

# Integrating TB and HIV services

## TB and HIV Co-infection

TB is the leading cause of morbidity and mortality among people with HIV in most parts of the world. People living with HIV are more susceptible to developing active TB, and if they have active TB they are more likely to die during the course of treatment. The proportion of TB patients who are HIV-positive varies widely between countries. In 2007 1.9% of TB patients in China were HIV-positive, compared with 73% in South Africa. Around four out of every five HIV-positive TB cases in 2007 were in Africa.

The need for TB and HIV programmes to collaborate was internationally recognised in 2004 when WHO HIV Department and Stop TB published an Interim Policy on TB/HIV Collaborative Activities, and since then indicators and milestones have also been developed. Since November 2009, WHO guidelines recommend that all patients with active TB who are HIV-positive start ART as soon as possible.

Patients with both HIV and TB often have to navigate two separate health care programmes, which can lead to additional time and transport costs. Effective coordination of TB and HIV services is vital to ensure that patients access the care they need from both services to ensure the best health outcomes.

This policy brief examines the advantages and disadvantages of different models of integration of HIV and TB services. It draws on a systematic review that was conducted for a background paper to the WHO First Global Symposium on Health Systems Research in

November 2010.

Examples of TB and HIV service integration can be classified into five broad categories, as shown in figure 1. The least integrated models are those where the HIV or TB services refers patients to the other disease service for testing and treatment. More integrated models involve the TB or HIV clinic testing or screening for the other disease, and then referring to the other service for treatment. The most integrated category of models is where HIV and TB testing and treatment are all done in the same facility. Each models has

advantages and disadvantages, and the best model may depend on the local context.

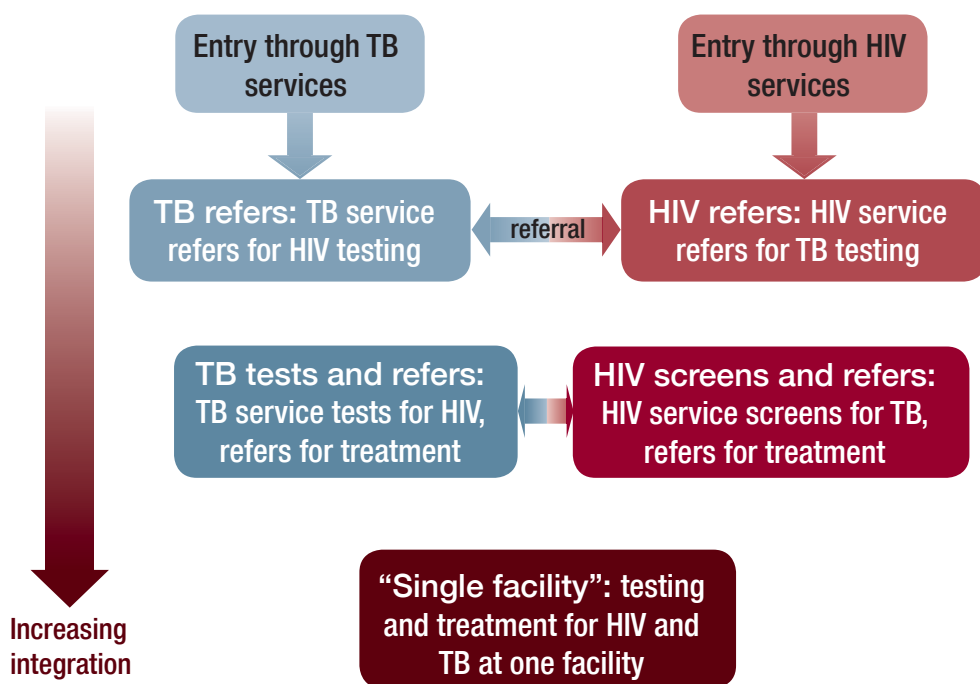
## Models where TB or HIV services refer patients to the other service for testing and treatment

These models are relatively simple to implement and require minimal changes to existing services, primarily staff training. These models are common where the prevalence of HIV among TB patients is low. These models depend critically on a robust referral system, and will serve

## Key Points

- \* TB and HIV services need to be coordinated, particularly in settings where most patients with TB are also HIV positive
- \* A review of examples of how TB and HIV services have been integrated in practice suggests five models of integration of HIV and TB services: TB service refers for HIV testing and treatment; TB service tests for HIV and refers for treatment; HIV service refers for TB screening and treatment; HIV service screens for TB and refers for treatment; TB and HIV services provided at a single facility
- \* Models based on referral require minimal extra resources, but are dependent on a robust referral system
- \* When TB services provide HIV testing, and HIV services screen for TB and then refer for treatment, some additional staff training and infrastructure may be needed; this level of integration is likely to benefit patients in most settings
- \* Single facility models reduce the transport costs and patient time needed to access both services, and should save staff time, but may require significant investment
- \* Research is needed to provide data on the effectiveness, cost-effectiveness and patients' and health service staff's perspectives of these models
- \* Standardised measures of how well integration is working should be reported by TB and HIV programmes, to make it easier to compare between different programmes and models of integration

Figure 1: Models of Integration of TB and HIV Services

**Key term: Intergration**

We defined integration as managerial or operational changes to health systems to bring together inputs, delivery, management and organisation of particular service functions as a means of improving access, quality, user satisfaction, equity and effectiveness. This included integrating ‘different packages of services’; the integration of service delivery points; integrating services to assure continuity of care; integration at different levels of service delivery; and integration of management decisions. Integration of management decisions at the policy level is not covered by this policy brief.

patients poorly if referral fails for any reason. They also multiply the costs to the patient, as the patient has to travel to at least two different clinics, which may be far apart. There are also difficulties if information is not shared between the different service providers, which could, for example, result in failure to implement cotrimoxazole preventive therapy if both services assume the other one is doing so.

### Models where TB or HIV services screen for the other disease, then refer to the other service for treatment

Implementing HIV testing in TB services and TB screening in HIV services requires more changes than models which refer for both testing and treatment. Training staff is crucial. Physical changes may also be required. TB facilities will need a private space for HIV counselling and testing; HIV facilities may need to provide a suitably ventilated space for sputum samples to be produced, if this is done on site. In theory these

models are more efficient than where patients are referred for testing, as only those patients in need of treatment will be referred to the other services. But, like the models discussed above, these models do rely on effective referral systems to ensure people access the further care they need.

### Models where a single facility provides both TB and HIV services

There were many different examples within this category, including:

- TB clinics that provide HIV treatment
- HIV clinics that provide TB treatment
- Primary health care facilities that provide integrated treatment for both TB and HIV
- Hospitals that provide integrated treatment for both TB and HIV
- Other single facility models, including public-private partnerships

Since few facilities have been designed to provide integrated care, these models are likely to require more resources to establish than the other models discussed above. The single facility approach should reduce the number of people lost during the referral process. Users should also benefit by having lower transport costs if visits are on the same day, or, better still, if one provider manages both the TB and HIV aspects of care at the same visit. A major concern with these models is the risk of nosocomial spread of TB among HIV patients, who are at high risk. Infection control is therefore critically important, and measures should include intensified case finding for active TB amongst clinic attendees; waiting areas which maximise natural ventilation (preferably outdoors); and designated “cough monitors”, meaning health care workers who quickly identify coughing patients in waiting areas and isolate them. Poor infection control risks putting patients with advanced HIV disease at high risk of acquiring TB; however the greatest risk of transmission is from

those with undiagnosed infectious TB, so if integrated care promotes rapid diagnosis and treatment of active tuberculosis, the net effect may be a reduction of risk compared with separate services.

## Barriers and facilitators of integrating TB and HIV services

There are a number of barriers to integrating TB and HIV services:

### Service delivery

- service users unaware, or unconvinced, of the importance of testing for HIV or TB
- users reluctant to undergo testing because of stigma, particularly TB patients being unwilling to undergo HIV testing (especially if this involves attending a facility identified as serving people with HIV)
- in models based on referral, barriers to access of the relevant service: distance between facilities, cost of travel, being too ill to travel, inconvenient opening hours
- staff using inappropriate criteria to decide which patients need testing
- in models based on referral, poor communication between services, and failure to share information concerning the care of individual patients
- lack of access to care and support for people diagnosed with HIV
- facilities not designed to facilitate infection control for TB, both in general areas and specifically for areas where sputum samples are produced
- lack of private space for HIV counselling and testing data recording systems poorly designed for integrated care
- ineffective referral systems

### Human resources

- lack of staff trained to manage both HIV and TB
- high staff turnover, requiring continuing training activities
- in models where additional activities are introduced, staff already overburdened
- staff attitudes: not motivated to carry out co-ordinating activities, particularly if this is perceived as extra work; may be reluctant to implement HIV testing early in TB treatment

### Supply of medicines and products

- lack of isoniazid preventive therapy, suitably formulated (300mg tablet) and packaged
- unreliable supplies, including drugs and point of care HIV tests
- shortage of antiretroviral therapy (ART) in general, and specifically shortage of regimens suitable for people taking TB treatment
- where tuberculin skin tests are used to determine IPT eligibility, lack of tuberculin and space for its cold storage

### Facilitators of integrated TB and HIV services

- training activities that bring staff from both services together
- having a member of staff with responsibility for integration activities

## Comparing models

It is difficult to compare the effectiveness of different models of integration from the current literature, as there have been no randomised trials, and few reports of the impact of the different models on outcomes which are relevant to patients, such as outcomes of TB treatment or ART. There is also a lack of evidence about the cost-effectiveness of different models. Little research has been done to look at the perspectives of users and services providers about the models. All these information gaps need to be plugged. But there is also a need to improve integration of services now. In settings where there is greatest overlap between the two diseases, it seems likely that integrated care would serve the patient best, providing infection control is addressed. This should also maximise efficient use of health service resources, although there are no data to prove this. The balance of costs vs. benefits of closer integration is likely to differ where the prevalence of HIV among people with TB is lower. However, the advantages of, at minimum, testing for HIV in TB services (and vice versa) seem to outweigh the disadvantages at any HIV prevalence, and this should be a relatively simple first step towards closer integration.

## Conclusion

It is important that individuals with HIV-associated TB start ART promptly, and that TB is identified, treated and prevented among people with HIV. In many settings much effort has been put into developing better-integrated services, using a wide range of approaches. There are considerable barriers to integrated care. However, it is essential to overcome them to allow patients with the two life-threatening diseases to access the services they need.



## Recommendations

### Recommendations for policy & practice

- Lack of integration of TB and HIV services may mean that some patients with both diseases do not access all the services they need. HIV and TB services should make it easier for patients to navigate what are often complex systems.
- Health services that use a model based on referral should ensure that the referral system is effective, and try to tackle obstacles that prevent patients from taking up referrals for testing or treatment.
- Services that provide HIV and TB services in a single facility should ensure that infection control measures are in place to prevent the spread of TB.
- TB and HIV programmes should report standard indicators of co-ordinated care so that the effectiveness of integration can be monitored.

### Recommendations for research

- More evidence is needed to compare the effectiveness of different integration models on the outcomes of TB and HIV treatment, in addition to evidence on the development of indicators to measure service coverage.
- Cost-effectiveness analysis of different models of integration of TB and HIV services is needed to inform policy decisions.
- Little research has been done on the perspectives of service providers and patients about models of integrated services. Better knowledge of this may help to identify and remove barriers to testing and treatment.

## Credits

This brief was written by Annabelle South, Helena Legido-Quigley, Palwasha Khan, Catherine Montgomery, Ade Fakoya and Alison Grant.

funded by:

**DFID** Department for International Development

This document is an output from a project funded by DFID for the benefit of developing countries. The views expressed are not necessarily those of DFID.

## Recommended Readings

Helena Legido-Quigley, Catherine M. Montgomery, Palwasha Khan, Ade Fakoya, Haileyesus Getahun, Alison D. Grant, 2010: Integrating tuberculosis and HIV services in low- and middle-income countries: a systematic review. Background paper for the First Global Symposium on Health Systems Research, 16-19 November 2010, Montreux, Switzerland. Executive summary: [http://www.hsr-symposium.org/images/stories/6tuberculosis\\_hiv\\_services.pdf](http://www.hsr-symposium.org/images/stories/6tuberculosis_hiv_services.pdf)

For full report, [email info@evidence4action.org](mailto:info@evidence4action.org)

WHO, 2004: Interim policy on collaborative TB/HIV activities <http://www.who.int/hiv/pub/tb/tbhiv/en/index.html>

WHO, 2009: WHO policy on TB infection control in health-care facilities, congregate settings and households [http://whqlibdoc.who.int/publications/2009/9789241598323\\_eng.pdf](http://whqlibdoc.who.int/publications/2009/9789241598323_eng.pdf)



### About Evidence for Action

Evidence for Action is an international research consortium with partners in India, Malawi, Uganda, UK and Zambia, examining issues surrounding HIV treatment and care systems.

The research is organised in four key themes:

1. What “package” of HIV treatment and care services should be provided in different settings?
2. What delivery systems should be used in different contexts?
3. How best should HIV treatment and care be integrated into existing health and social systems?
4. How can new knowledge related to the first three questions be rapidly translated into improved policy and programming?

### Partners:

International HIV/AIDS Alliance, UK  
Lighthouse Trust, Malawi

London School of Hygiene and Tropical Medicine, UK

Medical Research Council Uganda Research Unit on AIDS, Uganda

Medical Research Council Clinical Trials Unit / University College London, UK

National AIDS Research Institute, India

ZAMBART, Zambia

[www.evidence4action.org](http://www.evidence4action.org)

[info@evidence4action.org](mailto:info@evidence4action.org)