

# HIV Nursing **matters**

A publication of the Southern African HIV Clinicians Society



VIRUS

Diagnosis of TB in South Africa

TB/HIV integration at primary healthcare facilities: Experience from Soweto

Management of drug-induced liver injury in patients with HIV being treated for TB

March 2014 Volume 5 No. 1





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Diagnosis of TB in South Africa

TB/HIV integration at primary healthcare facilities: Experience from Soweto

Management of drug-induced liver injury in patients with HIV being treated for TB



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*HIV Nursing Matters*  
focuses on  
HIV and TB

# guest editorial



**Dr Melanie John**

Microbiologist and Infectious Diseases Consultant  
*Clinical Investigator*  
Durban International Clinical Trials Unit  
Nelson Mandela School of Medicine  
University of KwaZulu-Natal

The expedited implementation of scientific and operational research findings are changing the face of tuberculosis.

There is an urgency for novel, high-quality diagnostics and management strategies for tuberculosis (TB), borne out of necessity as global rates of multidrug-resistant tuberculosis (MDR-TB) increase and HIV remains the leading cause of death worldwide in adults aged 15 - 49 years. The burden of TB/HIV disease is focused in sub-Saharan Africa where 79% of co-infection occurs. In 2011, South African surveys reported that 65% of TB cases were HIV-related. While limited health systems in our regions strain under the weight of providing care for this curable disease, there is cause to be hopeful. Never before have we had so many tests to diagnose TB. Molecular techniques allow non-laboratory-skilled health workers who are appropriately trained

to diagnose TB with an accuracy of 70 - 75% from a single specimen, in 2 hours using GeneXpert (Cepheid). However, using this test effectively is limited by operational challenges. A good test must be cost-effective and positively impact patient care. Other tests based on gene amplification, e.g. line probe assays, are available in reference laboratories and provide drug sensitivities to many first- and second-line agents with a practical turnaround time of 1 - 2 weeks. These tests are a vast improvement on smear microscopy, with a reported sensitivity of 30 - 65%, albeit at low cost (R30/smear). The Determine TB LAM is a low-cost point-of-care urine test that shows good sensitivity in patients with CD4<sup>+</sup> counts <200 cells/ $\mu$ l and may be useful in this specific patient population who are at highest risk for TB disease and mortality. When to use which test and the role of culture remains disputed and we look forward to the practical guide offered by Dr K McCarthy in this issue.

The availability of rapid and reliable genotypic tests facilitates rapid diagnosis of drug-resistant TB. MDR- and extensively drug-resistant (XDR)-TB are always laboratory diagnoses, though clinical failure prompts confirmatory laboratory investigations. Early diagnosis permits expedited, directed drug therapy to limit disease complications, prevent transmission and amplification of resistance. The treatment field is exciting, with several new drug classes in phase 2b and 3 clinical trials, notably diarylaminoquinolones (approved by the US FDA in 2012 for MDR-TB therapy) and nitroimidazoles. Old drugs, e.g. clofazamine, are being recycled in new regimens and are being evaluated to improve on the current treatment success rates of 50 -


60%, as well as to shorten duration of therapy (WHO).

Two complications of treating HIV/TB co-infection are also reported in this issue. To date, the approach to the detection of antiretroviral (ARV) drug resistance in South Africa is population-based through regular sentinel surveillances in specific populations, rather than routine drug resistance testing in the clinical care of patients. The prevalence of resistance to any drug remains <5% (WHO, 2012); however, the rates of acquired and transmitted resistance are increasing. South Africa has the largest ARV programme in the world and the largest co-infected population. Patients have many hurdles when navigating twin multidrug regimens with competing toxicity and pharmacology. Rifampicin interacts with two ARV drug classes, including non-nucleoside reverse transcriptase inhibitors (NNRTIs) and protease inhibitors (PIs). Lopinavir/ritonavir (Kaletra or Aluvia) drug levels are significantly reduced when administered concomitantly with rifampicin, and doubling the dose of lopinavir/ritonavir or superboosting with ritonavir are the only options available in the national rollout. These strategies amplify toxicity and pill burden, presenting adherence challenges. The first-line regimen consisting of efavirenz, lamivudine or emtricitabine and tenofovir in a fixed-dose combination is the regimen of choice in a patient receiving treatment for both TB and HIV.

Detecting HIV resistance early and acting on results promptly will prevent further HIV resistance and clinical deterioration. However, genotype resistance testing is expensive and

is not widely available, only being processed at reference laboratories or research settings.

The other complication discussed in this issue is TB drug-induced liver injury (DILI). This is a welcomed management guideline for healthcare workers. The Southern African HIV Clinicians Society spear-headed this consensus document that evaluates the scarce scientific literature on a common problem, and adapted existing recommendations for our health setting. First-line anti-TB drugs associated with DILI are isoniazid, rifampicin and pyrazinamide, while nevirapine is the most common ARV associated with liver toxicity, and NRTIs contribute as well. Depending on the regimen, DILI develops in 9 - 30% of patients receiving ART. The spectrum of TB DILI varies from asymptomatic hepatic adaptation to fulminant hepatic failure. Rechallenge strategies have been studied in only one randomised clinical trial and this study excluded HIV-co-infected patients in whom there may be multiple causes for liver dysfunction. We urgently need randomised trials to inform clinical practice; South Africa has the expertise and large population to inform these clinical dilemmas.

National government has kept pace with the emerging scientific data in HIV/TB, e.g. isoniazid prophylaxis, early HAART in TB patients, and rolling out rapid Gene Xpert diagnosis, etc. Operational challenges are significant, but it is up to us, the foot soldiers in this march against TB/HIV to bring this co-epidemic to heal. 



# Message from the president



**Dr Francesca Conradie**  
*President: Southern African  
HIV Clinicians Society*




I clearly remember the first day our clinic started giving out ARVs. It was the day I wrote and passed the exam for the HIV Management Diploma and I was unable to be at the clinic. It was only on 2 April 2004 that I went to the clinic. I looked in the drug cupboard and realised that, finally, we would be able to provide South Africans access to life-saving medication. For the next couple of months, as soon as I was finished at the research site where I was working, I went to the clinic at Helen Joseph Hospital to start patients on ARVs. In August of that year, we celebrated with cake and tea when we had started our 1 000th patient on treatment. We now have started over 30 000 patients on treatment at this clinic.

The appointment of Dr Aaron Motaaleedi as the National Minister of Health has, without a doubt, been one of the most important factors in our success. What he has done for the programme is immense. I have highlighted some of the aspects that I have seen in my work as really pushing forward access. Dr Motaaleedi decreased the amount of red tape that clinics had to go through to become ARV

sites, considerably decentralising the service. We now have over 3 500 clinics in South Africa providing ARVs.

His ambitious aim to test 15-million for HIV was achieved. The mean CD4<sup>+</sup> count on presentation is increasing and we are seeing fewer and fewer patients presenting *in extremis*. At the academic ward rounds that I attend every 6 weeks, we are now seeing older patients presenting with malignancies or long-term complications of ART. With the review of the guidelines in 2010, d4T – a drug that we all knew had severe side-effects – was removed from the first line and replaced with the gentler TDF. Finally, the fixed-dose combination means that most patients have to swallow just one pill once a day.

While much has been made in the media of getting to zero and the end of AIDS – we are getting closer than ever before – if we let up now, we will see an increase in HIV-related morbidity and mortality. We need to buckle down and do the work of testing and treating all who come to our doors and of ensuring that they adhere to lifelong therapy. 

### The Team

**Guest Editorial:**

Dr Melanie John

**President:**

Dr Francesca Conradie

**Editorial Advisory Board:**

Dr Elizabeth Mokoka  
Ms Stacie Stender  
Dr Natasha Davies  
Dr Michelle Moorhouse  
Dr Sindisiwe Van Zyl  
Ms Laurie Schowalter  
Ms Nelouise Geyer  
Ms Nonhlanhla Motlokoa

**Contributors:**

Monument Trust

**Advertising:**

Chriss Nyalungu  
Email: [chriss@sahivsoc.org](mailto:chriss@sahivsoc.org)  
Tel: +27 (0) 11 728 7365

**Article/Letter submission:**

Ms Nonhlanhla Motlokoa  
Email: [nonhlanhla@sahivsoc.org](mailto:nonhlanhla@sahivsoc.org)  
Tel: +27 (0) 11 728 7365

**For more information contact:**

SA HIV Clinicians Society  
Suite 233 Post Net Killarney  
Private Bag X2600  
Houghton 2041

Tel: +27 (0) 11 728 7365  
Fax: +27 (0) 11 728 1251  
Email: [sahivsoc@sahivsoc.org](mailto:sahivsoc@sahivsoc.org)  
[www.sahivsoc.org](http://www.sahivsoc.org)

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# NEWS

## *Lancet* study uses stem cells to help treat drug-resistant TB

BY TAMAR KAHN, 10 JANUARY 2014, BUSINESS DAY LIVE

Patients with potentially lethal multidrug-resistant tuberculosis (MDR-TB) may one day be treated with stem cells taken from their own bone marrow, according to a small study published on Thursday in the medical journal *The Lancet*.

New treatments are needed for TB, as there is growing resistance to the drugs available.

There are about 450 000 MDR-TB patients around the world, mostly in South Africa, Eastern Europe and Asia, according to the World Health Organization, and about half of

**'Conventional treatment for MDR-TB uses a combination of TB drugs (antibiotics) which are harmful to patients.'**

them would fail to respond to existing treatments.

The experimental treatment devised by Swedish and British scientists involved extracting bone marrow mesenchymal stromal cells (MCSs) from 30 patients with MDR-TB, or extremely drug-resistant (XDR)-TB, in Belarus and aged 21 - 65 years. The stem cells were rapidly cultured in the lab and then put back into the patients in an infusion. The patients were still on standard antibiotic treatment. The research was intended to determine whether bone marrow stem cell infusions were safe for patients with MDR-TB, but the researchers found more than half of them were free of the disease 18 months later. They found that 16 of the 30 patients who got the experimental treatment were cured in 18 months, compared to just five out of 30 TB patients who did not get the stem cell treatment.

'Conventional treatment for MDR-TB uses a combination of TB drugs (antibiotics) which are harmful to patients. Our new approach, using the patients' own bone marrow stromal



- Study uses stem cells to help treat drug-resistant TB
  - Patients with potentially lethal multidrug-resistant TB (MDR-TB) may one day be treated with stem cells taken from their own bone marrow
- BDLIVE.CO.ZA

cells, is safe and could help overcome the body's excessive inflammatory response, repair and regenerate inflammation-induced damage to lung tissue, and lead to improved cure rates,' said the study's lead researcher, Markus Maeurer of the Karolinska University Hospital in Sweden.

The study's co-author, Alimuddin Zumla from University College London, said: 'The results of this novel and exciting study show that the challenges and difficulties of treating MDR-TB are not

insurmountable. They bring a unique opportunity with a fresh solution to treat hundreds of thousands of people who die unnecessarily of drug-resistant TB.'


'Further evaluation in phase 2 trials is now urgently required to ascertain efficacy and further safety in different geographical regions such as South Africa, where MDR-TB and XDR-TB are rife.'

Local TB researcher Andreas Diacon, a professor of internal medicine at the University of Stellenbosch, said the study was interesting, but cautioned against placing too much hope in a

cure from MSCs, as the research was still at a very early stage. The study's findings were counterintuitive, he said, as previous research has found that TB can evade the immune system by hiding in a patient's bone marrow in the very same cells that Prof. Mæurer and his colleagues found helpful in fighting off the disease. 'We still don't understand the immune system very well, but it seems these MSCs somehow reset the immune system, like rebooting a computer,' said Prof. Diacon.

Doctors have found that stimulating the immune system of someone who is very ill can sometimes backfire, prompting

so much inflammation that the person gets sicker, he said. For example, before the era of antibiotics, TB patients were exposed to sunshine, which helps the skin make vitamin D, used by the immune system. Doctors found that moderate sun exposure helped TB patients fight off the disease. But they also found that if very sick patients were exposed to too much sun too soon, their immune systems went into overdrive and they got worse, Prof. Diacon said.

Original article:  
<http://www.bdlive.co.za/life/health/2014/01/10/study-uses-stem-cells-to-help-treat-drug-resistant-tb> 

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# Motsoaledi pledges NHI white paper is 'imminent'

BY TAMAR KAHN, 30 JANUARY 2014, 14:55  
BUSINESS DAY LIVE

Health Minister Aaron Motsoaledi has once again promised that the publication of the government's long-awaited white paper on National Health Insurance (NHI) is imminent. This policy document is expected to go hand-in-hand with a financing proposal from the Treasury, which has also yet to be published.

Choosing his words carefully, the Minister on Thursday said talks with the Treasury on the financing of the NHI were close to conclusion. When pressed to put a date to the publication of the white paper, he said 'we are not planning to do it after the election', but would not be drawn further.

The government hopes to overcome the inequities in people's access to health by introducing NHI, but exactly what form it will take in order to achieve this goal and how it will be paid for are questions it has yet to answer. Consumers and health economists are particularly keen to see the financing


proposals, as better-off individuals will probably pay higher taxes to supplement what the state allocates directly from the national budget.

The Department of Health published its green paper on NHI in August 2011, and has consistently said since then that a white paper, which is the next step in policy development before legislation is drafted, will soon follow. Finance Minister Pravin Gordhan initially said the Treasury's discussion document on financing mechanisms for the NHI would be published by April 2012, but that deadline too has been extended repeatedly.

The health minister made his remarks on the sidelines of a two-day summit on healthcare innovation hosted by the Bertha Centre at the University of Cape Town's Graduate School of Business, where he told delegates that the two biggest obstacles to overcome in providing universal healthcare were the poor quality of care in the public sector

and soaring costs in the private sector. 'Every time I say this people say I wish to close down private healthcare. But nothing like that is going to happen,' he said.

The world had seen innovations in drugs and diagnostics, but new ideas were badly needed on the financing front, he said.

'On the issue of healthcare financing, we haven't won the battle. That's why we are in turmoil (with) people saying it (NHI) can't happen, the economy is going to collapse,' he said. 

**The government hopes to overcome the inequities in people's access to health by introducing NHI, but exactly what form it will take in order to achieve this goal and how it will be paid for are questions it has yet to answer**



# New hospitals and clinics for NHI on the cards

BY TAMAR KAHN, 18 FEBRUARY 2014, 15:41, BUSINESS DAY LIVE



Health Minister Aaron Motsoaledi briefs the media after meeting with the health cluster at a State of the Nation Address debate on Tuesday.

Picture: TREVOR SAMSON

**'I can't keep on having such heavy responsibility without having authority ... to act when I think something is going wrong,' he told reporters at a briefing in parliament.**

The government plans to build 43 new hospitals over the next 5 years and at least 213 clinics in the 11 pilot districts for National Health Insurance (NHI), Health Minister Aaron Motsoaledi announced on Tuesday.

In stark contrast to most health infrastructure projects, which were managed by the provinces, the Cabinet and Treasury had given the go-ahead for this project to be run by the national health department, he said. It was an important departure, which the minister said he hoped would give him the capacity to step in the moment anything went awry.

'I can't keep on having such heavy responsibility without having authority ... to act when I think something is going

wrong', he told reporters at a briefing in parliament.

The constitution defines health as a concurrent power, shared between national, provincial and local health authorities. While the national health department sets policies, service delivery is largely carried out by the provinces.

Health infrastructure projects are typically managed by provincial health departments, with the actual building work done by the provincial departments of public works. The situation leaves the minister to be judged on the performance of the provincial health departments, yet leaves him little scope to hold them to account.

The minister said he had asked the Treasury and Cabinet to give him 'special permission' to take responsibility for the NHI pilot districts at national level.

The new hospitals and clinics that would be built in the pilot districts would be handed over to the provinces when they were completed, with a detailed maintenance plan, he said.

Health Director-General Precious Matsoso said maintenance would constitute a significant portion of the budget for the new hospitals and clinics. In the past, the failure to maintain health facilities had forced the government to replace them at 'huge cost', she said.

A further 870 health facilities are to be upgraded in the 11 NHI pilot districts. **R**



# Trailblazing move to take HIV treatment out of clinics

BY LAURA LOPEZ GONZALEZ, 2 DECEMBER 2013, HIV/AIDS TREATMENT, NEWS, POLICY AND LEGISLATION

Some of South Africa's 2.4 million HIV patients will be able to get antiretrovirals (ARVs) outside of health clinics in a move that the Department of Health hopes will help address stockouts

Currently, many patients in the country queue monthly to pick up their ARVs, but as part of its latest funding application to the international financing mechanism, The Global Fund to Fight AIDS, TB and Malaria, the country is planning to move treatment out of clinics and into patients' homes, local libraries and maybe even their local chain clothing store, like PEP, in the next 3 years. South Africa will be one of the first countries in the world to implement such a system.

According to South African National AIDS Council CEO Dr Fareed Abdullah, Deputy-Director General Dr Anban Pillay is already overseeing work into possible models.

'The Department of Health is busy designing a mechanism for providing ARVs through courier services in the community,' Abdullah said. 'The good news is that we expect that service could become available to about 300 000 patients.'

Department of Health spokesperson Joe Malia said community treatment models are just one way the department is looking to tackle the allegedly widespread stockouts affecting the country.

The Department of Health is likely to put out a call to invite proposals for multiple community models, but will also be rolling out community adherence clubs nationally, Abdullah added.

Piloted by the international medical humanitarian agency, Médecines Sans Frontières (MSF), these clubs were first developed in Khayelitsha. As part of these clubs, stable, long-time ARV patients meet in the community – at someone's house or a nearby library. A trained counsellor distributes a patient's 2-month ARV supply and does a quick check up of the patient. Unless counsellors pick up problems, patients see a clinician annually for a check up as well as routine blood tests.

**Department of Health Spokesperson Joe Malia said community treatment models are just one way the department is looking to tackle the allegedly widespread stockouts affecting the country**

Dr Gilles Van Cutsem is MSF's Medical Coordinator for South Africa and Lesotho. Van Cutsem says the organisation has welcomed a national rollout of the clubs, which were formally adopted by the Western Cape this year. The Western Cape also approved 4-month supplies of ARVs for use in the clubs ahead of December, to accommodate those travelling home to the Eastern Cape during the festive season.

More than 20% of all Cape Metro ARV patients are currently part of an ART adherence club, according to Van Cutsem. Research has shown that club members were more likely to stay in care and were almost 70% less likely to see spikes in their HIV blood levels. But he cautioned that community models of treatment may not be an answer to stockouts: 'To run adherence clubs successfully, it's essential to have a consistent supply of treatment,' he said. 'The main challenge will be to fix ongoing drug supply chain problems.'

Moving ARVs into patients' homes or communities will also depend on the ability of government to roll out fixed-dose ARVs. Without these, the ARV stocks will likely remain too bulky for counsellors or couriers to carry multiple orders at one time.

In just days, world leaders will meet in the US capital, Washington, DC, to decide

the fate of The Global Fund, one of the world's leading funders of HIV programmes.

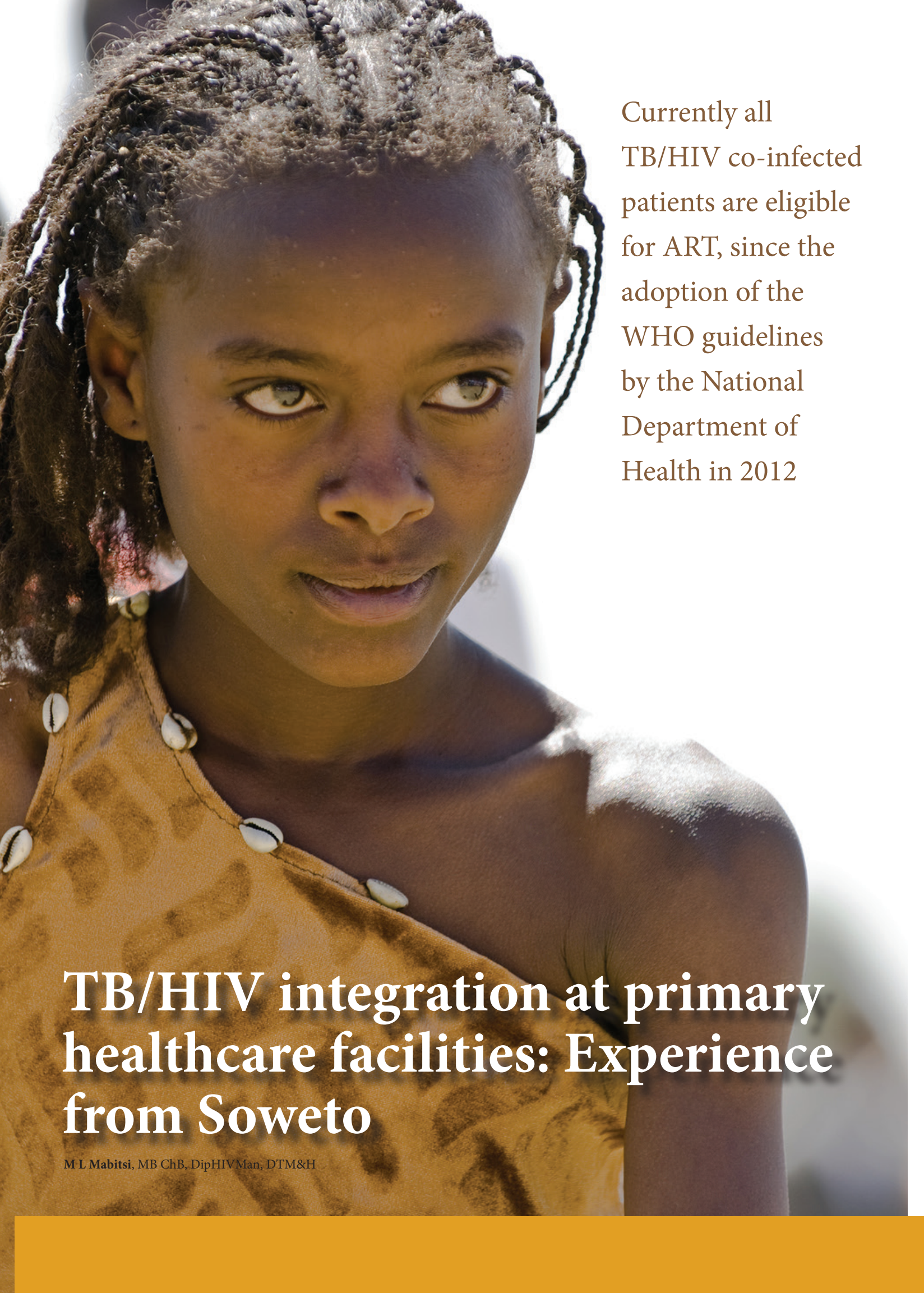
South Africa has historically been one of only a handful of African countries that not only receives funding from The Global Fund but also contributes to it. While donors like France, South Korea and the United States have already signalled their support, South Africa's potential contribution has yet to be announced. – Health-e News Service. 

## APOLOGIES

The September and December 2013 editions of *HIV Nursing Matters* (Vol. 4, Nos 3 and 4) omitted credit for two articles by the Aurum Institute. The articles, 'Identification of drug-resistant TB, mono- and poly-resistant TB, MDR-TB diagnosis and management and monitoring of MDR-TB patients on treatment' (p. 31 - 44, Vol. 4 No. 3) and 'Important TB drug interactions' (p. 28 - 29, Vol. 4 No. 4), were from Aurum's clinical management guide: 'Managing TB in a New Era of Diagnostics' version 2, June 2013. The guide is available for download on the Society's website ([www.sahivsoc.org](http://www.sahivsoc.org)) and limited hard copies are available via Aurum (email: [info@auruminstitute.org](mailto:info@auruminstitute.org)).

The Editorial Committee apologises to the Aurum Institute for this oversight.





Currently all  
TB/HIV co-infected  
patients are eligible  
for ART, since the  
adoption of the  
WHO guidelines  
by the National  
Department of  
Health in 2012

# TB/HIV integration at primary healthcare facilities: Experience from Soweto

M L Mabitsi, MB ChB, DipHIVMan, DTM&H

South Africa (SA) has the third-highest burden of tuberculosis (TB) in the world, with an annual TB incidence of 1 003/100 000 population, and a TB/HIV co-infection rate of 65 - 70%.<sup>[1]</sup> TB remains the leading cause of death in HIV-infected individuals in the country.

One of the World Health Organization (WHO) strategies for TB/HIV management is the integration of TB and HIV services.<sup>[2]</sup> The aim of service integration is to address the dual TB/HIV epidemic at population and patient level.

For more than a decade, primary healthcare (PHC) has been at the core of the TB control programme, with TB patients being treated at their local PHC facilities, primarily by professional and enrolled nurses. Nurse-initiated management of antiretroviral therapy (NIMART) was implemented in the Johannesburg Metro district in April 2010, in line with the national policy on decentralisation of antiretroviral therapy (ART) services to PHC facilities. The setup in PHC facilities is such that there are separate consulting rooms or

sections within the facility for clinical management of TB and HIV. This means that TB/HIV co-infected patients get their TB care in the one consulting room, and their HIV care in another consulting room by a different healthcare worker.

Currently all TB/HIV co-infected patients are eligible for ART, since the adoption of the WHO guidelines by the National Department of Health (NDoH) in 2012.<sup>[3]</sup> Prior to July 2012, only TB patients with a CD4<sup>+</sup> count <350 cells/ $\mu$ l, and those with extra-pulmonary TB and drug-resistant TB, were eligible for lifelong ART.

One of the challenges identified in PHC facilities has been the delay in initiating TB/HIV co-infected patients on ART. NIMART-trained nurses treating HIV-infected patients have also been found not to have sufficient knowledge on the diagnosis and management of TB.

**Methodology**

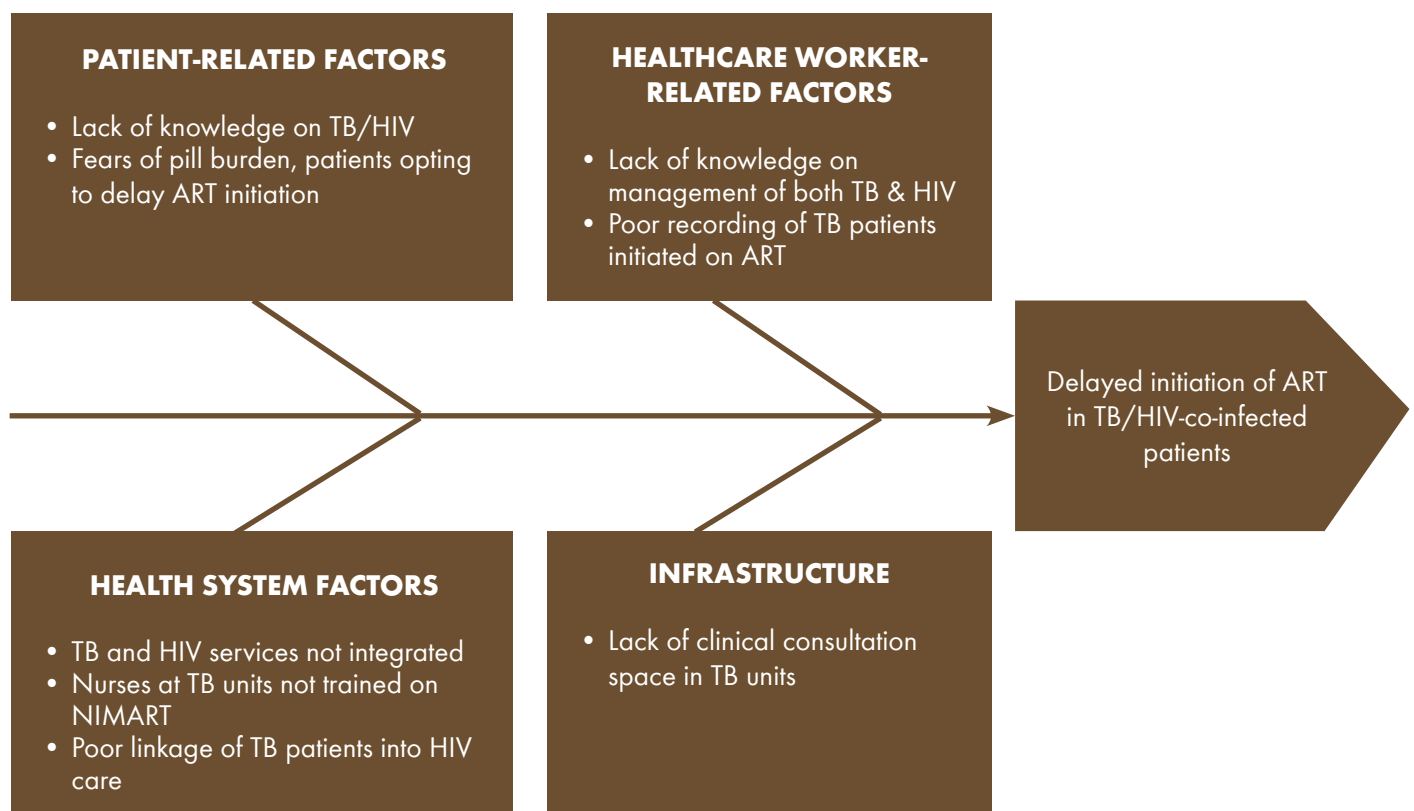
The fish-bone quality improvement (QI) methodology was applied to identify the 'root' cause of the delays (Fig. 1).

One of the root problems identified was that nurses at TB units were not trained and mentored on HIV care and ART initiation. The referral of patients from TB services to ART services for treatment initiation resulted in some patients being 'lost' along the way, resulting in delays in ART initiation.

In March 2012, Anova Health Institute began facilitating integration of TB/HIV services at PHC facilities by implementing NIMART at TB clinics. NIMART implementation would provide an opportunity for all TB/HIV co-infected patients to be offered both services in one consulting room in the TB clinic, and by the same professional nurse (TB treatment, HIV counselling and testing, pre-ART management, ART initiation and follow-up). Upon discharge from TB treatment, patients would then be referred back to mainstream ART clinic or PHC services (depending on the structure of services in that particular PHC facility).

Integration of TB/HIV services provides patient-centred, comprehensive management and care to TB/HIV co-

Figure 1



infected patients; facilitates early initiation of ART in patients (no referral process); minimises clinic visits for the patient (one visit for both TB and HIV treatment instead of two visits on separate days), and promotes improved adherence to both TB/HIV treatment:

Step 1: We conducted an audit to identify which of the PHC facilities had a professional nurse working at TB clinics.

Step 2: All professional nurses working at TB clinics were then requested to attend NIMART training.

Step 3: The 5- or 10-day (the curriculum changed in June 2013) didactic NIMART training was then followed by weekly clinical mentorship by a nurse clinician qualified as a NIMART mentor, or a medical officer with extensive HIV experience. After the initial 12 weeks of mentorship, the clinical competency of the professional nurse was assessed by the mentor, using the DoH clinical mentorship assessment tool. Based on the assessment, weekly on-site mentorship

sessions would continue for another 12 weeks or would be tapered down to two-weekly sessions.

Step 4: Two-weekly on-site mentorship and telephonic mentorship continued until the mentee was assessed as competent and able to work independently.

**Results**

The number of facilities offering ART services at TB sections increased from only one in March 2012 to 14 by the end of March 2013 (Graph 1).

Graph 2 shows an increase in the number of TB patients initiated on ART at TB sections in three PHC facilities in Soweto between April 2012 and June 2013. These patients were initiated by professional nurses who were trained and mentored on TB management and NIMART.

**Challenges identified**

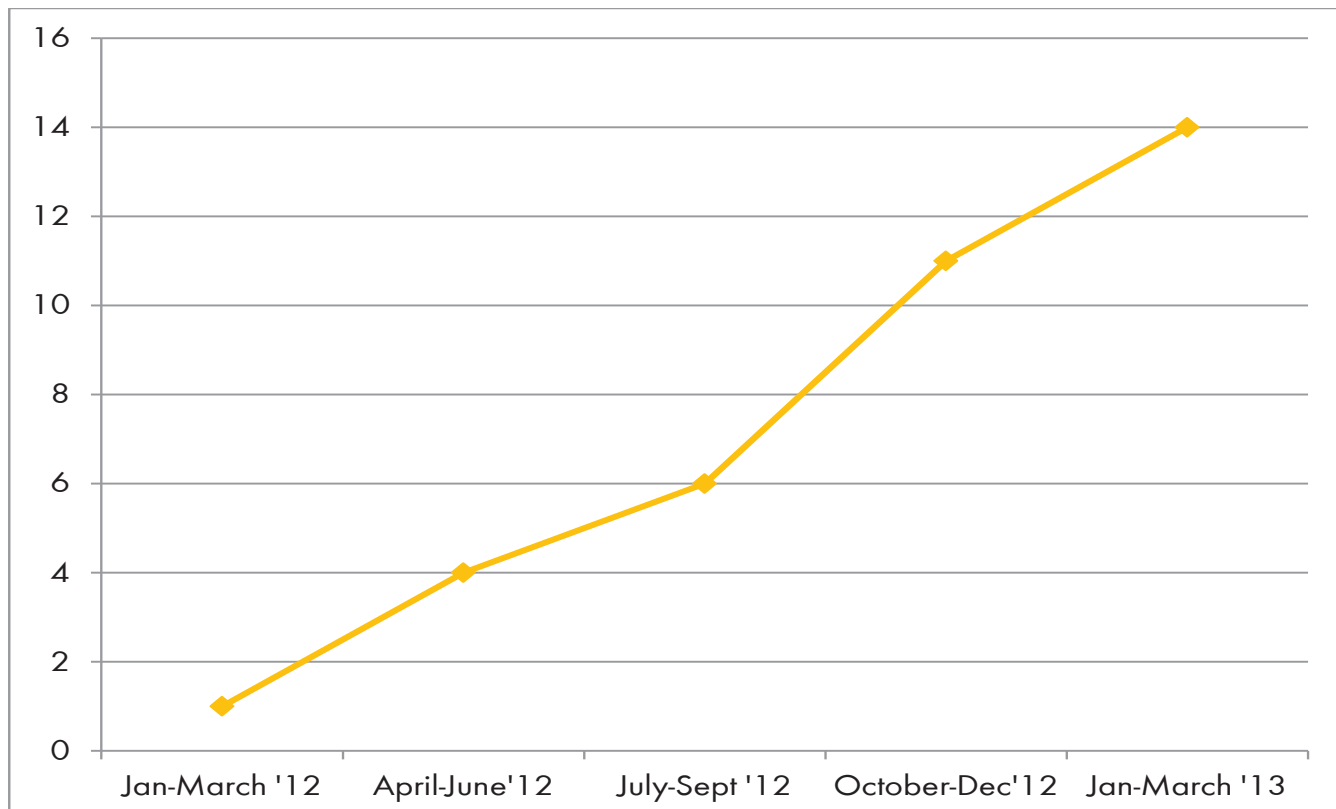
Integration of HIV care into TB services was seen by some as additional work

to the already overworked professional nurse working at TB units. Buy-in from facility managers and staff working in TB clinics was the biggest challenge that hindered implementation in some facilities. Staff rotations in some facilities resulted in non-sustainability of the service (e.g. NIMART-competent professional nurse moved from the TB clinic and replaced by a nurse not NIMART-trained).

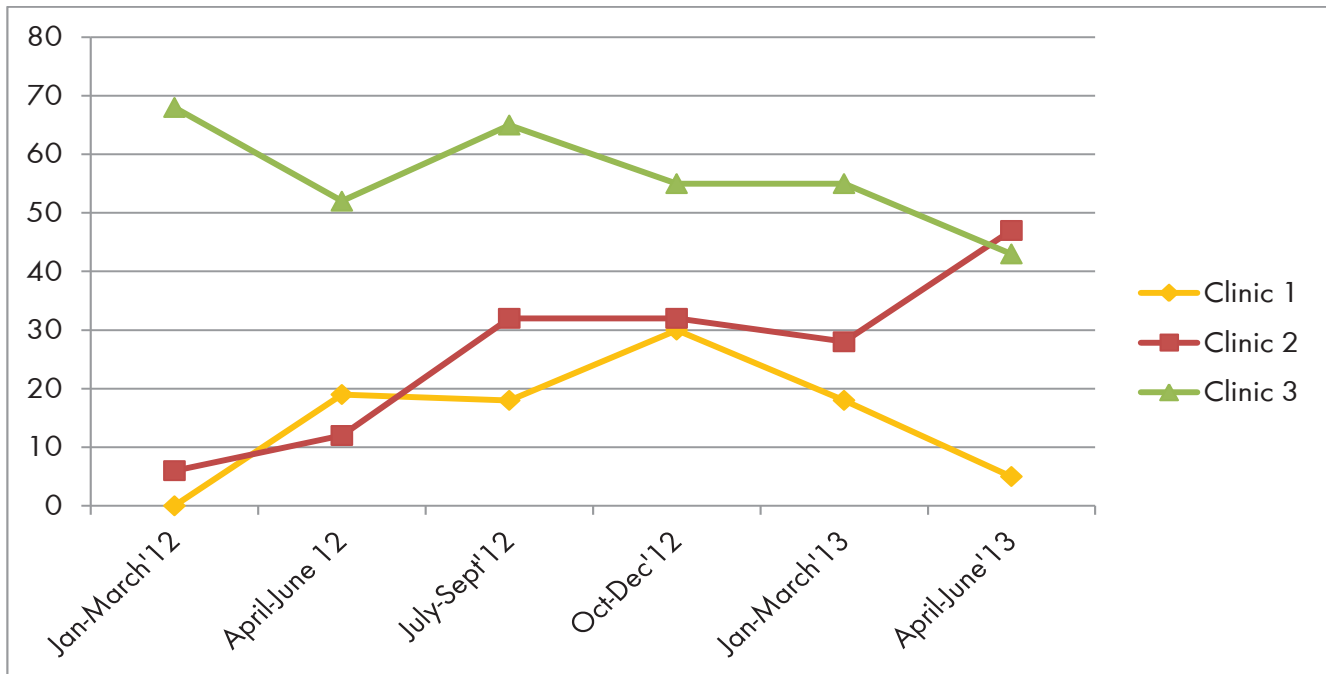
The category of staff working in the TB section was also another hindrance. In facilities where enrolled nurses and enrolled nurse assistants worked at TB clinics with no supervision from a professional nurse, NIMART could not be implemented, as it is not in the scope of practice for those categories of staff.

Rotation of professional nurses from one department to another led to the unsustainability of the programme in clinics where a NIMART-trained and mentored nurse at the TB section would be moved from the TB department and replaced by someone without NIMART

Graph 1: Number of facilities that have implemented NIMART at TB units.



Graph 2: Number of TB/HIV co-infected patients initiated on ART by a professional nurse trained and mentored on NIMART as TB units in three PHC facilities in Soweto.



training. As shown in Graph 2, clinics 1 and 3 had a decline in the number of TB/HIV co-infected patients initiated on ART from January - March 2013, during which time rotation of staff occurred.

### Conclusion

Implementation of NIMART at TB units resulted in early initiation of TB/HIV co-infected patients on ART. To promote TB/HIV integration, clinicians treating TB should be equipped with knowledge on

HIV care and ART initiation to be able to manage TB/HIV co-infected patients. Where human resource challenges make it difficult for a professional nurse to manage the TB unit, measures should be in place to facilitate early initiation of TB/HIV co-infected patients on ART. <sup>®</sup>

### References

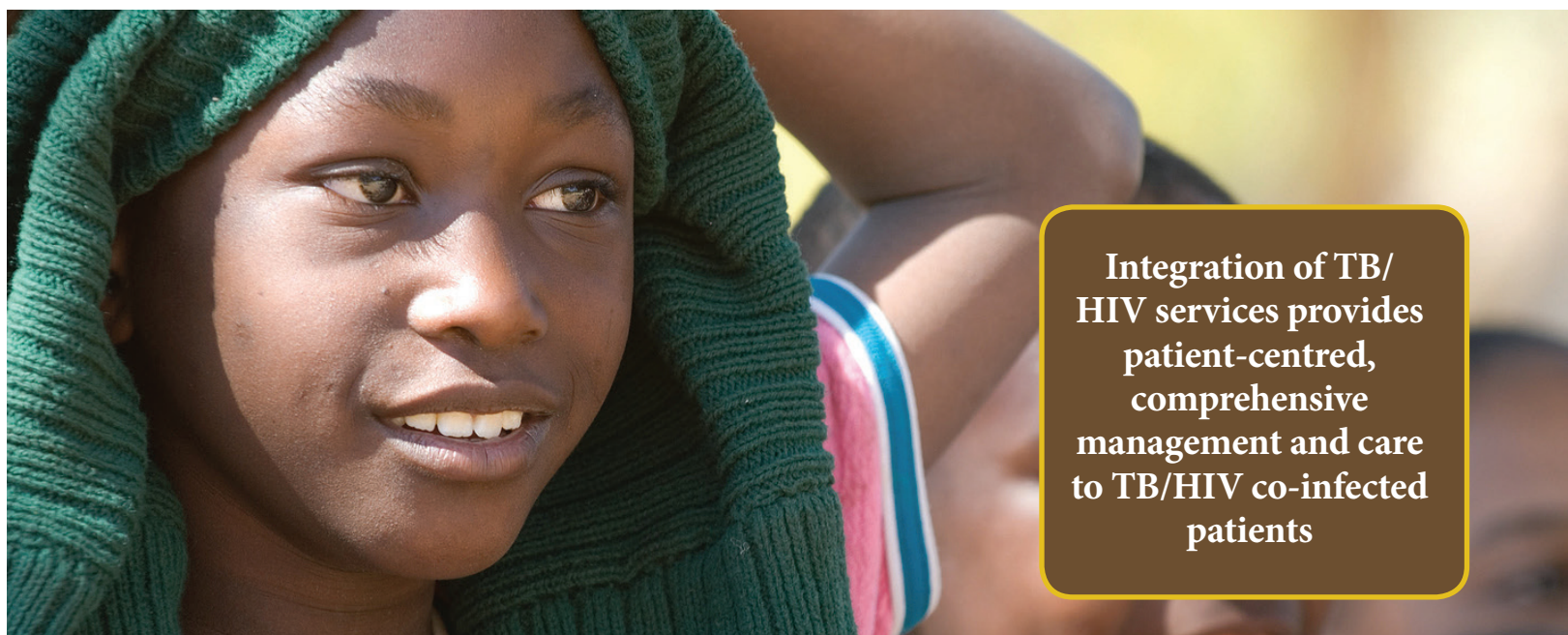
1. World Health Organization. Global Tuberculosis Report, 2013.
2. World Health Organization. WHO

policy on collaborative TB/HIV activities; Guidelines for national programmes and other stakeholders.

3. Revised SA TB management guidelines; Memo on ART eligibility criteria in TB patients, July 2012.

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2. DoH Johannesburg metro and City of Johannesburg TB programme teams
3. Anova Tirisanong team.



Integration of TB/HIV services provides patient-centred, comprehensive management and care to TB/HIV co-infected patients



# Management of drug-induced liver injury in patients with HIV being treated for TB

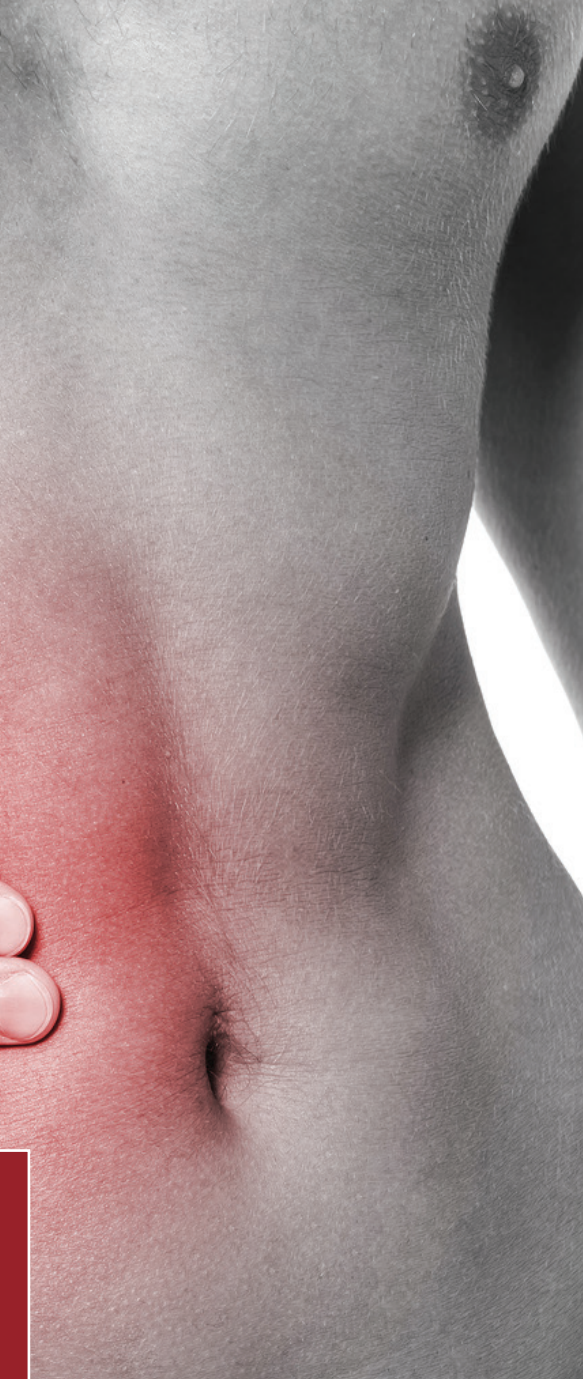
R H Berhanu, S Sheik

*Right to Care, TB Focal Point, Themba Lethu Clinic, Helen Joseph Hospital, Department of Medicine, University of Witwatersrand, Johannesburg South Africa*

Dr R H Berhanu, MD (US), Internal Medicine (US), Dip TM&H (US), DipHIVMan (SA); rberhanu@righttocare.org  
Dr S Sheik, MB ChB, DipHIVMan (SA)

The management of DILI poses several challenges to the healthcare worker, and it can be difficult to distinguish DILI from the other causes of liver dysfunction such as IRIS, acute hepatitis and sepsis





**CASE: A 24-year-old woman with HIV and TB presents with jaundice, vomiting and weight loss**

**Presentation of case**

A 24-year-old woman with HIV and tuberculosis (TB) presented to her local clinic because of jaundice, nausea, vomiting and weight loss.

A diagnosis of disseminated TB was made one month earlier when she was admitted to a hospital with weight loss, night sweats, fever and diffuse lymphadenopathy. She had a non-productive cough and sputum could not be obtained for Xpert MTB/RIF testing. She had a slightly elevated ALT 65,

and abdominal ultrasound revealed an enlarged liver, ascites, and enlarged intra-abdominal lymph nodes. A fine-needle aspirate of an axillary lymph node was sent for TB culture, but the results were pending at the time of discharge. A test for HIV was positive; and the patient's CD4<sup>+</sup> count was 52 cells/ $\mu$ l. TB treatment in the four-drug combination commonly referred to as 'rifair' with rifampicin (RIF), isoniazid (INH) ethambutol (EMB) and pyrazinamide (PZA) was started and she was discharged from hospital. She was initiated on fixed-dose combination (FDC) antiretroviral therapy (ART) containing tenofovir (TDF), emtricitabine (FTC) and efavirenz (EFV) as well as co-trimoxazole (CTX) for *Pneumocystis pneumonia* (PCP) prophylaxis at the clinic 2 weeks after initiating TB treatment.

The patient and her family began to notice her eyes turning yellow one week after starting ART. She reported vomiting daily after taking her medication, her appetite was poor and she felt weak and dizzy. She had lost 4 kg since starting TB treatment. She had no known allergies. She denied taking any traditional or over-the-counter medication. She did not smoke, drink alcohol or use drugs.

On examination, the patient was alert and oriented but emaciated. Her weight was 42 kg, temperature 40°C, blood pressure 85/54, and pulse 130 beats per min, with respiration 30 breaths per min. The sclera of the eyes were yellow and she had oral thrush. There were coarse breath sounds bilaterally, and bronchial breath sounds in the right upper-lung fields. The heart sounds were normal. There was a 2.5 cm right axillary lymph node. The liver edge was tender and palpable 3 cm below the costal margin. The nurse evaluating her at the clinic referred her to the hospital for admission. A chest radiograph showed a cavity in the right upper lobe, diffuse interstitial opacities in the right and left lobes and hilar lymphadenopathy. IV fluids and anti-emetics were started.

Table 1 shows the patient's initial laboratory test results.

**What is wrong with this patient?**

This patient had developed jaundice with high bilirubin and ALT after starting TB treatment and ART. Possible causes include:

- Drug-induced liver injury (DILI) from TB treatment, ART or CTX
- Immune reconstitution inflammatory syndrome (IRIS)
- Acute viral hepatitis
- Bacterial sepsis.

**I. What is DILI?**

DILI is liver toxicity from medication. Although the exact prevalence is not known, DILI from TB and HIV treatment is common in South Africa and is associated with a high mortality. Approximately one-third of patients admitted to hospital with DILI die during their hospitalisation.<sup>[1]</sup>

Three out of the four medications in first-line anti-TB treatment, RIF, INH and PZA, are known to be toxic to the liver, although it is not known which one causes the majority of DILI reactions. In ART, the drugs with the most liver toxicity are nevirapine (NVP) and lopinavir/ritonavir (LPV/r) (especially at the double dose used in patients receiving TB treatment). EFV, zidovudine (AZT) and stavudine (D4T) can also cause liver dysfunction, albeit less commonly. The timing of DILI is variable; it can occur within days or months after starting a new medication. Common risk factors for the development of DILI in patients with HIV receiving TB treatment include being a child or age >35 years, chronic hepatitis B infection, alcohol use, disseminated TB and malnutrition.<sup>[2,3]</sup> The symptoms of DILI are non-specific and can include nausea, vomiting, weight loss, jaundice and abdominal pain.

The management of DILI poses several challenges to the healthcare worker. It can be difficult to distinguish DILI from the other causes of liver dysfunction such as IRIS, acute hepatitis and sepsis.

**Table 1: Results of laboratory tests**

Test	Results	Reference range
Haemoglobin (g/dl)	7	12 - 18
Haematocrit (%)	20	37 - 52
Creatinine (µmol/l)	89	53 - 106
Total bilirubin (µmol/l)	142	5 - 21
ALT (U/l)	250	10 -40

Furthermore, when DILI is suspected, clinicians have to decide whether or not to stop life-saving TB treatment and ART, and the best way in which to re-introduce these medications once the liver dysfunction has improved. The South African HIV Clinicians Society published a guideline for the management of DILI in 2013, recommending a practical approach for healthcare workers, which will be reviewed in this article.<sup>[2]</sup>

## II. Overlap between IRIS and DILI

HIV causes a decrease in the body's normal response to infection. Once the immune system and CD4<sup>+</sup> cells start to recover after starting ART, the heightened immune response to infection can puzzlingly result in deterioration of the patient's condition. This is called a paradoxical IRIS. Another form of IRIS occurs in patients in whom the diagnosis of TB was not known at the time of ART initiation. In this situation, TB can be revealed after

starting ART; this is called 'unmasking IRIS'.

The symptoms of IRIS depend on the location of the opportunistic infection. In TB meningitis, IRIS can present with headache and neurological signs; in pulmonary or pleural TB, IRIS presents with worsening cough, infiltrates or pleural effusions on chest radiograph. In patients with TB involvement in the liver, TB-IRIS will present as a tender and enlarged liver, right upper quadrant abdominal pain, nausea and vomiting. The liver function tests (LFTs) will typically show a moderate elevation of ALT and AST and a significant rise in what are called the 'canalicular' enzymes GGT and ALP.<sup>[4]</sup> Jaundice and significant increase in bilirubin are unusual in TB-IRIS involving the liver.<sup>[4]</sup> It is often impossible to differentiate clinically between IRIS and DILI. The only way to tell them apart is to perform a liver biopsy, which is not practical in most settings. When the diagnosis of DILI

versus IRIS is in question, it is prudent to treat the patient as a DILI case and monitor the response.<sup>[2]</sup>

## III. General approach to the patient with suspected DILI

In a patient with suspected liver toxicity, i.e. DILI, the following steps should be taken:

1. Double-check the TB diagnosis. It is important to confirm the diagnosis:
  - Check results of TB culture and susceptibility testing. If none are available, repeat the workup for TB (e.g. sputum for Xpert MTB/RIF, fine-needle aspirate of lymph node, TB blood culture or 'bactec').
  - If a clinical diagnosis was made, and the patient had a good clinical response to TB treatment with resolution of symptoms and weight gain, then the diagnosis of TB is likely to be correct.
  - Reconsider the diagnosis of TB if not confirmed.

**Table 2: DILI severity**

Mild DILI	Clinically well (asymptomatic) and - ALT <200 IU/l - Total bilirubin <40 µmol/l
Moderate DILI	Clinically well (asymptomatic) and - ALT level >200 IU/l or - Total serum bilirubin concentration >40 µmol/l
Severe DILI	Clinically unwell (nausea, vomiting, abdominal pain) and - ALT >120 IU/l - Bilirubin >40 µmo/l

**Table 3: ‘Covering the tail’ with two NRTIs**

Regimen	Stop	7-day ‘tail’
FDC	FDC	TDF, 3TC
TDF, 3TC, EFV	EFV	TDF, 3TC
D4T, 3TC, EFV	EFV	D4T, 3TC
AZT, 3TC, EFV	EFV	AZT, 3TC

- Consider other causes of liver disease including alcohol abuse, viral hepatitis, TB involvement of the liver, IRIS and bacterial sepsis.
- Take a thorough medication history.
  - Enquire about traditional medication use as well as over-the-counter medication such as paracetamol. In high doses, paracetamol is toxic to the liver.
  - Other medications that can cause liver toxicity which are commonly used in HIV/TB co-infected patients include CTX, fluconazole, NVP LPV/r (especially when the dose is double for patients receiving anti-TB treatment).

#### IV. Management of DILI

DILI can be classified as mild, moderate or severe (see Table 2), and management will depend on the severity of the symptoms and the degree of elevation of ALT and bilirubin.

##### 1. Mild DILI

Clinically well with elevated ALT <200 IU/l and total bilirubin <40 µmol/l.

Mild elevations in ALT and bilirubin can occur in patients receiving TB treatment and ART. In these situations, patients should be monitored with weekly blood work for ALT and bilirubin and continued on ART and TB treatment (see flowchart for ‘Mild DILI’). If the ALT and bilirubin improve, then monitoring can stop. If they worsen and meet the definition for moderate or severe DILI, then patients should be admitted to hospital or referred to a specialised TB

clinic, if one is available. If the patient remains stable but elevated, alternative diagnoses other than DILI should be considered and the patient should be referred for further workup and abdominal sonar.

##### 2. Moderate and severe DILI (see flowchart)

The categories of moderate and severe DILI are grouped together as the management is similar. In general, patients with moderate and severe DILI require urgent referral to the hospital to be admitted for further management. In special circumstances, patients with moderate DILI can be treated as outpatients.

TB treatment should be stopped. Decisions about stopping ART should be made on a case-by-case basis. Patients on first-line ART with EFV will require a 7-day NRTI ‘tail’ with TDF and lamivudine (3TC) (see section on stopping ART below). However, if the patient is experiencing liver failure, all ART should be stopped at once. A ‘liver-friendly’ TB regimen of streptomycin (STM) or kanamycin (KM), EMB and moxifloxacin (MXF) should be started. STM or KM can be used interchangeably. For monitoring purposes, ALT and bilirubin are sufficient and full LFTs are not required.

**Another form of IRIS occurs in patients in whom the diagnosis of TB was not known at the time of ART initiation**

ALT and bilirubin should be repeated every 3 - 5 days and when ALT is <100 IU/l and bilirubin is normal, re-challenge with single drugs can begin. (See flowchart for detailed instructions on the re-challenge sequence.)

##### 3. Final regimens (see flowchart)

After the re-challenge is completed, the intensive phase of treatment will start from the beginning. This is regardless of the duration of intensive phase that has been completed prior to DILI presentation. The date of starting the ‘final regimen’ is considered day 1 of the intensive phase.

If the patient tolerates both INH and RIF re-introduction, and ALT and bilirubin remain stable, then streptomycin or KM and MXF are stopped and the final regimen is RIF, INH and EMB for 12 months. There is no distinction between intensive phase and continuation phase.

If the patient does not tolerate RIF re-introduction but tolerates INH, then the intensive phase of treatment will include STM or KM, INH, EMB and MXF for 2 months, and a continuation phase of INH, EMB and MXF for 16 months (total of 18 months of treatment).

If the patient does not tolerate INH re-introduction but tolerates RIF, then INH, MXF and STM are stopped and the patient takes RIF, MXF and EMB for 12 months. There is no distinction between intensive phase and continuation phase in this situation.

In certain situations (e.g. TB meningitis, or isolated drug resistance to EMB or

STM), re-challenge with pyrazinamide should be considered once the patient's condition has stabilised.

## V. Notes on stopping ART

The decision to stop ART should be made on an individual patient basis. If the patient has been on the ART regimen for >6 months, then the regimen may be continued, because ART is less likely to be the cause of the DILI. If a patient presents in liver failure, then all treatment including ART should be stopped at once.

Depending on the patient's treatment regimen, ART may be stopped as follows:

### 1. First-line ART or FDC

Due to the long half-life of EFV, if a patient were to stop the FDC or all their first-line ART at once, they would effectively be on a single drug (i.e. EFV) for several days. By 'covering the tail' with two NRTIs we prevent this period of monotherapy (single drug) and reduce the likelihood of developing resistant mutations to EFV. See Table 3.

### 2. PI-based regimen i.e. LPV/r ('Aluvia')

All ART can be stopped at once without the need for a 7-day 'tail'.

### 3. Restarting ART

ART may be restarted once the patient has stable LFTs and rechallenge with single TB drugs has been completed. LFT monitoring should continue after starting ART (every 2 weeks for 2 months).

NVP should not be re-introduced in a patient with suspected DILI and can be substituted with EFV.

Note that there is no need to double-dose LPV/r if RIF is not included in the final TB regimen.

In patients who are ART-naïve when TB-DILI is diagnosed, ART initiation can occur once the patient has stable liver

function and rechallenge with single TB drugs has been completed.

## VI. Special situation: Isolated hyperbilirubinaemia

Another possible presentation is that of isolated jaundice (defined as ALT <200 U/l, total bilirubin >40 µmol/l). The most likely cause of this is RIF which can interfere with bilirubin uptake, leading to an isolated jaundice.

These patients should be managed by stopping RIF and substituting it with MXF. The ALT and bilirubin should be repeated in 7 days. If the bilirubin does not settle, an expert should be consulted for further assessment. If the bilirubin does settle, refer to flowchart for final regimen without RIF. The clinician may consider a re-challenge with RIF 2 - 3 weeks after stopping the drug. Again, ALT and bilirubin should be repeated after 7 days. In general, ART should be continued throughout this period.

## VII. Rechallenge of CTX

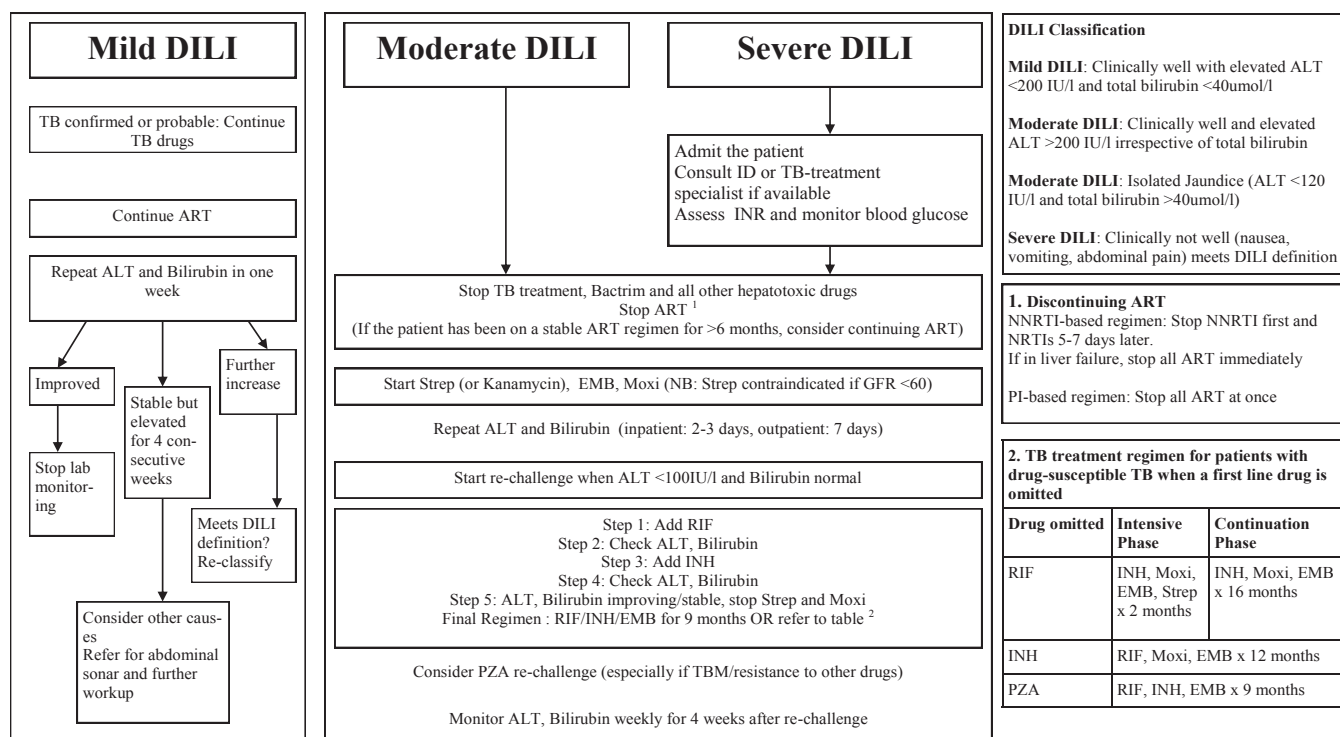
Patients taking cotrimoxazole who develop a severe DILI should not be re-challenged with CTX and dapsone should be used as an alternative medication for PCP prophylaxis. In patients with mild and moderate DILI, re-challenge with CTX is recommended, as it is a more effective drug than dapsone.

## Back to the clinical case

All medication was stopped, i.e. TB treatment, ART and CTX. The patient was taking an FDC ART regimen. This included TDF, FTC and EFV. The FDC was stopped and the patient was given a 7-day supply of TDF and 3TC to cover the EFV 'tail' (see notes on stopping ART).



**Consensus Statement: Management of drug-induced liver injury in HIV positive patients treated for TB**  
Southern African HIV Clinicians Society Guideline, 2013



Tests for hepatitis A, B and C were sent to rule out acute viral hepatitis as a possible cause or contributor to the patient's deterioration. A blood culture was also taken to evaluate for bacterial sepsis.

In order to confirm the diagnosis of TB, the result of the fine-needle aspirate culture taken at the initial hospitalisation was traced. The result was culture-positive for *Mycobacterium tuberculosis* and polymerase chain reaction (PCR) tests confirmed sensitivity to RIF and INH.

Using the DILI guideline, this patient was classified as having severe DILI, i.e. clinically not well (nausea, vomiting, abdominal pain) with an ALT >120 IU/l and bilirubin >40 µmol/l.

A liver-friendly regimen of KM, MXF and EMB was started. The ALT and bilirubin were repeated every 3 days

until the ALT was <100 IU/l and the bilirubin had normalised. At this point, RIF was introduced as per the DILI guideline. The step-by-step re-introduction was followed and the patient was able to tolerate RIF and INH. KM and MXF were stopped and the final regimen was RIF, INH and EMB. The patient would continue this final regimen for a total duration of 9 months.

Once the patient was tolerating this regimen with stable ALT and bilirubin, ART was re-introduced. The FDC of TDF, FTC and EFV was started again and ALT and bilirubin monitoring was done every 2 weeks for a period of 2 months. **R**

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Health  
REPUBLIC OF SOUTH AFRICA

Private Bag X828, PRETORIA, 0001, 19TH Floor, Civitas, Crn Struben & Andries Street, PRETORIA, 0001 Tel: +27 (0) 12 395 8000 Fax: +27 (0) 12 395 8422

Heads of Pharmaceutical Services  
Provincial Depot Managers

Dear HOPS/Depot Managers

**RE: URGENT FDC ROLL OUT**

It has come to our attention that many facilities continue to delay their rollout of the fixed dose combination of Tenofovir / Emtricitabine and Efavirenz (FDC, TEE) to all clinically eligible patients.

As per a circular sent out on the 1 October 2013 **all** eligible patient groups should have been offered the opportunity to switch to FDC. That is, previous priority groups 1 to 7 should **all** have begun switching, as clinically appropriate:

1	All HIV positive patients eligible for initiating ART, including all pregnant women (regardless of CD4 count).
2	HIV positive pregnant women and breastfeeding mothers currently stable on singles 3TC, TDF and EFV.
3	Virologically suppressed patients on a d4T-based regimen who have normal renal function.
4, 5, 6,7	Stable patients receiving singles TDF, 3TC and EFV, with or without co-morbidities, as clinically appropriate.

Concerns about single agents expiring, or the need to use up single agents, are not acceptable reasons for delaying FDC rollout. Facilities with excess or short dated single agents should contact their depots for stock upliftment.

As with any product, continued monitoring and evaluation should be adopted to maintain sustainable supply to all facilities.

Please ensure that you work with your programmatic partners and networks of pharmacy personnel to convey the message that all priority group patients need to be switched as a matter of urgency.

Failure to comply with this policy is a contravention of national policy on ARV treatment and the necessary disciplinary steps will be taken against such persons.

**DR T PILLAY**  
**DEPUTY DIRECTOR GENERAL: HEALTH REGULATIONS AND COMPLIANCE**  
**DATE: 03-02-2014**



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# Identification and management of ART failure

R J Lessells, BSc (MedSci), MBChB, MRCP (UK), DTM&H, DipHIVMed

*Africa Centre for Health and Population Studies, University of KwaZulu-Natal, Mtubatuba, and  
Department of Clinical Research, London School of Hygiene and Tropical Medicine,  
United Kingdom*

**It is important to be aware that sometimes people can seem to have immunological failure or even clinical failure, without evidence of virological failure**

## **Introduction**

The expansion of ART in South Africa in the past decade has had impressive benefits in reducing deaths and serious illness. There are now an estimated 2.4 million people receiving ART, and one of the main challenges for the national programme is to retain these patients on treatment for life. Although most individuals treated with ART respond well, there are a number of reasons why ART failure can occur. For individuals

and communities to get the most benefit from ART, it is important that we understand why ART failure happens and how we can identify and manage such failure.

## **What do we mean by ART failure?**

In South Africa, regular testing of viral load (VL) is recommended to monitor progress on ART and to identify treatment failure. Virological failure is defined as

a VL >1 000 copies/ml. If virological failure is not identified and addressed, then it can lead to immunological failure (drop in CD4<sup>+</sup> cell count) and clinical failure (occurrence of new opportunistic infections or other HIV-related diseases) (Fig. 1).

It is important to be aware that sometimes people can seem to have immunological failure or even clinical failure, without evidence of virological failure. This





Figure 1. Antiretroviral therapy failure.

is because some conditions (e.g. TB, Kaposi's sarcoma, and lymphoma) can occur at any time, at any CD4<sup>+</sup> cell count and even during complete virological suppression. The key thing to remember here is that if there is no virological failure, then changing ART is not necessary and will not help the patient.

**Why does virological failure happen?**

Virological failure occurs for one of two main reasons:

1. There is insufficient antiretroviral (ARV) drug pressure to suppress viral replication – usually due to suboptimal adherence, but could also be due to drug-drug interactions or malabsorption (meaning that the drugs do not get into the bloodstream properly because of an intestinal problem).
2. The virus has developed ARV drug resistance so, even in the presence of sufficient ARV drug pressure (good adherence), viral replication cannot be completely suppressed.

Rather than being separate mechanisms, these two reasons are very closely intertwined. Poor adherence is the most important factor leading to the emergence of ARV drug resistance. It is reasonable to say that most patients with virological failure will have had problems with adherence at some point in time – those problems might have been in the past and have resolved or they may be ongoing. One of the important points in your assessment is trying to determine whether there are ongoing barriers or challenges to adherence that mean the patient will need more intensive adherence support or that will require additional interventions.

**Importance of VL monitoring**

The detection of an elevated VL can alert us to problems with ART adherence, the presence of drug resistance or to other important issues. It is essential that VL measurements are performed at the correct times according to the guidelines (at month 6, month 12, and then every 12 months if the VL is <400 copies/ml). It is also important that there is a good system for results being reviewed on return from the laboratory and of identifying those with elevated VL results. A VL >1 000 copies/ml should always be taken seriously and should be acted upon. If we act in a timely fashion, then we may be able to prevent the emergence of ARV drug resistance. If virological failure is not dealt with in a timely fashion, then not only may that individual get sicker, but we may also lose the chance for ART to work well for that patient. If virological failure is prolonged, then the chances of that person responding to future ART regimens (e.g. second- and third-line therapy) may also be affected.

**Assessment of the patient with virological failure**

The proper assessment of the patient with virological failure can be a complex and time-consuming process. It may require more than one consultation with the patient and their family, and for some patients you will need to involve

members of the multidisciplinary team (Fig. 2). While it can be difficult to get access to these team members in many settings, it is important to be aware of the important roles that different team members can play in helping with difficult cases.

The first step in assessing the patient with virological failure is to make an assessment of adherence. A standard assessment can be done using the tools provided in the national ART guidelines – this can include subjective assessment (the patient's own assessment of their adherence) as well as objective measures (such as the pill count). However, these adherence tools often do not detect problems even when they exist and, even if they do, they do not tell us the cause of the problem. On their own, they are therefore not sufficient for us to assess and manage a patient with virological failure. We need to explore in more detail the factors that may contribute to virological failure. This will include exploration of factors relating to adherence, as well as other reasons why treatment may fail (e.g. drug interactions or the presence of drug resistance). Some of the things that should be explored are described in Box 1.

This highlights that assessment can be complex – in reality, you are trying to build up a complete picture of how ART fits into the patient's life and trying to identify what may be contributing to adherence problems. In some cases there might be simple explanations for virological failure and all these issues do not need to be explored for every patient. Unfortunately, though the reasons underlying virological failure may be complicated and deep-rooted, you will only detect these problems if

**The detection of an elevated VL can alert us to problems with ART adherence, the presence of drug resistance or to other important issues**

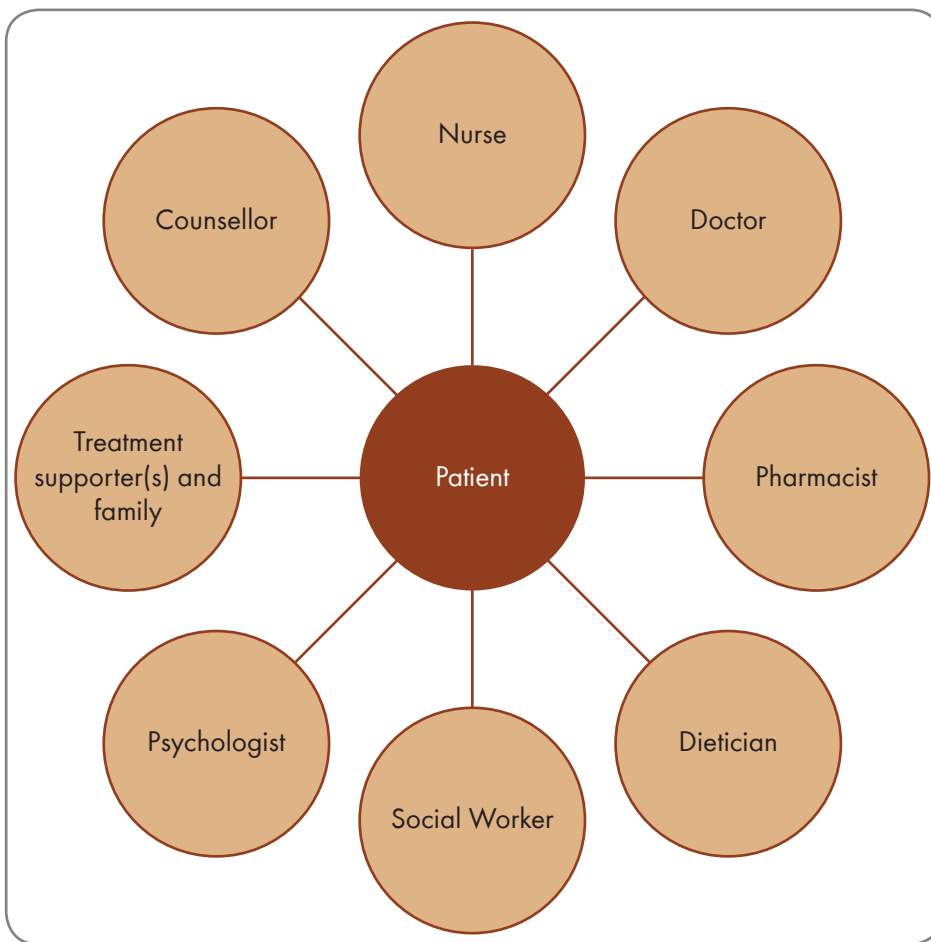


Figure 2. Multidisciplinary team providing patient-centred care.

You discover that she has recently returned to the family home from the city, having lost her job. The patient has only disclosed her HIV status to her sister, but not to her parents or partner. She is therefore hiding her ARVs at home and sometimes does not take them when she visits her partner at weekends. There are financial pressures because she was the main breadwinner for the family and now there are shortages of food towards the end of the month – she doesn't take her ARVs if she has not eaten anything. This case is more complex and there seem to be a number of factors that might have contributed to the loss of virological suppression. You realise that she needs a lot of support and counselling and ideally needs help from a multidisciplinary team. You counsel her about ways in which she may disclose to her parents and you educate her about the importance of still taking ARVs even in the absence of food. You arrange for her to come back the following week on the day that the dietitian and social worker will be at the clinic. You encourage her to bring her sister with her to the next appointment to try to engage her as a treatment supporter.

you search for them and if the patient trusts you enough to disclose their problems. This makes it important to try to build strong relationships with your patients and always to appear supportive, compassionate and caring – sometimes it is easy to forget how important this is.

It is also important to remember that adherence can change substantially over time. It is essential to support each person within his/her family and community setting throughout their treatment journey, and to identify problems early. It can also be useful to recognise past problems as there is always the possibility that these can return to affect adherence again in the future.

### Management of the patient after initial assessment

If your assessment uncovers an issue that can be addressed, then it is

important to intervene as soon as possible. This may involve something relatively simple or may be more complex.

**Example 1:** Your patient has a viral VL >1 000 copies/ml after 6 months of fixed-dose combination tenofovir/emtricitabine/efavirenz. You identify that the patient is taking carbamazepine for epilepsy and you realise that there might be a drug-drug interaction between efavirenz and carbamazepine. You discuss with the patient and, in addition to adherence counselling and support, you refer the patient to the medical officer who subsequently changes the carbamazepine to lamotrigine. You plan to repeat the VL in two months.

**Example 2:** Your patient has a VL >1 000 copies/ml after 2 years of tenofovir + lamivudine + efavirenz. Prior to this, she had good virological suppression (VL <40 copies/ml).

The VL should be rechecked in two months in all cases with one VL >1 000 copies/ml. We know that, with intensified adherence counselling and support, approximately half of the patients with one detectable VL (>1 000 copies/ml) will be able to achieve virological suppression (<50 copies/ml) on the same regimen. In this case, the same regimen should be continued and the adherence support should be maintained. If the repeat VL is also >1 000 copies/ml, then a switch to a second-line regimen is indicated. It is important to remember that this should not stop you from trying to identify and address any adherence problems or other problems contributing to virological failure (Box 1) – indeed this becomes even more important. If the underlying issues are not addressed, then a switch to second-line therapy in

itself may not lead to good outcomes for the patient. On the other hand, for patients where there are no ongoing adherence issues, the switch to second-line therapy should not be delayed.

## Conclusions

Routine VL monitoring in South Africa helps with the identification of ART failure. However, assessment and management of the patient with

virological failure can be complex and requires a good understanding of the factors that may contribute to treatment failure, so that you can identify and address problems in individual cases. <sup>R</sup>

Box 1. An approach to exploring reasons for virological failure in an individual patient

### First steps

1. Check ART prescription and medication – are the drugs and dosages correct?
2. Check that the patient understands their drugs and dosages – is what they are taking correct?
3. Review the patient's understanding and beliefs about ART
4. Does the patient have a designated treatment supporter?
5. Review the patient's clinic file and speak to other nurses/counsellors
  - Is there any documentation of adherence problems?
  - Is the patient on time for clinic visits/pharmacy refills?
  - Have there been any interruptions in treatment?
  - Does the patient attend each visit or do they send someone else to collect ART?
  - Is there any documentation about adverse effects from ART?

### Clinical issues

1. Previous history of ART (including for the prevention of mother-to-child transmission)
2. Other medication
  - Prescribed medication (e.g. TB treatment, epilepsy treatment)
  - Over-the-counter medication (e.g. 'immune boosters')
  - Traditional therapies
3. Adverse effects from ART – particularly those that may influence adherence e.g. peripheral neuropathy, lipodystrophy, gynaecomastia, insomnia, diarrhoea etc.
4. Problems with absorption (any vomiting, diarrhoea, weight loss?)
5. Substance misuse (alcohol, marijuana, others)
6. Mental state/cognitive impairment
7. Partner's use of ART - although risk of super-infection with drug-resistant virus is small (a detectable VL should never be assumed to just be related to unprotected sex with a partner receiving ART – this is a common misconception)

### Socioeconomic issues

1. Disclosure of HIV status and ART use – to partner, family members, others. Are they all supportive?
2. Do they know other people taking ART?
3. Do they have any care responsibilities at home?
4. Are they employed? If so, what is the work pattern and location of work? Have they disclosed their HIV status and ART use to their employer?
5. Is there reliable supply of food at home? Do they take ART if without food?
6. Financial issues – household income/receipt of grants?
7. Transport and distance to clinic
8. Relationship with clinic staff

# THE DIAGNOSIS OF TUBERCULOSIS IN SOUTH AFRICA

Kerrigan McCarthy, MB BCH, FCPATH (Micro), DTM&H

*The Aurum Institute, and School of Public Health, University of the Witwatersrand, Johannesburg*

The diagnosis of TB in South African public sector facilities is guided by algorithms agreed upon by the National Department of Health TB Control Programme and the National Health Laboratory Service

## Why diagnosis of TB is critically important

The World Health Organization (WHO) 2013 Global Report on TB lists South Africa (SA) as having the highest TB incidence globally, and having the second-highest global burden of multidrug-resistant (MDR)-TB.<sup>[1]</sup> The dramatic rise in incidence of TB and MDR-TB in SA over the last 25 years has paralleled the rising population prevalence of HIV. Presently, 60% of South Africans who are diagnosed with TB are co-infected with HIV, but rates >80% are reported from provinces with high HIV prevalence.<sup>[1,2]</sup> Consequently, diminished life expectancy among South Africans and high mortality of persons in the 15 - 49-year age group in SA are driven largely by TB co-infection.<sup>[3]</sup> In response to this epidemic in SA, and among many other actions taken, the National Department of Health (NDoH) took a decision in March 2011, together with the National Health Laboratory Service (NHLS), to replace sputum smear microscopy with a better test, the Xpert MTB/RIF (Cepheid, Sunnyvale, USA; GXP) as the first-line diagnostic test in all microscopy centres across SA

– the first country globally to do so.<sup>[4]</sup> Identification of persons with TB is the first step to controlling the epidemic and preventing further TB transmission. The rollout of GXP was completed late in 2013, and currently all primary health facilities have access to a laboratory where GXP testing is available.

## Diagnosis using Xpert MTB/RIF


The diagnosis of TB in SA public sector facilities is guided by algorithms agreed upon by the NDoH TB Control Programme (TCP) and the NHLS. These algorithms are reviewed periodically – most recently in 2004, 2009 and 2011. When favourable evidence of substantially improved sensitivity compared with smear microscopy became available,<sup>[5]</sup> the WHO issued a strong recommendation that GXP should be used as the initial diagnostic test in individuals suspected of MDR-TB or HIV/TB co-infection.<sup>[6]</sup> The NHLS released a new algorithm for the diagnosis of TB in 2011 for use with the GXP test (see Fig. 1). It is therefore helpful to review this algorithm, and highlight areas where difficulties in implementing it are encountered.

## Critical points in the algorithm

Five key areas are highlighted in which careful attention to the guidelines will ensure a correct diagnosis of TB.

### A. Screening for TB

The best way to find out who has TB would be to investigate everyone (i.e. send sputum for investigation, do chest X-rays and examine everyone thoroughly). But, this is too expensive. Screening (i.e. enquiring about TB symptoms) can identify people who are more likely to have TB and save these expensive investigations for this smaller group. The WHO suggests that all persons entering healthcare facilities, regardless of the reason, should be screened for TB by enquiring about four key symptoms: cough, weight loss, fever and night sweats.<sup>[7]</sup> A person with any one of these symptoms should have a single, spot (immediate) sputum specimen taken for a GXP test. Table 1 explains how well this screening test works. Persons who do not have any symptoms are quite unlikely to have TB. If, however, in the worst case scenario, a person has TB but does not have symptoms, the reality is that: (1) they



A negative Xpert/RIF result in an HIV-positive person who remains symptomatic means that further investigations are required --CXR, TB culture and trail of antibiotics

are unlikely to be infectious, and so will not pass TB on to someone else; and (2) in time, they will go on to develop symptoms, and present for screening at a later stage.

A critically important part of TB screening is recording patient contact details. This is often done without attention to detail – and then if results are positive, the patient cannot be found – a disaster for the TB programme. When recording contact details, it may help to pay attention to the following:

- Record the patient's (or his/her friend or family member's) cellphone number
  - Call the cell phone number immediately to see if it exists on the network, and to ensure that the number was correctly transcribed. (A missed call is sufficient.)
- Record the patient's home address.
  - If the address is unfamiliar to you, ask a DOT supporter or community health worker (CHW) to accompany the patient home, so that someone at the clinic knows where the patient lives.
- Record the patient's next of kin – their name and cell phone number
- If the patient is a migrant labourer, or if s/he is from another area, and only temporarily staying in the clinic vicinity, be sure to take detailed information on how to contact him/her when s/he moves away.
- Record the patient's SA ID or passport number on the sputum request form. The NHLS has asked that this is done so that patient results can be matched when they receive specimens in different areas or from different clinics.

## **B. Interpretation of Xpert MTB/RIF results**

When a laboratory report for a sputum test returns from the NHLS, it must be interpreted. This requires some understanding of the test that was done, and its strengths and weaknesses. No test is ever 100% accurate for diagnosing a condition. The information in Table 2 explains each possible GXP result, and what it could mean. The GXP test is far superior to smear microscopy because: (1) it detects as few as 150

TB organisms; and (2) it can identify rifampicin-resistant TB simultaneously with detection of the TB organism. The detection of rifampicin resistance is very useful, because MDR-TB is usually rifampicin-resistant. This means that the correct TB treatment can be started far earlier than in previous years, when drug-resistant TB treatment was only started months after, when culture results became available.

### C. Rapid initiation of persons with positive results on TB treatment

The GXP test is excellent, and has a very short turn-around time. However, it often happens that results get to the clinic, but the health system fails the patient, and it is weeks before the patient is started on TB treatment. This can be avoided by:

1. Taking detailed patient locator information when sputum is given (see section A)
2. Ensuring good communication with the laboratory:
  - a. Directly ask the laboratory manager to report positive sputum results by telephone
  - b. Use or ensure that the clinic has a functioning SMS printer

c. Telephone the laboratory if hard-copy results or SMS printer results do not reach the clinic by the usual time.

3. Assign someone in the clinic to review the hard-copy NHLS results each day, and report positive results to the clinic manager
4. Ensure a good working relationship with the community NGOs and CHWs. Ask these teams to actively find persons with positive sputum results on the day that the result is received in the clinic.

### D. HIV counselling and testing

Early results from the national evaluation of the GXP rollout have shown that almost 65% of persons who are suspected of TB are also HIV-positive, but only 10% of these persons are receiving ART. We also know that the single most common cause of people dying in SA is underlying HIV infection. Therefore, in order to save people's lives, we must offer HIV counselling and testing to all clients. Furthermore, once someone has a positive test, we need to provide CD4<sup>+</sup> count testing, and ensure continuity of care. Every opportunity for HIV counselling and testing must be taken.

However, regarding the diagnosis of TB, it is critically important that healthcare workers know a person's HIV status. Those who are HIV-positive have far fewer TB organisms in their sputum. It is very likely, therefore, that a person with HIV infection may have a false-negative GXP result. Section E describes how, particularly in HIV-positive persons, the GXP test may miss TB, and how it is important to offer additional investigations.

### E. What to do if Xpert MTB/RIF is negative

Xpert MTB/RIF has a sensitivity of 65 - 95%.<sup>[8,9]</sup> This means that some GXP tests will be falsely negative. False-negative tests are uncommon, but more likely among HIV-infected persons who are being screened for TB prior to commencing ART. Furthermore, patients who are HIV-positive and have low CD4<sup>+</sup> counts may have disseminated TB disease, and may not have TB organisms in their sputum. Therefore, patients suspected of TB who have a negative GXP test and remain symptomatic should always be investigated further, especially if they are HIV-infected.

Figure 1. The algorithm released by the South African Department of Health for the diagnosis of TB using the GeneXpert MTB/RIF test, highlighting problem areas A - E.

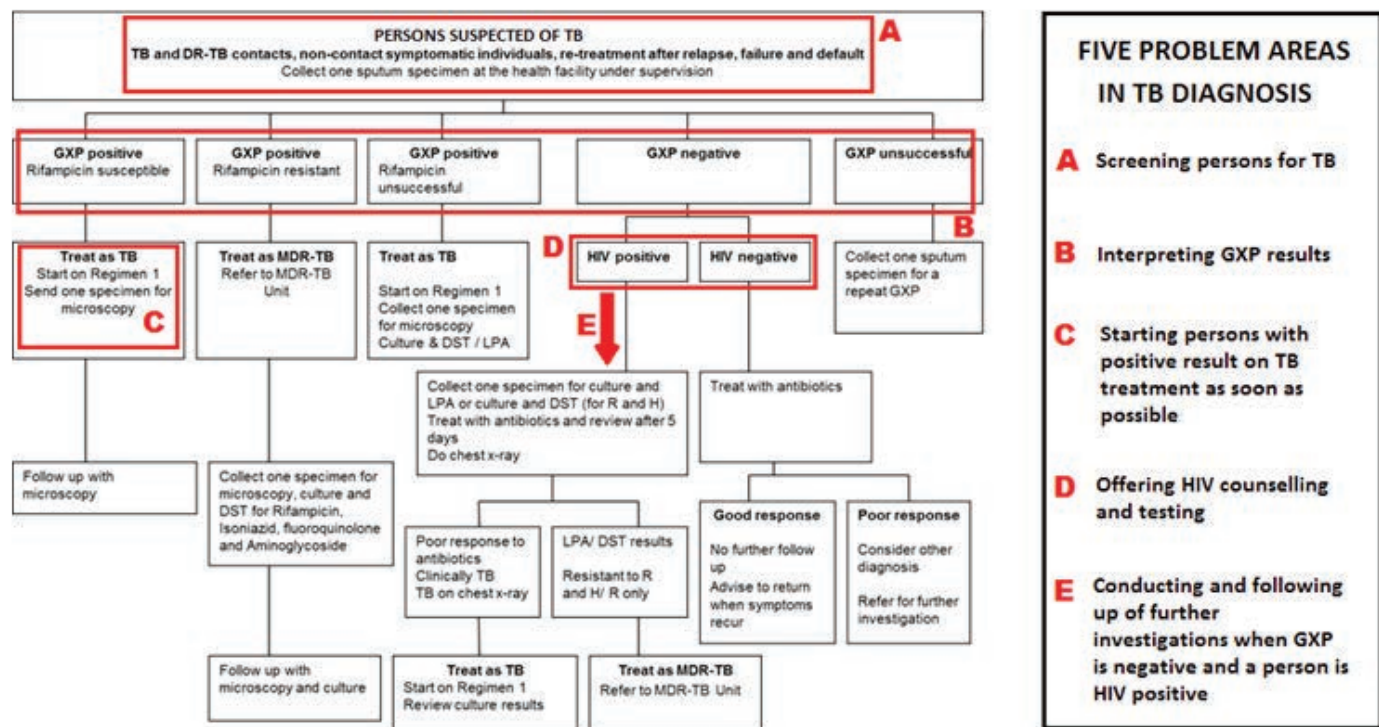


Table 1. The performance of the WHO screening tool for the identification of TB by screening for symptoms.<sup>[7]</sup>

Symptom combination	Sensitivity	Specificity	NPV (TB prevalence 1%)	NPV (TB prevalence 20%)
	79%	50%	99%	90%
<b>Any of current cough, fever, night sweats, weight loss:</b> A client may have any one of the above symptoms, or a combination of these.	These symptoms will detect ~80% of people who have proven TB disease. Asking patients for other combinations of TB symptoms will not identify a larger percentage of TB patients.	About half of the people with these symptoms (i.e. who screen positive for TB) will not have TB. This is ok, because further investigations will not show TB.	Where TB is relatively uncommon (e.g. in healthy community members), a negative symptom screen will correctly predict that a person is healthy.	Where TB is relatively more common (e.g. in persons with HIV and a low CD4 <sup>+</sup> count), a negative symptom screen will predict that a person is healthy only 90% of the time – i.e. it will miss 10% of persons with TB.

The algorithm says that those with a single negative GXP and who remain symptomatic should have:

1. a second sputum specimen sent for TB culture.
2. a chest X-ray (CXR)
3. broad spectrum antibiotics (e.g. amoxicillin 500 mg PO 8-hourly x 7 days)

If after 5 days, there is no response to antibiotics, and there is evidence of pulmonary tuberculosis on CXR, TB treatment may be commenced. Practically speaking, it may be very difficult to put these guidelines into practice in SA primary health clinics, where the TB programme is run by enrolled or staff nurses under the supervision of a professional nurse. Antibiotics are not kept in the room where TB patients are seen. There will not be CXR facilities. There may not be a doctor who visits the clinic. Under these circumstances, what can be done? These suggestions may be helpful:

1. Train all nurses in the Xpert MTB/RIF TB diagnosis algorithm.
2. Store amoxicillin 500 mg in the TB room.
3. When someone with negative GXP and HIV-positive status is identified, prescribe amoxicillin 500 mg PO 8-hourly x 7 days, and immediately request a third sputum specimen and send for smear and TB culture.
4. Write a referral note to the nearest facility that has CXRs, giving the history of the patient (including results of HIV, CD4<sup>+</sup> and smears, and

the NHLS bar code of the third specimen sent for culture) and request a CXR.

5. Follow-up with the referral facility. If possible, identify a named doctor in casualty or at an outpatient clinic to whom the patient can be referred. It makes a real difference if the patient is going to someone who is expecting them.
6. If your facility has a doctor, and you know that the referring facility will hand the CXR over to the patient, ask the patient to return to the clinic with the CXR on the day that the doctor is present to interpret the CXR.


### Managing the diagnosis of TB in primary health clinics

Clinic managers have an essential and important role to play in ensuring that staff adhere to the algorithm for the diagnosis of TB, and ensuring that the copy of the algorithm is available in every consulting room in the clinic. Ensuring that staff are adequately trained is the responsibility of the facility managers. Equally, it may be helpful for the process if staff are directly accountable to the facility manager for certain critical events in the TB diagnostic pathway. Two areas are important:

1. The 'time to treatment start' among persons newly diagnosed with TB
2. ART initiation among those suspected to have TB who are newly identified as HIV-positive
3. Follow-up of patients with negative GXP who are sent for CXR, and have TB culture.

It may be helpful if TB room staff keep a line list of the patients listed above, and report on these weekly to clinic managers. In this way, patients who are most at risk can be followed up, and staff held accountable for their management. Weekly meetings where these line lists are presented can also encourage teamwork with the CHWs, laboratories, and broader clinic community to ensure that TB is not missed.

### Conclusion

TB is a killer disease in SA, but with the investment in technology through the GXP, it need not be. However, technology is not enough. We also need committed, knowledgeable professional persons who will make the diagnosis of TB happen. This article is offered as a resource towards equipping healthcare professionals for this important task. 

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Table 2. Xpert MTB/RIF results and their interpretation

What the lab report says	What could this lab report mean?	What should the healthcare worker do?
<b>Xpert MTB/RIF positive Rifampicin-sensitive</b>	<ul style="list-style-type: none"> <li>This patient has TB</li> <li>This patient's TB is sensitive to the usual drugs</li> </ul>	<ul style="list-style-type: none"> <li>Counsel the patient regarding the diagnosis and treatment of TB</li> <li>Commence TB treatment using standard drugs, according to the guidelines</li> <li>Immediately take a second sputum test for monitoring (this sputum is sent for smear microscopy – because monitoring is done with smear, not with GXP)</li> <li>Offer an HIV test (see section D of this article)</li> </ul>
<b>Xpert MTB/RIF positive Rifampicin-resistant</b>	<ul style="list-style-type: none"> <li>This patient has TB</li> <li>This patient's TB is most likely drug-resistant – i.e. s/he most likely has multidrug-resistant TB (MDR-TB)</li> </ul>	<ul style="list-style-type: none"> <li>Counsel the patient that there is a high chance of MDR-TB, and that s/he will need to start MDR-TB treatment as soon as possible; however, the diagnosis will need to be confirmed by culture of sputum</li> <li>Start MDR-TB treatment by referring to the nearest MDR-TB treatment facility</li> <li>Immediately take a second sputum for TB culture; include the specimen details (and NHLS specimen barcode) in the referral letter to the MDR-TB treatment facility</li> </ul>
<b>Xpert MTB/RIF positive Rifampicin unsuccessful</b>	<ul style="list-style-type: none"> <li>This patient has TB</li> <li>The GXP test was not able to determine if the patient's TB was drug-sensitive or drug-resistant</li> </ul>	<ul style="list-style-type: none"> <li>Counsel the patient regarding the diagnosis and treatment of TB</li> <li>Commence TB treatment using standard drugs for drug-sensitive TB, according to the guidelines (Most TB is drug-sensitive, so the chances are that this patient's TB is sensitive to standard treatment.)</li> <li>Immediately take a second sputum for TB culture and susceptibility testing. Be sure to follow-up the result</li> </ul>
<b>Xpert MTB/RIF negative</b>	<ul style="list-style-type: none"> <li>This patient probably does not have TB <b>but ...</b></li> <li>GXP will be falsely negative (i.e. the patient actually does have TB) in a small number of persons, especially if persons are HIV-positive)</li> </ul>	<ul style="list-style-type: none"> <li>Offer an HIV test</li> <li>If the patient is HIV positive, see section D</li> </ul>
<b>Xpert MTB/RIF unsuccessful</b>	<ul style="list-style-type: none"> <li>The GXP test failed for some reason</li> <li>The reason could be a power failure in the laboratory, or food particles in the sputum blocked the machine, or the testing chemistry failed</li> </ul>	<ul style="list-style-type: none"> <li>Take a second sputum specimen immediately and send for GXP</li> <li>Offer HIV testing</li> </ul>



# 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



**0800 212 506 /  
021 406 6782**

Alternatively send an SMS or  
"Please Call Me" to 071 840 1572  
[www.hivhotline.uct.ac.za](http://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



**MEDICINES  
INFORMATION  
CENTRE**





# CASE STUDY

## HIV-INFECTED ADULT MALE WITH A LABORATORY REPORT SHOWING EXTENSIVELY DRUG-RESISTANT TB (XDR-TB)

Richard Lessells

A result is received from the laboratory on a 38-year-old male patient. It is the result of phenotypic drug-susceptibility testing (DST) on a cultured

*Mycobacterium tuberculosis* isolate from a lymph node aspirate taken 10 months previously. This reports XDR-TB (resistance to rifampicin, isoniazid,

ofloxacin and kanamycin). The patient is contacted and brought for review. He reports a previous history of TB as shown below:

Year	TB type	Regimen	Duration	Outcome
2008	Smear-positive PTB	1	6 months	Cured
2009	Smear-negative PTB	2	8 months	Completed
2010	Lymph node	1	?	Stopped Rx

On review, he is asymptomatic with no evidence of lymph node disease. He reports that the lymph node swelling was in his neck in 2010 and TB treatment was started on clinical grounds. Treatment was then stopped some time later (exact timing not clear) because it was not working.

He is HIV-infected and has been receiving ART for 3 years. His current regimen is TDF/3TC/EFV, his latest viral load is <40 copies/ml and CD4<sup>+</sup> cell count 197 cells/ $\mu$ l.

A chest X-ray is performed, which shows left lower zone and right lateral pleural opacification, consistent with previous TB disease. A sputum culture is sent and a decision is made to monitor his clinical condition. Two months later he returns complaining of swelling of the right hand. On examination he has soft-tissue swelling of the dorsal aspect of the first web space. Pus is aspirated and sent for TB culture and DST. The sputum culture sent previously has been reported as negative.

### CLINICAL CHART

The culture from the aspirate is positive for *M. tuberculosis*. The Genotype MTBDRplus assay is performed on the culture isolate and is reported as resistant to rifampicin but sensitive to isoniazid.

### Interpretation

The Genotype MTBDRplus assay is an example of a line probe assay (LPA). This allows the simultaneous detection of *M. tuberculosis* complex and the most common mutations in the *rpoB*, *katG* and *inhA* genes. Line probe technology involves DNA extraction, DNA amplification by polymerase chain reaction (PCR) and hybridisation of PCR products with oligonucleotide probes embedded in a strip. Subsequent colourimetric change as a result of hybridisation allows discrimination between wild-type and mutant strains. Mutations are identified by lack of binding to wild-type probes combined with binding to a specific mutation probe (Fig. 1).

In this case, rifampicin mono-resistance has been identified with the LPA.

However, there is also the previous growth of XDR-TB from a lymph node aspirate to consider. It remains possible that the current isolate could be XDR-TB (or MDR-TB). The Genotype MTBDRplus assay has suboptimal sensitivity for isoniazid resistance as not all mutations associated with such resistance are incorporated in the assay.

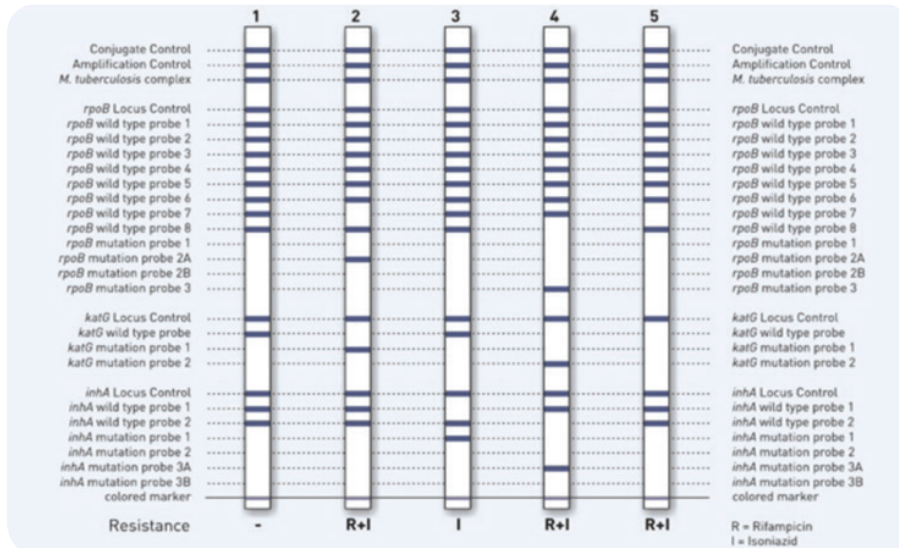
### RECOMMENDATIONS

#### Treatment recommendation

The patient has active extrapulmonary TB (EPTB) disease, which seems, based on the current evidence, to be confined to soft-tissue disease. This certainly warrants antituberculous chemotherapy.

One option would be to wait for full phenotypic DST results on the current isolate to inform selection of an individualised drug regimen. However, that risks progression of soft-tissue TB disease and possible dissemination to other sites. The second option would be to treat as rifampicin mono-resistance, with a standardised regimen consisting of isoniazid, kanamycin, moxifloxacin, pyrazinamide, ethionamide and

## DRUG RESISTANCE



terizidone. However, that risks suboptimal therapy and amplification of drug resistance if the isolate is confirmed as XDR-TB.

The third option is to take into account the previous growth of XDR-TB and to institute an XDR regimen such as capreomycin, moxifloxacin, ethionamide, terizidone, PAS and clofazimine. Evidence to inform which of these strategies is best is extremely limited. There is also limited information regarding penetration of second-line anti-TB drugs into different tissues, so the efficacy of selected drugs in different forms of EPTB is relatively poorly understood.

### Case resolution

The patient was commenced on a standardised regimen consisting of isoniazid, kanamycin, ofloxacin, pyrazinamide, ethionamide and terizidone. Sputum cultures were negative. Phenotypic DST on the isolated cultured from the aspirate revealed mono-resistance to rifampicin, with phenotypic susceptibility to isoniazid, ofloxacin and kanamycin. The soft-tissue swelling reduced significantly in the first month of treatment and his drug regimen including isoniazid was continued.

### QUESTIONS

- I. How common is drug-resistant TB in EPTB disease?
- II. Should this patient have been treated for XDR-TB when the initial laboratory result was received?

### ANSWERS

- I. The burden of drug resistance in EPTB has not been well characterised. Case series from uMzinyathi district in KwaZulu-Natal have suggested a relatively high prevalence of XDR-TB from pleural and lymph node aspirates (7/21 or 33.3% of culture-positive isolates) and also from blood cultures (20/41 or 48.8% of culture-positive isolates). However, these series had inherent bias as aspirates were more likely to be performed when there was pre-existing concern about drug resistance. In addition, this sub-district continues to have a different epidemiology of drug resistance than elsewhere, so the results may not be representative. There is some preliminary evidence that the Xpert MTB/RIF assay can be performed with extrapulmonary specimens and it is hoped this may bring some new understanding to the epidemiology of drug resistance in EPTB.
- II. It is important to remember always to treat the patient and not the laboratory result. In this case, at the time the initial laboratory result (showing XDR-TB) was received, there was no strong evidence of active TB disease. Instituting treatment with the inherent risks of toxicity would not have been in the best interests of the patient. Full reassessment of the patient for active disease and then close follow-up and monitoring of symptoms and signs is appropriate. Ultimately, the strain isolated from the soft-tissue disease had a different susceptibility

pattern and an appropriate treatment regimen has been instituted.

### KEY LEARNING POINTS

- Drug-resistant EPTB should generally be treated with the same regimens and for the same duration as for pulmonary disease.
- Always remember to treat the patient and not the laboratory result. Diagnostic test results should always be considered in conjunction with the clinical features before a management decision is made.

### Further Reading

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### Disclaimer

Although every attempt has been made to ensure that the information in this book is accurate and up-to-date, the authors and publishers accept no responsibility for any loss or damage resulting from use of the information herein.

It is the responsibility of the individual clinician or health care worker to abide by national and local guidelines and protocols regarding management of HIV and TB. Information regarding drug indications and dosages should be checked with the national or local formulary, or with the pharmaceutical package insert.

None of the authors has declared any competing financial interests with regards to any material discussed within the HIV and TB Drug Resistance and Clinical Management Case Book.

# Transforming healthcare and managing your own private clinic

(NURSES DOING IT FOR THEMSELVES!)

Nonceba Dhlamini

Nurse clinician

*Unjani clinic, Braamfischerville, Soweto*

To be able to own one of the Unjani clinics, you need to be a professional nurse specialising in primary healthcare, with a positive caring attitude and the ability to manage a project





## Introduction

My name is Nonceba Dhlamini and I am a professional nurse and an entrepreneur. I have been in the nursing profession for 18 years and have been working in public sector facilities as a nurse clinician. Throughout my nursing career I've been longing to add value to people's lives and to make a difference. Joining a healthcare franchise was the biggest challenge of my career and it changed my life in a big way.

I joined this healthcare franchise in February 2013 and I have not looked back since. My clinic is situated in Braamfischerville, Dobsonville, in Soweto.

## Project history

This project belongs to Imperial Health Science (IHS) – a private company interested in capacitating nurses with business management skills. IHS sells clinic containers to nurses, provides them with some funds on a monthly basis for medication and the nurse then has to repay IHS a certain amount over a 5-year period.

All its clinics are called Unjani clinics and the nurses report to IHS. After 5 years, you are totally independent and can function without any financial support from IHS. We work independently as nurse clinicians and are able to prescribe up to schedule 4 drugs. All the clinics order their medication from the IHS pharmacy. The IHS offices are situated in

Centurion, Gauteng Province. There are currently seven container clinics situated in different areas - one in Soweto, one in Pretoria, one in Cape Town, one in Mpumalanga, two in the East Rand and one in Orange farm. They are all situated in townships. IHS develops marketing tools, e.g. posters and pamphlets, to advertise our clinics, and campaigns are conducted in malls. Blood pressure and glucose levels are checked, and through these campaigns, pamphlets are distributed to market the clinics.

## Unjani clinics

Unjani clinics belong to a network of private container clinics, established to provide a layer of services to fill the gap between the Department of Health and the Local Government clinics. The objective of the Unjani clinics is to increase community access to affordable, quality healthcare services. 'Unjani' looks at the physical, social, spiritual and psychological wellbeing of individuals.

'How are you?' 'Unjani?'

## Definition of 'Unjani'

The human being is the Spirit who dwells in the body with a soul. So 'Unjani' is concerned with the Spirit of how man feels in his body. Does the body give pain or discomfort? 'Unjani' aims to alleviate pain, discomfort and diseases that causes the Spirit of man to suffer. 'Unjani' is concerned with how this man interacts with his surroundings. 'Unjani' desires to see this man interact

with his surroundings or environment in a peaceful, safe and secure way.

The majority of South Africans rely on the country's stretched and under-resourced public healthcare system. This system carries a huge case load of patients who have the ability to pay for their healthcare needs, yet they continue to go to the public clinics for healthcare services and disadvantage patients who have no other healthcare alternatives. The Unjani clinics offer affordable healthcare, catering for patients who have the ability to pay a minimal fee, but cannot afford a private doctor or a medical aid. I am currently seeing up to 200 clients per month, though my aim is to see 550 clients per month. This means 550 people will be removed from the public healthcare system. We aim to create and develop a healthy community that is independent, self-sufficient and able to take responsibility for their own healthcare needs.

To be able to own one of the Unjani clinics, you need to be a professional nurse specialising in primary healthcare (PHC), with a positive caring attitude and the ability to manage a project.

## Operational hours and staff complement

The clinic operates Monday to Friday from 07h30 to 16h30. It is closed on weekends and public holidays. The staff complement consists of two people – the PHC professional nurse and an administrative assistant. If I am unable

to go to work, I have to arrange for a nurse clinician from an agency to stand in for me. In the near future, an Unjani clinic will have to have a total staff complement of five employees – one professional nurse, one administrative assistant, a cleaner, a marketer and the franchisee. This will contribute to decreasing unemployment and alleviating poverty.

### Expenditure

Income from clients covers salaries, purchasing of stock and medication, equipment repairs, paying of rent and taxes.

### Career growth

Every Friday I attend clinical management workshops at Lillian Ngoyi CHC, to keep myself up to date with any new developments in clinical care. I obtained financial management and marketing skills from IHS, which have made the clinic sustainable since February 2013. I am currently studying through UNISA, – a project management course, in order for me to manage the clinic in an effective way.

### Services rendered

- PHC services
- Treatment of minor ailments
- Treatment of sexually transmitted infections
- Family planning and Pap smear services
- Childhood immunisation
- Antenatal care
- Treatment of chronic diseases
- HIV counselling and testing
- Referral of patients for specialised care and for ART.

I see patients ranging from newborns to the elderly.

### Achievements

- Managing my own private clinic for a year and still going strong
- Providing accessible and affordable quality healthcare to the community of Braamfischerville
- Job creation opportunities for myself and the administrative assistant

- Writing this article and sharing my story with my fellow colleagues
- Unjani is what I live for, caring for the human being is the valuable treasure deposited in me which makes me to feel special and honoured. It is important for me to serve the community faithfully and with passion. Adding value and making a difference to peoples' lives is my heart's desire.

### Challenges

- Space is limited and the waiting area is small
- Visibility of the clinic: the area where the clinic is situated is not visible enough to the community
- Difficulty in establishing working relationships with provincial and local authorities, so that we can get a supply of vaccines and family-planning methods. Clients won't be charged for the vaccines and the family-planning methods, only consumables will be charged. If the partnership becomes successful, more people will be reached and we will help to bring the teenage pregnancy and communicable diseases rates down.

### Future Plans

- Getting another container with a kitchen and more space for consultation and waiting area for clients
- Employing other healthcare providers so as to meet all the healthcare needs of the community in all dimensions of life at an affordable price

### Support

This franchise is still young; more help is still needed to expand and prosper, so donations are welcomed in any form, e.g. IEC material, information to develop staff, financial aid, etc.

### Conclusion

Professional nurses are capable of running their own businesses. One needs to be brave, committed, hardworking, disciplined and have a good work ethic in order to be successful. Nurses are now faced with many opportunities that allow us to broaden our horizons. What is left is for us to believe in ourselves, get out of our comfort zones and make things happen. We must always support and uplift each other as nurses. Whatever you set your mind to do, you can do it! Find joy and peace in whatever you do and always strive to change patients' lives in a caring manner. ®

**Unjani is what I live for, caring for the human being is the valuable treasure deposited in me which makes me feel special and honoured**



# Media release: Make the rate hike work for you

Mr John Manyike

*Head of Financial Education at Old Mutual, Sandton Offices*

The principle behind this, says Manyike, is compound interest. Its power was emphasised by none other than Albert Einstein: 'Compound interest is the eighth wonder of the world. He who understands it, earns it ... he who doesn't, pays it.'

Many consumers are still working out the implications of the recent unexpected rate hike and the latest fuel-price increase, which has pushed the cost of petrol to a high of just under R14/litre for the first time. There are more cheerful ways to start a new year.

Some of us wryly refer to 'Jan-u-worry' as the leanest month, but with two unpleasant surprises only a week apart, quite a few South Africans will really struggle financially. Plus the first interest rate increase in nearly 6 years could be the first in a series of increases.

Many with housing bonds, higher purchase loans and long- and short-term loans will be wincing as they realise they owe their creditors quite a bit more than they did a few weeks ago.

## **Time to review your situation**

John Manyike, head of financial education at Old Mutual, says that while the increase of 50 basis points came largely as a surprise, South Africans can use this as an opportunity to review their financial plans and build wealth.

'Many motorists already do all they can to limit their driving and keep their fuel bills as low as they can. And while South Africans like to put on a brave face, a lot of us find the beginning of the year difficult financially. There's the

temptation to spend more than usual over the festive season, so the interest rate hike and the fuel-price increase may feel like a double whammy.'

'This is especially true when the weak rand is driving a series of fuel-price increases, which drive up the cost of everything else. But it also provides a reminder not to try to 'go it alone' when it comes to money. Changes in the financial environment illustrate the importance of getting good advice.'

If you've retired and have some capital, the rate hike means you'll receive more interest on which to live, which is handy because the cost of living will follow suit and increase too.

## **Ask a financial adviser to help you ride the rising cost of living**

An accredited financial adviser can help you review your monthly budget and identify things you can do without. You could consider lift clubs or public transport if you drive to work. Make adjustments on your spending habits. For example, take a lunch box to work instead of buying takeaways. You will be surprised how much you can save this way, and you can use this money to reduce your debt faster by paying extra. This could even close the gap caused by the interest rate hike. Even if the rate goes down, don't reduce your monthly repayments. Manyike explains: 'Plan to get rid of short-term

debt, start saving and pay extra into your home bond, if you have one.'

The principle behind this, says Manyike, is compound interest. Its power was emphasised by none other than Albert Einstein: 'Compound interest is the eighth wonder of the world. He who understands it, earns it ... he who doesn't, pays it.'

'The longer you're in short-term debt, the longer you're paying interest to someone else, either the bank, or a clothing chain or a short-term lender. The increase in interest rates means you'll pay even more.

'So it's worth sucking up the short-term pain to free yourself of short-term debt. For many of us that involves doing without nice-to-haves for a while.'

## **Commit to saving**

A key to building personal wealth in general is to adopt the basic principles of saving money before you spend it. 'Save first and spend the rest, rather than spend first and save the rest,' explains Manyike.

Watch out for store-cards with introductory vouchers worth hundreds of rands. The interest on such accounts is always expensive. Online shopping can also lead to trouble: if you're trying to get out of debt – or stay out – ask yourself hard questions before

you buy. Do you really need an item or would that money be better spent on nibbling away your credit-card debt? Just because a bargain is available doesn't mean you have to buy it.

'A far more basic step though is simply to know how much you earn and what it's spent on. Establishing that already puts you in a better position than many South Africans, including those who earn more than you but are still always short of money.'

- Arrange automatic deductions from your wages or salary so that you're

committed to saving every month, even if it's only a small amount.

- Set tangible, realistic goals for what you want your money to achieve.
- Stay in control. Identify the biggest threats to building wealth (like your credit card or a loan that carries lots of interest) and prioritise eliminating them.
- Unleash the power of interest through patience.

Old Mutual's free On the Money programme shows how the habits of South Africa's Big Five animals can help us develop good financial

principles. For more information email [financialeducation@oldmutual.com](mailto:financialeducation@oldmutual.com).<sup>®</sup>

**A key to building personal wealth in general is to adopt the basic principles of saving money before you spend it. 'Save first and spend the rest, rather than spend first and save the rest,' explains Manyike.**

# STRESS no more

**Laura Skead**, Clinical Psychologist

BSocSc (UCT), BSocSc HonsPsych (UKZN), MA (ClinPsych) (UKZN)

**Claire Maher**, Educational Psychologist

BSocSc (UKZN), BSocSc HonsPsych (UKZN), PGCE (UKZN), MEd (EdPsych) (WITS)

## Inadequate preparation in dealing with the emotional needs of patients has been identified as a great stress in nurses' everyday experiences

The job of a nurse and/or midwife is challenging, rewarding, and can often involve stress. Frontline healthcare providers face many challenges and obstacles on a daily basis. Healthcare facilities are often over-crowded, and it is not uncommon to have staff shortages. A large amount of responsibility is given to nurses and midwives, long hours are a necessity and every-day people's medical wellbeing is their concern and duty. However, in a South African context particularly, HIV is probably one of the biggest stressors.

If stress is not managed appropriately and one does not know what stress feels like, or how to manage their stress,

it will have implications in home or occupational environments, as well as an impact on long-term physical and mental health. Job satisfaction will be compromised, as well as the ability to deal with patients in a professional and adequate manner.

### **What is stress?**

Stress is defined as 'a state of mental or emotional strain or tension resulting from adverse or demanding circumstances'.<sup>[1]</sup> Cooper and Palmer<sup>[2]</sup> describe stress as occurring when your workload/burden is imagined to be more than what you think you can manage effectively. Many working situations, particularly when caring for people with complex medical conditions such as HIV, can contribute to

stress levels. Therefore, it is how well we manage and cope with these stressful situations that really matters.

### **What to look out for**

Stress can manifest in a variety of ways: physically, emotionally, behaviourally and psychologically. The following are symptoms of stress. People respond differently to stress and it is important to note that a person may only experience a few of these symptoms.<sup>[3]</sup>

### **What causes nurses' stress?**

Various studies and reports have identified an array of factors that contribute towards the stress that nurses experience. Apart from their own familial and private stressors, nurses are



Physical symptoms	Emotional symptoms
<ul style="list-style-type: none"> <li>• tightness in chest</li> <li>• chest pain and/or palpitations</li> <li>• indigestion</li> <li>• breathlessness</li> <li>• nausea</li> <li>• muscle tension</li> <li>• aches and pains</li> <li>• headaches</li> <li>• recurrence of previous illnesses/allergies</li> <li>• constipation/ diarrhoea, stomach pain</li> <li>• weight loss or gain</li> <li>• change in menstrual cycle for women</li> <li>• sleep problems</li> <li>• tiredness/exhaustion</li> </ul>	<ul style="list-style-type: none"> <li>• Mood swings</li> <li>• Feeling anxious</li> <li>• Feeling tense</li> <li>• Feelings of anger</li> <li>• Feeling guilty</li> <li>• Feelings of shame</li> <li>• Having no enthusiasm</li> <li>• Becoming more cynical</li> <li>• Feeling out of control</li> <li>• Feeling helpless</li> <li>• Decrease in confidence/self-esteem</li> <li>• Poor concentration</li> <li>• Depression</li> </ul>
Behavioural symptoms	Psychological symptoms and negative thoughts
<ul style="list-style-type: none"> <li>• Drop in work performance</li> <li>• More inclined to become accident-prone</li> <li>• Drinking and smoking more</li> <li>• Overeating/loss of appetite</li> <li>• Change in sleeping patterns - insomnia</li> <li>• Poor time management</li> <li>• Too busy to relax</li> <li>• Withdrawing from family and friends</li> <li>• Loss of interest in sex</li> <li>• Poor judgment</li> <li>• Inability to express feelings</li> <li>• Over-reacting</li> </ul>	<ul style="list-style-type: none"> <li>• 'I am a failure'</li> <li>• 'I should be able to cope'</li> <li>• 'Why is everyone getting at me?'</li> <li>• 'No one understands'</li> <li>• 'I don't know what to do'</li> <li>• 'I can't cope'</li> <li>• 'What's the point?'</li> <li>• 'I don't seem to be able to get on top of things'</li> <li>• 'I keep forgetting where I put things'</li> <li>• Loss of judgment</li> </ul>

regularly faced with challenges and stressors in the workplace. Inadequate preparation in dealing with the emotional needs of patients has been identified as a great stress in nurse's everyday experiences. Additionally, the emotional impact that dealing with terminally ill patients has on nurses is significant. Nurses are often wary to treat patients who have not disclosed their HIV status, concerned that infection cannot be controlled more stringently. A lack of hospital resources and an increased workload when dealing with HIV-infected patients are both contributors to stress. Nurses feel that working for HIV-infected patients is more stressful than working with other patients, and that they should receive greater pay to compensate for this.<sup>[4]</sup> In addition, issues such as staff shortages and absenteeism put unnecessary pressure on those nurses who are present at the hospitals and clinics. Lastly, poor support from colleagues and conflict with other staff members have been shown to increase nurses' stress in the workplace.<sup>[5]</sup>

The number of patients living with HIV who are requiring lifelong care is increasing as individuals test and know their status. Statistics South Africa's 2013 mid-year estimates stated that 10% (approximately 5.26 million) of the South African population was living with HIV.<sup>[6]</sup> This is an increase from 8.9% (4.1 million people) in 2003.<sup>[6]</sup> Every day nurses working in public and private healthcare facilities in South Africa are caring for people with HIV. In a study by Mulaudzi *et al.*,<sup>[5]</sup> it was found that one of the biggest stress factors within the hospital setting was not only the HIV-infected patients, but HIV-infected staff members. The complications and challenges created by the stigma surrounding HIV are additional stressors for nurses in these settings.

### What can you do?

Throughout life you will encounter stressful situations - whether in the work environment or at home. What is essential is to know how to handle the stress effectively and to identify which strategies are effective for you.

The following strategies can be used in order to cope with the stress your job presents:

- Communicate well at all levels
- Develop a reputation of being approachable
- Exercise regularly
- Come to work healthy
- Take advantage of the skills and guidance of those in senior positions who can be of assistance
- Do not forget to do things you enjoy and bring you happiness
- Be self-aware - know your limits!
- Pay attention to your emotions
- Aim for further education and skills development. Feeling useful and being knowledgeable and empowered with skills is an essential way to reduce stress in the workplace.
- Be an expert in relaxation or meditation - allow yourself 'time off'.
- Be positive and laugh
- Reflect
- Be aware of your multiple roles within your work and home environment.

## What can the health facility where you work do to help you?

While paying attention to your own needs and ensuring that you are doing what you can to handle stress effectively, your healthcare facility can also assist you in managing your stress – either in ways to prevent or reduce stress. The following are a few examples of the ways your work environment can contribute towards your mental and physical wellbeing:

- HIV information, training, coaching and group discussions should be implemented for nurses in order to alleviate stress related to lack of support and knowledge around HIV and caring for PLHIV.<sup>[4]</sup>
- Experienced nurses could assist in counselling and giving guidance in a peer-mentoring capacity.
- Nurses should be offered counselling and given psychological support by mental health professionals. This should be made available to all nurses as frequently as necessary.
- Hospitals and senior staff need to encourage an atmosphere of 'reciprocal interpersonal exchanges that enhance security, mutual respect, and positive feelings' between co-workers and supervisors and nurses.
- Staff rotation should be utilised in order to reduce or prevent burnout. In this way nurses can work in different wards, and at different shifts.
- Continued support for the nurse's family challenges and difficulties.
- Nurses require a platform where they are able to discuss and debate 'personal biases, preconceptions and value judgements that impair HIV/AIDS patients' care.'<sup>[4]</sup>

**Stress is defined as 'a state of mental or emotional strain or tension resulting from adverse or demanding circumstances'**

- Take interest in further education and training to advance your skills. Enquire about various courses and certificates that can benefit you and your patients.

Stress is a regular occurrence in our daily lives. Different occupations encounter different stressors and the effects of this stress is varied. What is important is that this stress is managed appropriately, and burnout is avoided. A nurse's job is particularly stressful in that the lives of other people (their patients) are their responsibility. The complexity of care and treatment that some PLHIV require may intensify the stress felt by nurses. Nurses need to be aware of how imperative management of their stress is, and how identifying early signs and symptoms of stress is crucial in preventing or reducing further complications. Nurses play an integral role within healthcare system as well as our society. They need to be appreciated and provided with continual support within their working environment. <sup>R</sup>

### Support Resources

- South African Depression and Anxiety Group (SADAG)  
www.sadag.org  
011 262 6396 / 0800 20 50 26
- Lifeline  
www.lifeline.org.za  
www.lifeline.co.za  
011 422 4242 or 0861 322 322
- FAMSA (Country wide)  
http://www.famsa.org.mzansiitsolutions.co.za / 011 975 7106/7
- Living with HIV  
www.livingwithhiv.co.za
- AIDS Helpline  
Braamfontein, Johannesburg  
(011) 715 2000
- National Aids Helpline  
www.aids helpline.org.za  
0800 012 322
- NAPWA Support Group (National Association of People Living with AIDS)  
Corner of Knox and Simpson Street, Germiston, 011 872 0975
- HIV and AIDS Educational Programmes  
Morningside, Johannesburg  
083 381 0591

### COMBAT STRESS TODAY:

- Exercise – take the stairs instead of the elevator
- Go out – arrange a night out with colleagues or friends
- Take a multivitamin
- Listen to music
- Get 6 - 8 hours of sleep every night
- Drink water – reduce carbonated and caffeinated drinks
- Eat fruit and vegetables – limit sugary snacks
- Keep a gratitude journal
- Pray or meditate

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# COMPETITION

## HIV/TB NURSING

# COMPETITION

Working in the TB room as a nurse is a very challenging task because you are faced with more than TB. Most patients with TB are also co-infected with HIV/AIDS, so the TB nurse has to be extremely knowledgeable about both infections. A TB nurse has to work with a high volume of patients and s/he risks becoming infected with TB her/himself.

We want to hear about your experiences working as an HIV/TB nurse. What strategies do you use to support patients through treatment for both diseases? How do you keep them motivated, ensure they come for their appointments, make sure people living in the household are investigated, etc.? We would love to publish your strategies for success in *HIV Nursing Matters*.

Submit your typed piece, not to exceed 1 000 words, by 1 May 2014 and stand a chance to win a free one-year membership to the Southern African HIV Clinicians Society (the Society); complimentary registration to the Society's 2014 conference; and have your piece published in *HIV Nursing Matters*!

One winner will be chosen by 15 May. The winner agrees to the publication of the story in the June 2014 issue of *HIV Nursing Matters* and to submit a picture to accompany the article. The judges' decision is final and no correspondence will be entered into. Please note that only typed stories will be considered. Please submit via email to: [nonhlanhla@sahivsoc.org](mailto:nonhlanhla@sahivsoc.org).





# Clinic committees and hospital boards: Important but under-appreciated governance structures

Sasha Stevenson, Attorney, Section 27

The Minister of Health appoints and determines the functions of central hospital boards. The MECs responsible for health in each province determine the appointments and functions of all other public hospital boards.

Clinic committees and hospital boards serve an important social oversight function over public health facilities. Unfortunately, in many facilities, the actual role played by clinic committees and hospital boards is far from that

required by law and much of the potential power and use of these valuable governance structures is lost.

It is useful for those working in healthcare facilities to have a thorough

understanding of the roles, functions and potential benefits of strong clinic committees and hospital boards to ensure that facilities are able to operate in as efficient, effective and healthcare-service-enhancing manner as possible.

This article seeks to lay out some of the most important legal and policy provisions relating to clinic committees and hospital boards.

## Clinic committees

The National Health Act 61 of 2003 (NHA) requires that provincial legislation must provide for the establishment of clinic committees to serve a clinic or group of clinics, a community health centre, or a combination of clinics and community health centres. The section of the NHA dealing with this issue only became operational on 4 March 2012, however. Some provinces already had clinic committees before this date, despite not being required to have provided for them, and these committees are likely to remain in operation.

The power to appoint clinic committees is given to the MEC or district health authorities, but this is qualified by the requirement that clinic committees are representative of the community in which the health facility is located. For example, the Eastern Cape Provincial Health Act calls for nominations to be made by members within a health district and for the MEC to make appointments based on these nominations.

The functions of clinic committees are supposed to be prescribed in provincial legislation. The common practice, including in the Eastern Cape Provincial Health Act and the KwaZulu-Natal Health Act 4 of 2004, is for the MEC or district health authorities to create terms of reference for the clinic committees, which lay out their functions and are made public through publication in the Government Gazette and local newspapers.

## Hospital boards

The Minister of Health appoints and determines the functions of central hospital boards. The MECs responsible for health in each province determine the appointments and functions of all other public hospital boards.

The composition of both central hospital boards and other hospital boards is determined in the NHA. It provides that these boards must be comprised of one representative from each university associated with the hospital. One representative from the relevant provincial department of health, up to three representatives from the communities serviced by the hospital including special interest groups representing users, and up to five representatives of staff and management at the hospital (although these representatives may not vote at board meetings). Central hospital boards must also include a representative from the National Department of Health.

Until recently, neither the selection criteria for members of hospital boards, nor the functions of hospital boards had been decided by the Minister. On 2 March 2012, the Policy on the Management of Public Hospitals ('Policy on Management'), which relates only to central hospitals, was published. Certain criteria for appointment to a central hospital board are laid out, requiring that a member must be a South African citizen, aged >18 years, of sound mind, not certifiable as mentally ill and must not have a criminal record (unless a free pardon has been received or a period of three years has expired since release from prison and the individual has been certified as fully rehabilitated by the Department of Correctional Services).

Furthermore, the Policy on Management requires that prospective board members must demonstrate commitment to community service, support for the mission and values of the organisation, a high

level of personal integrity and honesty, an understanding of the difference between the role of management and governance, and must think strategically and communicate effectively.

Contact information for the members of central hospital boards must be available on request at a central hospital or local health district office.

The Policy on Management lays out the function of hospital boards, suggesting that 'hospital boards are largely advisory governance structures for hospitals and have a mandate to act honestly in the best interest of the public and the users.' A hospital board is supposed to advise the management of the hospital on, among other things, the process for defining its purpose, values and strategic direction; improving hospital care; issues of human resources; processes for developing systems of operational and financial internal control; processes for dealing with ethical issues and conflicts of interest; and processes for expanding community participation.

## Conclusion

Clinic committees and hospital boards have the potential to provide effective oversight of public health facilities and to involve community members in the operations of healthcare facilities. Such community member involvement can lead to the development of partnerships between the community and the health facility, resulting in better healthcare facilities and a healthier community. It is important that these pivotal structures play their legislated role in ensuring the realisation of the right of access to healthcare services through improving the governance of healthcare facilities. <sup>®</sup>

## References

1. National Health Act 61 of 2003, section 42.
2. National Health Act 61 of 2003, section 41 (7).
3. Policy on the Management of Public Hospitals, 2 March 2012, Government Gazette 35101, Notice 186.

**Contact information for the members of central hospital boards must be available on request at a central hospital or local health district office**

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- The province, district and name of the facility where you work

All your details will remain confidential.





# QUESTIONS

## QUIZ ANSWERS

FROM DECEMBER 2013 ISSUE

1. 5 700.000 orphans
2. Antidepressants, anti-anxiety and sleeping tablets
3. Nature and relationship between the deceased and the bereaved, the manner of death, availability of good support system, cultural and religious beliefs and practices, personality traits and coping style of bereaved, multiple losses, mental health issue.
4. With stockouts, there is no medication on the shelf or in the facility. With stock shortages, there is less stock of medicine available, but it won't be sufficient to last until the next order is received.
5. True
6. False
7. Virological, clinical or immunological
8. True
9. The National Health Act 61
10. Nevirapine levels are reduced

1. Name the common risk factors for the development of DILI in HIV-infected patients receiving TB treatment?

Answer .....

2. How does one clinically differentiate between IRIS and DILI?

Answer .....

3. According to the World Health Organization, which four key symptoms should healthcare workers enquire about in all people entering the facility to screen for TB?

Answer .....

4. True or false: A critically important part of screening for TB is the recording of patients' contact details?

Answer .....

5. According to the guidelines, when can the viral load be tested?

Answer .....

6. True or false: Routine viral load monitoring in South Africa helps with the identification of ART failure?

Answer .....

7. What is the annual TB incidence rate in South Africa?

Answer .....

8. What is the TB/HIV co-infection rate?

Answer .....

9. True or false: The MEC appoints and determines the functions of central hospital boards?

Answer .....

10. True or false: The policy on the management of public hospitals was published in September 2013?

Answer .....



**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 assist 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.*





## NDoH/SANAC Nerve Centre Hotlines

- Any HCT concerns from facility and district managers should be reported to the NDoH/SANAC

### Nerve Centre Hotline and email 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  
sanacgaateng@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's) 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 the NDoH, to take over the management of the Line by rotating it between the 32 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.

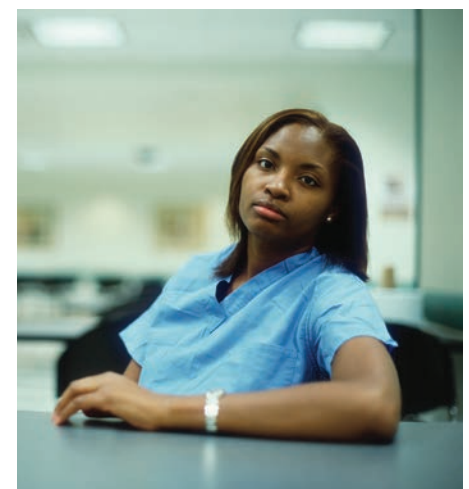
The AIDS Helpline, a national toll-free help line, operates on a 24/7 basis and is utilised by people from all walks of life in urban and rural areas, in all official languages, and at no cost from a landline telephone.

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 preventive and more supportive service to those infected and affected by the disease, but also serves as an entry point in terms of accessing services from government, private sector and other NGOs/CBOs.

Cases presented 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.





# ASK THE EXPERT

If you have any HIV/TB clinical questions, send your questions to 'Ask the Expert' via [nonhlanhla@sahivsoc.org](mailto:nonhlanhla@sahivsoc.org) and you will get an answer in the next issue of *HIV Nursing Matters*. If your question is urgent, please state it on your email and the answer will be e mailed back to you and still be published in the magazine.

## Dear clinician

I am a nurse working with HIV-positive patients. Due to stockouts, I sometimes give single ART drugs until we receive stock, and then give the FDC again to the same patient. Is this practice causing any harm to the patient?

## Answer

Dear nurse clinician

Thank you for taking the initiative of giving single-agent treatment when there is an FDC stockout. FDC contains tenofovir, emtricitabine and efavirenz. Emtricitabine is equivalent to lamivudine, but is only ever used for FDCs. So there is no harm done to the patient when you give single agents - lamivudine, tenofovir and efavirenz in place of FDC.



**CONFERENCE**

**2014**

**24-27 SEPTEMBER AT CTICC**

**SAVE THE DATE**  
24 – 27 SEPTEMBER 2014

**Southern African HIV Clinicians  
Society 2<sup>nd</sup> Biennial Conference  
International Convention Centre,  
Cape Town, South Africa**

Following on from the success of our inaugural conference in 2012, our second SA HIV Clinicians Society Conference will be taking place from 24 – 27 September 2014 at the CTICC.

Focusing on clinical content, our conference is aimed at doctors, nurses and pharmacists, and will be fully CPD accredited.

Please diarise this event and keep an eye on our website: [www.sahivsoc2014.co.za](http://www.sahivsoc2014.co.za) , for the latest updates.

We look forward to welcoming you in Cape Town.

Contact: Scatterlings Conference & Events  
Tel +27 (0) 11 463 5085 Email: [fiona@soafrica.com](mailto:fiona@soafrica.com)





# UNITING NURSES IN HIV CLINICAL EXCELLENCE, BECOME A MEMBER.



## Who are we?

We are a member-based Society that promotes quality, comprehensive, evidence-based HIV health care, by:

### 1 LEADING • PIONEERING

We are a powerful, independent voice within Southern Africa with key representation from the most experienced and respected professionals working in the fight against HIV.

### 2 CONNECTING • CONVENING • ENGAGING

Through our network of HIV practitioners, we provide a platform for engagement and facilitate learning, camaraderie and clinical consensus.

### 3 ADVOCATING • INFLUENCING • SHAPING

With our wealth and depth of clinical expertise, we can help health care workers take their practice to a new level. We are constantly improving and expanding our knowledge, and advocating for clinical and scientific best practice.

## Member Benefits

Join today and gain instant support from a credible organisation. The Society helps connect you with the best minds in HIV health care. Build your knowledge, advance your profession and make a difference by getting involved now!

- Free quarterly subscriptions to the *Southern African Journal of HIV Medicine*
- Free monthly subscription to the Society's e-newsletter, *Transcript*
- E-learning through CPD-accredited clinical case studies and on-line discussion group forums
- Free quarterly subscriptions to *HIV Nursing Matters*
- Weekly SMS clinical tips for nurse members
- Free CPD-accredited continuing education sessions
- Listing in the Society's online HIV provider referral network

## SOCIETY CONTACT DETAILS:

**Tel:** +27 11 728 7365 • **Fax:** +27 11 728 1251

**Email:** [sahivsoc@sahivsoc.org](mailto:sahivsoc@sahivsoc.org)

**Post:** Suite 233, Private Bag X2600, PostNet, Killarney, Houghton, 2041

[www.sahivsoc.org](http://www.sahivsoc.org)

