Acta Academica Supplementum 2005(1): 314-336

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One patient, two diseases: collaboration in controlling TB and HIV in the Free State

A perilous synergism exists between TB and HIV/AIDS, which form a dual epidemic requiring joint action. This paper first reviews key global and South African policy developments in relation to TB-HIV/AIDS control. Secondly, the early response of the Free State to global and national directives to implement integrated TB-HIV/AIDS programmes is described. As is clear from the experience of the first TB-HIV training site in the Free State, the Mafube local municipality, integrated TB and HIV/AIDS control is made possible by means of actual practical interventions as well as the collaboration of a range of role-players. In Mafube, and later also in the Free State at large, attempts at integration have resulted in substantially more TB patients undergoing voluntary counselling and testing for HIV.

Een pasiënt, twee siektes: samewerking in die beheer van TB en MIV in die Vrystaat

'n Gevaarlike sinergisme bestaan tussen TB en MIV/VIGS. Hierdie siektes vorm 'n dubbele epidemie wat tweeledige optrede vereis. Die artikel bied eerstens 'n oorsig van die internasionale en Suid-Afrikaanse beleidsontwikkelinge wat verband hou met die beheer van TB-MIV/VIGS. Tweedens word die vroeë respons van die Vrystaat op internasionale en nasionale voorskrifte om geïntegreerde TB-MIV/VIGS-programme te implementeer, beskryf. Soos blyk uit die ervaring van die eerste TB-MIV-opleidingsarea, die Mafube plaaslike munisipaliteit, word geintegreerde TB- en MIV/VIGS-beheer moontlik gemaak deur werklike praktiese intervensies, asook die samewerking van 'n reeks rolspelers. In Mafube, en later ook in die Vrystaat as 'n geheel, het pogings tot integrasie 'n substansiële toename in die aantal TB-pasiënte wat vrywillige berading en toetsing vir MIV ondergaan, tot gevolg gehad.

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HIV is the greatest risk factor for TB ever known. HIV increases the chances that latent TB infection may be reactivated to become an active, life-threatening disease. Unlike other opportunistic HIV-related infections, TB occurs at all levels of the laboratory marker of immune function (the CD4 count). Thus, TB presents early in the course of HIV infection and results in a more rapid progression from HIV to advanced AIDS. Of the world's 40 million people living with HIV/AIDS about one-third are co-infected with TB (Oxglade & Spencer 2003). In sub-Saharan Africa the dual epidemic is at its worst. In this region the swift spread of HIV over recent decades has been accompanied by an increase of up to 400% in the number of registered TB patients (WHO 2003).

By 2001, the estimated figure of 4,74 million people living with HIV/AIDS in South Africa was higher than that in any other country (Pelser *et al* 2004). After HIV/AIDS and homicide/violence, TB is the leading cause of death in South Africa (Bradshaw *et al* 2003). It is evident that a perilous synergism exists between TB and HIV. In 2000, South Africa had an estimated TB/HIV co-infection rate of almost 50% (Redelinghuys & Van Rensburg 2004). Neither epidemic is likely to abate in the foreseeable future. Based on an annual population increase of 1.47% and an additional TB incidence of 10% per year, South Africa will have a TB incidence rate of 877 per 100 000 of the population by 2005 (Dept of Health 2003). If more drastic measures are not taken to stem the HIV epidemic, by the end of this decade AIDS-related deaths will account for two-thirds of all deaths in the country (Pelser *et al* 2004).

"Not for nothing are HIV and TB variously referred to as 'the terrible twins' and 'Bonnie and Clyde'" (Whiteside & Sunter 2000: 25). The dual epidemic requires joint action. In this context, this paper will first review key global and national policy developments in relation to TB/HIV before proceeding to describe the early responses of the Free State to global and national directives to implement integrated TB/HIV management.

1. Global TB/HIV control strategies

Traditionally, despite the overlapping epidemiology of TB and HIV, efforts to combat these diseases have generally been separate. National programmes to control TB have concentrated on implementing the World Health Organization's (WHO) Directly Observed Treatment Short-course (DOTS) strategy for TB control. DOTS is a five-point plan comprising political commitment, the detection of infectious cases, standardised short-course chemotherapy, an uninterrupted supply of anti-TB drugs and careful monitoring of programme performance. DOTS has been implemented in eight of the fourteen Southern African Development Community (SADC) countries. However, only Botswana, Tanzania and Malawi have reported high (>80%) DOTS coverage and reasonable (±70%) treatment success (Weyer 2003).

While national TB control programmes based on DOTS can be very successful in developed countries, such programmes have often failed to achieve similar success in countries where HIV prevalence is high (De Cock & Chaisson 1999). Despite successful implementation of most of the elements of DOTS in several African countries and settings, TB continues to escalate. In countries heavily burdened by HIV/AIDS, especially those in eastern and southern Africa, a wider range of interventions than DOTS is needed to reduce the burden of TB.

While advocating that DOTS should remain the core strategy for TB control, the WHO also promotes collaborative TB/HIV programme activities. These should be directed towards establishing mechanisms for collaboration between TB and HIV/AIDS programmes, decreasing the burden of TB in people living with HIV/AIDS and reducing the burden of HIV in TB patients. The WHO's (2004a) strategy for collaborative TB/HIV control is multifaceted (Table 1).

Table 1: The WHO's interim policy on collaborative TB/HIV activities

Establish mechanisms for collaboration	Set up a co-ordinating body for TB/HIV activities effective at all levels	Such committees' responsibilities include the governance and mobilisation of resources for TB/HIV activities, capacity building, communication about TB/HIV, ensuring community participation in TB/HIV activities, and overseeing the preparation of the evidence base.
	Conduct surveillance of HIV among TB patients	Key methods for surveillance are periodic cross-sectional HIV seroprevalence surveys among a representative group of TB patients, sentinel surveys of TB patients within the general HIV sentinel surveillance system, and surveying data from routine HIV counselling and testing of TB patients.
	Carry out joint TB/HIV planning	Crucial elements for joint TB/HIV planning are resource mobilisation, capacity building, communication (advocacy, programme communication and social mobilisation), community involvement and operational research to enhance collaboration.
	Conduct monitoring and evaluation	Assessment of collaborative TB/HIV activities in respect of quality, effectiveness, coverage and delivery to promote a learning culture and to ensure continuous improvement of programme performance.
Decrease the burden of TB in people living with HIV/AIDS	Establish intensified TB case-finding	Screening for symptoms and signs of TB in settings where HIV-infected people are concentrated, including their household contacts, groups at high risk for TB and those in congregate settings.
	Introduce isoniazid preventive therapy (IPT)	IPT is used to prevent latent TB infection from progressing to active disease. It is important to exclude active TB before therapy is started. The use of anti-retroviral drugs does not preclude the use of IPT.
	Ensure TB infection control in healthcare and congregate settings	Measures include administrative, environmental and personal protection measures aimed at reducing exposure to TB among healthcare workers, prison staff and police as well as their clients and people living in congregate settings.
Decrease the burden of HIV in TB patients	Provide HIV testing and counselling	Counselling and rapid HIV testing of TB patients offer an entry point for a continuum of prevention, care, support and treatment for HIV as well as TB. Testing should be readily available, conducted on a voluntary and confidential basis and preceded by obtaining informed consent.
	Introduce HIV prevention methods	To reduce sexual transmission of HIV safer and more responsible sexual behaviour should be promoted, as well as the delayed onset of sexual activity, a reduced number of sexual partners, the systematic use of male and female condoms and the treatment of other sexually transmitted infections (STIs).
	Introduce co-trimoxazole preventive therapy (CPT)	CPT is used for the prevention of several secondary bacterial and parasitic infections in people living with HIV/AIDS
	Ensure HIV/AIDS care and support	HIV/AIDS care and support entails clinical management, nursing, palliative care, home care, counselling and social support.
	Introduce anti-retroviral therapy (ART)	ART reduces the incidence of TB in HIV-positive patients. Early initiation in the course of HIV infection and high compliance are required in order to prevent a significant proportion of TB cases.

Source: Compiled from WHO 2004a.

If people with TB know they are HIV-positive, they can make more appropriate choices, and healthcare workers can provide appropriate care (Hausler *et al* 2003). In order to decrease the burden of TB in people living with HIV/AIDS, TB case-identification should therefore be intensified. In 1999, the South African Department of Health commenced participation in the ProTEST initiative of the WHO and the Joint United Nations Programme on HIV/AIDS. ProTEST is aimed at greater collaboration between the TB and HIV/AIDS programmes. It accepts that voluntary HIV counselling and testing (VCT) are crucial to a more coherent response to TB in areas with a high prevalence of HIV (Colebunders & Lambert 2002). Key elements of ProTEST are collaboration among stakeholders and health services; improved access to high-quality VCT; intensified case-finding and treatment of active TB in HIV-positive clients; the use of IPT to treat latent TB infection in HIV-positive clients likely or known to be infected with TB; the use of CPT to reduce morbidity and mortality due to opportunistic HIV-related infections; HIV prevention including condom promotion, the treatment of STIs and the prevention of mother-to-child HIV transmission, and improved clinical care for people living with HIV/AIDS (WHO 2004b).

Thus, ProTEST entails much more than VCT for TB patients. In particular, intensified case-finding is followed by the introduction of IPT. Administering isoniazid to HIV-positive people infected with TB decreases their risk of developing active TB. Isoniazid treatment has been recommended as part of a comprehensive package of care for HIV/AIDS since 1998. In 2000, based on observations that co-trimoxazole is effective in decreasing morbidity in HIV-positive people, and also in decreasing mortality in HIV-positive TB patients, the WHO and the Joint United Nations Programme on HIV/AIDS recommended that co-trimoxazole should be provided as part of the comprehensive package of care for TB-symptomatic people living with HIV.

2. South Africa's TB/HIV control policies

In November 2000 in Cairo, the manager of the National TB Control Programme (NTCP) of South Africa, together with the programme managers of 21 other high-burden countries, agreed to develop the Global DOTS Expansion Plan. In South Africa DOTS demonstration and

training districts (DTDs) had been established countrywide by 1997. DOTS population coverage in South Africa has increased from 66% in 1999 to 98% in 2002 (WHO 2004). Despite this progress, the current cure rate of 53.8% (Dept of Health 2004b) is well below the nationally and internationally accepted target of 85%. As in other sub-Saharan African countries, the HIV/AIDS epidemic in South Africa is the driving force behind the resurgence of TB. Attempts at TB control have not yet been adapted to the realities of the HIV/AIDS epidemic.

As early as 1996 and 1997, reviews of the South African TB, HIV/AIDS and STI programmes recommended the strengthening of collaboration among these programmes at all levels of the health system. In order to achieve the aims of the ProTEST initiative more effectively, an HIV/AIDS and TB cluster was formed in the Department of Health. It comprised three directorates: HIV/AIDS and STI, the Government AIDS Action Plan (GAAP) and TB (Kironde & Bamford 2002). Four ProTEST pilot sites were established in 1999: East London (Eastern Cape), Bushbuck Ridge (Limpopo), Ugu South (KwaZulu-Natal) and Langa Central (Western Cape). For these pilot projects, as with projects in Malawi (Lilongwe) and Zambia (Lusaka), the following deliverables were specified as necessary to implement a more coherent response to TB in settings with high HIV prevalence: good quality VCT; improved TB case-finding; preventative therapy for TB; increased collaboration between TB and HIV programmes, as well as between all stakeholders in both epidemics, and an eventual reduction in the TB and HIV burden (WHO 2004b).

Preliminary results from the ProTEST initiative in the four provincial TB/HIV pilot districts facilitated the development of best practices for integrated TB/HIV control (Kironde & Bamford 2002). However, the feasibility and cost-effectiveness of TB-preventative therapy is still being tested in South Africa. Such interventions are complex and difficult to implement. IPT entails giving 300mg isoniazid daily for six months and monitoring for side-effects and symptoms. While the efficacy of IPT has been established, adherence to the therapy is variable (Hausler 2004). Reasons for unreliable adherence to TB-preventative therapy as well as its feasibility and cost-effectiveness are being evaluated in the pilot districts. Moreover, clinicians in the Free State have expressed doubt concerning the use of IPT due to a fear of creating re-

sistance to what is a key anti-TB drug in a high-incidence area. Hence, as a rule, IPT is not practised in the Free State public health sector (Heunis 2005).

The South African Medium-Term Development Plan (MTDP) acknowledges the challenges posed by the TB/HIV co-epidemic (Dept of Health 2001). As one of its four overall objectives the MTDP commits the NTCP to establishing optimal co-ordination with the HIV/AIDS & STD Programme. However, none of the MTDP's three short-term objectives relate directly to HIV/AIDS. The MTDP prioritises (thorough) implementation of DOTS. Thus, its three short-term objectives are to achieve a cure rate of 80-85% among detected sputum smear-positive TB cases, to detect 70% of the estimated new smear-positive cases and to achieve universal DOTS coverage. The MTDP's two main strategies for reaching these objectives are integral application of the WHO's revised DOTS strategic framework and partnership building.

Integral application of DOTS entails access to quality-assured sputum microscopy for case detection among people presenting with symptoms of TB; screening of those with prolonged cough symptoms, and special attention to case detection among high-risk groups, including HIV-infected and institutionalised people (Dept of Health 2001). As far as its programme activities are concerned, the MTDP's first priority is "to get the basics right" by countrywide implementation of the NTCP "core package" (Dept of Health 2001: 20). However, in the delineation of the MTDP's "additional package", collaboration between TB and HIV interventions is promoted as a means of increasing the effectiveness of the TB control programme. The additional package calls for high quality, easily accessible VCT for all TB patients, combined with appropriate HIV/AIDS care and prevention as well as screening for active TB among people living with HIV. The additional package also includes enhanced passive TB case-finding in high-risk groups such as people living with HIV/AIDS and TB-preventative treatment in people living with HIV. As well as the other key elements of the MTDP, the additional package identifies the following as crucial elements of co-ordination with the HIV/AIDS & STD Programme: collaboration in training; information, education and communication (IEC); operational research; surveillance, home-based care programmes; VCT, and care for people with HIV/AIDS.

The implementation of the MTDP imposes an additional burden on the health system and on health workers, and this is acknowledged insofar as the Plan recognises that staffing at the provincial and district levels needs to be expanded. At the provincial level, besides a full-time TB co-ordinator, the expected co-ordination with the HIV/AIDS Directorate, non-governmental organisations, academic institutions, correctional institutes and mines requires additional staff for supervision, training and data management. The MTDP states that at the district level there must be a TB co-ordinator, possibly with combined responsibility for the TB and HIV/AIDS/STD programmes. However, the Plan cautions that co-ordinators with such combined responsibilities might be overwhelmed by competing demands. Thus, in order to prevent the TB programme from collapsing and to allow for further strengthening and expansion of the DOTS programme, dedicated (sub-)district TB co-ordinators must be appointed with designated time for delivery of the core package of co-ordinating and supervisory activities (Dept of Health 2001).

In 2000, the Joint Strategy for HIV/AIDS & STD and TB Control in South Africa was developed and endorsed by the provinces and senior managers of the Department of Health. Provincial co-ordinators for HIV/AIDS, STD and TB identified areas for collaboration and conducted joint operational planning. Provincial Heads of Health decided to apply the lessons learned from the TB/HIV pilot districts and in DTDs. The main lesson was that the introduction of rapid HIV testing results in an increase in the number of people undergoing HIV testing. In the four pilot sites there was an increase from 1 703 people per quarter in 1999 to 4 963 per quarter in 2001 (Hausler *et al* 2003). Prior to the introduction of rapid testing most testing had been clinically referred, but after its introduction the proportion of self-referred clients increased to over 60% in two of the pilot districts.

The main goal of the TB/HIV training districts was to implement and evaluate a comprehensive package for prevention, care and support in relation to HIV/AIDS, STIs and TB (Simelela 2001). In 2002, all provinces established a TB/HIV training district (Hausler 2004). The HIV/AIDS and TB Directorates of the Department of Health initiated a plan to expand ProTEST activities with the aim of achieving coverage

of 174 districts by 2006 (Kironde & Bamford 2002: 294). Bamford *et al* (2003: 223) commented:

> Expansion of the NTCP to include [VCT] and provision of TB prophylaxis to HIV-positive patients is welcome, and implementation of the Department of Health's comprehensive treatment plan for HIV/AIDS also provides opportunities for expanding the provision of integrated TB and HIV/AIDS care. However, ensuring adequate implementation of these additional services will require considerable effort. It is also important that TB control efforts among HIV negative patients are not compromised.

3. The Free State's evolving response to TB/HIV

The Free State comprises five health districts and twenty local municipal areas. The province is traversed by several national roads and has strong agricultural and mining industries. A high degree of labour migration heightens vulnerability to TB and HIV infection and encourages the spread of both diseases in the province (HIV/AIDS/STI/TB/CDC Directorate 2004). Although, the Free State is geographically the second largest province in South Africa, it has the second smallest population and the second lowest population density. An estimated population of 2 663 504 reside on 129 480 km^2. A substantial proportion live in rural surroundings characterised by poverty and poor nutrition. Many occupy informal housing with poor ventilation. In fact, among the nine provinces, the Free State and Gauteng have the highest proportions of people living in informal settlements. All these factors contribute to the escalation of TB and HIV/AIDS (Pelser *et al* 2004). A recent study at the Ernest Oppenheimer Mine Hospital in Welkom indicated HIV prevalence of 24% among the workforce and revealed that TB was the most frequent reason for hospitalisation of HIV-positive patients (Corbett *et al* 2002). In a cohort study conducted in nine mine hospitals in the Free State to determine the efficacy of IPT, the overall incidence of recurrent TB was reduced by 55% (Churchyard *et al* 2003, cf also Mallory *et al* 2000).

In contrast to the annual antenatal surveys that have consistently found KwaZulu-Natal to have the highest HIV prevalence, the 2002 Nelson Mandela/HSRC study recorded the highest HIV prevalence in the Free State (14.9 %), followed by Gauteng (14.7%). Even if, as suggested by the 2002 Antenatal HIV Seroprevalence Survey, the Free

State (28.8%) ranks third after KwaZulu-Natal (36.5%) and Gauteng (31.6%), it is appropriate that the Free State Department of Health has identified HIV/AIDS as a priority service area in its Strategic Plan for 2003/4 to 2005/6. TB incidence in the Free State is also very high at 494 cases per 100 000 of the population (2002). This translates to more than 11 000 new pulmonary TB cases per year (Bamford *et al* 2003). Thus, as elsewhere in the country and the region, TB and HIV in the Free State represent a co-epidemic. In fact, the South African Medical Research Council recently found that 71.9% of confirmed TB patients in the Free State are co-infected with HIV (Weyer *et al* 2003).

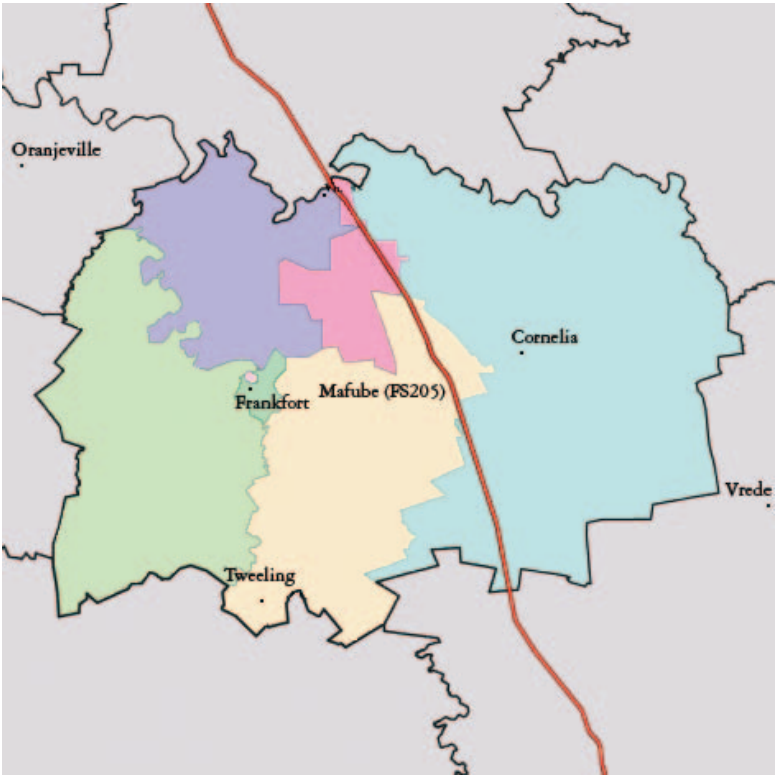
In the provincial MTDP Workshop held in the Free State in February 2002 it was acknowledged that insufficient TB/HIV counselling was taking place and that integrated TB and HIV/AIDS services were lacking. To address these problems objectives were formulated to improve the integration between TB and HIV programmes and services, including collaboration at the provincial, district and local area levels; comprehensive TB and HIV/AIDS training of health workers, voluntary workers and the community; the provision of continuous care including VCT for TB patients, CPT and management of opportunistic infections; home-based care, and screening for TB among HIV-positive clients.

A vexing problem affecting TB control, and thus also HIV/AIDS control in the Free State is that "the TB transfer system from secondary to primary level is insufficient [and] inappropriate, and results in the majority of hospital TB patients failing to complete treatment" (Nhiwatiwa & Sepitla 2004: 297). An interview with the first author of the study which produced this finding revealed that the functions of the district TB co-ordinator might best be extended to facilitate transporting patients to local clinics and alerting staff to the need for follow-up care (Nhiwatiwa 2005). Clearly, the district co-ordinator function also has the potential to facilitate integrated TB-HIV/AIDS care.

3.1 Mafube: the first attempt at TB/HIV programme integration in the Free State

The first TB/HIV training site in the Free State was established in the Mafube local municipality in the Northern Free State District Municipality in January 2002. The Northern Free State supports the largest petrochemical industry in the country. However, Mafube, encompassing

Cornelia, Frankfort, Mafahlaneng, Namahadi, Ntshwanatsatsi, Qalabotjha, Tweeling and Villiers, is a more rural, agricultural area. The national road between Gauteng and KwaZulu-Natal traverses the area.



Mafube local municipality in the Northern Free State

Of an estimated total population of 53 423 in Mafube, Blacks (89.7%) form the majority. Poverty is rife, with most households earning between R2 400 and R6 000 per year (Free State Provincial Government 2004). One district hospital and eight PHC clinics serve the community.

Initially, another local municipality in the Northern Free State, Moqhaca (in the Kroonstad area), was targeted as the TB/HIV training

site. However, since it was also the site for a pilot study on the prevention of mother-to-child HIV transmission (PMTCT), the district TB co-ordinator persuaded policy-makers that Mafube would be a more appropriate site for the endeavour. The district manager agreed to the selection of Mafube and was committed to improving TB/HIV collaboration. The district TB and HIV co-ordinators were enthusiastic about the development and worked well together.

The selection criteria for TB/HIV training districts include that the district should be a (DOTS) DTD with a well-functioning TB control programme. Although all 20 local municipalities in the Free State were developed as DTDs, accepted DOTS targets were not generally being achieved. This was also the case in Mafube. Before implementation of the TB/HIV piloting activities, the interruption rate among those on TB treatment was 20.8% and the cure rate of new smear-positive cases was 73.9%. Additionally, the following problems occurred in the TB programme: incorrect statistics; most TB patients being diagnosed by X-rays without sputum microscopy; no voluntary workers as DOT supporters, and no follow-up actions to address treatment defaulting. Thus, the first priority was to improve the DOTS programme in the area. A concerted effort to do this took place during the first quarter of 2002. Follow-up of treatment interrupters was the first step and was addressed by means of the recruiting and training of DOT supporters. The second step was to ensure that microscopy was conducted on all TB suspects and that sputum samples were taken again after two or three months according to national TB policy. As a third step, all clinic TB co-ordinators received training on TB and, in particular, on how to interpret TB statistics.

The following activities were planned and implemented to improve DOTS:

- Three formal TB training sessions of three days each were presented by the TB Alliance for DOTS Support Association (TADSA) to two managers, eight PHC clinic staff and 31 DOT supporters.
- Two sessions on the interpretation and use of statistics were presented to eight professional nurses.
- Monthly follow-up monitoring visits by the provincial TB co-ordinator were conducted at the eight PHC clinics for one quarter. In-service

training was provided. A formal monitoring tool was used to monitor progress.

- The clinics were coached to depict TB statistics graphically on consulting-room walls, and health workers were coached to keep these statistics up-to-date.
- Health education programmes on TB were implemented in clinics. Individual health education on TB was given on a daily basis to new TB patients. Group sessions were held in the waiting rooms.
- "TB days" took place at the eight clinics. TB also featured strongly in the provincial "Health Week".
- In all, 31 DOT supporters were trained and utilised by the clinics.
- Door-to-door campaigns were held in Tweeling and Cornelia to inform communities about TB. All those with persistent coughs were advised to go to their nearest clinic for TB testing.
- Twelve traditional healers were trained on TB/HIV.
- 33 members of Khoptalang, a NGO, underwent TB training.
- Six health workers at the district hospital received TB training.
- Four TB support groups were established.
- Cured TB patients were involved in health education programmes.

These interventions substantively improved the implementation of the DOTS strategy. The interruption rate went down from 20.8% to 8.3% within six months. By the end of 2003 it had declined further, to 5%. Significantly, the cure rate for new smear-positive cases increased from 73.9% to 82.1% within six months of the implementation of actions to improve the DOTS strategy.

In Mafube the integration of the TB and HIV/AIDS programmes started simultaneously with the efforts to improve the DOTS strategy. In a meeting between the TB and HIV/AIDS programmes and the district management, the following goals were set for TB/HIV integration:

- Comprehensive TB and HIV/AIDS training and education had to be provided to health workers, voluntary workers and the community.
- Continuous care, including VCT, co-trimoxazole prophylaxis, management of opportunistic infections and home-based care had to be provided at all clinics.

- HIV-positive clients had to be screened for TB.
- HIV/TB registers had to be implemented in all health facilities.
- Regular monitoring had to be conducted at all services by the district TB and HIV/AIDS co-ordinators.

In the subsequent six months (April-September 2002) the following actions were taken in an attempt to integrate the TB and HIV/AIDS programmes:

- A district TB/HIV/STI committee was established, comprising representatives of Khoptalang, a medical officer from the Frankfurt Hospital, a pharmacist, a traditional healer, registered nurses from the eight PHC clinics, a community liaison officer and a dietician. Meetings were held on a two-monthly basis.
- All eight PHC clinics became VCT sites.
- Educational campaigns were held on TB and HIV/AIDS, targeting taxi ranks, schools, women's organisations and traditional healers.
- 31 volunteers and four professional nurses were trained on HIV counselling.
- 21 staff members completed the Life Line course.
- Eighteen professional nurses, six clerks, 110 nursing assistants and one enrolled nurse attended a course on HIV confidentiality, legal and ethical issues, VCT and the prevention of mother-to-child transmission.
- Eighteen professionals nurses were trained on rapid HIV testing and the new HIV confirmatory test.
- All lay counsellors were monitored on a two-monthly basis by Khoptalang and district co-ordinators.
- Thirteen home-based carers received training.
- Two support groups were established for people living with HIV/AIDS.
- World TB Day and HIV/AIDS Day were used to promote TB/HIV/AIDS
- Traditional healers were made aware of TB/HIV/AIDS.
- Data on TB/HIV/AIDS integration was collected from the third quarter of 2002.

The outcomes of these interventions are reflected in Mafube's statistical reports on TB for the third and fourth quarters of 2002 and the first quarter of 2004 (Table 2). Mafube faired much better than the province as a whole in relation to both the number of TB cases undergoing VCT and those being tested for HIV. During the fourth quarter of 2002 nine in every ten TB patients volunteering for HIV testing tested positive. For the Free State as a whole, in excess of seven in every ten TB patients tested positive. The high prevalence of HIV among TB patients has persisted (cf Table 3).

Table 2: Progress in the integration of the TB and HIV programmes in Mafube relative to the Free State province (%)

	3rd qtr 2002		4th qtr 2002		1st qtr 2003	
	Mafube	Free State	Mafube	Free State	Mafube	Free State
TB cases undergoing VCT	43.1	12.4	55.6	12.4	23.0	N/A*
TB cases tested for HIV	23.5	9.1	37.0	8.3	40.1	N/A
TB cases testing HIV+	58.3	73.7	90.0	72.9	72.0	N/A
TB cases receiving co-trimoxazole	17.6	N/A	81.5	N/A	54.1	N/A

* Not available

Source: Free State Department of Health 2005.

One of the major constraints reported in Mafube was that once volunteers had been trained as DOT supporters, home-based carers or lay counsellors they often resigned. The provision of stipends for all volunteers in the Free State largely solved this problem. Another problem was that there was limited physical space within clinics for providing VCT. This problem was partially addressed by special efforts on the district level.

The main lesson from Mafube was that building good relationships was key to collaboration between the programmes. The sound relationship between the co-ordinators facilitated the integration of the TB and HIV/AIDS programmes. Active participation from the community, community-based organisations, NGOs and traditional healers was

also necessary. The success of the implementation of the TB/HIV integration was made possible by political commitment and support, not only from the province, but also from the district. Political commitment and ownership are important elements in ensuring sustainability. In Mafube the representative District TB/HIV/AIDS Committee strengthened the delivery of both the TB and the HIV programmes, as well as the continuity of care. The consultation and involvement of community structures was important in terms of ownership and the mobilisation of volunteers. Improved social mobilisation and health education strengthened community involvement. Support groups improved the acceptance of both TB and HIV status. It became clear that the TB and HIV programmes can be successfully integrated as long as their roles and responsibilities are clearly defined.

3.2 The rollout of TB and HIV integration to the other districts in the Free State

During 2002/2003 HIV/AIDS and TB were prioritised by the MEC's office in the Free State. This implied special attention to the HIV/AIDS and TB-related training of both professional and lay health workers. There was a focus on extending general access to and uptake of VCT. On the part of the TB control programme efforts to increase the numbers of TB patients undergoing VCT were also redoubled. Simultaneously, there was a concerted attempt to improve the implementation of the DOTS strategy. This included training as well as advocacy and social mobilisation initiatives. The focus of these initiatives was on making the community aware of their right to be tested and of the advantages of being tested for both TB and HIV. TB and HIV/AIDS became integral parts of the home-based care package. PMTCT was also being implemented at the time, which contributed to the uptake of VCT.

The aim of TB/HIV integration in the Free State is to implement a comprehensive package of TB/HIV prevention care and support. In July 2002 the managers of all five districts were asked to identify other sites where the TB and HIV programmes could be integrated. Nine new sites were identified and four training sessions were presented to the HIV and TB co-ordinators on the district and local area levels. Pharmacists and doctors also attended the sessions.

By the first quarter of 2004 the situation in the Free State was as follows:

- HIV/AIDS and TB formed one directorate.
- TB/HIV training was being given to all TB and HIV co-ordinators on the district and local area levels. This training was also expanded to the facility level. 131 health workers received combined TB and HIV training.
- District TB/HIV committees had been established in eight of the nine local areas.
- VCT was being offered in 204 of the 304 TB sites in the Free State.
- Each TB/HIV co-ordinator was implementing a plan on the TB/AIDS integration and had to give quarterly feedback on progress, constraints and how these would be addressed.
- 278 health workers and 379 lay counsellors had been trained as HIV counsellors.
- 1508 community volunteers (DOT supporters) were actively involved in DOTS (1158 had been trained).
- 56 traditional healers from all five of the districts had been trained in TB/HIV.
- Co-trimoxazole therapy was available at all VCT sites.

The outcomes of these interventions are reflected in Table 3.

Table 3: Progress in the integration of the TB and HIV programmes in the Free State (n and %)

	2002				2003				2004
	1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr	2nd qtr	3rd qtr	4th qtr	1st qtr
Total TB cases	3 767	3 614	4 154	4 382	3 163	5 974	7 673	8 145	7 937
HIV+ cases tested for TB	N/A*	N/A	N/A	N/A	N/A	N/A	619 (8.1%)	948 (11.6%)	1 265 (15.9%)
TB cases undergoing VCT	252 (6.7%)	267 (7.4%)	514 (12.4%)	543 (12.4%)	N/A	N/A	1 635 (21.3%)	1 887 (23.2%)	1 937 (24.4%)
TB cases tested for HIV	242 (6.4%)	240 (6.6%)	376 (9.0%)	362 (8.3%)	N/A	N/A	972 (12.7%)	1 040 (12.8%)	1 321 (16.6%)
TB cases testing HIV+	158 (4.2%)	174 (4.8%)	277 (6.7%)	264 (6.0%)	N/A	N/A	699 (9.1%)	N/A*	879 (11.1%)
TB cases receiving co-trimoxazole	N/A	N/A	N/A	N/A	N/A	N/A	497 (6.5%)	908 (11.1%)	1 019 (12.8%)

* Not available
Source: Free State Department of Health 2005.

Table 3 reflects the rapid growth in TB incidence in the Free State, with the total number of cases having increased more than twofold (211%) over the two years. Data for people living with HIV who have been tested for TB have been captured since July 2003. The available data (9 months' worth) already reflects a more than twofold (204%) increase in the proportion of HIV-positive people tested for TB. The Free State is thus attempting to fulfil national and international policy directives to intensify case-finding among people living with HIV. However, whether the 15.9% of these cases being tested by the first quarter of 2004 was sufficient for pro-active TB/HIV management is open to question. In the TB/HIV training site, Mafube, this proportion was already 40.1% by the first quarter of 2003.

The data on the number of TB patients (new and re-treatment cases) undergoing VCT reveals an almost eightfold (769%) increase since early 2002. Still, as the latest available figure indicates that less than one-quarter (24.4%) of TB patients are tested, there is much room for improvement. Even so, the proportion is a little higher than the 23.0% achieved in Mafube by March 2003. Given that there has been an almost threefold (264%) increase in the number of TB cases testing positive for HIV since 2002, this is of even greater concern. In addition, only about one TB patient in every ten (12.8%) is receiving co-trimoxazole treatment. In Mafube the corresponding figure was 54.1% by March 2003.

4. Conclusion

The clinical interaction of TB and HIV is repeatedly emphasised in the literature: In populations with healthy immune systems, only one in every ten of those infected with TB ever becomes ill with active TB. Among people infected with TB whose immune systems are impaired by HIV, over half become ill with TB before they die. In addition, in a person with HIV, the presence of TB infection may allow the HIV to multiply more rapidly. This implies a more rapid progression from HIV infection to AIDS (Hausler *et al* 2003).

The National Department of Health's Strategic Plan for 2004/05-2006/07 identifies supporting provinces in a more targeted manner and improving the monitoring of policy implementation as key challenges

(Dept of Health 2004). It would seem that integrated TB/HIV control is "easier said than done". Given the dangerously persistent lack of recognition of the reality that TB and HIV/AIDS commonly co-exist in Africa — as a dual epidemic requiring joint action — it is deplorable that in most settings today the emphasis is almost exclusively placed on strategies addressing the threat of HIV/AIDS, without including TB control as a component of a comprehensive approach (Weyer 2003).

The South African MTDP indicates that, with the current sharp increase of sources of TB infection in places where HIV is widespread, it is crucial to contain the rate of transmission by effective treatment delivery to all diagnosed infectious cases and to keep the TB problem within manageable proportions until the rate of HIV transmission levels off. The MTDP anticipates that after HIV infection has levelled off, a decrease in the rate of TB infection can be expected, followed by a decrease in TB incidence, but that until then "we must prevent the situation that [TB] becomes managerially and epidemiologically out of control" (Dept of Health 2001: 35).

In South Africa TB/HIV pilot projects for the integration of TB, HIV/AIDS and STI services have been established in many districts, and training programmes for joint TB/HIV control activities have been implemented in all provinces. The plan was to establish at least one training site for integrated TB/HIV management in every province by the end of 2002 (Kironde & Bamford 2002). By 2003 the NTCP had been expanded to include VCT and TB prophylaxis for HIV-positive patients. Indeed, the implementation of the Department of Health's comprehensive treatment plan for HIV/AIDS provided opportunities to expand the provision of integrated TB and HIV/AIDS care (Bamford *et al* 2003).

Mechanisms for collaboration between the two programmes must be implemented, as described in this paper. This process has commenced in the Free State. TB and HIV/AIDS control was optimalised in the Mafube local municipality by means of actual practical interventions as well as the collaboration of a range of role-players. This was in the interests of the user community, as reflected in greater availability and uptake of VCT among TB patients. Early detection of infection and co-infection with TB and HIV is associated with improved treatment outcomes. Indeed, with the current advent of anti-retroviral treatment in the South African public health sector this is all the more important, since "late stage diagnosis means less success with ARV" (Makotoko 2005).

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