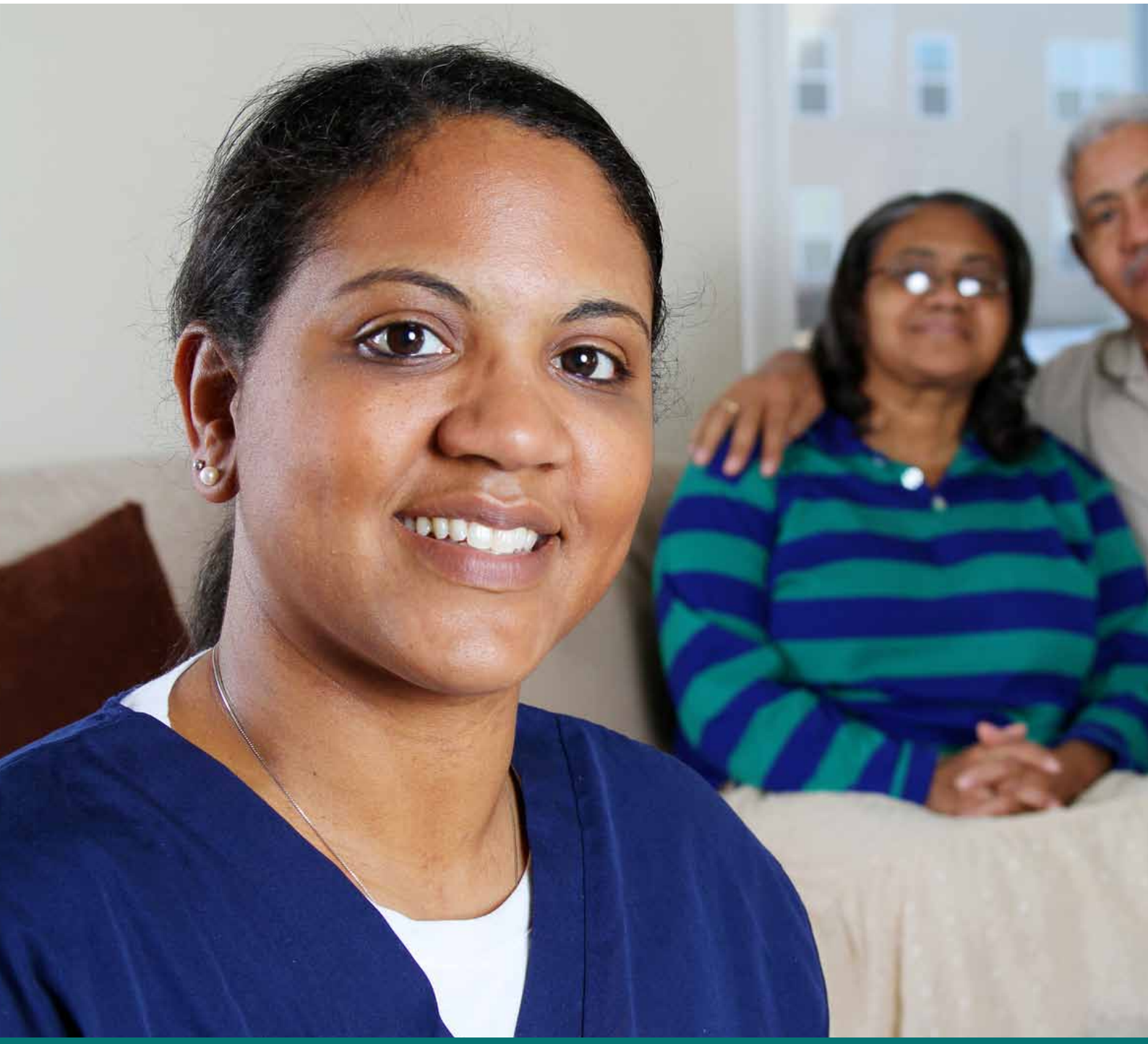
Re-engineering of Primary Health Care in South Africa

This article is a summary of the Department of Health (2011) Provincial Guidelines for the Implementation of the three streams of PHC Re-engineering. (4 September 2011) written by Hasina Subedar, Peter Barron and Yogan Pillay



In 2010 the fourth democratic election ushered in a new President and a new set of Ministers who were determined to tackle the challenges facing all sectors within the country.In the health sector four priority areas were identified.

Health Sector Priorities

Increasing life expectancy,

Reducing maternal and child mortality rates,

Combating HIV and AIDS and decreasing the burden of disease from TB, and

Strengthening the effectiveness of the health system.

Primary Health Care (PHC) has been the cornerstone of health reform in South Africa. Since 1994 all health policy and legislation emphasised the need to strengthen PHC service delivery especially with regard to improving access to health care for all its inhabitants. The country has also over the last decade faced declining health indicators for maternal and child mortality and a decline in life expectancy. This decline has been reversing for the last two or three years.

During this period when the new government was faced with the enormous challenges of redressing the serious impact that apartheid had on the majority of South Africans, the country was faced with the enormous problems created by the HIV pandemic. The impact of HIV pandemic on the South African society, already faced by a health care system with multiple challenges, high unemployment and poverty and a poor education system, was profound.

In 2010 the fourth democratic election ushered in a new President and a new set of Ministers who were determined to tackle the challenges facing all sectors within the country. In the health sector four priority areas were identified.

The Minister of Health was tasked with addressing these four priorities as part of his National Service Delivery Agreement (NSDA) with the President of the country. The re-engineered PHC strategy was identified as the vehicle that will drive the achievement of the NSDA targets.The re-engineered PHC strategy is not a new one; it recognises that the existing District Health System (DHS) will remain the vehicle for the delivery of PHC services. While there is acknowledgement that the DHS has been widely implemented throughout South Africa it has not yielded the desired results. Over the years the preventative aspects and the principles of community involvement and participation, which are the fundamental pillars of PHC, were not sufficiently emphasised. Health services over years have remained largely passive, with a curative orientation and based on individual health care.

To address these challenges the PHC re-engineered approach focuses greater emphasis on health services pro-actively reaching out to families with the emphasis on keeping them well through health promotion and preventive activities. There is also greater emphasis on outreach into communities and homes of families with family censuses; early identification of individuals within families at high risk; greater interaction with communities to get their support for participation in maintaining and improving their own health and

Health services over years have remained largely passive, with acurative orientation .

most importantly amongst health workers much more of a team approach to health care. So while the re-engineered PHC is not a new innovation it by and large ensures that neglected principles of PHC are better implemented. The re-engineered approach to providing PHC services proposes a population based approach for the delivery of PHC outreach service with a special focus on reaching the uninsured population of South Africa who number around 41million of the total population of 50million.

PHC Re-engineering & District Health Model

In November 2010 the National Health Council adopted the District Health Model illustrated in Figure 1. The PHC re-engineering process emphasises the need to strengthen the district health system – which continues to be the institutional vehicle for the delivery of PHC services. The district management, sub-district management as well as management of all facilities within the district must continue to be strengthened . PHC re-engineering is based on the development and strengthening of district health plans and that the District Health Information System is used to monitor and strengthen service delivery. It also means that quality of care must be improved through better supervision and clinical governance and paying attention to the basics such as systemic interventions. In particular it means District Management Teams, Sub-District Management Teams s and district hospital CEOs are held responsible

Figure 1 The District Based PHC model

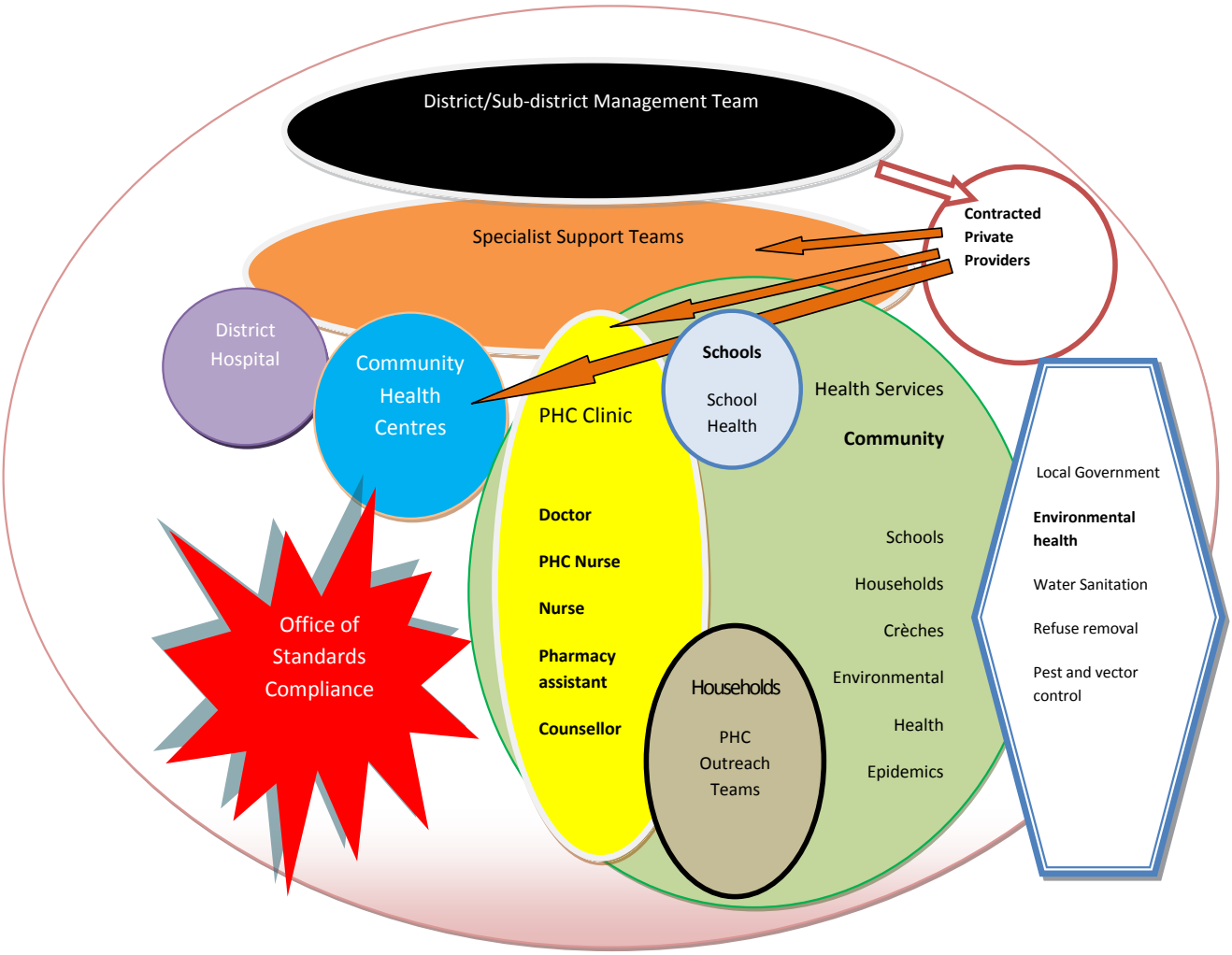
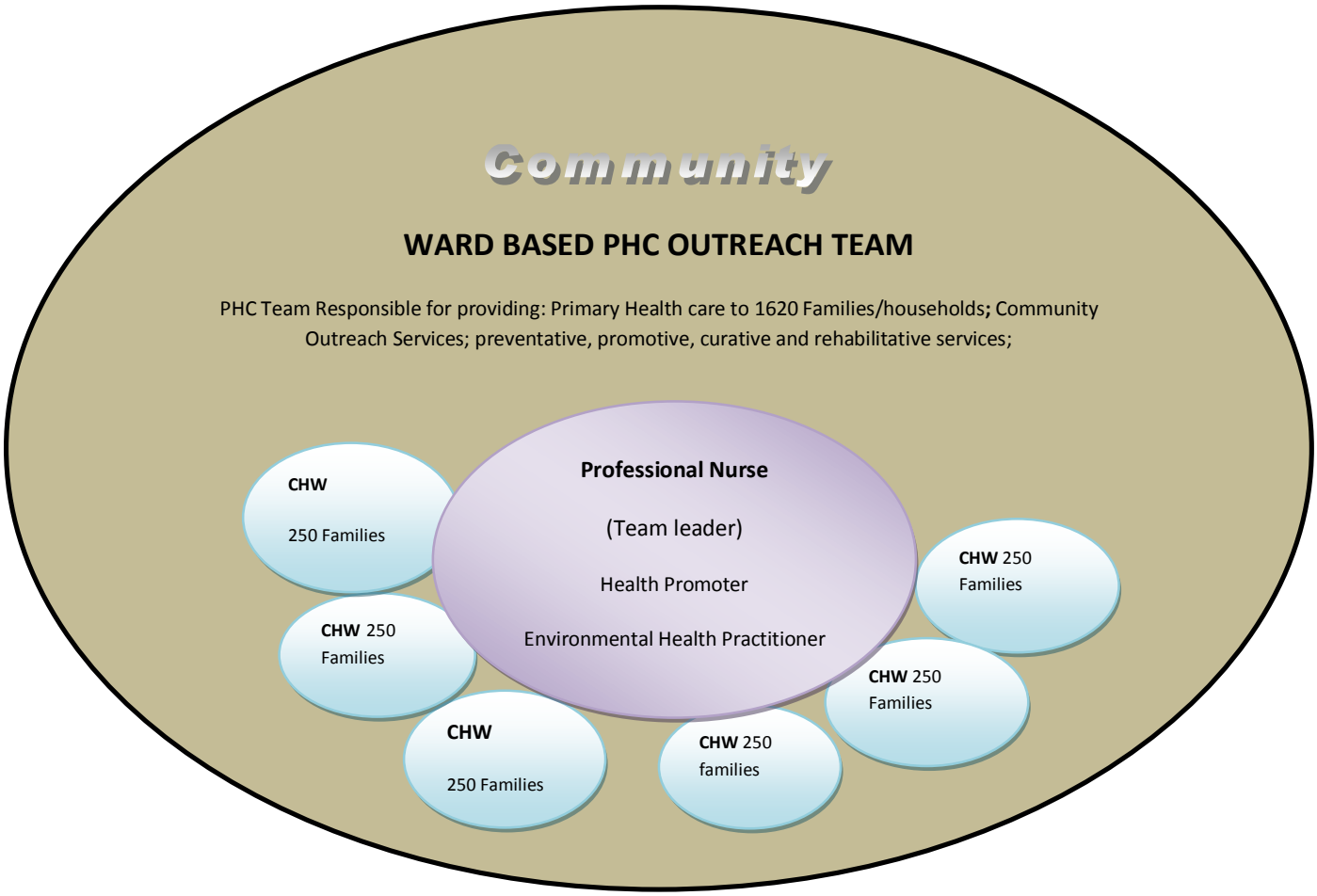


Figure 2 Ward Based PHC Outreach Services



and accountable for all the services that take place in their facilities and communities in the districts that they serve. In order to fast track interventions to address the four NSDA areas, the NHC emphasized a 3 stream approach. These three streams: District Clincal Specialist Teams (DCSTs), School Health Teams and Ward based Outreach Teams are highlighted in figure 1 where the diagrammatic presentation of the district model is shown.

The 3 Streams of PHC Re-engineering

The three streams prioritised for strengthening the delivery of PHC services especially to woman and children are the Ward based PHC Outreach Teams, School Health and District Clinical Specialist Teams. Each of these streams is described in more detail.

1. Ward based PHC Outreach Teams

Each ward should have one or more PHC outreach teams. These teams are composed of a professional nurse, 6 community health workers supported by environmental health and health promotion practitioners. A ward based PHC outreach team will serve a population of about 7 660 people. A CHW will manage on average 250 families or households. The number of families or households will vary depending on the geographic location, social demographics and burden of disease of the community and size of households or families that the team member serves. For example, in a deep rural area where the houses are sparsely distributed the number of households will be far fewer compared to an urban area where houses are in close proximity and easy to access.

This will also apply to areas where there is a high burden of disease or pregnant woman or children compared to areas where there is a low burden of disease, fewer pregnant woman and children.

The roles of the PHC outreach team will include:

- Promoting health
- Preventing ill health
- Providing information and education to communities and households on a range of health and related matters
- Environmental health, especially those aspects impacting directly on households and communities
- Psychosocial support in collaboration with community care givers supported by the Department of Social Development
- Early detection and intervention of health problems and illnesses

- Follow-up and support to persons with health problems including adherence to treatment
- Treatment of minor ailments
- Basic first aid and emergency inter ventions

Each ward based PHC outreach team has a professional nurse as the team leader who is linked to a PHC facility. The team leader is responsible for ensuring that the work is targeted and linked to service delivery targets and that the team members are adequately supported and supervised. CHWs will play a key role in improving access to PHC services to community and household members and for this reason they should, over time, be directly managed by the Department of Health.

The integration of CHWs into the ward based outreach team is not without its challenges. A recent audit conducted by the National Department of Health (2011) found that there are some 72 000 community based health workers offering a range of health services. Based on a review of the role CHWs have played in strengthening community based health services, the scope of work for the CHW working as a ward based outreach team was determined. Given the current situation where community based workers are fulfilling a large number of different responsibilities it was important for the CHWs functioning in the ward based PHC outreach teams to have a clearly delineated scope that defines and sets parameters for their practice. Special emphasis was made to ensure that these CHWs adopt an integrated approach in how they manage health problems. In summary the overall scope of the CHW is "to improve the quality of life and contribute to better health of communities and its members by providing an outreach service to promote and facilitate improved access to primary health care services".

This scope of the CHW is best encapsulated in the following 7 core generic roles:

I. Promote health and prevent illness
II. Conduct structured household assessment to identify their health needs
III. Provide psychosocial support to community members
IV. Conduct community assessments and mobilise around community needs
V. Identify and manage minor health problems
VI. Support continuum of care through service co-ordination with other relevant service providers
VII. Support screening and health promotion programmes in schools and ECD centres

2 School Health

School health services, largely due to under-resourcing, are unevenly provided within and between provinces. Working with the Departments of Basic Education and Social Development, the Department of Health revised the School Health Policy and implementation guidelines. While the intention is to have a school health nurse in every school, the reality is that with 29,000 schools in the country, this is not possible in the short to medium term. The short term focus will be on schools in quintiles 1 and 2 (the poorest schools) offering a selected range of services. As more resources become available the above package of services will be expanded to the full range of school health services as outlined in the revised policy.

District management must also ensure that the ward based PHC outreach teams work in tandem with school health services. It is possible that in some areas, the PHC outreach team assist in the provision of school health services. The PHC outreach teams will also investigate home circumstances of children who do not attend school or are failing to thrive. They will be referred by the school health nurse to the PHC outreach teams.

3 District clinical specialist teams (DCSTs)

To address the unacceptably high infant, child and maternal mortality in most of our districts, the National Health Council has agreed that every district should be supported by a team consisting of a gynaecologist, paediatrician, anaesthetist, family physician, advanced midwife, paediatric nurse and primary health care nurse.
The basic functions of the DCSTs are to: strengthen clinical governance at PHC level as well as in district hospitals; to ensure that treatment guidelines and protocols are available and are used; that essential equipment is available and that these are correctly used; that mortality review meetings are held, are of good quality and that recommendations from these meetings are implemented; support and supervise and mentor clinicians; and monitor health outcomes.

These specialist teams will work closely with the PHC outreach teams.

The Department of Health has prioritised the implementation of the three streams in all the 10 National Health Insurance pilot districts that was announced by the Minister of Health in March 2012. A robust monitoring and evaluation system was developed to monitor progress with implementation. To date all provinces are at varying stages of implementation of the three streams and it is envisaged that there will be significant progress by the end of the financial year 2012/13. Ⓡ

Promoting TB and HIV awareness

through a HEI initiated community based education project

AUTHORS : G. Lourens & Prof M. Clarke, Stellenbosch University
CORRESPONDING AUTHOR : Guin Lourens, guin@sun.ac.za

In 2006, South Africa ranked seventh highest by the WHO among the 22 TB high burden countries in the world, and fourth highest in Africa, with an estimated incidence of all TB cases at 940 per 100 000 in the population (WHO)

The High Education Institute community project was described using a qualitative approach with a case study design.

INTRODUCTION

In 1993 the World Health Organization's (WHO) declared tuberculosis (TB) a global emergency (SA. DOH, 2005). Despite this, the global TB epidemic is growing larger each year (WHO, 2003). Furthermore, TB is the leading cause of death globally from a curable infections disease (Dye, 2006).

In 2006, South Africa ranked seventh highest by the WHO among the 22 TB high burden countries in the world; and fourth highest in Africa; with an estimated incidence of all TB cases at 940 per 100 000 in the population (WHO, 2008).

The estimated number of people living with HIV (Human Immuno deficiency virus) in 2007 is 33, 2 million. Globally it is estimated that every day, over 6800 become newly infected with HIV and 5700 persons die from AIDS, mostly due to inadequate access to HIV prevention and treatment services. This leaves the HIV pandemic as the most serious infectious disease public health challenge, with AIDS remaining a leading cause of mortality worldwide and the estimated deaths in 2007 due to AIDS estimated at 2,1 million (UNAIDS, 2007).

With an estimated 5, 5 million people living with HIV in 2006, South Africa is the country with the largest number of infections in the world (UNAIDS, 2007).

The CPUT (Cape Peninsula University of Technology) TB and HIV Project, which was started in April 1999, was a response to the challenges posed by TB and HIV and in line with the core value of social responsibility of the CPUT (previously known as Cape Technikon), with a community development thrust and responsibility as a tertiary institution to impart knowledge and skills to it's communities (Cape Technikon, 2001:33).

The overall aim of this study was to describe the CPUT TB and HIV project

The specific objectives for the study were to:

- Document the historical overview of the project
- Describe the implementation process of the project
- Describe the perceptions/experiences of the trainers trained by the project

METHODS

This HEI (High Education Institution) community project was described using a qualitative approach with a case study design.

Ethical approval for the study was granted by the CPUT research ethics committee of The Faculty of Applied Sciences.Written and audio taped informed consent was obtained from all study participants prior to data collection.

The study population included all 174 trainers who had participated in the project over a 4 year period.The study population were predominantly from the boundaries of the Western Cape Province,with one national group of trainers deployed nationally on farms with the exception of the Kwa Zulu Natal province.Convenience sampling was used to include trainers ,based on their willingness and availability to participate voluntarily following an invitation to a a venue in their geographical setting.Trainers would

exclude themselves by not responding to the telephonic and written invitation. Purposive sampling was used to select the key informants who could accurately describe the history.

The data collection tool was a peer reviewed and piloted opening question and some probes.

Focus group discussions and in-depth individual and pair interviews with trainers were conducted to explore their experiences of the project.For the historical overview of the project, interviews were conducted with key informants.

Data was collected over a large geographical area including Port Elizabeth, the Langkloof, Plettenberg Bay, the Boland and West Coast. Although it was originally planned to collect data in focus group discussions, it soon became evident that this was only feasible in the urban, Metropole area around Cape Town where many trainers were clustered; accessible and had access to transport.

In the semi-rural and rural areas of the Winelands, Overberg, Southern Cape and West Coast, trainers were spread far apart geographically and only pair interviews and individual interviews were feasible.

RESULTS

Project History And Implementation: Overview

The influential role-players in the project's inception and implementation were identified as the HEI in which the project was housed, the NGO sector, and the Provincial Department of Health. The CPUT, in which the project was housed, remained actively engaged with the project in the given time line.

The NGO sector remained as a constant key role-player in recruiting, selecting and nominating participants for the project courses; and funding was acquired throughout the time frame from various private sector funders. The Provincial Department of Health who initiated links with the CPUT to establish the project and orchestrated a pilot course in the West Coast in 1999 and a course in the Southern Cape Karoo in 2000, gradually played the role of a written certificate of support, but no training nominations and finally by 2005, when the management had changed at the TB Control Directorate, verbalized no further support of the project.

All focus group discussions and interviews were audio taped and transcribed by an approved transcribing agency.All transcripts were managed confidentially and were locked away securely by the principal researcher.

A qualitative content analysis approach was applied to the verbatim transcripts .The transcripts were coded for emerging themes to describe both the history and the implementation of the project by the trainers.These themes were triangulated by three researchers .

The themes were grouped and presented with verbatim quotations to substantiate them.

The findings from the trainer data presented diagrammatically (see diagram 1).

Themes that emerged from the experiences of the training are summarized in this diagrammatic representation and included 1) Knowledge and skill acquisition in TB, HIV, Counselling and ABET; 2) Memorable ABET methodology which assisted understanding and learning of course content; 3) Development of awareness of the stigma surrounding TB and HIV, which lead to greater empathy for clients with these diseases; and 4) A sense of self development and confidence, following course completion and skill acquisition.

DIAGRAM 1: Experiences of the training

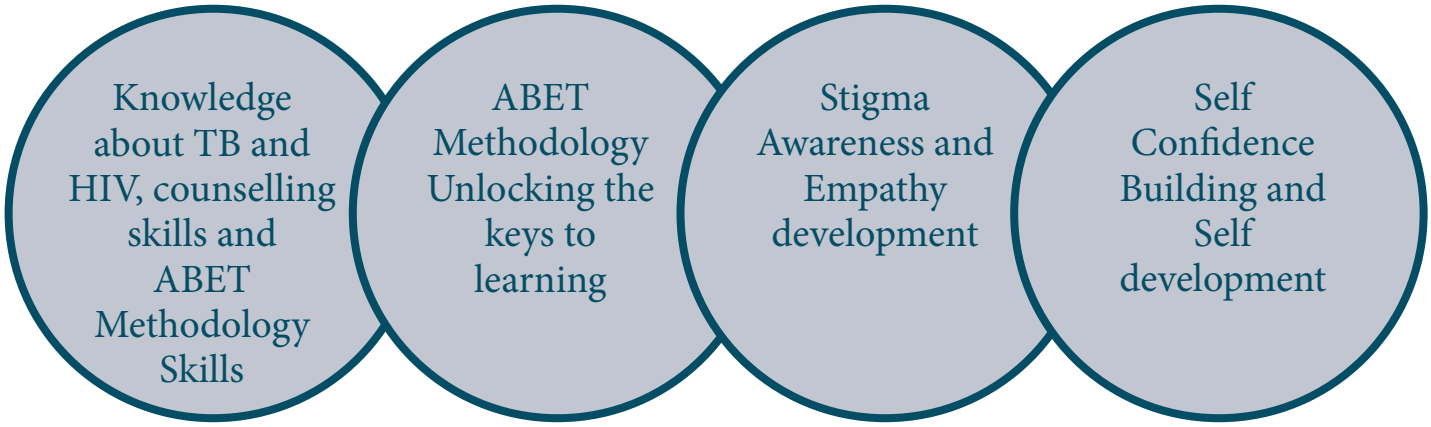
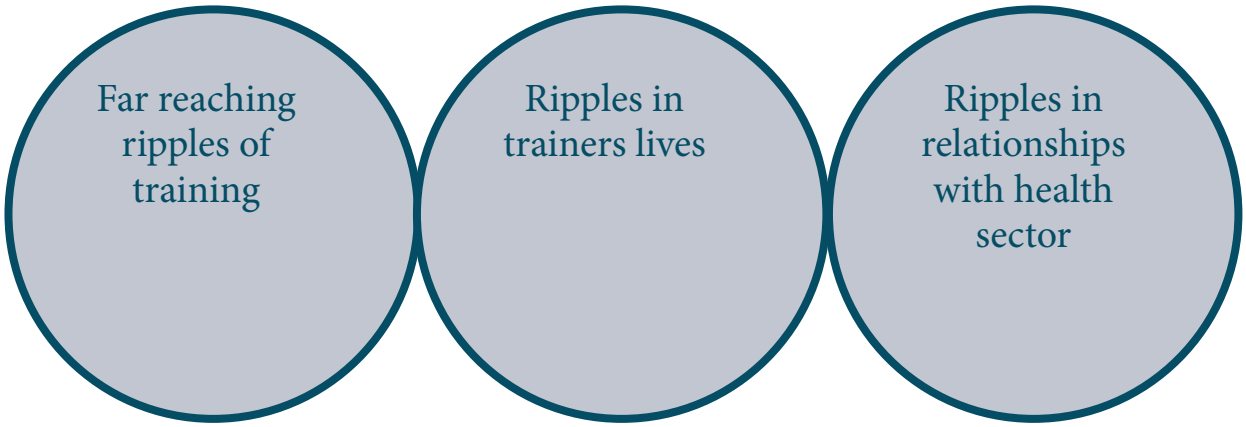
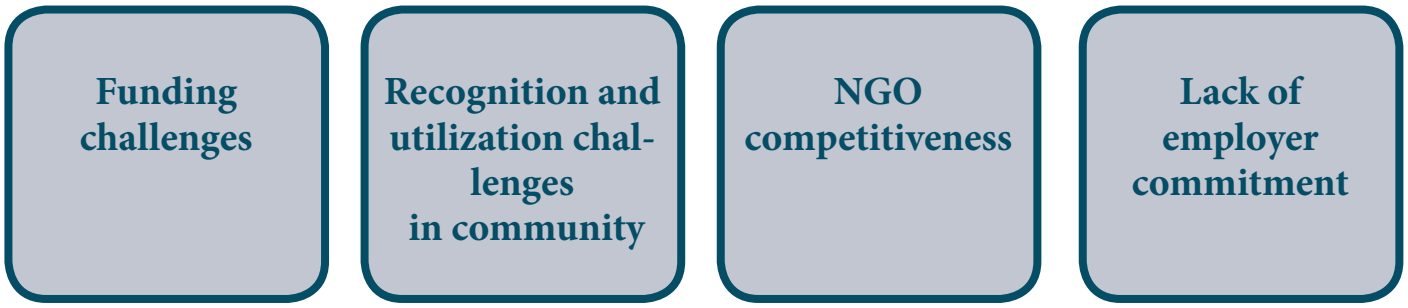


DIAGRAM 2: The Ripple effect of the training



Diagrammatically represented in the model is the extensive ripple effect of the training that was described with multiple areas of implementation and many role players facilitating this process. (see diagram 2)

DIAGRAM 3: Challenges



Blocked here (see diagram 3) is how a diagrammatic grouping of themes that emerged from the trainers challenges in application of the course would look and included funding constraints (personal and with the organisations trainers were linked to); a lack of recognition for trainers and despite having had the training where not utilized in their community setting and a lack of commitment by trainer employers to release them to do training.

This diagram (see diagram 4) represents themes that emerged from the data on the way forward or suggestions for the project made by the trainers and included a need for new TB and HIV theory update, re-emphasis of treatment supervision and adressing the needs of community care workers for respite.

DISCUSSION

PRINCIPLES OF LEARNING

The ten principles of learning (Downs, 1995) linked well to the course outline that was described in the history interviews, as well as to the descriptions of the trainers experienced of the training. Each principle is linked to data that emerged about the course provided by the trainers (see table 1).

DIAGRAM 4: Community carer's needs

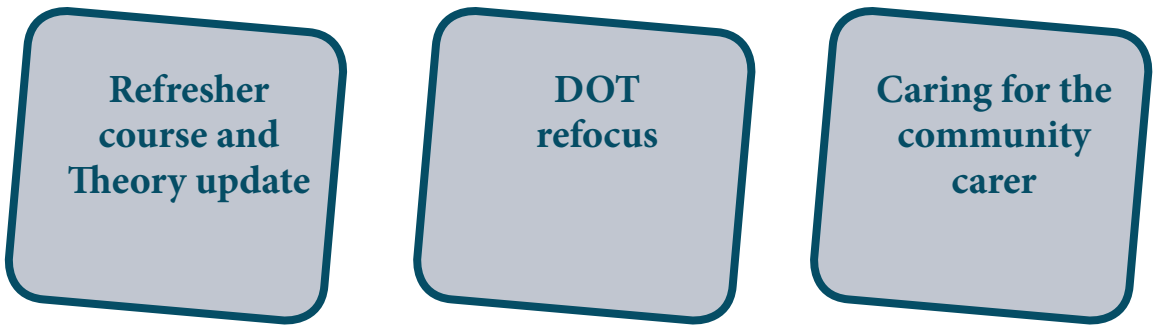
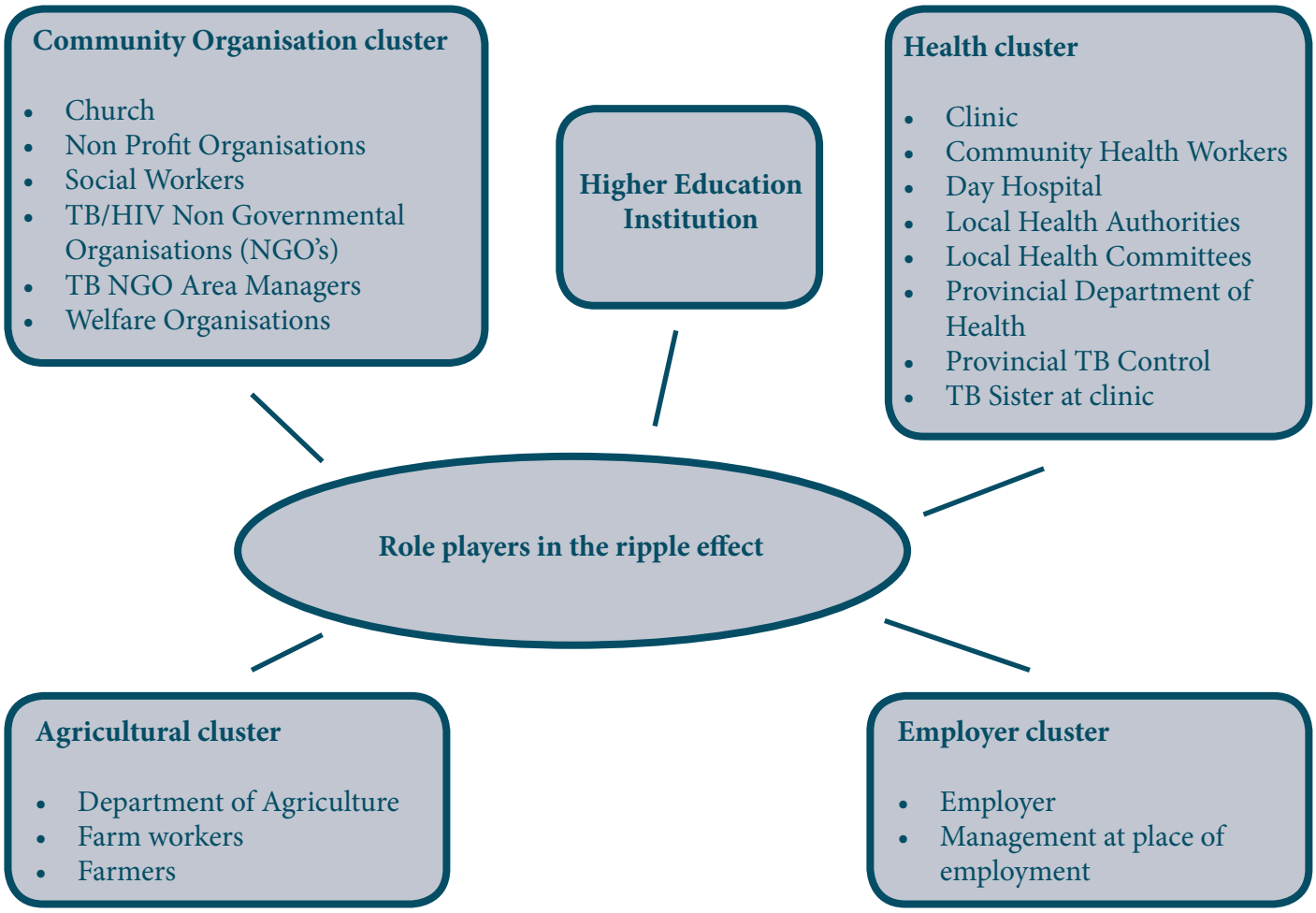


TABLE 1: PRINCIPLES OF LEARNING (DOWNS, 1995) LINKED WITH EXPERIENCE OF TRAINERS

PRINCIPLE	TRAINERS EXPERIENCE
Learners need to know where they are going and have a sense of progress towards their objectives	At the beginning of each training module session trainers were given an overview of the course, the module and what each module would entail as described in Chapter 3.
The learning environment has to be one of trust, respect, openness and acceptance of differences.	Ground rules were set by the trainers themselves at the start of each course and this set the tone for mutual respect.
Being aware of and owning the responsibility for learning lies with the learner. Others can only give information, support and provide feedback.	The adult learning approach was stressed on the course and the facilitator provided information, support and feedback, but learners were encouraged to take responsibility for their own learning.
Learners need to aprticipate actively in the learning process.	The adult learning methodological approach throughout was one of experiential active learning with learners involved in pair discussion, group discussions and problem solving using case studies and scenarios.
Learning should be related to and use the learner's experience and knowledge.	The pre-knowledge of the adult learners about TB, HIV, counseling and ABET was used as building blocks for course learning.
Learning is not only a basic capability but also a group of skills which can be developed/learned.	Training was presented to optimalize the best ways of learning e.g. ABET and counseling practice and feedback, games for memorising facts, problem solving to help understanding.
Facts, concepts and skills are learned in different ways.	The methodology was varied and trainers recalled many of the activities that aided their learning, which included role plays, icebreakers, quizzes, crossword, case studies, group discussion and lecturing.
Getting ideas wrong can be a valuable aid to developing understanding.	The assessments provided a formal way of learning by error and answers sets (memorandums) were discussed in detail after the test. TB, HIV and counseling case studies were provided for group work and a great deal of learning/understanding came from getting ideas wrong.
For learning to be processed and assimilated, time must be alowed for reflection.	The course structure allowed for reflection. Overnight homework was given and about 2 weeks interspersed the 4 modules, giving trainers an opportunity to reflect and process what they had learnt and discuss in classes.
Effective learning depends on realistic, objective and constructive feedback.	Assessment was planned for each module and learners received structured feedback on theory tests for the TB, HIV, counseling and ABET modules, as well as peer feedback on their counseling skills.

DIAGRAM 5 : CLUSTERS OF ROLEPLAYERS DESCRIBED BY TRAINERS IN THE RIPPLE EFFECT



HEALTH CLUSTER KEY ROLE PLAYERS

The role of the nurse has been described as key in an MDR-TB study done in a community in Peru (Palacios et al, 2003: 343). Clinic nurses have been described as one of the key role players by the trainers and in the ripple effect of the training relationships with the clinic were viewed to have improved after the training intervention. Palacios, et al. (2003) recommends that this leadership role which nurses play in managing a complex disease such as MDR-TB be harnessed in the co-ordination and supervision of community health workers involved in community TB/HIV activities. This would also strengthen the linkages between community health extension workers, formal health and the community.

CONCLUDING REMARKS

Important in the results, in the South African context, where skills development is on the forefront, that trainers felt they were more marketable and employable once they had successfully completed their training and were more competent.

Education legislation stipulates that HEI's can only offer qualifications on NQF levels five to ten and therefore this project's course this would now have to be a learnership. Learnerships will be at NQF levels three to five and this course could be investigated to be a learnership at NQF level three or four. This would require a further investigation to establish whether it is needed, if needed then at what NQF level, and whether FET colleges could

Learners need to know where they are going and have a sense progress towards their objectives.

offer it as learnership. As this study indicated it would provide some level of status to the training if linked to an educational institution as opposed to if it is a short course offered by different NGO's. This would also lead to the course being standardized.

Finally it is noted that this course added much value to the participants for themselves, as well as becoming informed to assist community members based on knowledge / accurate facts.

Furthermore it is observed that it would be imperative that health service management support and recognize trainers to have the desired effect towards TB and HIV control.

ACADEMIC ACKNOWLEDGEMENT:
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REFERENCES

CapeTechnikon. 2001. Technology: An African Focus: Annual Report 2001. Cape Town: Cape Technikon.

Downs, C.W. & Adrian, A.D. 2004. Assessing Organizational Communication. New York: Guilford Press.

Dye, C. 2006. Global epidemiology of tuberculosis. Lancet, 367 (3) : 938 – 940.

Palacios, E. Et al. 2003. The role of the nurse in the community-based treatment of multidrug-resistant tuberculosis. International Journal of Tuberculosis and Lung Disease, 7 (4): 343 – 346.

South Africa. Department of Health. 2005. Western Cape TB Control Programme: Annual Report 2003. Cape Town: Department of Health.

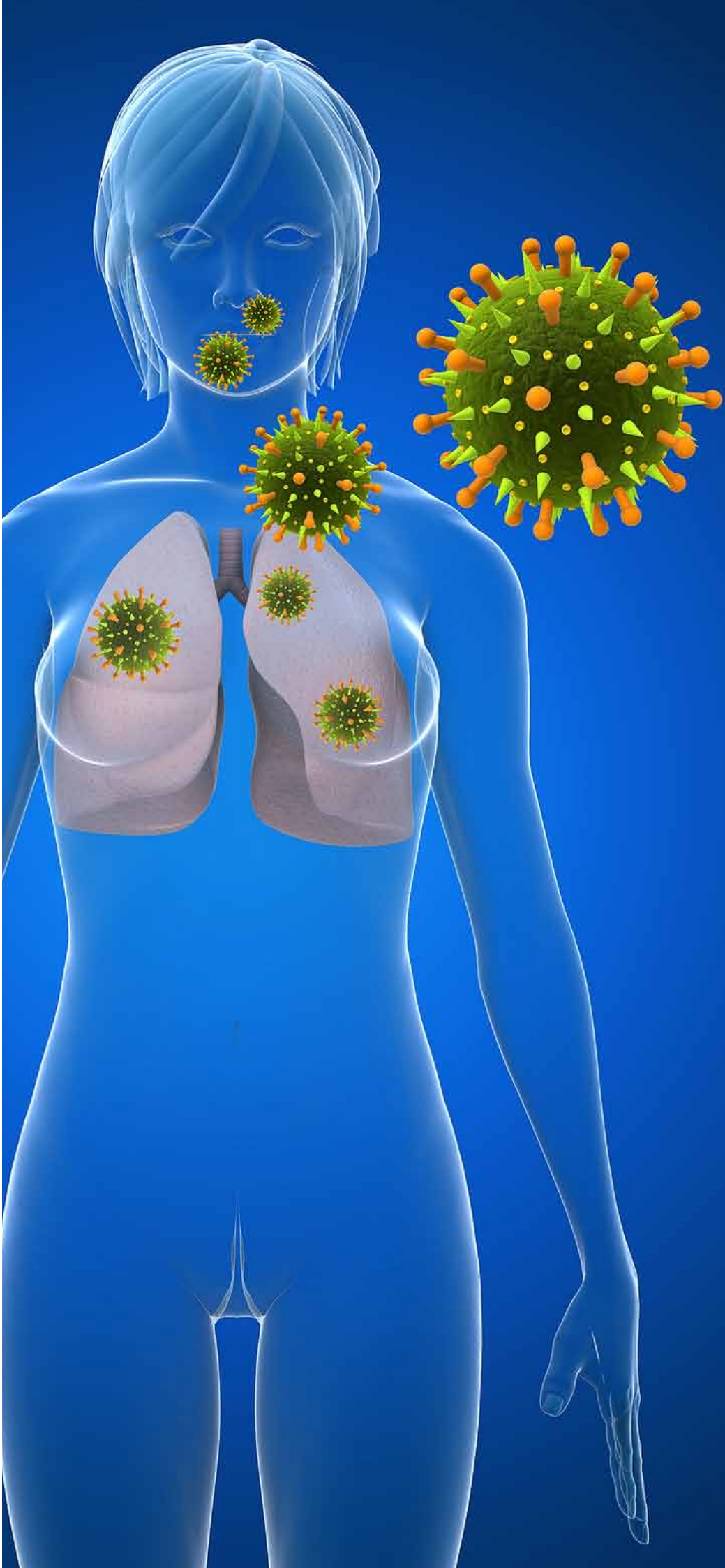
UNAIDS, 2007. 07 AIDS epidemic update. Switzerland: World Health Organization.

World Health Organization. 2003. TB/HIV: Guidelines for implementing collaborative TB and HIV Programme Activities. Geneva: World Health Organization.

World Health Organization. 2003. Community Contribution to TB Care: Practice and Policy. Geneva: World Health Organization.

World Health Organization. 2003. WHO Report 2003: Global Tuberculosis Control. Geneva: World Health Organization.

World Health Organization. 2008. Tuberculosis detection rate under DOTS. http://www.who.int/whosis/indicators/compendium/2008/4tdr/en/index.html



TB AND HIV COMMUNITY-OUTREACH TRAINING PROJECT IN A HIGHER EDUCATION INSTITUTION

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BACKGROUND

At the request of the South African Department of Health's Western Cape Provincial Tuberculosis Control Directorate, the Cape Peninsula University of Technology, a Higher Education Institution, developed and implemented a Tuberculosis and Human Immunodeficiency Virus community outreach train the trainer project to train community members about Tuberculosis and Human Immunodeficiency Virus.

Microscopic TB bacteria (SA.DoH, 1998: 3)

STUDY AIM

This study aimed to provide a historical overview of the Cape Peninsula University of Technology Tuberculosis and Human Immunodeficiency Virus project and describe the experiences of the trainers involved.

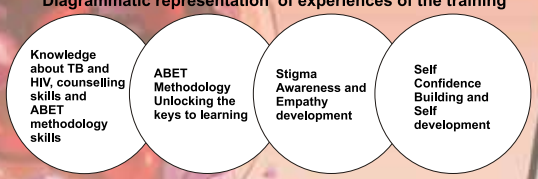
METHODS

A descriptive case study design, using a qualitative approach was applied during this study.

RESULTS

The historical overview of the project showed the need for a broad base of networking, securing funding and a project facilitator from the outset of such a project. This study found that trainers had experienced self-development in terms of knowledge, skills and self confidence and that the training had far reaching effects by spreading Tuberculosis and Human Immunodeficiency Virus information in diverse community settings, despite notable challenges experienced in the community settings, which included funding, recognition, utilization, employer commitment and NGO competitiveness challenges.

Diagrammatic representation of experiences of the training



CONCLUSIONS

Community outreach training projects from a recognized training institution have a positive impact at community level. However, political commitment and development of the course content into a registered learnership are required for sustainability.

ACKNOWLEDGEMENT

Prof. Marina Clarke (Supervisor) • Mrs. Ronel Sherriff (Admin Executive) • Print Right (Graphic design) 2010

PALSA PLUS

for Primary Health Care

PALSA PLUS is a programme that consists of the evidence-based primary health care guideline that is accompanied by an on-site training programme.The PALSA PLUS guideline is symptom-based and uses clinical algorithms and key messages to guide the practitioner to diagnose and manage clients appropriately.

The conception of PALSA PLUS

In 2003, the University of Cape Town Lung Institute was working with the Free State Department of Health to find ways of improving TB in primary care. We developed PALSA, based on the World Health Organization's PAL (Practical Approach to Lung Health) strategy designed to improve the case detection of TB and the management of other common respiratory conditions (WHO 2000). The guideline was adapted and tailored (English R. 2006, Bheekie, A. 2006) to local conditions and national protocols and tested in this province in 2003. In 2005 the approach was expanded as PALSA PLUS to include counselling and testing for HIV, routine care for HIV clients before and once on ART, prevention of TB and other opportunistic infections, PMTCT, and prevention and treatment of STIs. A large randomized controlled trial (Fairall, L. 2005) found that PALSA PLUS substantially improved the quality of care (Table 1) and concluded that the educational outreach component improved the provision of care over and above the intensive training that accompanied the implementation of the Comprehensive Care, Treatment and Management of HIV and AIDS Programme in that province.

Table 1: Results of the randomized controlled trial of PALSA in the Free State

Case detection of tuberculosis	^ by 68%
Inhaled steroid provision for asthma	^ by 80%
Appropriate referral of severe cases	^ by 120%
VCT uptake among tuberculosis patients	^ by 110%

The findings from the first randomised trial, the expansion to HIV/AIDS and STIs and positive feedback from nurses and nurse trainers (Stein, J. 2008), prompted the Free State and Western Cape to implement the programme throughout their primary care facilities. By the end of October 2007 the Knowledge Translation Unit (KTU) had trained and supported 150 nurse trainers who in turn have trained 2770 nurses in 325 facilities throughout the two provinces.

Nurse managed ART

Work in the Free State and research on the mortality rate among those infected with HIV (Fairall, L. 2008) prompted those who had been involved in PALSA to look for alternative ways for patients in need of ART to improved access to treatment. The World Health Organisation International Conference on Task Shifting had recommended that countries should consider a task-shifting approach where access to HIV and other health services are constrained by health worker shortages (WHO 2008). The KTU implemented STRETCH (Streamlining Tasks and Roles to Expand Treatment and Care for HIV) to support the integration and decentralization of HIV services, including antiretroviral treatment initiation in selected adults by nurses. STRETCH was designed to empower health workers to deliver quality care to those infected with HIV, and included task shifting, systems strengthening and PALSA PLUS training to the intervention sites. STRETCH was evaluated by means of a pragmatic cluster randomized controlled trial using 31 primary care clinics in the Free State (Fairall, L. 2012) and showed that expansion of primary-care nurses' roles to include ART initiation and re-prescription can be done safely, and improve health outcomes and quality of care.

To date, the Knowledge Translation Unit (KTU) has trained 17211 staff in 1836 primary care facilities throughout South Africa.

"We can manage our patients without a doctor, without a doctor in there. So, I can recommend it."

Primary health Care Nurse

Expansion of PALSA PLUS

In 2009 the Knowledge Translation Unit was awarded a tender from the National Department of Health to roll out PALSA PLUS in 4 South African TB crisis districts. At the end of 2009, the president of South Africa called for intensification of efforts in the fight against HIV/AIDS. Consequently early in 2010, the Department of Health actively set about integration of HIV treatment into the primary health care services and increasing accessibility to HIV testing and treatment. This necessitated revision of policies and increase in capacity for health care. The PALSA PLUS guideline for the general management of HIV/AIDS, TB & STIs was revised, including Nurse Initiation and Management of ART (NIMART) to include the policy changes that were instituted in April 2010.

To date, the Knowledge Translation Unit (KTU) has trained 17211 staff in 1836 primary care facilities throughout South Africa using a network of 1384 PALSA PLUS facility trainers (Table 2) We have in addition established a body of PALSA PLUS master trainers who have been capacitated to conduct Training of Trainers in their provinces.

In 2009 the KTU began work with Dignitas International in their projects focused on HIV prevention and treatment in the Zomba District of Malawi. We developed STAT-PALM+, (Simpli-

Table 2: National PALSA PLUS training statistics

Province	Number of facilities trained	Number of facility trainers	Number of health care workers trained
Eastern Cape	298	281	2467
Free State	182	125	1753
Gauteng	299	203	2627
Kwazulu Natal	270	208	2865
Limpopo	61	85	408
Mpumalanga	119	91	703
North West	145	135	1181
Northern Cape	46	78	243
Western Cape	416	178	4964
TOTAL	**1836**	**1384**	**17211**

fied Tools and Training – Practical Approach to Lung health plus HIV/AIDS in Malawi), the Malawian adaptation of PALSA PLUS, to facilitate the integration of HIV/AIDS and TB care with primary care and build sustainable capacity in the Zomba District health system (Schull, M. 2010).

PALSA PLUS has also extended beyond the South African public health system and has been implemented by the South African Clothing Workers Union and the South African Military Services (SAMS). To date, 244 health care providers in the SAMS have been trained in PALSA PLUS.

What is PALSA PLUS?

While well known as a guideline, PALSA PLUS is a programme that consists of the evidence-based primary health care guideline that is accompanied by an on-site training programme.
The PALSA PLUS guideline is symptom-based and uses clinical algorithms and key messages to guide the practitioner to diagnose and manage clients appropriately. The contents are a blend of evidence and expert consensus and are 100% consistent with national guidelines. Nurses report how they appreciate the clear approach with symprtoms as entry points and the integration of conditions. This addresses the actual common presentation of patients with one or more diseases, especially the close link between HIV and TB infection. The illustrations and layout make it user friendly and nurses easily engage with it.

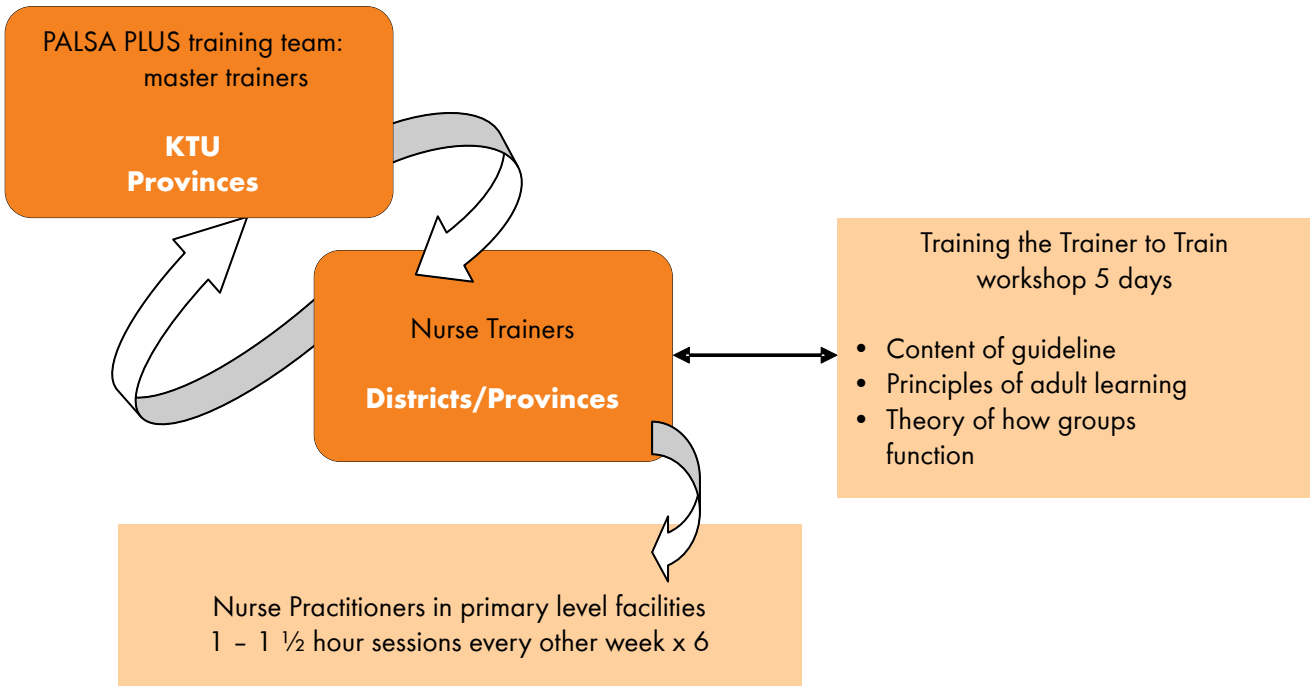


Figure 1: The PALSA PLUS training model

'Simplifies the management of patient treatment and makes you enjoy your work.'

Primary Health Care nurse

Regular revision of the guideline remains current with national policies and guidelines and therefore contributes towards standardising clinical approach and improving quality of care.

However, evidence has shown that to simply issue someone with a guideline does not guarantee use (Grimshaw, J.M. 2001). Knowledge Translation is a complex set of interactions between researchers, health services and patients to expedite the implementation of research findings into practice to strengthen health services and improve patient outcomes. Educational outreach is a knowledge translation strategy shown to be a modestly effective strategy for improving care, especially the quality of prescribing, and is superior to passive dissemination of guidelines or audit and feedback (O'Brian, M.A. 2007) . This strategy is used in PALSA PLUS training and represents a substantial departure from the usual off-site training model. We equip outreach trainers to deliver the PALSA PLUS training at the site of clinical practice which limits pulling vital staff away from primary health care facilities, as is the case with traditional classroom based courses that are offered for nurse training. It therefore minimizes disruption to clinical services and allows for a team approach, targeting all cadres of staff working across programmes within a clinic, increasing coverage and promoting functional integration of clinical care. It also provides for the alternation of learning with practice as sessions are repeated over time.
Nurse trainers, drawn from the health system in the district are taken away for an intensive week of training to equip them as outreach trainers, and in turn provide short interactive training sessions at the clinic over 3 – 4 months, allowing for the integration of knowledge into practice. On-site

training requires no technology but takes the form of interactive participative group learning in a case-based approach.

The next step

The PALSA PLUS guideline has been expanded over the course of the last five years into Primary Care 101, a programme that addresses 40 common presenting symptoms and 20 chronic conditions in adults, all in 101 pages. These conditions include chronic diseases of lifestyle (hypertension, diabetes, cardiovascular disorders),

infectious diseases (TB, HIV), chronic respiratory diseases (asthma, COPD), mental health conditions (depression, anxiety, substance abuse, dementia) women's health and others (musculo-skeletal conditions, epilepsy). The result is a clinical guideline that integrates vertical health care programmes into a more integrated approach. The quadruple burden of disease in South Africa dictates that non-communicable diseases need more intensive intervention, and Primary Care 101 will address this at primary care level. PALSA PLUS is preserved in Primary Care 101 and has created the platform upon which to build a more comprehensive yet integrated approach that will capacitate nurses who remain largely the first point of care in our clinics and community health centres.

Conclusion

PALSA PLUS has profoundly impacted Primary Health Care by providing an efficient vehicle to drive policy into the primary care service as well as empower nurses to cope with the overwhelming burden of infectious disease during the past decade.

"We are doing less stressing now, because like I've said before, the workload goes quicker. You don't have to sit there and be frustrated. You don't go to lunch because the people are moaning outside and everything."

" I feel it's my cover. It provides a structure, and if I stay within the structure I know I will be right."

Primary Health Care Nurses

The programme remains in demand for its content and approach and while the KTU is no longer under contract to the National Department of Health, we continue to offer training on request.

Can I access PALSA PLUS?

The KTU still offers PALS A PLUS training as the following:

- Training of trainers who can then deliver on-site facility based training
- Orientation of clinical nurse mentors in the PALSA PLUS guideline
- Refresher workshops for trainers

www.knowledget-ranslation.co.za

References

Bheekie A, Buskens I, Allen S, English R, Mayers P, Fairall L, Bateman ED, Zwarenstein M, Bachmann M. The Practical Approach to Lung Health in South Africa (PALSA) intervention: respiratory guideline implementation for nurse trainers. Int Nurs Rev. 2006 Dec; 53(4):261-8.

English RG, Bachmann MO, Bateman ED, Zwarenstein MF, Fairall LR, Bheekie A, Majara BP, Lombard C, Scherpbier R, Ottmani SE. Diagnostic accuracy of an integrated respiratory guideline in identifying patients with respiratory symptoms requiring screening for pulmonary tuberculosis: a cross-sectional study. BMC Pulm Med. 2006 Aug 25; 6:22.

Fairall L, Zwarenstein M, Bateman ED, Bachmann OM, Lombard C, Majara B, Joubert G, English RG, Bheekie A, van Rensburg HCJ, Mayers P, Peters AC, Chapman RD. Educational outreach to nurses improves tuberculosis case detection and primary care of respiratory illness: a pragmatic cluster randomized controlled trial. BMJ. 2005; 331:750-75

Fairall LR, Bachmann MO, Louwagie GMC, van Vuuren C, Chikobvu P, Steyn D, Staniland GH, Timmerman V, Msimanga M, Seebregts CJ, Boulle A, Nhiwatiwa R, Bateman ED, Zwarenstein MF, Chapman RD. Effectiveness of antiretroviral treatment in the South African public-sector programme: cohort study. Arch Intern Med. 2008; 168(1):86-93.

Fairall L, Bachmann M O, Lombard C, Timmerman V, Uebel K, Zwarenstein M, Boulle A, Georgeu D,Colvin C J, Lewin S, Faris G, Cornick R, Draper B, Tshabalala M, Kotze E, Van Vuuren C, Steyn D, Chapman R, Bateman E. Task shifting of antiretroviral treatment from doctors to primary-care nurses in South Africa (STRETCH): a pragmatic, Parallel, cluster-randomized trial. www.thelancet.com Published online August 15, 2012 http://dx.doi.org/10.1016/S0140-6736(12)60730-2

Grimshaw JM, Shirran L, Thomas R, Mowatt G, Fraser C, Bero L, Grilli R, Harvey E, Oxman A, O'Brien MA. Changing provider behavior: an overview of systematic reviews of interventions. Med Care. 2001 Aug; 39(8 Suppl 2):II2-45.

O'Brien MA et al. Educational outreach visits: effects on professional practice and health care outcomes Cochrane Database Syst Rev 2007(4): CD000409

Schull MJ, Banda H, Kathyola D, Fairall L, Martiniuk A, Burciul B, Zwarenstein M, Sodhi S, Thompson S, Joshua M, Mondiwa M, Bateman E. Strengthening health human resources and improving clinical outcomes through an integrated guideline and educational outreach in resource-poor settings: a cluster-randomized trial. Trials 2010, 11:118

Stein J, Lewin S, Fairall L, Mayers P, English R, Bheekie A, and Bateman E, Zwarenstein M. Building capacity for antiretroviral delivery in South Africa: A qualitative evaluation of the Practical Approach to Lung Health and HIV/AIDS (PALSA Plus) nurse training. BMC Health Services Research. 2008, 8:240

WHO Practical Approach to Lung Health (PAL) Available at: http://www.who.int/tb/health_systems/pal/background/en/index.html

WHO First Global Conference on Task Shifting. Task shifting to tackle health worker shortages - Global recommendations and guidelines 2008. Available at: www.who.int/healthsystems/task_shifting/en/ - 23k

Lipodystrophy in adults

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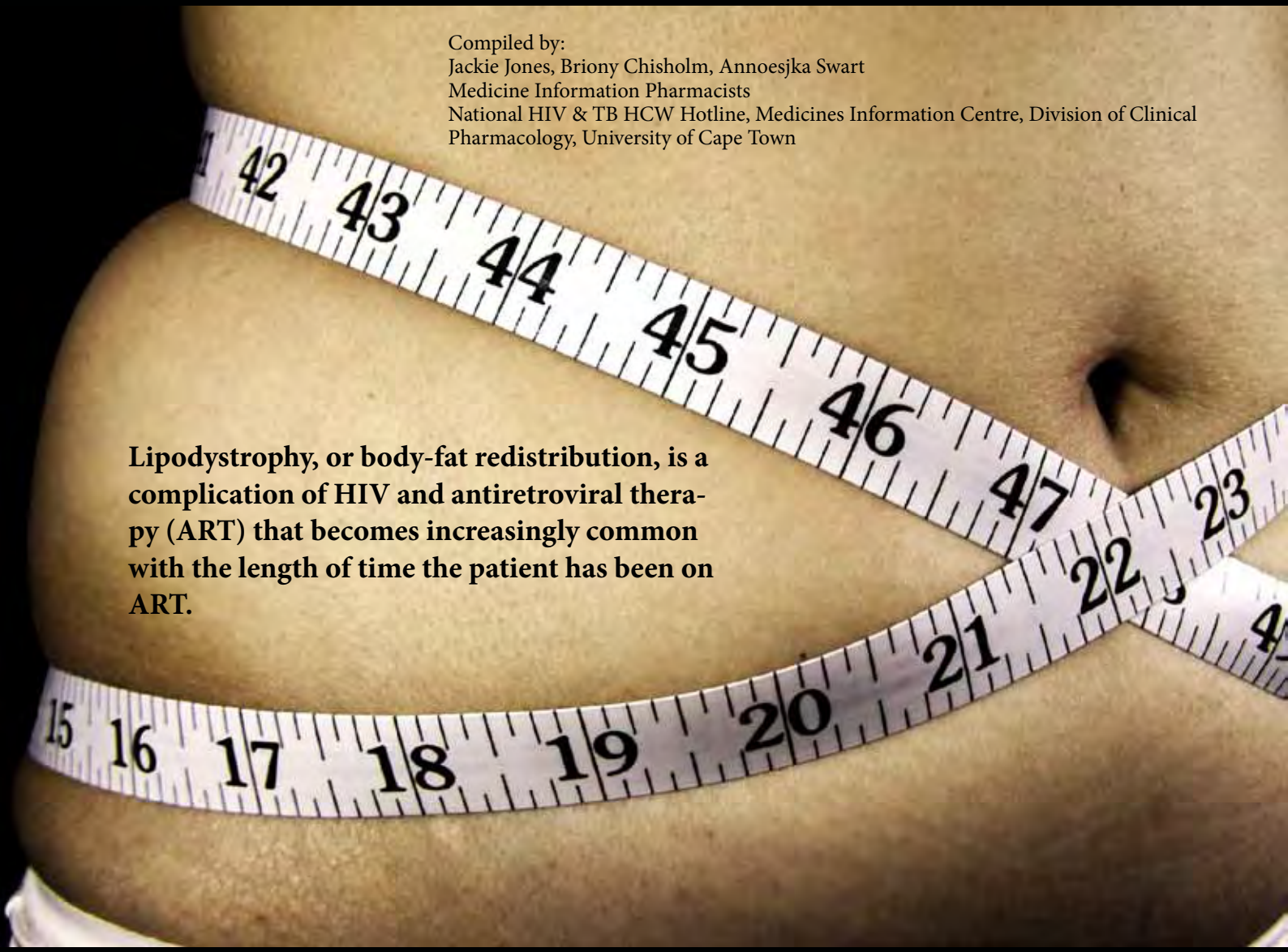


Lipodystrophy, or body-fat redistribution, is a complication of HIV and antiretroviral therapy (ART) that becomes increasingly common with the length of time the patient has been on ART.

Lipodystrophy, or body-fat redistribution, is a complication of HIV and antiretroviral therapy (ART) that becomes increasingly common with the length of time the patient has been on ART. Disfiguring changes in regional fat distribution (either fat loss or accumulation) can be very distressing and stigmatizing to the patient and may negatively affect adherence. It is difficult to estimate how often these changes occur, mainly due to the absence of a uniform definition and a standardized method of assessment. A study published in 2007 found a prevalence rate of 14-40% in HIV-positive patients on ART. [1]

Historically, all body-fat changes and certain metabolic changes such as dyslipidaemias and insulin resistance were thought to be closely related and were grouped together as a lipodystrophy syndrome. More recent data suggests that there are in fact two major types of body-fat changes and that they can occur independently of each other. [2]

Lipodystrophy is associated with an increased risk of dyslipidaemia and insulin resistance, so it is important to do fasting lipogram and glucose in affected patients and to treat if nec-

essary. Dyslipidaemias and glucose disorders associated with ART may, however, occur in the absence of body fat changes. [2]

It is important to differentiate between the two different types of body-fat changes – **lipoatrophy** and **lipohypertrophy** – as their causes and management differ. Lipoatrophy may respond to a change in antiretroviral treatment, while lipohypertrophy will not. Unnecessary changes in antiretroviral treatment should be avoided.

Lipoatrophy is the loss of subcutaneous fat, most noticeable in the arms, legs, face and buttocks. The face may appear lean and muscular with deep laugh lines when smiling and limb veins may be prominent due to the loss of subcutaneous fat. Lipoatrophy is not the same as HIV wasting, which is a loss of both body fat and lean body mass. [2]

A clear association with lipoatrophy and specific antiretrovirals has been demonstrated: stavudine (d4T) in particular has been pinpointed and, to a lesser extent, zidovudine (AZT). [3] The mechanism by which these drugs exert their effect on fat is yet to be fully understood, but is thought to be related to mitochondrial toxicity in adipocytes. [2]

The mainstay of halting the progression of lipoatrophy is to switch the AZT or d4T to tenofovir (TDF) or abacavir (ABC.) [1,3] After switching, the gain in fat is very slow and barely noticeable for at least a year. Furthermore, severe lipoatrophy may not recover fully, therefore early detection is important. In resource-rich settings cosmetic surgery with injectable facial fillers has been used and gives reasonable short term results.

Before switching one drug, such as stavudine, in the case of a patient with lipoatrophy, a number of factors need to be considered. Single drug substitution in a patient who is not virologically suppressed is not a good idea as this may encourage the development of resistance. Before switching a single drug, a viral load should be done. If the patient is not virologically suppressed, step-up adherence support should take place and the viral load should be checked again in three months' time. If after three months the patient still has a detectable viral load they should be switched to a second-line regimen. The second-line regimen should include tenofovir or abacavir if possible.

Another important consideration, before starting a patient on tenofovir, is kidney function. A plasma creatinine should be done and the eGFR (estimated glomerular filtration rate, a measure of the renal function) calculated. Patients with an eGFR of less than 50mL/min should NOT be given tenofovir, as it has the potential to cause renal toxicity.

Lipohypertrophy is the central accumulation of fat in the abdomen, breasts, neck or top of the back (buffalo hump). [2] Considerably less is understood about lipohypertrophy and it has been observed in patients on a wide variety of ARV regimens. [3] It used to be thought that lipohypertrophy is due to the protease inhibitors (PIs), but the incidence is the same on many different ART regimens containing non-nucleoside reverse transcriptase inhibitors, PIs, or other combinations not yet available in the public sector.

A large study done in the USA showed that the rate of fat accumulation in the trunk is similar in HIV-infected patients on ART and in HIV-uninfected controls.[4] This finding, together with the fact that fat accumulation is not linked to any antiretroviral drug class, suggests that fat gain on ART is a consequence of treating HIV, with patients becoming obese at the same rate as the general population.

Current evidence does not support changing ART regimens for lipohypertrophy. Diet and exercise may help with reducing visceral fat accumulation and metformin is of value if insulin resistance is present. Growth hormone and its analogues have been of use in clinical trials but the costs are prohibitive. Surgery may be considered for buffalo humps or breast enlargement, but this is seldom available in the public sector. [3]

In summary, switching ART for lipoatrophy is recommended. On the other hand, fat accumulation is NOT related to any antiretroviral class and does NOT respond to treatment changes. Patients should be counseled appropriately about this and should NOT be told that their ART is making them gain weight.

The National HIV and TB Health Care Worker Hotline is open for telephonic queries from health care workers, toll-free, from Monday to Friday, 8:30AM – 5:00PM. They can be contacted on 0800 212 506 or 021 406 6782 or send a 'Please Call Me' to 071 840 1572. R

References:

1. Robles DT. Lipodystrophy in HIV. http://emedicine.medscape.com/article/1082199-overview. Accessed 2012/08/28
2. Bedimo RJ. Body-Fat Abnormalities in patients with HIV: Progress and Challenges. Journal of the International Association of Physicians in AIDS Care November/December 2008;7(6): 292-305
3. Wohl DA & Brown TT. Management of Morphological Changes associated With Antiretroviral Use in HIV-Infected Patients. J Acquir Immune Defic Syndr September 1 2008;49 :S93-S98
4. Grunfeld C et al. Regional adipose tissue measured by MRI over 5 years in HIV-infected and control participants indicates persistence of HIV-associated lipoatrophy. AIDS 2010, 24:1717-1726.

Nutritional Advice

Patients with HIV – Associated Lipodystrophy

Written by Carey Haupt, Dietician RD (SA), Wits Reproductive Health and HIV Institute

The dietary goal should be to obtain and maintain a healthy body weight and to manage any metabolic symptoms (2010). Patients should be referred to a dietician for a complete nutritional assessment and dietary intervention.

Introduction

HIV associated wasting is the classical image of people infected by HIV. The introduction of antiretroviral treatment (ART) has changed this picture of HIV/AIDS. A person on ARV treatment can develop lipodystrophy or become overweight or even obese (Keithley et al., 2009). The changes in nutritional status have made nutritional assessment and management an important tool in the treatment of the disease.

Many of the symptoms of lipodystrophy and obesity overlap each other like abdominal obesity, dyslipidemia and insulin resistance. Most of these symptoms require dietary guidelines which interlink with each other (Keithley et al., 2009). Obesity is considered to be one of the factors that have increased the prevalence of metabolic syndrome in people living with HIV/AIDS. The syndrome has additional symptoms that includes increased blood pressure, glucose intolerance, pro-inflammatory and pro-thrombotic states. Lipodystrophy may also have the following symptoms: fat redistribution (lipoatrophy or lipohypertrophy), and Diabetes Mellitus (Keithley et al., 2009) .

As with all nutritional assessments the A (Anthropometric), B (Biochemical) C (Clinical), D (Dietary) principle should be followed when assessing a person on ART that may have obesity or lipodystrophy (Knox et al., 2003).

Anthropometric

All normal anthropometric measurements should be taken (weight, height) including regional measures of fat (mid upper arm circumference (MUAC), waist and hip circumference and bicep, tricep and subscapular skinfold thicknesses) (SInghania and Kotler, 2011). The additional regional fat measurements can be used to screen for or monitor long term nutritional status regarding fat deposition. For example longitudinal triceps and MUAC measurements will show if a person is losing arm fat or arm circumference.

The Body Mass Index (BMI) can be used to classify a person's weight into underweight to morbidly obese. A person's normal weight range can be calculated using BMI; this can assist with setting a goal weight. Below is a table of the classifications which use BMI in adults.

Table 1:Body Mass Index (BMI) classification (1998)

Classification	BMI
Underweight	< 18.5
Normal weight	18.5-24.9
Overweight	25-29.9
Obesity (class 1)	30-34.9
Obesity (class2)	35-39.9
Morbid obesity	>39.9

Another method is to measure waist circumference to determine the intra-abdominal or visceral fat that a person is carrying. The waist circumference is an important measurement as it is an independent measure of type 2 diabetes, hypertension or cardio vascular disease. Waist circumference measures that are higher than the cut-offs in the table below indicates that the person is at higher risk of cardiovascular disease.

Biochemical

Nutritionally specific biochemical

Table 1:Body Mass Index (BMI) classification (1998)

Gender	Centimeters
Men	>102cm
Women	>88cm

markers need to be monitored to manage dyslipidemia , insulin resistance and glucose intolerance. The following bloods values should be monitored: cholesterol, triglycerides and fasting glucose.

Clinical

The clinical assessment should include the medical history and physical exam to identify the risk of malnutrition (both over and under). The key areas to focus on are: physical appearance (lipodystrophy can be very evident in the face, abdomen and extremities), evaluation of opportunistic infections, diarrhoea or signs of gastro intestinal stress, mal-absorption, use of nutritional and herbal supplements and functional status (ability to obtain, prepare and eat food) (Knox et al., 2003).

Table 1:Body Mass Index (BMI) classification (1998)

Stage	Clinical profile	Energy increase needed	Reason for energy increase
I & II	Asymptomatic	10%	Maintain body weight and physical energy
III & IV	Symptomatic	20-30%	Maintain body weight

Dietary

When assessing the dietary intake of a patient the adequacy of the current diet should be assessed by looking at the energy, macronutrient intake and assessing the factors affecting adequate intake and food intolerances. The dietary goal should be to obtain and maintain a healthy body weight and to manage any metabolic symptoms (2010). Patients should be referred to a dietician for a complete nutritional assessment and dietary intervention.

In order to calculate a diet for an obese, HIV infected person, the World Health Organization's (WHO) guidelines of using the person's HIV stage and ideal body weight should be taken into account. Once the total energy requirement has been calculated, then a balanced diet can be worked out by dividing the total energy into the correct proportions of fat, protein and carbohydrate. Additional recommendations are increased physical activity, monitoring of food intake and exercise and the management of stress (Keithley et al., 2009)

The distribution of energy by macronutrients should be as follows:

- The protein requirement of 12-15% is not changed due to HIV/AIDS disease (2007).
- There is no specific guideline for fat intake for people living with HIV/AIDS, therefore the normal 30-35% of total energy should come from fat (2007, 2005). This equates to approximately 80g fat per day (2007). However more specific guidelines would apply to people that have metabolic symptoms.
- The remaining energy is comprised from the carbohydrate requirement.

Lipodystrophy and obesity are found in the general population. The dietetic principles that are used in the management of the symptoms expressed by the two diseases can be used in the HIV/AIDS population (Keithley et al., 2009).

Dietary guidelines for patients with Diabetes Mellitus and insulin resistance

The guidelines for people living with HIV/AIDS who have diabetes mellitus

or insulin resistance are the same as for the general population (SInghania and Kotler, 2011). Diet and oral agents are generally adequate to manage this syndrome. The American Dietetic Association (ADA) recommends that people living with HIV/AIDS who have hyperglycemia be educated on increasing fiber intake and limiting simple carbohydrate and alcohol (2010). A patient would needs to consult a dietician for correct dietary counseling on Diabetes Mellitus, the use of diet for better blood sugar control and for an individualized diet.

Dietary guidelines for patients with abnormal lipid levels

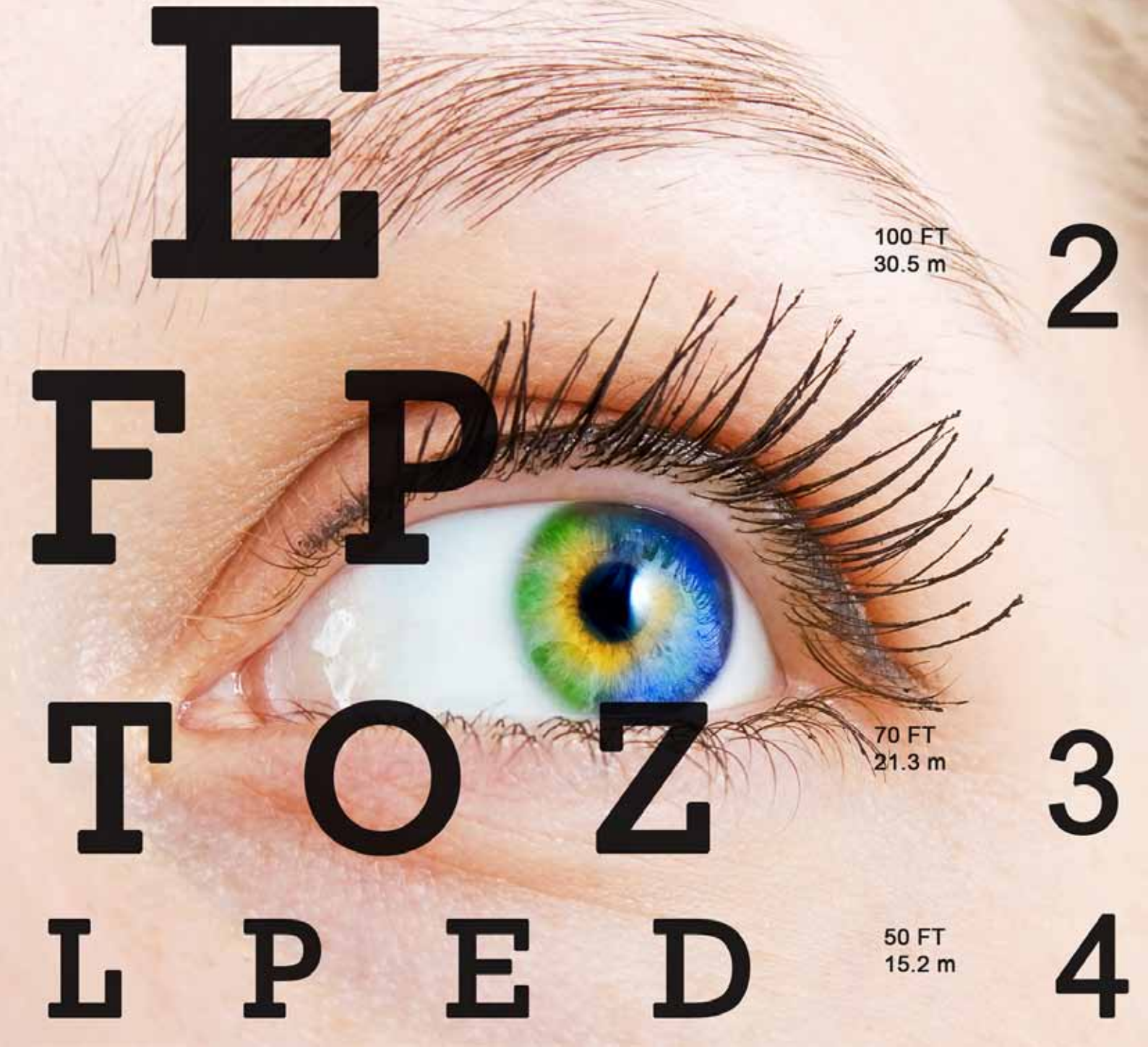
The American Dietetic Association (ADA) recommends that a heart healthy diet should be followed when treating abnormal serum lipid levels alongside medication and exercise (2010). The general US guidelines for people living with HIV/AIDS who have elevated blood lipid levels is to maintain a healthy body weight, reduce saturated fat, trans-fatty acid, salt and dietary cholesterol intake (2010).

The South African Dietary Guidelines for HIV infected people with a high lipid profile are the following (DOH, 2006):
Reduce total amount of fat eaten. This can be done in the following ways:

- Reduce the intake of saturated fats
  - o Use fat free milk rather than full cream milk
  - o Restrict red meat to 300g of cooked meat a week (2-3 times a week)
  - o Choose lean cuts of meat with very little visible fat
  - o Look out for hidden fats like in regular mincemeat: rather use extra lean mincemeat
  - o Cut off fat from meat before cooking it
  - o Eat leaner meats like fish and chicken without the skin
  - o Avoid the use of animal fats, palm oil, palm kernel oil, coconut oil and coffee creamer.
- Reduce the intake of fats
  - o If cooking a curry or casserole, allow cooling and the removal of fat from the top and then re-heat and serve.
  - o Reduce fatty sauces and gravies
  - o Avoid deep fried foods, rather steam, boil, grill or bake
  - o Use low fat or lite products
- Increase fibre in the diet
  - o Increase fruit and vegetable intake
  - o Add beans and legumes to your dishes
- Reduce or avoid alcohol
- Increase exercise Ⓡ

Reference

1. National Institutes of Health, 1998, Practical guide: Identification, evaluation and treatment of overweight and obesity in adults, Washington DC.
2. Executive Summary of a Scientific review: Consultation on Nutrition and HIV/AIDS in Africa: Evidence, lessons and recommendations for action, 2005, Durban South Africa.
3. South African National Guidelines on Nutrition for people living with HIV/AIDS, TB and other chronic debilitating condition, Dept. of Health (ed), 2007.
4. Nutrition intervention and Human Immunodeficiency Virus infection, American Journal of Dietetic Association, 2010, 110, 1105-1119.
5. Keithley, J., Duloy, A., Swanson, B., Zeller, J., 2009, HIV infection and Obesity: A review of the evidence, Journal of the Association of Nurses in AIDS Care, 20, 260-274.
6. Knox, T., Zafonte-Sanders, M., Fields-Gardner, C., Moen, K., Johansen, D., Paton, N., 2003, Assessment of Nutritional status, body composition and Human Immunodeficiency Virus-associated morphologic changes, Clin. Infect. Dis., 36, 63-68.
7. Singhania, R., Kotler, D., 2011, Lipodystrophy in HIV patients: its challenges and management approaches, HIV/AIDS- Research and Palliative Care, 3,135-143.



IMPLEMENTING A VISION SCREENING PROGRAMME IN SCHOOL HEALTH SERVICES.

Elizabeth Mokoka

Vision screening is an efficient and cost-effective method of identifying children with visual impairment or eye conditions that are likely to lead to visual impairment, so that they can be referred to an appropriate eye care professional for further evaluation and treatment (Ophthalmological Society of Southern Africa)

INTRODUCTION

Strengthening of School Health Services has been identified as a key component of the Primary Health Care restructuring process. The new Integrated School Health Policy (ISHP) and Programme, which replaces the 2003 School Health Policy and Implementation Guidelines, aims at providing a comprehensive service to school – going age groups throughout the 4 phases of schooling, namely, the foundation, intermediate, senior and FET (further education and training) phases. Key components of the services to be provided are set out as an IHSP package and comprise the following:

- Health promotion and health education, which entail crucial activities within the school health programme and provide the best opportunity to impact on the immediate and long-term health behaviour of children and the youth.
- Health assessment of new learners, with focus on identifying barriers to learning. Assessment should also be offered to learners whose learning is sub-optimal at the request of an educator. The ISHP aims to individually assess every learner at least once during each of the four educational phases.
- On-site Service Provision, which will initially focus on providing a relatively limited package of services or ensuring that, if not provided on site, learners have access to these services. Examples of these services include as a minimum, immunization, deworming, treatment of minor conditions especially skin conditions, provision of condoms, contraceptives, HCT and pregnancy testing.
- Provision of additional (referral) services which are required but cannot be provided on site. Where health facilities are easily accessible, learners should receive services at these facilities. Plans must be in place to ensure that learners can be seen at appropriate times (in the afternoon or during weekends or school holidays). Services may also be provided from mobile units.

Among services specified in the package is the implementation of a vision screening programme throughout the 4 phases of schooling.

Definition of Vision screening

Vision screening is an efficient and cost-effective method of identifying children with visual impairment or eye conditions that are likely to lead to visual impairment, so that they can be referred to an appropriate eye care professional for further evaluation and treatment *(Ophthalmological Society of Southern Africa)*

Purpose of a school vision screening programme

The purpose of a school vision screening program is to identify learners with visual problems or impairment in order to refer them to a suitable practitioner for timely and relevant care and treatment. Early detection of vision problems will provide a learner with an opportunity to get assistance and subsequently enhance their educational success. This can be done through:

- Identifying learners with visual problems through screening procedures and observation by school health services personnel and educators.
- Notifying parents/guardians in order to obtain their consent as necessary for further interventions
- Establishing follow-up procedures to assist learners with visual problems in receiving appropriate care.
- Informing educators and enhancing their understanding of problems that learners with visual problems might experience in class.

Areas for evaluation during vision screening

An effective vision-screening program will evaluate the following areas:

1. Visual acuity - the ability of the eye to see clearly in the distance (e.g.to read on the chalkboard from their desks) and at near(e.g. to read a book).

2. Eye muscle coordination – The ability to maintain a single image without deviation or tendency for deviation; through fusion (the ability to unite the images from both eyes, into a single image), during convergence (the ability to turn the two eyes toward each other to focus on a close object) and eye movement (the ability to move the eyes from one point to another).

3. Refractive error - the inability of the eye to focus light upon the retina. Common refractive errors include near-sightedness (myopia – Fig. 1,), farsightedness (hyperopia – Fig 2) and astigmatism (fig. 3)

4. Eye health - the absence of anomaly or disease on all structures of the eyes. During visual screening this can partly be done through observation.

5. Colour vision – the ability to distinguish colours. Colour deficiency is the inability to distinguish between certain colours, usually red – green.

6. Accommodation – the ability to change/maintain focus at different distances.

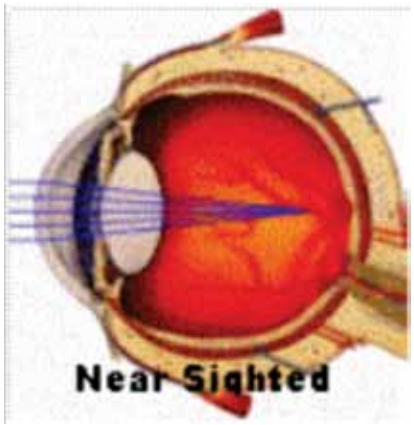


Fig1. MYOPIA

A condition whereby the eye, while at rest, over refracts the light from a distant object so that the image of the distant object is focused in **FRONT** of the retina. The person perceives a blurred image that cannot be improved by accommodation. The person sees near objects clearly but distant objects appear blurry. Myopia is corrected with negative (-) lenses.

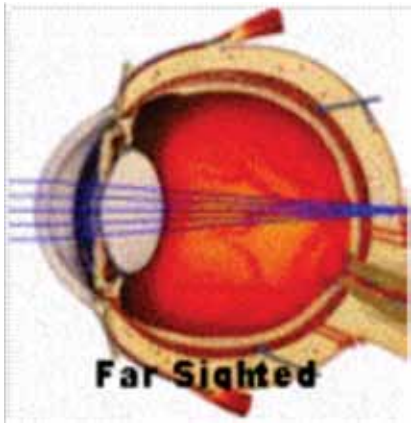


Fig 2. HYPEROPIA

A condition whereby the eye, while at rest, refracts light from a distant object insufficiently, so that the image is focused **BEHIND** the retina. The person sees distant objects clearly but close objects appear blurry. Hyperopia is corrected with positive (+) lenses.

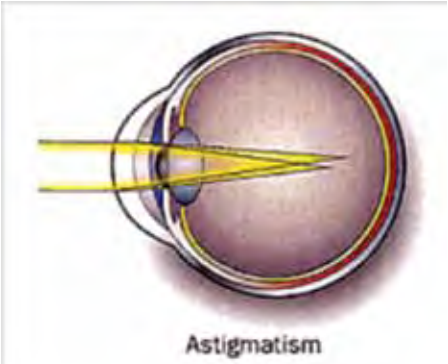


Fig 3

A condition that occurs when the cornea is slightly irregular in shape. This irregular shape prevents light from focusing properly on the retina. As a result, vision may be blurred at all distances.

Components of a vision screening programme in schools

A school vision screening programme should at least include the following activities:

- History taking - signs or symptoms as described by the learner, or observed by the parent/ guardian and/or teacher, which may indicate visual problems.
- Observation of the eyes of a learner during screening
- Observation of the behaviour of a learner during screening
- Visual acuity testing for distance and near and colour perception
- Recording of vision screening results, preferably in a permanent record which could be kept either at the school or by the school health team, according to policy.
- A referral system and follow up procedures.
- Notification of parents if a learner is found to have possible visual problems.

Points to consider during vision screening in schools.

1) *Selection of a screening site* – A quiet place or room should be selected to avoid distractions. Where possible, a waiting area should be provided, so as not to disrupt screening.
2) *Communication* – It is important to make time to explain to learners what the tests are about in order to gain their cooperation and to keep them informed. This is also a suitable time to give health education on appropriate topics such as eye care, the need to protect eyes during play or sports, etc.
3) *Appropriateness of tests* – It is important to match the vision screening activities to the age, phase or grade level and maturity of the learner. For example, learners in the foundation phase can have their visual activity tested with the tumbling E – chart (Fig 4) where the letter E can be turned into various positions. This will also show young children how to use their arms and hands to indicate where the three legs of the E are facing.

Fig 4. Snellen Charts

Factors that can influence vision screening.

The following factors can affect the results of vision screening and should be kept in mind when planning, especially where young learners are concerned:

- Children have a short attention span. Timing is important in terms of the time that screening is scheduled and the length of the tests.
- Language comprehension. It is important to use the language that the learner understands and to avoid the use of acronyms and medical terms when communicating with the learner.
- Limitations of verbal expression. Some learners are shy or might even feel intimidated or scared.
- Poor development of eye – hand coordination, especially in very young learners.
- Fear of new experiences. Some learners might have an inherent fear of health care workers, based on previous experience like immunisation, injections, etc.

To overcome the above, the school health team needs to be trained in vision screening to be able to choose suitable procedures. It is also preferable to send the same team to the school until learners are familiar with the process. Staff must also establish rapport with both educators and learners to create a friendly and relaxed, non – threatening environment.

Children have a short attention span. Timing is important in terms of the time that screening is scheduled and the length of the tests.

Signs and symptoms of visual problems which may be observed during screening:

There are signs and symptoms which can be picked up during vision screening. These can be detected during history taking, through observation and during the actual testing, through complaints expressed by the learner, appearance, behaviour and performance.

Complaints expressed by the learner:

- Eyes are sensitive to light.
- Eyes or eyelids burn or itch
- Images appear as blurred or doubled
- Letters and lines run together.
- Words seem to jump.
- Frequent headaches.
- Cannot see the chalkboard from his/her desk
- Eyes water

Appearance

- Lids are discharging, crusted, red-rimmed, or swollen;
- Styes or sores on the eyelids or face.
- Eyes are red or appear bloodshot.
- Eyes are crossed or turned.
- A drooping eyelid
- Different size of pupils or eyes

Actions or behaviour

- Brings the book too close or holds it too far
- Asks for special seating in class to be able to see the chalkboard
- Thrusts head forward to see distant objects
- Frowns or narrows the eyes when reading or looking far
- Attempts to brush away a blur
- Rubs eyes frequently
- Blinks continually when reading
- Tilts head to be able to see better
- Covers one eye
- Stumbles or trips over objects when walking

Performance

- Learner shows slowness and in learning to read.
- Poor achievement demonstrated by reduced quality or quantity of work and slow rate of learning
- Short attention span, which some times leads to the child being disruptive in class.
- Classmates can complain that the learner "copies " their work (because he/she does not see the chalkboard .
- Learner can be shy or withdrawn among fellow learners.
- Reluctant to participate in games, sports or play with fellow learners.

Fig. 5 Vision screening kit

REQUIREMENTS FOR IMPLEMENTING A VISION SCREENING PROGRAMME IN SCHOOLS IN SOUTH AFRICA

Of the ten million children in public schools in South Africa, it is estimated that approximately 200 000 have visual impairments that negatively affect their development. Most of these conditions can be identified through vision screening and treated, thus complementing the primary healthcare re-engineering strategy currently underway. To be able to have a successful, vision screening programme that will enhance the quality of life of those learners with visual problems requires the following:

- Policy guidelines for vision screening as an integral part of school health services
- Comprehensive training for the school health team, especially personnel that have had no training in eye care
- Re - orientation of nurses in school health who might not have worked in eye care for lengthy periods of time.
- A mentorship programme to support these practitioners
- Continuing Professional Development to keep abreast with the dynamic world of eye care.
- Involvement of stakeholders such as ophthalmic nurses, ophthalmologists and optometrists to support services.
- Vision Screening tools, including vision screening kit (Fig. 5) and a recording system
- Clear referral and follow up systems
- Monitoring and Evaluation system for the programme.

CONCLUSION

Visual problems can and do affect the physical, intellectual, social and emotional development of children. Early detection, comprehensive, accurate identification of visual problems, referral to the relevant eye care practitioner and a functioning follow up system

coupled with parent- and educator education and involvement, are all key to a successful vision screening programme that will ensure that learners with visual problems are provided an optimal state of health and development. To achieve Millennium Development Goal 2 of the World Health Organization (to achieve universal primary education by 2015), all children need to be vision screened to ensure they can complete a full course of primary schooling. R

REFERENCES

BC Ministry of Healthy Living and Sport 2010. *Provincial Vision Screening Training Manual*

National Department of Health 2011. *School Health Policy and Implementation Guidelines*. Pretoria: National Department of Health.

National Department of Health 2011. *Integrated school health programme (ISHP).National Implementation Plan 2012 – 2016*. Pretoria: National Department of Health.

Ophthalmological Society of Southern Africa 2012. *Vision Screening Guidelines*. Pretoria: OSSA.

Visuals problems can and do affect the physical, intellectual, social and emotional development of children.

Competition Winners

Above are the winners who got funded by the SA HIV Clinicians Society to attend AWACC conference which was held at Durban on the 4th-5th of October. From left is Gladness Marhwa from TB/HIV Care Association project Integrate, Ixopo, Nonhlanhla Motlokoa, Nurse Project Manager from SA HIV Clinicians Society, Clarisa Knipe from Central Clinic in East London, Given Wilondja from Charlotte Maxeke Academic Hospital, Johannesburg.

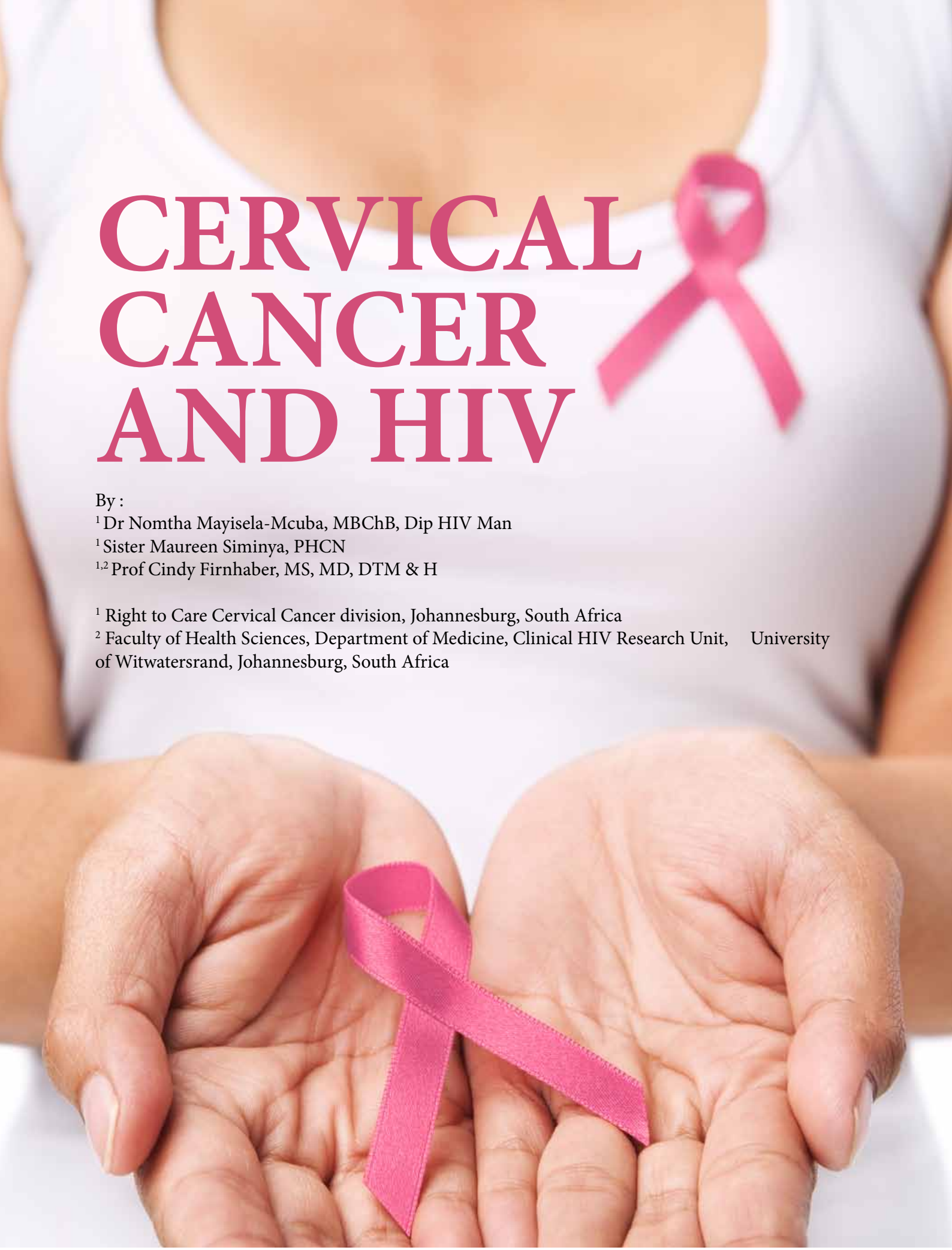
Competition Winners

It is with great pleasure to announce the winners of our competition which was published on the September issue, themed Mental Health. The lucky winners won the above-mentioned book "HAART AND MIND, common mental disorders in people living with HIV," written by Dr Rita Thom.

Winner's Names:

1. Regina Masombuka
2. Ntombi Mahlangu
3. Mirriam Kunene

CERVICAL CANCER AND HIV



By :
[1] Dr Nomtha Mayisela-Mcuba, MBChB, Dip HIV Man
[1] Sister Maureen Siminya, PHCN
[1,2] Prof Cindy Firnhaber, MS, MD, DTM & H

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In Africa cervical cancer comprises 23.3% of all cancers in women, Human Papillomavirus (HPV) is the main cause of cervical cancer and HIV immunosuppression is associated with a higher prevalence, incidence and persistence of HPV infection.HPV infection is a common sexually transmitted infection.

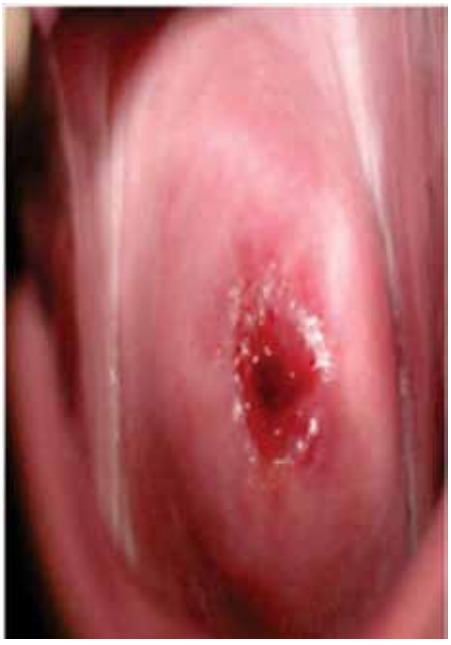
Cervical cancer is one of the most common cancers among women globally and comprises approximately 12% of all cancers in developing countries (1). The most recent compilation of data indicates that an estimated 490,000 new cases of cervical cancer occur annually among women worldwide and nearly 80% of these are in developing countries where screening programmes are not well established and are poorly organised (2). In Africa cervical cancer comprises 23.3% of all cancers in women.

South Africa has the highest number of people estimated to be living with HIV/AIDS in the world and is one of the countries hardest hit by the epidemic. The prevalence of HIV among South African women attending antenatal visits in 2010 was 30.2 % (3).

Human Papillomavirus (HPV) is the main cause of cervical cancer and HIV immunosuppression is associated with a higher prevalence, incidence and persistence of HPV infection. HPV infection is a common sexually transmitted infection. Most women are infected shortly after beginning their first sexual relationship, with the highest prevalence seen in women under 25 years of age (4, 5).

Invasive cervical cancer (ICC) develops relatively slowly typically over a period of at least 10 years but studies have shown that ICC in HIV seropositive women tends to present 10-15 years earlier than in their HIV counterparts due to immunosuppression (6,7). Over 100 HPV types have been identified, of which 40 infect the genital tract. A study in South Africa of 148 HIV seropositive women showed a diversity of HPV types, with 95% of the women harbouring HPV, a median of 3 HPV types per participant and 85% of women having one or more oncogenic HPV types (16 accounted for 30% followed by 30 and 35) (8). Anatomically, the cervix consists of two portions, the ectocervix and the endocervix. Ectocervix is covered by a pink stratified squamous epithelium, and a reddish columnar epithelium lines the endocervix. The junction between squamous epithelium and columnar epithelium is called the Squamocolumnar junction (SCJ). The location of the SCJ in relation to the external os varies depending upon age, menstrual status, and other factors such as pregnancy and oral contraceptive use. The area adjacent to the SCJ is known as the transformation zone and is of great importance in colposcopy as this is where almost all manifestations of cervical carcinogenesis occur (9).

Negative



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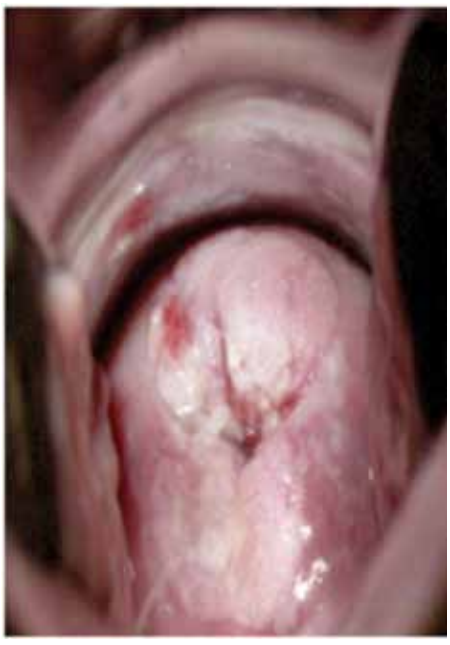
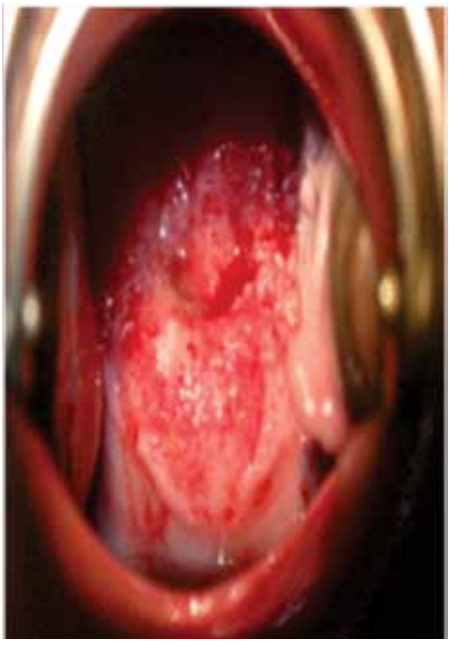


Cervical cancer



Screening and Treatment of Cervical Dysplasia

The Pap smear has been the standard of care screening method throughout the world for decades and has been shown to reduce the morbidity and mortality of cervical cancer even in middle and lower income countries (10).

Pap smear results are interpreted as per Bethesda classification. (11)

1. **Negative for intraepithelial lesion or malignancy**
2. **Squamous cell abnormality**

- Atypical squamous of undetermined significance (ASCUS)- Borderline changes between normal and abnormal.
- Atypical squamous of undetermined significance, cannot exclude HSIL (ASCUS-H)- Borderline but may be more serious
- Low grade squamous intraepithelial lesion (LSIL)- Mild cellular changes
- High grade squamous intraepithelial lesion (HSIL) –Moderate to severe cellular changes.
- Invasive cervical cancer (ICC)

3. **Glandular cell abnormality**

- Atypical glandular cells (AGC)
- Atypical glandular cells favour neoplastic
- Endocervical adenocarcinoma in situ
- Adenocarcinoma

Occasionally, results may come with reports on CIN1/CIN2 which are equivalent to LSIL/HSIL respectively, but are often used in histology results. The adequacy or suitability of the Pap smear results on the report is very crucial in order for the results to be considered satisfactory by the cytologist. Unsatisfactory results are often due to incomplete sampling of either or both the endocervical and ectocervical squamous cells of the cervix. Both areas are needed to evaluate the complete health of the cervix. Blood and vaginal discharge/inflammation can obscure the reading of the Pap smear rendering the results uninterpretable by the cytotechnician or cytologist. Removing the discharge and blood is important before performing a Pap smear. Women should be informed not to come for a Pap smear while menstruating. Also if a woman has a sexually transmitted disease then she should have this treated first before performing a Pap smear. Another important aspect of the laboratory interpretation of the Pap smear is the reproductive history of the woman. The age, dates of last menstrual cycle, any hormonal therapy (including birth control) and if the patient has been treated for dysplasia before is crucial information that should be on all requisition forms. Recommendations or comments from the cytologist are always noted on the report and can be used as a guide for further management.

All HIV seropositive women should have a baseline Pap smear at the time of diagnosis of their HIV.

After an abnormal Pap smear (either HSIL, ASC-H or persistent LSIL (defined as two LSIL Pap smears at least a year apart), the woman should be referred for a colposcopy. This test involves wiping the cervix with a solution of either acetic acid (vinegar) and/or iodine. The cervix is then looked at with a special lamp called a colposcope. This procedure allows abnormalities of the cervix to be seen and a biopsy is taken and sent to the laboratory

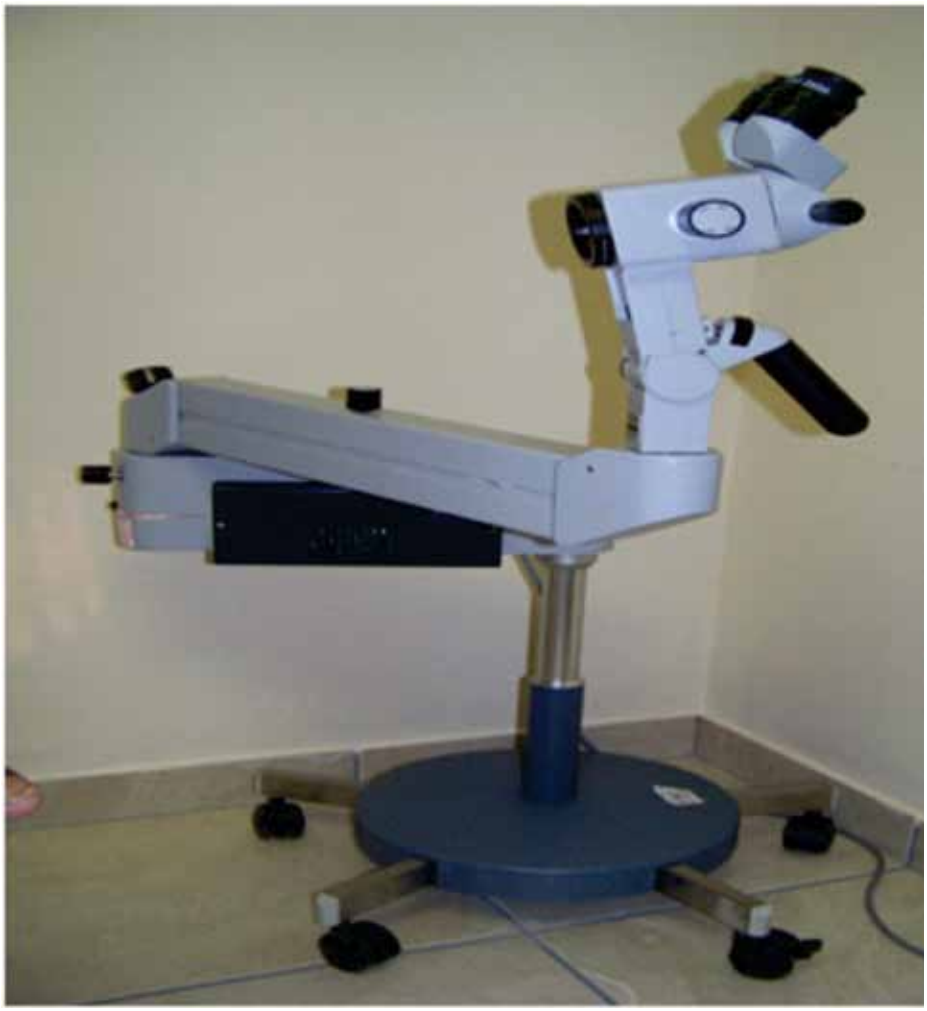
Cervical intraepithelial neoplasia (CIN), also known as cervical dysplasia is the premalignant transformation and abnormal growth of squamous cells on the surface of the cervix. It is graded according to its pathologic process seen on the biopsy specimen; from CIN1 to CIN3. This represents depth of disease found on biopsy from CIN 1 (1/3 of the cervical specimen shows dysplasia) to CIN 3 which indicates that the dysplasia is found throughout the cervical biopsy specimen of the transformation zone.
LLETZ (Large Loop Excision of the Transformation Zone), is an outpatient surgical procedure recommended for managing CIN2 and CIN3. In women with HIV, untreated CIN 1 is likely to persist, and the likelihood of persistence is also higher than that among HIV-seronegative women, therefore screening and follow up of these patients is very important (13).

National Department of Health HIV treatment guidelines. (12)

PAP SMEAR RESULTS	REFERRAL CRITERIA
Normal	Repeat smear in 3 years
LSIL	Repeat smear in 1 year
HSIL	Refer for colposcopy
ASCUS	Manage as LSIL
ASCUS-H	Refer for Colposcopy
Glandular	Refer for endometrial investigations

Biopsy Forceps

Colposcopy.



Cervical cancer is a preventable disease which is curable if detected and treated in its precancerous state. No woman should get cervical cancer. If more clinics with dedicated staff can have access to cervical cancer screening every woman would live a life free from cervical cancer. ℞

REFERENCES

1. Parham GP, Sahasrabuddhe VV, Mwanahamuntu MH, et al. Prevalence and predictors of squamous intraepithelial lesions of the cervix in HIV-infected women in Lusaka, Zambia. Gynecol Oncol 2006; 103:1017-22.
2. Kanavos P. The rising burden of cancer in the developing world. Ann Oncol. 2006; 17(Suppl 8):viii15–23.
3. SA DOH, National Antenatal Sentinel HIV & Syphilis Prevalence survey, 2009-2010
4. Walboomers JM, Jacobs MV, Manos MM et al. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. J Pathol.199; 189:12–19
5. Collins S, Mazloomzadeh S, Winter H et al. High incidence of cervical human papillomavirus infection in women during their first sexual relationship. BJOG 2002; 109: 96-98
6. Lornalisa P, Smith T, Guidozzi F. HIV Immunodeficiency virus infection and invasive cervical cancer in South Africa. Gynecol Oncol 2000; 460-463
7. Moodley M, Moodley J, Kleinschmidt I. Invasive cervical cancer and human Immunodeficiency virus infection: a South African perspective. Int J Gynecol Cancer 2001; 11(3): 194-197.
8. Firnhaber C , Van Le H , Pettifor A , et al. Association between cervical dysplasia and human papillomavirus in HIV seropositive women from Johannesburg South Africa. C C C. 2010;21:433–443.
9. Sellors J W, Sankaranarayanan R. Colposcopy and treatment of cervical intraepithelial Neoplasia: A Beginners' Manual. IARC, 2003.
10. Aristizaban L, Cuello C, Correa P. The impact of vaginal cytology on cervical cancer in Cali, Columbia. Int J Cancer 1984;34:5-Lazcan-Ponce E, Palacio-Meija L, Allen-Leigh B, et al. Decreasing Cervical cancer Mortality in Mexico: Effect of Papanicoloau coverage , birth weight and the importance of diagnostic validity of cytology.Cancer Epidemiol Biomarkers Prev 2008;17:2808-2817
11. Solomon D, Davey D, Kurman R et al.Forum group members; Bethesda 2001 workshop: The 2001 Bethesda System: Terminology for reporting results of Cervical cytology. JAMA 2002;287:2114-2119
12. National Department of Health, SA, 2010. Clinical Guidelines for the management of HIV and AIDS in adults and adolescents.
13. Adam Y, Van Gelderen C, de Bruyn G, et al. Predictors of persistent cytologic abnormalities after treatment of cervical intraepithelial neoplasia in Soweto, South Africa: A cohort study in a HIV high prevalence population. BMC Cancer 2008; 8: 211.

Principles of HIV drug resistance

for clinical management in South Africa

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Introduction

The rapid scale-up of antiretroviral therapy (ART) during the past decade has led to dramatic reductions in HIV-related morbidity and mortality. Efforts are now focused on maintaining virological suppression of patients on first line ART, detecting treatment failure and switching to second-line regimens where necessary.

A major threat to sustaining the positive impacts of ART is the increasing issue of drug resistance. Drug resistance may be primary (transmitted), whereby a person is infected by a strain of HIV that is not fully susceptible to antiretroviral medications (ARVs), or secondary (acquired), whereby a person develops resistance to ARVs over time. In South Africa, the level of primary resistance has been below 5% for the last decade [1] and so this article will focus on the more pressing problem of secondary resistance.

In Southern Africa, routine viral-load monitoring is recommended to identify treatment failure but it is often not done with sufficient frequency, nor reacted to appropriately. There can be a reluctance to switch patients to second-line therapy, in spite of clear guidelines. This is in part because of a lack of certainty regarding the reason for treatment failure – whether it is due to poor patient adherence, the development of drug resistance, or a combination of these issues. Nonetheless, patients who continue taking a failing ART regimen are at risk of developing resistance to those medications. This article reviews the South African guidelines for viral load monitoring and regimen switch and introduces basic concepts of drug resistance for nurses and health care workers. The information presented here is useful to practitioners throughout Southern Africa as most HIV epidemics in the region are dominated by the same HIV subtype (HIV-1 subtype C), and drug resistance develops by similar mechanisms.

Guidelines on VL monitoring

The goal of ART is to keep the viral load as low as possible for as long as possible [2]. HIV viral load tests are reported as the number of HIV copies in a milliliter (copies/ml) of blood. If the viral load measurement is above detection (> 50 copies/ml), this indicates that HIV is reproducing as evidenced by its presence in the blood, and that disease will likely progress faster than if the viral load is not detectable. Consistent suppression of viral load levels is associated with reduced morbidity and mortality and a lower probability of sexual transmission of HIV [3].

The South African national ART program provides viral load monitoring free of charge to patients on ART. Two viral loads are measured in the first year of treatment, at 6 and 12 months, and the test is repeated every 12 months thereafter. In response to a detectable viral load, adherence should be carefully assessed and the test repeated, as described in table 1.

Barriers to correct viral load monitoring

Many barriers to viral load testing in South Africa are due to Health System challenges which are a combination of financial, logistical and human resource issues [4]. Viral load is a costly and complex test. The price for viral load testing is about 4 to 5 times that of CD4 testing. Currently available viral load platforms are laboratory-based and require significant infrastructure compared with CD4 point-of-care technologies [5]. Currently available viral load technologies require delicate instruments, a reliable cold chain and a secure electricity supply – luxuries which are not available in many areas of Southern Africa. Physical and human resources at laboratory and clinic level further impede efficient processing and reporting of results [4]. There is evidence that continued ART scale up may exacerbate the health system crisis in South Africa[6].These various factors present obstacles to consistent and timely viral load monitoring. However, as the most sensitive indicator of treatment success or failure, viral load monitoring is a vital component of care for patients taking ART.

Why viral load monitoring is important: resistance to antiretroviral drugs

Treatment of HIV-infected people with antiretroviral treatment (ART) is very effective. It works by preventing HIV from making copies of itself, allowing cells of the immune system to survive and fight infections. These effects are

Table 1: South African National Guidelines 2010, 3:19

Viral load (VL)	Action to be taken
<400 copies/ml	Routine adherence support 6 monthly viral load monitoring and then at 12 months annually
400-1000 copies/ml	Assess adherence carefully Repeat viral load after 6 months
>1000 copies/ml	Intensive adherence assessment and counseling Repeat viral load in 3 months, check hepatitis B status if not done already. If <1000, return to routine 6 monthly monitoring If >1000 and adherence issues addressed, switch to second line therapy

reflected in a falling viral load and a rising CD4 count. If a person is taking ART and the viral load is still detectable in the blood, this indicates that the virus is still making copies of itself despite presence of the antiretroviral drugs. HIV has a very high rate of replication, coupled with a lack of quality control checks when this replication occurs. That is, HIV that is not controlled by antiretroviral medications (ARVs) produces billions of copies of itself every day, and none of these copies are double-checked to ensure that they are the same as the original. Under these conditions, the structural make-up of the virus is altered, and this is known as the development of 'mutations'. Some of these mutations do not impact how well the virus responds to ARVs; however some make the virus less susceptible (or more resistant) to one or more antiretroviral drugs. In general, resistance to a specific ARV only occurs if that ARV is present in the patient. This is why adherence to ART is essential – adequate levels of the drugs must be present to ensure that the virus does not get a chance to replicate. Drug resistance is strongly predictive of virological failure after highly-active ART [7]. Moreover, resistance to drugs in first-line ART regimens increases the probability of virological failure to subsequent regimens [8,9].

Virological failure and switching patients to second line ART

The South African National Department of Health (NDoH) defines virologic failure as VL>1000 copies on two occasions, despite intensive adherence counseling. In many Southern African countries, viral load monitoring is not available and in these circumstances, immunological (fall of CD4 count to baseline, or 50% fall from peak value on treatment, or persistent CD4 level below 100 cells/mm3) or clinical (new or recurrent World Health Organization stage 4 condition) criteria are used to detect treatment failure [10].

Recommended second line regimens are based on the likelihood that patients with treatment failure will have developed resistance to their first-line ARVs. In the case of the Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs), a patient who is resistant to efavirenz (EFV) is likely to be resistant to nevirapine (NVP), and vice-versa. For this reason, second-line regimens contain Protease Inhibitors (PIs) rather than NNRTIs. Empirical treatment switches should be made as follows:

- Patients failing on a d4T or AZT based first line regimen – switch to TDF+3TC/FTC+LPV/r
- Patients failing on a TDF based first-line regimen – switch to AZT+3TC/FTC+LPV/r

First-line drug resistance and treatment switch is explained in more detail later in this article. Patients failing any second-line regimen require specialist referral [11]

Patient-specific risk factors for the development of virological failure and HIV drug resistance

Virologic outcomes improve with increased levels of adherence to first-line (NNRTI-based) ART[12] . Factors that impact patient adherence are often complex, and a number of factors have been linked to poor adherence in Sub-Saharan Africa [13-15].

- Disease and treatment factors such as experiencing side effects, and the maintenance of adherence even when a person feels well
- Social factors such as having disclosed to a trusted family member or friend and having social support
- Individual factors such as alcohol use, being away from home, fear of stigma, preferential use of tradition al medicines, non-acceptance of one's own HIV positive status
- Health care characteristics such as provider/ patient relationship, waiting times, access to health care facility
- Additional issues affect children and adolescents taking ART, where the importance of full disclosure of HIV status by caregivers, as well as strong parental relationships are associated with good adherence.

Aside from adherence issues, drugs may be poorly absorbed in the gastrointestinal tract, for example due to chronic vomiting or diarrhea or protein-losing enteropathy.

Drug-drug interactions are also a common issue affecting patients on ART, and these can lead to drug toxicity, poorer adherence, or decreased efficacy of either the ARVs or the coadministered medication [16]. Potential interactions are commonly presented when a patient is started on treatment for tuberculosis: rifampicin reduces the concentration of PIs and, to a lesser extent, NNRTIs. In addition, patients taking TB drugs as well as ARVs are exposed to increased risk of toxicity such as liver damage and peripheral neuropathy [17]. Prescribing errors are a further concern, and particular care must be taken with children, for whom drug doses must be calculated at each visit to ensure accuracy.

Nomenclature of resistance mutations

HIV RNA is a code for the proteins that the virus requires in order to function. RNA is made up of a sequence of codons. Each group of three codons makes an amino acid. Amino acids are the basic units that make up proteins and it is at the amino-acid level that resistance mutations are described. Because ARVs target certain HIV proteins, mutations in these proteins mean that the drugs no longer work, or work less effectively. This is drug resistance. When a mutation occurs, it is described according to the position of the affected amino acid.
The intended amino acid is named before the position, and the amino acid resulting from the mutation is named after. For example, M184V is a one of the most common drug resistance mutations. It happens in the reverse transcriptase (RT) protein and it is associ-

Table 2. Introduction on HIV-1 drug resistance mutations to first line ART in South Africa and its effects on other ARVs (adapted from the HIV & TB Drug Resistance Clinical Cases Book. Russouw, Lessells & de Oliveira, ISNB 978-1-920014-91-9)

Mutation	Selected by	Effects on other ARV
K103N, V108M, Y181C	EFV, NVP	- The presence of one of more mutations result in loss of susceptibility to EFV and NVP - Drug resistance mutations commonly transmitted from mother to child due to sdNVP
M184V	3TC, FTC	- Loss of susceptibility to 3TC, FTC - Increased susceptibility to AZT, d4T, TDF
TAMs: M41L, D67N, K70R, L210W T215Y or F, K219Q or E	AZT, d4T	- Decreased susceptibility to all NRTIs based on number of TAMs - Three or more TAMs are usually related to high-level resistance
Q151M, T69ins	AZT/ddI, ddI/d4T	- Resistance to all NRTIs - T69ins: TDF resistance
K65R	TDF, ABC, ddI	- Variable decrease in susceptibility to TDF, ABC, ddI (and 3TC, FTC) - Increased susceptibility to AZT
L74V	ABC, ddI	- Decreased susceptibility to ABC, ddI - Increased susceptibility to AZT, TDF

ated with lamivudine (3TC) resistance. In this mutation, 'M' refers to the 'wild-type' amino acid, methionine; 184 means that the affected amino acid is at position 184 in the genetic code of HIV's RT protein ; and 'V' refers to the amino acid resulting from the mutation in the RNA, valine. Because the amino acid at this position has been altered, the protein produced is different to that which was intended, and the virus is now resistant to lamivudine.

Even more worrying is the fact that these mutations can cause resistance to more than one ARV. In the example of the lamivudine mutation M184V, this single amino acid switch alone makes HIV resistant to lamivudine and emtricitabine, as well as potentially resistant to abacavir and didanosine [18].

Resistance to first-line therapy: NRTI and NNRTI resistance

RT is a type of protein known as an enzyme. It is essential for HIV to make new copies of itself. Nucleoside Reverse Transcriptase Inhibitors (NRTIs) and Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs) are designed to prevent reverse transcriptase from performing this function. These are the ARVs used in first line therapy in South Africa. Mutations that make HIV resistant to these classes of drugs are summarized in table 2. Particularly concerning are Thymidine Analogue Mutations (TAMs), which are a group of mutations that can cause resistance to all of the NRTIs.

Resistance to second-line therapy: PI resistance

Protease is another enzyme that is needed for the virus to become infectious. Protease Inhibitors (PIs) block protease so that HIV cannot infect a new cell. One mutation is usually not enough to make HIV resistant to PIs but if there are a multiple mutations, these drugs will become less effective than they should be [19]. Unlike with the NRTIs and NNRTIs, PI mutations do not tend to affect the entire family of drugs, so even if a person is resistant to one PI they may still be susceptible to another PI. Resistance to second-line therapy is not simple to manage; for this reason South African guidelines suggest that once a patient is resistance to PIs, he or she should see a specialist physician.

HIV drug resistance in South Africa

A number of studies have described the patterns of HIV drug resistance in patients failing first-line therapy in South Africa. Patients with virological failure on ART who have demonstrable resistance mutations have been shown to range between 73 and 88 percent [20-25] The most common mutations found are the M184V mutation, already described, and mutations that present resistance to the non-nucleoside reverse transcriptase inhibitors (NNRTIs) – namely efavirenz and nevirapine. This is clearly a huge concern with respect to our first-line treatment options here in South Africa. Patients who continue their first-line treatment despite raised viral loads are likely to accumulate numerous drug-resistant mutations as time progresses [23,25,26]. A recent study in rural KwaZulu-Natal identified that 1 in 6 patients failing

Table 3: Example of an HIV-1 genotypic resistance test report.

Drug	Mutations	Description	Level	GSS
Zidovudine	41L 65R 184V	Susceptible	1	1.0
Didanosine	41L 65R 74I 184V	High-level resistance	5	0.0
Lamivudine	41L 65R 184V	High-level resistance	5	0.0
Stavudine	41L 65R 184V	Low-level resistance	3	0.5
Abacavir	41L 65R 74I 115F 184V	High-level resistance	5	0.0
Emtricitabine	41L 65R 184V	High-level resistance	5	0.0
Tenofovir	41L 65R 115F 184V	Intermediate resistance	4	0.5
Nevirapine	106M 190A	High-level resistance	5	0.0
Delavirdine	106M	High-level resistance	5	0.0
Efavirenz	106M 190A	High-level resistance	5	0.0
Etravirine	106M 190A	Low-level resistance	3	0.5
saquinavir/r		Susceptible	1	1.0
indinavir/r		Susceptible	1	1.0
Nelfinavir		Susceptible	1	1.0
fosamprenavir/r		Susceptible	1	1.0
lopinavir/r		Susceptible	1	1.0
atazanavir/r		Susceptible	1	1.0
tipranavir/r		Susceptible	1	1.0
darunavir/r		Susceptible	1	1.0

first line ARVs developed high-level resistance that compromises second line therapy[27]. This was due to patients failing treatment for an average of 27 months (i.e. 27 months with detectable viral load) without being switched to second line. These findings highlight the need to detect and react to raised viral loads as soon as they occur.

Testing for resistance

There are two types of resistance tests; phenotypic testing and genotypic testing. The former is relatively simple to interpret and can assess the interactions between different mutations. Genotypic testing uses polymerase chain reaction (PCR) technology to find the changes in HIV's genetic sequences that we have discussed. A genotypic resistance report will describe all of the resistance mutations and their impact on the level of resistance to each drug from 1 (no resistance) to 5 (complete resistance), as well as the genotypic sensitivity score (GSS): either 0 (drug has no activity), 0.5 (drug has partial activity), or 1 (drug has full activity). The perfect regimen has a GSS score of 3, meaning that all drugs are fully active (Table 3).

The first-line regimen of the patient described in table 3 was TDF/3TC/EFV. This regimen has a cumulative GSS of 0.5, because only TDF is partially active. The standard second-line regimen for this patient, as per South African guidelines, should be AZT/3TC/LPV/r, which has a less-than-perfect cumulative GSS of 2.0. However, given that this patient has the M184V mutation (described in table 2), he/she should do well on the standard second-line treatment as this mutation increases susceptibility to AZT. HIV-1 genotypic resistance testing is very useful both in terms of clinical management of patients, and as a research tool. In the clinical management of patients it allows clinicians to see whether the drugs the patient is taking are active against that patient's HIV, and whether different drugs may be more appropriate.

In addition, given that there is currently no accepted questionnaire-based adherence assessment tool[28], resistance testing can serve as a useful proxy indicator for adherence, as follows:

- High viral load and resistance to patient's drugs shown on test result: Patient may or may not be taking their drugs properly at the present time, but because they have resistance they will not be able to suppress their viral load with their current regimen.
- High viral load and NO resistance shown on test result: either...
  a) Patient has resistance but the

level of resistance is too low for the test to detect (less than 20%). This could happen if the patient was not taking their drugs at all around the time of the test, but had been taking them previously and so developed resistance. In this scenario, re-initiation of the same regimen may not work as the resistant HIV will re-emerge once adherence to the same drugs improves. This is why we sometimes repeat the resistance test after 6 months if the viral load is still high despite intensive adherence support and if the patient reports good adherence. Alternatively...

b) Patient is not taking the drugs at all and genuinely has no resistance. If this is the case, the same regimen should work for this patient if he or she is able to adhere correctly. Patients failing antiretroviral therapy in the absence of drug resistance are particularly difficult to manage and often have serious adherence problems. They are in great danger of disease progression with the development of AIDS and require intensive adherence support and care.

Conclusion

Drug resistance testing is not currently available in the public sector in most provinces of South Africa. However, with the recent publication of guidelines by the SA HIV Clinicians Society, it is hoped that drug resistance testing will become more widely available in the near future. In the meanwhile, attention must be focused on frequent, proactive monitoring for treatment failure. Research is underway to design simple, inexpensive viral load tests (e.g. fingerprick) and it is hoped that they will be available throughout Southern Africa and beyond in the near future[29]. Patients with treatment failure should be supported with intensified adherence support, in conjunction with the correct application of criteria for regimen switching. This will reduce the amount of time that patients spend on failing regimens and limit the development of complex resistance patterns, encouraging a durable treatment response. ℞

References

1. Manasa J, Katzenstein D, Cassol S, Newell M. Primary Drug Resistance in South Africa : Data from 10 Years of Surveys. *AIDS Res Hum Retroviruses*. 2012;28(6):558–565.

2. Maenza J, Flexner C. Combination antiretroviral therapy for HIV infection. *American Family Physician*. 1998;58(5):1084.

3. Cohen M, Chen Y. Prevention of HIV-1 infection with early antiretroviral therapy. ... *England Journal of* .... 2011;365(6):493–505. Available at: http://www.nejm.org/doi/full/10.1056/nejmoa1105243. Accessed October 12, 2012.

4. Usdin M, Guillerm M, Calmy A. Patient needs and point of care requirements for HIV load testing in resource limited settings. *Journal of infectious diseases*. 2010;20(1):S73–S77.

5. Murtagh M. *HIV / AIDS Diagnostic Landscape*. 2nd ed. (World Health Organisation, ed.). Geneva: UNITAID; 2011.

6. Orach S. ART in Ugandan Catholic Health Services. Opportunities and challenges. In: Rossouw T, Lessels R, de Oliveira T, eds. *HIV/ TB Drug Resestance & Clinical Management Case Book*. South Africa Treament and Resistance Network (SATuRN); 2012:21–27.

7. von Kleist M, Menz S, Huisinga W. Drug-class specific impact of antivirals on the reproductive capacity of HIV. *PLoS Comput Biol*. 2010;26(6).

8. Tozzi V, Zaccarelli M, Bonfigli S, et al. Drug-class-wide resistance to antiretrovirals in HIV-infected patients failing therapy: prevalence, risk factors and virological outcome. *Antiviral therapy*. 2006;5:553–60.

9. Blaise P, Clevenbergh P, Vaira D, Moutschen M, Dellamonica P. HIV resistance to antiretroviral drugs: mechanisms, genotypic and phenotypic resistance testing in clinical practice. *Acta Clin Belg*. 2002;57(4):191–201.

10. World Health Organisation. Antiretrovoral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach. 2010. Available at: http://whqlibdoc.who.int/publications/2010/9789241599764_eng.pdf.

11. South African Department of Health. CLINICAL GUIDELINES FOR THE MANAGEMENT OF HIV & AIDS IN ADULTS AND ADOLESCENTS. 2010.

12. Nachega JB, Hislop M, Dowdy DW, et al. Adherence to Nonnucleoside Reverse Transcriptase Inhibitor–Based HIV Therapy and Virologic Outcomes. *Annals of Internal Medicine*. 2007;146(8).

13. Dahab M, Charalambous S, Hamilton R, et al. "That is why I stopped the ART": patients' & providers' perspectives on barriers to and enablers of HIV treatment adherence in a South African workplace programme. *BMC public health*. 2008;8:63. Available at: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2276211&tool=pmcentrez&rendertype=abstract. Accessed October 24, 2012.

14. Nachega JB, Stein DA, Lehman D, et al. Adherence to Antiretroviral Therapy in HIV-Infected Adults in Soweto, South Africa. *AIDS Research and Human Retroviruses*. 2004;20(10):1053–1056.

15. Bikaako-Kajura W, Luyirika E, Purcell DW, et al. Disclosure of HIV status and adherence to daily drug regimens among HIV-infected children in Uganda. *AIDS and behavior*. 2006;10(4 Suppl):S85–93. Available at: http://www.ncbi.nlm.nih.gov/pubmed/16791525. Accessed October 24, 2012.

16. Nachega JB, Hsu AJ, Uthman OA, Spinewine A, Pham PA. Antiretroviral therapy adherence and drug-drug interactions in the aging HIV population. AIDS. 2012;26(Suppl 1):S39–53.

17. McIlleron H, Meintjes G, Burman WJ, Maartens G. Complications of antiretroviral therapy in patients with tuberculosis: drug interactions, toxicity, and immune reconstitution inflammatory syndrome. *The Journal of infectious diseases*. 2007;196 Suppl :S63–75. Available at: http://www.ncbi.nlm.nih.gov/pubmed/17624828. Accessed October 24, 2012.

18. Marcelin A. Resistance to nucleoside reverse transcriptase inhibitors. In: Geretti A, ed. *Antiretroviral resistance in clinical practice*. London: Mediscript Ltd; 2006:1–11.

19. van Maarseveen N, Boucher C. Resistance to protease inhibitors. In: Geretti AM, ed. *Antiretroviral resistance in clinical practice*. London: Mediscript Ltd; 2006:19–24.

20. Wallis CL, Papathanasopolous MA, Fox M, et al. Low rates of nucleoside reverse transcriptase inhibitor resistance in a well-monitored cohort in South Africa on antiretroviral therapy. *Antiviral therapy*. 2012;17(2):313–320. Available at: http://ukpmc.ac.uk/abstract/MED/22293461.

21. El-khatib Z, Delong AK, Katzenstein D, et al. Drug resistance patterns and virus re-suppression among HIV-1 subtype C infected patients receiving non-nucleoside reverse transcriptase inhibitors in South Africa. J AIDS Clin Res. 2011;2(117).

22. Sigaloff KCE, Ramatsebe T, Viana R, et al. Accumulation of HIV drug resistance mutations in patients failing first-line antiretroviral treatment in South Africa. *AIDS research and human retroviruses*. 2012;28(2):171–5. Available at: http://www.ncbi.nlm.nih.gov/pubmed/21819219. Accessed October 3, 2012.

23. Orrell C, Walensky RP, Losina E, Pitt J, Freedberg KA WR. HIV type-1 clade C resistance genotypes in treatment-naive patients and after first virological failure in a large community antiretroviral therapy programme. *Antiviral Therapy*. 2009;14(4):523–31.

24. El-Khatib Z, Ekstrom A, Ledwaba J, et al. Viremia and drug resistance among HIV-1 patients on antiretroviral treatment: a cross-sectional study in Soweto, South Africa. AIDS. 2012;24(11):1679–87.

25. Barth RE, Aitken SC, Tempelman H, Geelen SP, van Bussel EM, Hoepelman AI, Schuurman R WA. Accumulation of drug resistance and loss of therapeutic options precede commonly used criteria for treatment failure in HIV-1 subtype-C-infected patients. *Antiviral Therapy*. 2012;2:377–86.

26. Stürmer M, Dauer B, Moesch M, et al. Evolution of resistance mutations during low-level viral replication in HIV-1-infected patients treated with zidovudine/lamivudine/abacavir as a first-line regimen. *Antivir Ther*. 2007;12(1):25–30.

27. Manasa J, McGrath N, Lessells R, et al. High levels of drug resistance after failure of first-line antiretroviral therapy in rural South Africa: impact on standardised second-line regimens. In: *XIX International AIDS Conference*. Washington DC; 2012.

28. Bärnighausen T, Chaiyachati K, Chimbindi N, et al. Interventions to increase antiretroviral adherence in sub-Saharan Africa: a systematic review of evaluation studies. *Lancet Infectious Diseases*. 2011;11(12):942–51.

29. Medicines Sans Frontieres. Undetectable: *How Viral Load Monitoring Cam Improve HIV Treatment*. Geneva; 2012. Available at: http://www.msf.org/shadomx/apps/fms/fmsdownload.cfm?file_uuid=764501C9-C92B-49D9-AEC8-F6D54A2B7398&siteName=msf.

Improving patient treatment adherence outcomes through the patient advocate programme introduced by kheth'impilo in NelliesFarm Clinic, Amajuba district, Kwazulu Natal

By Dr Goodman Vilakazi, MBCHB (University of Limpopo), BSC in Physiology & Biochemistry (Western Cape University), Khethimpilo AIDS Free Living, Amajuba District, KZN

The backbone of the Khethimpilo programme is the PAs, who visit their patients at their respective homes for a psychological assessment. All patients receiving antiretroviral treatment are attached to the PAs, who then follow them up for at least the first 6 months of treatment.

Kheth'Impilo (KI) is a non-governmental organisation supporting the South African Department of Health in the scaling up of integrated HIV care and treatment services. KI's vision is 'An AIDS free generation in our lifetime". Ki's support includes provision of human resources in the form of healthcare worker, human resource development through our training and mentoring programmes, health system strengthening (including HIV and TB integration, infrastructure as well as data collection systems support). KI is currently working in 4 provinces, 8 districts in KwaZulu-Natal, Mpumalanga, Western Cape, and Eastern Cape.

A KI community-support services programme, (CSC Programme), comprising of patient advocates (PAs), site facilitators and community co-ordinators, provides adherence and psychosocial support to HIV/AIDS, PMTCT, TB patients, as well as mother-infant pairs linked to health services. The goals of the CSC Programme include:

A. Retention in Care

1. 95% of VIP patients attached to a patient advocate (PA)
   - (VIP patients are those recently initiated on HAART, all PMTCT patients, patients with opportunistic infections esp. TB, and patients whose viral loads are not suppressing)

2. For patients attending clinic and picking up ARVs:
   - 6 months on treatment: 95% remaining in care
   - 12 months on treatment: 90% remaining in care

B. Treatment Success
   - An undetectable viral load

Its long term objectives are to:

- Promote adherence awareness within communities
- Encourage family support and disclosure
- Promote the principles of the CSC programme with DOH and other partners
- Create career path opportunities for PAs
- Capacity building of other organisations in the areas of adherence and psychosocial support

The backbone of the KI community programme is the PAs, who visit their patients at their respective homes for a psychosocial assessment. The results of this assessment are used to give the

necessary support to the patients and their families according to their needs. All patients receiving antiretroviral treatment are attached to the PAs, who then follow them up for at least the first 6 months of treatment.

This has remarkably improved adherence outcomes at the clinics that are supported by the Kheth'Impilo PAs over the years, as evidenced by the outcomes at Nelliesfarm PHC clinic, a clinic in the Dannhauser sub-district in Amajuba District, in Kwa Zulu Natal Northern region. Dannhauser is a very rural area, with high unemployment and poverty rates. Nelliesfarm PHC clinic serves a population of 43100.

Nelliesfarm PHC clinic has a staff compliment of 12 professional nurses 3 enrolled nurses, 3 enrolled nursing assistants, one admin clerk, three lay counsellors, one area coordinator, one site facilitator, and ten patient advocates. A roving doctor visits the clinic weekly to support the NIMART nurses who initiate patients on ART.

The service provided at Nelliesfarm clinic is comprehensive and includes, amongst many others maternal, child and women's health (MC & WH) and management of sexually transmitted infections, HIV/AIDS and TB.

Kheth'Impilo started supporting Nellisfarm in February 2007. Adherence was being compromised as patients had to travel long distances to Madadeni hospital to collect treatment as it was not available at the PHC clinics, and the loss to follow up rates were high. Kheth'Impilo, together with the district Department of Health, introduced the roving team model to increase access to ARV treatment. The roving teams comprise of a doctor and a pharmacist, who visit clinics manned by professional nurses to assist them with the initiation of patients, and to support and mentor NIMART trained nurses. Further, KI introduced PAs to provide adherence support to adult HIV/AIDS and PMTCT patients in the community.

Nelliesfarm was one of the first sites to pilot this model. The first patients to be initiated on HAART at this clinic were initiated in October 2009. With this innovative intervention, good treatment adherence rates, good patient retention rates with low loss-to-follow up, and very low mother-to-child-transmission rates were achieved. The average patients remaining in care for the two years ending June 2012 is 83% at 6 months, increasing from less than 60% in the previous years; the average patients remaining in care at 12 months for the same period is 74%, increasing from an average of 50% in the previous years, and the PCR positivity at 6 weeks dropped from more than 5% in the previous years to 1.7% in the last two years. The loss-to-follow rates have been below 3% in the same two year period (data taken from the quarterly reports that Kheth'Impilo compile and send to funders). Of equal importance is the improvement in disclosure rates of the patients. More and more patients find it easier to disclose to their family members as compared to before due to the ongoing counselling that they get from the PAs with the support of the Social Worker and the Social Auxiliary Worker employed by Kheth'Impilo.

These positive outcomes are as a result of the holistic care and support that the patient advocates and the clinic staff offer to each individual patient. This KI model of support could improve patient outcomes in other rural areas. ®

Adherence was being compromised as patients had to travel long distances to collect treatment, and the lost to follow up rates were high.

NDOH/SANAC Nerve Centre Hotlines

• Any HCT concerns from facility and district managers should be reported to the NDOH/SANAC

Nerve Centre Hotline and, specific emails for each province:

- **Western Cape:** 012-395 9081 sanacwesterncape@gmail.com
- **Northern Cape:** 012-395 9090 sanacnortherncape@gmail.com
- **Eastern Cape:** 012-395 9079 sanaceasterncape@gmail.com
- **KZN:** 012-395 9089 sanackzn@gmail.com
- **Free State:** 012-395 9079 sanacfreestate@gmail.com
- **Mpumalanga:** 012-395 9087 sanacmpumalanga@gmail.com
- **Gauteng:** 012-395 9078 sanacgauteng@gmail.com
- **Limpopo:** 012-395 9090 sanaclimpopo@gmail.com
- **North West:** 012-395 9088 sanacnorthwest@gmail.com

AIDS Helpline 0800 012 322

The National Toll free AIDS Helpline was initiated in 1991 by the then National Department of Health's (NDoH) "HIV/AIDS, STD's and TB Directorate". The objective of the Line is to provide a national, anonymous, confidential and accessible information, counselling and referral telephone service for those infected and affected by HIV and AIDS, in South Africa.

In 1992, LifeLine was requested by NDOH, to take over the management of the Line by rotating it between the thirty-two existing community-based LifeLine Centres, and manning it with volunteer counsellors. In 2000, in response to an increasing call rate, a centralised Counselling Centre was established in Braamfontein, Johannesburg, to house the AIDS Helpline

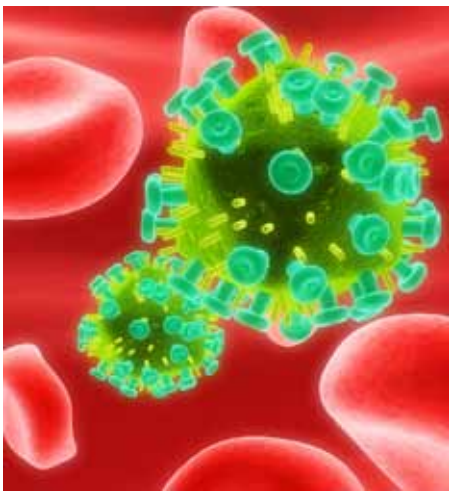
The AIDS Helpline a national toll-free, operates on a 24/7 basis and is utilized by people from all walks of life in urban and rural areas, in all eleven languages at no cost from a landline telephone.

Annually, the Line provides anonymous, confidential and accessible telephonic information, counselling and referrals to over 300 000 callers.

The AIDS Helpline plays a central role in providing a deeper preventative and more supportive service to those infected and affected by the disease, but also serving as an entry point in terms of accessing services from government, private sector and other NGOs/ CBOs

Cases presented to the range from testing, treatment, transmission, TB, Medical Male circumcision, etc.

The AIDS Helpline incorporates the Treatment line. The treatment support services were included to complement the services provided by lay counsellors on the line. The Treatment Line is manned by nurses who provide quality, accurate, and anonymous telephone information and/or education on antiretroviral, TB and STI treatment



NATIONAL HEALTH LABORATORY SERVICE

RESULTS HOTLINE

0860 RESULT 737858

This line is dedicated to providing results nationally for HIV Viral Load, HIV DNA PCR and CD4 to Doctors and Medical Practitioners, improving efficiency in implementing ARV Treatment to HIV infected people. This service is currently available to members of Health Professionals Council of the South Africa and the South African Nursing Council. The hotline is available during office hours from 8am to 5pm Monday to Friday.

Register to use the RESULT HOTLINE

Follow this simple Step-by-step registration process

Dial the HOTLINE number 0860 RESULT (737858)
Follow the voice prompts and select option 1 to register to use the hotline
A hotline registration form will be sent to you by fax or e-mail.
Complete the form and return it by fax or e-mail to the hotline to complete your registration process.
Once you are registered, you will be contacted with your unique number. This number is a security measure to ensure that the results are provided to an authorized user.

To use the hotline dial 0860 RESULT (737858)

Select option 2 to access laboratory results.

- You will be asked for your HPCSA or SANC number by the operator.
- You will be asked for your Unique Number.
- Please quote the CCMT ARV request form tracking number (bar coded) and confirm that the result requested is for the correct patient.

Should the results not be available when you call, you will be provided with a query reference number which must be used when you follow up at a later date to obtain the result.

Once you have a Reference number

Select option 3 to follow up on a reference number
Should the requested results not be available, a query reference number will be provided to you.
A hotline operator will call you within 48 hours of receiving the laboratory results.

Registering for this service from the NHLS, will assit in improving efficiency, providing improved patient care and streamlining clinic processes. Call now and register to access results for HIV Viral Load, HIV DNA PCR and CD4.

Hospice Palliative Care Association of SA

Short Course in Palliative Nursing for Professional and Enrolled Nurses run in conjunction with the Hospice Palliative Care Association of SA and the Foundation of Professional Development.

INTRODUCTION
The WHO defines palliative care as "an approach that improves the quality of life of patients and their families facing problems associated with life-threatening illness, through the prevention and relief of suffering, the early identification and impeccable assessment and treatment of pain and other problems, physical, psycho-social and spiritual."

Palliative care is an integral part of every nurse's role. This course equips the nurse with the particular skills and knowledge required to care for patients with non-curable and terminal illness and to support the patient's family members. This short course is run as a collaborative venture between HPCA and FPD.

WHO SHOULD ENROL?
All professional and enrolled nurses registered with the SANC who care for patients with life-threatening illness.

ASSESSMENT / CERTIFICATION
Formative and summative assessment methods are used to evaluate learning at both theoretical and practical levels. To qualify for the certificate of completion for this short course, participants should fully attend the workshops, successfully complete the assessment process and complete the clinical work.

COURSE DESIGN
The course consists of 3 parts:
1. Day release learning based on methods suitable for adult learners.

2. Assessment component (examination, communication skills and portfolio).

3. 128 hours clinical work – done in a HPCA approved Hospice.

COURSE STRUCTURE
1. Describe the development of palliative care and its role within the health care system and apply legal, ethical and professional principles in the care of patients and families, with particular reference to death and dying.

2. Describe the management principles of pain and symptom control in advanced illness with particular reference to malignant disease, HIV and AIDS, progressive neurological disorders and end stage organ disease.

3. Be competent in the interpersonal communication skills required to establish rapport and facilitate the grieving process with patients, families and colleagues.

4. Demonstrate the ability to understand the developmental stages as applied to social, cultural and spiritual dimensions in the provision of palliative care based on respect for the uniqueness of the individual.

Starting date:
February - 2012
Day Release: 9 February 2012
Distance Learning: 6 February 2012

REGISTRATION
Educational Grant
This course is partially sponsored through an educational grant from HPCA
All interested nurses can apply for this grant from:

LeshokoKomane
Tel: 012 664 8538
Fax to email: 086 513 9814
Email: lesoko@hpca.co.za

COURSE FEE
R 6 740

A member of the SAMA group

Registered with the Department of Education as a private Institution of Higher Education under the higher education act, 1997 (Registration number: 2002/HE07/013)

Foundation for Professional Development (Pty) Ltd Registration number 2000/002641/07

to advertise in

HIV Nursing matters

By advertising in HIV Nursing Matters, you reach many partners in the health industry.
Rates for 2012 are as follows:

Size	**Full colour**
Full page/Vol blad	R7200-00
Half page/Half blad	R3850-00
Third page/Derde blad	R2500-00
Quarter page/Kwart blad	R2030-00

Inserts

The same rates as for advertisements applies to inserts
Small advertisements: Available on request
These prices exclude VAT

Digital advertising material formats.

The following are formats by which the magazine can accept digital advertisement:

- Document to be set up to advertising specifications(i.e. Ad specs)
- We don't support zip disks
- Emailed advertising material should not be bigger than 5MB (PDF, Jpeg or tiff)
- All advertising material to be in CMYK colour mode and the resolution 300 dpi
- If pictures are sent, save as high resolution (300 DPI)
- Logos must be 300dpi with a CMYK colour break down
- All advertising material must have a 5mm bleed
- Press optimised PDF's on CD with a colour proof is also acceptable.
- PDFs supplied should include all fonts and in CMYK mode.
- PLEASE SUPPLY MATERIAL IN COMPLETED PDF FORM
- PLEASE ENSURE THE AD INCLUDES CROPMARKS!!!

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For advertising submission contact Chriss@sahivsoc.org

Last Minute Registration

SA HIV Clinicians Society Conference 2012

International Convention Centre • Cape Town • South Africa

Striving for Clinical Excellence 25 - 28 November 2012

- Register for the SA HIV Clinicians Society Conference 2012 (www.sahivsoc2012.co.za)

Visit the website to view all relevant information

- Send proof of payment for registration. Use your conference pin number and/or name & surname as payment reference
- Book your flight, airport transfers & accommodation

If travelling from overseas, ensure your passport is valid for 6 months after the conference, you have 3 clear pages in your passport & you have a visa (if applicable)

Make sure you allow for sufficient transfer times & your accommodation is in close proximity to the Cape Town International Convention Centre (CTICC)

- Keep copies of your registration confirmation, invoice, transfers, flights & accommodation on file. Ensure that all these documents are brought with you.
- Check programme times
- Bring pocket money for lunches
- Pack comfortable, non-creasing clothes & bring a light jacket for those cool Cape Town nights

Make a list of all items you need to pack and tick them off as it is done

- Confirm your transfer, accommodation & flights
- Sunday 25 November, 12h00 – 19h00: Register at conference. To ensure an easy, quick registration, a bar-coded confirmation letter will be sent to you approximately 10 days prior to the conference, please present this upon arrival at the Registration desk.
- ***Enjoy the conference!***

Visit the Conference website for additional programme and speaker information.

Register online today to secure your place at the SA HIV Clinicians Society Conference 2012.

www.sahivsoc2012.co.za

Parking at the Cape Town ICC

- P1 (Coen Steytler Parking Garage) are accessed via the Buitengracht or Heerengracht/Long Street entrance and require a short walk across Convention Square to enter the CTICC.
- P2 is located in the Westin Grand Hotel basement.
- P3 is situated in the CTICC basement.

Shuttle services are provided from these parking areas to the CTICC.

Parking is not included in the registration fee. Guests are required to use the convenient pay-on-foot parking ticket kiosks to pay for their parking on an hourly basis.

For further information contact:
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