

# HATiP

HIV & AIDS Treatment in Practice

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# HIV and TB in Practice for nurses: non-communicable diseases, HIV and TB

By Theo Smart

This is the fourth edition of HATiP written for nurses and other healthcare workers involved in task shifting in sub-Saharan Africa, kindly supported by the Stop TB Department of the World Health Organization.

These special editions of HATiP are intended to support the capacity development of nurses and other healthcare staff as they take on new roles and tasks in the scale-up of HIV counselling and testing, antiretroviral treatment, HIV/TB activities, TB case finding, diagnosis, treatment and cure.

One of our goals with these editions is to draw out recent key messages and issues — addressed in HATiP, the HATiP blog, and [www.aidsmap.com](http://www.aidsmap.com) news coverage — relevant to nurses and others providing counselling, medical care and support services; and then to link these to related job aids, training materials, posters and training manuals that may be useful.

If you have validated materials targeting nurses and others involved in task shifting that you would like to share, or if you are a nurse or healthcare provider and want to see particular issues addressed, or would like to share your personal experience of task shifting, please contact us at [info@nam.org.uk](mailto:info@nam.org.uk).

This fourth issue discusses the growing importance of non-communicable diseases — diseases without an infectious cause such as cancers, heart disease, lung disease and diabetes — in the general population and how they may impact upon the care and management of both HIV and tuberculosis. It is drawn primarily from HATiP editions [181](#) and [182](#) (that is where the references for most of the points below can be found, unless otherwise noted).

## Non-communicable diseases

Non-communicable diseases (NCDs), which include cancers, heart disease, chronic lung disease, diabetes, and chronic kidney disease are now the biggest cause of death worldwide. No longer are NCDs just diseases of rich industrialised countries — they are causing an increasing proportion of illness and death in low- and middle-income countries.

In [World Health Statistics 2012](#), released earlier this week, the World Health Organization reported that high blood pressure and obesity are on the increase globally — even in many of the low- and middle-income countries in sub-Saharan Africa — and with these ‘lifestyle’ risk factors, there is a concurrent increase in NCDs. And because of inadequate management of these chronic diseases in resource-limited settings, the report notes that almost 80% of the deaths from NCDs now occur in low- and middle-income countries.

The burden of NCDs is expected to rise dramatically over the next 20 years in low- and middle-income countries, and there are growing calls for governments and health services to take greater action against NCDs.

The relationship between NCDs and HIV was the topic of a pre-meeting of IAS 2011 on [HIV and Health Systems: Leveraging the HIV scale-up to Strengthen Chronic Disease Services](#), held July 15 and 16 in Rome. Participants at the meeting discussed how the increasing burden of NCDs — and the growing pressure to do more

to combat them — is likely to have an impact on HIV and TB programmes.

There is some potential for a negative impact — loss of HIV and TB funding and a shift in political attention away from infectious diseases. But, it could also be turned into a positive, if everyone pushes for a greater commitment to investing in health care for chronic diseases, and a willingness to learn from the HIV response to develop better systems for care of chronic health problems.

## NCDs in people living with HIV

While NCDs are becoming more common in the general population, they are also a growing problem in people with HIV, as they live longer on successful antiretroviral treatment (ART). This has clearly been seen in industrialised societies where ART first came into widespread use.

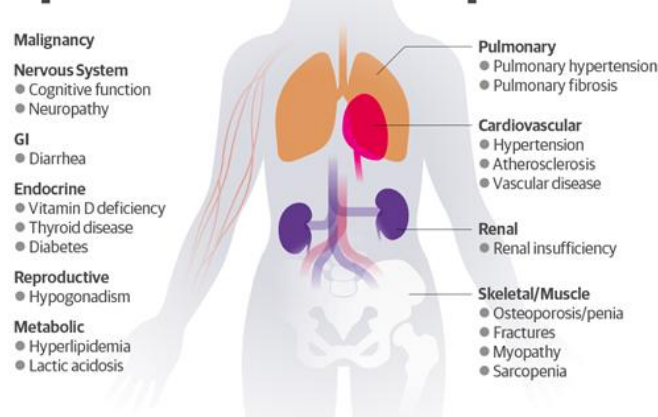
The understanding of many of the long-term complications seen in people living with HIV on ART has evolved over the years. It is believed that some antiretroviral drugs may increase the risk of heart disease and diabetes, while HIV itself increases the risk of some cancers. HIV also causes inflammation and many researchers are now trying to understand what effect this process has on the risk of developing a wide-range of non-communicable diseases.

In addition, NCDs will also develop in people with HIV simply because they are living longer on effective treatment — because many NCDs are diseases that increase in frequency as people age. How much chronic HIV or long-term medication may increase these risks is unclear.

Nevertheless, the benefits of ART far outweigh the risk of chronic complications — especially where treatment is started before the onset of symptoms — though in some cases programmes recommend switching certain antiretroviral drugs to reduce drug-related adverse events and to minimise the impact of antiretroviral therapy on complications like cardiovascular disease.

Even so, there is a need to incorporate management of other chronic conditions into HIV care.

## Spectrum of HIV Complications



This figure showing the range of non-communicable diseases that can complicate the care of people living with HIV comes from a presentation given by Professor Wafaa El-Sadr of Columbia University and ICAP, at a meeting on strengthening services for chronic diseases and HIV, held in Ethiopia. The report on the meeting can be downloaded [here](#).

“Prevention will save money and lives, and appropriate management of these complications will impact morbidity and

mortality. By paying attention to these complications we can truly improve the quality of life for these patients,” Professor El-Sadr said in the report.

## NCD care and prevention

NCDs need to be addressed both by care and prevention. Measures to reduce smoking, salt and alcohol intake, together with promotion of exercise and weight loss, and treatment of risk factors for heart disease, are agreed to be the priorities for prevention.

Some researchers are now suggesting that NCD prevention and care need to be integrated into HIV care in much the same way as TB screening is — even in low- and middle-income countries.

Some of the evidence for this has been produced by clinicians at the Botswana-Baylor Children’s Clinical Centre of Excellence, in Gaborone — one of the first sites in sub-Saharan Africa. Based on a comprehensive regional literature search and the spectrum of chronic conditions they were seeing in their patients, the clinicians at the site decided to adapt the basic package of care for adults living with HIV at the Family Model Clinic to include all of the following:

Basic preventive package of care for infectious and non-communicable diseases in people living with HIV
Clean water provision and water storage to prevent water-borne infections
Isoniazid prophylaxis for prevention of active TB
Depression screening and treatment
Cervical cancer screening (women with HIV are at higher risk of cervical cancer)
Breast cancer screening
Cardiovascular risk assessment
Regular hypertension screening
Hyperlipidemia screening
Diabetes screening
Hepatitis screening (checking liver function)
Exogenous risks: Domestic violence, Road safety, Tobacco/Alcohol abuse
Sexually transmitted infection screening/ and contraception

Other basic NCD prevention includes nutritional advice on how to reduce salt and maintain regular physical activity or exercise.

There is also a clear need for inexpensive medications to treat conditions — and pressure needs to be put on governments to use similar tactics for getting low-cost generic drugs to treat high blood pressure, cancers, etc., as were used to get the price of anti-HIV drugs reduced.

## NCDs and TB

Smoking, diabetes and the harmful use of alcohol can double or triple the risk of developing active tuberculosis. The risk of TB in people with diabetes is so great, that WHO has recently produced its [Collaborative Framework for Care and Control of Tuberculosis and Diabetes](#), which in many ways is similar to the Policy for Collaborative HIV and TB Activities.

Much of the policy addresses co-ordination, surveillance and monitoring and evaluation at the programmatic level.

However, the policy also stresses that facilities treating people living with diabetes should:

- Practise good TB infection control
- Implement TB symptom screening and linkages to TB diagnostic services
- Provide prompt care for those diagnosed with TB.

Meanwhile TB programmes need to:

- Screen for diabetes in their patients, and
- Ensure that those with diabetes get care, either by co-managing the conditions while the patient is receiving TB treatment or providing effective referrals.

This may be a problem when there are no good diabetes services to refer patients to — and this is common in many resource-limited settings. However, HIV programmes may offer a partial solution to this dilemma.

## Diabetes and TB: did you know?

- **People with diabetes are around three times more likely to develop TB**
- **People with diabetes are more likely to die after developing active TB than non-diabetics.**
- **People with diabetes take longer to respond to TB treatment.**
- **Levels of the key TB drug rifampicin may be reduced in people with diabetes, increasing the risk of treatment failure and drug resistance.**
- **Diabetics with well-controlled blood sugar are less likely to develop TB.**
- **Infections such as TB worsen glucose control and may increase the risk of developing diabetes.<sup>1</sup>**

## HIV care and treatment as a model for chronic care management

Lessons from HIV treatment and care programmes are being adopted by facilities and health departments to develop and sustain high-quality care for people who need long-term care for a chronic condition.

There are many tools and protocols that could be shared with other disease areas, perhaps allowing eventual integration of services.

In fact, researchers from ICAP reported on a very successful feasibility study where they adapted the approaches, tools and registers from the HIV programme to improve diabetes care provided at a regional hospital in Ethiopia, where diabetes is just as common as HIV, but there is little funding to scale up diabetes programmes.

Following a baseline assessment, key strategies, systems and tools originally developed for the hospital’s HIV clinic — and therefore had already been tested, validated, translated, adopted and in use in this hospital — were quickly adapted and introduced into the outpatient department (OPD) where people with diabetes were being treated.

A follow-up form was developed from a template used to record patient data in the HIV clinic. The form is reproduced below, on page 5 of this edition.

## Intervention package

Strategies	Systems	Tools
Introduction of an “essential package” of key services, supplies, and equipment	Appointment and defaulter tracking systems	Appointment books
Use of step-by-step protocols to guide care	Training, clinical mentorship and supportive supervision systems	Charting tools, forms and flow sheets
Emphasis on family-focused care	Peer educator programs	Job aids

Were the following services offered and documented in the patient's chart at least once in the past 3 visits?		
	Baseline	Follow-up visit
Weight	2%	82%
Blood pressure	45%	80%
Fundoscopy exam	1%	50%
Foot exam	3%	81%
Neurologic exam	3%	56%
Oral / dental exam	6%	82%
Assessment of visual acuity	4%	49%
Diabetes education provided	5%	74%
Next appointment documented	17%	81%
Medication adherence assessed	2%	77%

“It’s important to note that we didn’t introduce any new or experimental services into this study,” said Dr Miriam Rabkin. “We were following regional guidelines and local best practices for the care of diabetes. We didn’t create a new diabetes clinic, where there hadn’t been one there before, although we did steer follow-up visits to a specific day of the week. No additional support was provided for medications, labs or transport. And no new staff were engaged for implementation. Diabetes care was simply delivered using the strategies and systems (such as defaulter tracing, clinical mentorship, the implementation of peer educators programmes), registers, materials and types of job aids that had worked for the HIV programme.

“We saw a dramatic improvement in the documentation of service delivery,” said Dr Rabkin. “Now as all of you know, documentation does not put anything into delivery; but certainly if you’re providing chronic care and you can see at baseline only 2% of the patients had a weight documented — it’s really difficult to provide chronic care for a diabetic without knowing what that weight was before.”

One critical aspect of the HIV model adapted in Ethiopia was that it provided family-focused care. “Co-located, co-scheduled appointments for family members, coordination among adult and paediatric providers serving the same household, linkage of family medical records and outreach to family members not yet engaged in

care are some examples of the family-focused service model. In developing countries, many of these strategies have been initiated for the first time in the context of HIV programmes but would serve equally well for households affected by diabetes and other chronic conditions affecting families.”<sup>2</sup>

## Future developments

Integrating HIV/TB and NCD prevention and care will ultimately have to come in resource-limited settings, because the burden of non-communicable diseases will continue to grow in communities.

As lifelong care for people living with HIV becomes more routine and less concerned with dealing with medical emergencies, it will become intertwined with care and prevention of NCDs. People living with HIV are members of families and communities and are subject to the same ailments as their family members.

Nurses and community health workers will play a key role in developing the models of care which integrate the management of non-communicable diseases into existing health care.

## References

- [1] Dooley KE, Chaisson RE. Tuberculosis and diabetes mellitus: convergence of two epidemics. *Lancet Infect Dis* 9 (12): 737-746, 2009.
- [2] Miriam Rabkin, Wafaa El-Sadr. Why reinvent the wheel? Leveraging the lessons of HIV scale-up to confront non-communicable disease scale-up. *Global Public Health* 6 (3): 247-56, 2011 ([link to full text](#)).

## Further resources

**For more on this programme see the Ethiopian Meeting report previously referenced and:**

Miriam Rabkin (ICAP): Leveraging HIV programs to strengthen chronic care ([link to pdf of presentation](#)).

Zenebe Melaku, Ahmed Reja, Miriam Rabkin: Strengthening health systems for chronic care and non-communicable diseases (NCDs): leveraging HIV programs to support diabetes services in Ethiopia. Fifth International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Rome, abstract WePDD0104, 2011 ([link to pdf of poster](#)).

## For more on NCDs, see

NCD Alliance: <http://www.ncdalliance.org>

WHO Resources on the United Nations high-level meeting on non-communicable disease prevention and control ([available here](#))

**Diabetes follow-up form, including key data to be recorded at each visit**

Card no.	Name:		Age__ years		Sex M / F										
	Type of DM:		Date of diagnosis (DD/MM/YYYY)		Address										
<b>FOLLOW UP DATE</b>	<b>ANTHROPOMETRY &amp; VITAL SIGN</b>		<b>HISTORY</b>		<b>PHYSICAL EXAM</b>				<b>LAB TEST RESULT</b>			<b>TREATMENT</b>			
	Wt (KG)	BMI (Kg/m <sup>2</sup> )	B/P	Symptoms	Smoking	Oral	Foot	Injection site	Dilated eye	FBS	UA	RFT	Adherence	Drugs	Dose

Source: Reproduced from *Strengthening chronic disease services in Ethiopia: Lessons learned from HIV/AIDS program implementation. A national-level conference* (ICAP, Columbia University, 2010)

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## about HATiP

A regular electronic newsletter for health care workers and community-based organisations on HIV treatment in resource-limited settings.

The newsletter is edited by Theo Smart (Cape Town) and Keith Alcorn, NAM's Senior Editor (London).

For further information please visit the HATIP section of [aidsmap.com](http://aidsmap.com)