

# HATIP

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# Can integration of HIV with other health services strengthen the health response?

By Theo Smart

**This edition of HATIP looks at the question of integration between HIV services and other types of service within the health system. Integration has become a buzz-word in the HIV field over the past few years, but what do we mean by integration, who does it benefit, and where should the integration take place?**

"Integration has become a very important word lately," said Professor Wafaa El-Sadr, Director of the International Center for AIDS Care and Treatment Program (ICAP) at Columbia University. "[But we need] to think very carefully about what do we mean by integration; and at what level are we seeking integration? Clearly from the patient's perspective, at the point of service delivery or the receipt of services – integration makes sense in terms of getting what they need in one spot and also from one provider. I think on the other hand it might behave us to think carefully about also: What are we integrating what into?"

Prof. El-Sadr was speaking at IAS 2011 in Rome as a panellist during a symposium that looked at the impact of the economic crisis on the HIV response, described the evolving relationship between HIV programmes and the general health system – and asked whether 'integration' (and decentralisation) could help sustain and increase the impact of HIV programmes.

But as Prof. El-Sadr suggested, it is important to first define exactly what is meant by integration, because it is a rather nebulous term that people use to mean different things. For instance, in the literature, the term integrated care often refers to the organisation of a variety of service providers, laboratories and pharmacies based upon for economic benefits (such as managed care organisations in the United States), or it may refer to the integration of service delivery.<sup>1</sup>

In the HIV field, however, talk of integration can sometimes set off alarm bells among AIDS activists and HIV programme people. This is because 'integrated care' is sometimes a synonym for horizontal programmes (general health services) as opposed to vertical programmes (such as the national TB programme, the HIV programme, etc). In the damaging debates about whether the AIDS response has received 'too much funding and attention' at the expense of weak general health systems, vertical programmes were portrayed as being almost 'parallel health systems' that are inherently inefficient and which warp health system priorities.

Some parallel health system components, such as procurement and data management were sometimes established, particularly if the corresponding system in the general health service wasn't up to the demands being placed on the HIV programme to demonstrate rapid results.

But, "In practice the dichotomy between vertical and horizontal is not rigid and the extent of verticality or integration varies between programmes," Atun et al. wrote last year in a paper on integrating targeted interventions into health systems.<sup>2</sup>

The authors found that integration occurs over multiple levels in the health system and in relation to different health system

functions. There are very good reasons why some functions for one programme were separate, and why some targeted (as opposed to general) service platforms may be needed.

At the same time, there may be opportunities for integration created when there are demonstrable synergies and benefits between the HIV and other programmes (and these may evolve over time). For instance, integration at the service delivery level may provide more convenient services for the patient, or may produce some other benefit, such as expanding the reach and uptake of a service – or, quite simply, saving money by using the same infrastructure or resources for more than one purpose.

Service delivery integration can happen to varying degrees:

- Integrating an activity from one service into other service, such as providing intensified TB case finding or screening for sexually transmitted infections at an HIV counselling and testing unit; or
- Integrating most or all of one programme's core services into another programme's service delivery platform while both manage the same patient, such as introducing HIV screening, and care including ART for co-infected patients at TB clinics, or offering methadone-assisted therapy and other support services for people who use drugs into HIV or TB clinics, or providing screening and care for a co-infection or non-communicable disease (e.g. diabetes) at an HIV clinic.
- The process of integration also occurs whenever HIV services are being decentralised into general or primary healthcare facilities – which will then be offering more 'comprehensive care' – but an upcoming issue of HATIP will review some of the recent conference reports and findings on the benefits and dangers inherent in decentralisation.

When separate programmes integrate the delivery of services, other key health service functions – governance, financing, planning, procurement, monitoring and evaluation, and demand generation – may be involved, and may require joint co-ordination or sometimes, full integration. In certain cases, when the client overlap is particularly substantial, it has been suggested (and hotly debated) that entire programmes should perhaps become integrated from top down. A case in point is whether HIV and TB integration, which is increasingly being held up as the model for service integration, should go further in countries where there is a significant burden of co-infection.

"For example, up to 80% of the TB patients in Swaziland are also living with HIV. In Swaziland, there is an HIV programme, as well as a TB programme at the national level, which goes into the different levels of administrative levels.

"So is it really worth having separate programmes, or would it be better [more efficient] to merge the two programmes?" asked another panellist at the symposium, Dr Haileyesus Getahun of the World Health Organization's STOP TB department. "But having said that I think it has to be really well thought out – the debate has to start – and evidence has to be generated. And with the increasing threat of multidrug-resistant TB, we'd also have to be very careful that the priority to manage MDR-TB doesn't shift."

Since programmes and priorities evolve, it may be important, from time to time, for health systems and HIV programmes to revisit whether there might be synergies gained from more integration – particularly when new tools become available or when the funding environment has changed.

## Threats and opportunities in the evolving economic environment

There is a pressing need to look for such synergies because the current economic crisis (and the change in political will) has clearly threatened sustainability of donor funding and support for HIV programmes.

Speakers and panellists at conference symposia on integration explored whether there might be new opportunities created by the push to strengthen health system and programmes, particularly to reach Millennium Development Goals for health (MDGs).

Robert Greener, a senior economics advisor at UNAIDS, started the discussion by giving projections on the resource gap for the AIDS response and how the economic crisis and outlook might affect it.

“The financing situation is different in different countries, depending on the income level and the disease burden of AIDS,” he said (see table). Most HIV is in low-income countries, though some of the high middle-income countries have a high burden of HIV as well. Generally, however, it was the higher prevalence countries that were most affected by the economic downturn.

### Countries with high or low HIV burden of HIV in relation with income

Government Revenue per capita	<1% HIV Prevalence	≥1% HIV Prevalence	Global % of PLHIV
Upper-middle income >\$1150	Lower prevalence; 38 countries (Russia, Brazil, Mexico); 9% of PLHIV	Higher prevalence; 15 countries (South Africa, Botswana, Ukraine); 21% of PLHIV	30%
Lower-middle income <\$1150	Lower prevalence; 30 countries (China, Indonesia, Viet Nam); 3% of PLHIV	Higher prevalence; 9 countries (Thailand, Lesotho, Swaziland); 4% PLHIV	7%
Low income; <\$250	Lower prevalence; 15 countries (India, Myanmar, Pakistan); 11% of PLHIV	Higher prevalence; 27 countries (Nigeria, Kenya, Mozambique); 52% of PLHIV	63%
	23%	77%	% of PLHIV

Greener presented new estimates from the UNAIDS Investment Framework, showing that global resource needs are set to rise from about \$16bn in 2010 to \$22bn in 2015, and should fall thereafter. About half of the need will be in the low-income countries, while almost one third of the need will be in the upper-middle income countries because of higher unit costs.

Meeting these needs will require an increased commitment from the governments of low- and middle-income countries as well as from international donors. Rather optimistically, Greener said that the economies of the low- and middle-income countries are expected to resume strong growth this year – and that this should increase government revenues that can be invested in the HIV response.

“However, a greater increase can be obtained from an improved allocation to health in general and HIV in particular,” he said. This is

because the total investment in the HIV response tends to be much greater than the sums spent by poorer countries on their health systems, and so has been almost entirely donor dependent. Domestically, the level of HIV investment as a proportion of domestic health investment is consistently less than the HIV disease burden as a proportion of the total health burden.

“HIV does not get a fair share in national budgets,” Greener said.

In the best-case scenario – if countries abided by the Abuja Declaration and contributed at least 15% of the government’s revenue to the health budget, and if the domestic allocation for the HIV response is in line with the disease burden, the domestic public allocations could potentially double by 2017 and continue to increase thereafter. This would have the most impact in the middle-income countries and the need for external resources should decline in those countries.

The most rapid growth in domestic financing could be in low-income countries, but it won’t come close to meeting their total resource need and they will continue to need substantial external assistance.

During the discussion session, Dr Getahun noted that there is also a \$24bn resource gap needed to implement the Global Plan to Stop TB 2011 to 2015. Most of the funding for TB control programmes has come from domestic sources – partly because the interventions for TB were cheap – and not lifelong (lasting around six months). But this is changing with the roll out of new tools, such as the GeneXpert test for drug resistance, and the urgent need to contain the MDR-TB epidemic – which costs much more to diagnose, treat and manage.

Something else that needs to be considered is whether failure to allocate funds today could result in much greater healthcare expenses tomorrow – the current burden of disease cannot be the only consideration when allocating healthcare resources. MDR-TB is a case in point. In a growing number of settings, MDR-TB must receive more than its fair share – as reflected by burden of disease – in the national TB programme budget, for the very simple reason that failure to mount an adequately aggressive response today could result in MDR-TB (or worse, extensively drug resistant-TB) spreading out of control. This consideration holds for other infectious diseases such as HIV as well.

But the fact remains that HIV is not even getting its ‘fair share’ in national health allocations – and that most countries are not eager to increase health expenditures during an economic crisis.

“There is great pressure for governments, especially in Africa, to increase their funding for health in line with the Abuja Declaration of 2001,” said another speaker at the symposia, Dr Velephi Okello, who is the National Co-ordinator for the HIV Care and Treatment Programme in Swaziland. However, she noted that very few have made these commitments. In fact, in March of this year (ten years after the declaration), only two countries had met the 15% commitment: Rwanda and South Africa.<sup>3</sup> Meanwhile, it was reported that seven African countries have actually reduced their national health expenditures since 2001, while twelve others have neither recorded a rise nor decline in government revenues applied to health.

Other possible ways to meet the resource gap, Greener said, would be to utilise innovative financing mechanisms at the global and country level. Zimbabwe has implemented a 3% AIDS levy on salaries, while other countries have implemented or are considering taxes on tobacco and alcohol, sugary drinks and foods high in salt or trans-saturated fats, and national health insurance. Other innovations include forms of indirect taxation (e.g., on international

airline tickets, mobile phone usage — this is being done in Gabon — and exchange rate transactions); front-loading mechanisms, (such as the international financing facility), advance market commitments, voluntary solidarity levies and philanthropic foundations. Greener suggested that expanding domestic philanthropy could have an important role in some countries.

Aside from getting more resources, there are a couple of other options to help close the expected resource gap. One, Greener said, “is to break the upward trajectory of costs through the more efficient utilisation of resources,” including simplifying treatment regimens and delivery. This may be achievable through decentralisation, and switching to new treatment paradigms (Treatment 2.0) that rely more heavily on less expensive community-delivered treatment and care services.

The remaining option is “to integrate HIV programmes with other areas of the health system,” he said.

### Areas of synergy for potential integration and collaboration

The opportunities and benefits relating to integration may be greater now than in the recent past, when many — including some working in Ministries of Health — were arguing that the HIV response was having a negative impact on health systems. According to Dr Leonard Okello, there is a now growing appreciation of what HIV is bringing to the table, and the recognition that extending the reach of high-quality HIV care and ART may be dependent upon strengthening and increased integration with other health services — particularly primary health care.

“The experience we’ve had in lower middle income countries is that there are areas of synergy between HIV programmes and health systems in each of what the WHO has described as the six building blocks of the health systems: in governance, health care financing, the health workforce, medical products and technologies, health information and the delivery of services,” she said. “HIV programmes and health systems share common goals, which include improving health outcomes by addressing issues of equity and ensuring that in accessing health services, the population is protected from catastrophic expenditure.”

HIV programmes have demonstrated a number of ways in which health systems in resource-limited settings could improve the delivery of services. Approaches that have worked for HIV programmes include:

- The decentralisation of services
- The chronic care model
- Integration of services
- Community involvement
- Patient-centred health care
- Quality improvement.

Although HIV programmes started out being more verticalised — with services provided at specialised facilities, delivered by doctors and specialised personnel — Dr Okello stressed the paradigm shift represented by the decentralisation of ART services, to bring services closer to people in remote areas at the primary healthcare level, delivered by nurses and other community cadres. Critically, the decentralisation of ART services has been a major impetus for a movement to renew, revitalise and re-engineer primary health care — and these efforts have a better chance of success by incorporating the lessons HIV programmes have learned in a number of other areas.

For instance, “The implementation of the HIV chronic care model has put the emphasis on long-term continuous patient care versus episodic acute care which has been the norm in most of our health facilities. Furthermore, this model of care has enabled different levels of integration of services for other co-morbidities that the patient presents with to the healthcare worker. Healthcare workers have now had enough practice in implementing chronic HIV care that a similar approach to the management of other chronic illnesses, such as non-communicable diseases (NCDs) is being tried in countries such as Ethiopia [see below],” she said.

Closer integration of HIV care with the care of NCDs should ultimately improve the care of those conditions when they occur in people living with HIV. At the same time, they could also give health systems additional incentive to work together with the HIV programme to introduce and support the platform for chronic care and strengthen the capacity to provide long-term care for both NCDs and HIV, particularly at the primary care level.

“The opportunities for us to use these platforms to expand into delivery of care for all diseases, is right in front of us as well,” said Dr Eric Goosby, United States Global AIDS Coordinator during the panel discussion at the symposia. “Those opportunities must be taken; we must take advantage of it — not at the expense of the disease that we are focused on — but to allow us to take care of the other diseases that are present in the patient populations we are already interfaced with.”

It may behove programmes to investigate what services the clients of the health facility want (though demand generation activities may be needed to better inform communities of the availability of health services they are likely to need). But again, HIV programmes have shown health systems how to increase treatment literacy and community engagement.

“HIV has also broken down the barriers between healthcare facilities and communities [which] are now empowered in prevention, treatment, care and support, so that they have become an important part of the healthcare system. HIV programmes have involved communities in the delivery of services in facilities and PLHIV have been provided with skills for self-management of their conditions and to support others in their community,” said Dr Okello. One of the components of primary health care is the involvement and participation of the community — and the unparalleled engagement of the community, particularly people living with HIV, in the HIV response may be critical to the success of the efforts to renew primary health care.

The HIV response has also provided opportunities to demonstrate the use of the quality improvement process (Plan, Do, Study, Act) to empower healthcare workers to find their own solutions and use their own data to evaluate their effectiveness. Quality improvement has helped programmes achieve previously difficult-to-implement interventions and improve programme performance. Health systems are now starting to use the same process in other parts of the health system to improve indicators for other conditions.

The HIV response has also led to changes in government attitudes toward health in many resource-limited countries. HIV programmes have been called upon to account for their performance reaching targets — and this has led to increased awareness and pressure on governments and Ministries of Health to be held accountable for reaching the health-related MDG-goals, “as evidenced by the renewed commitment of governments at the recent 2010 NY High Level Summit on MDGs,” said Dr Okello, who added that it is hoped that governments show a similar level of

commitment at the upcoming High Level Summit on Non-Communicable Diseases in September.

Although not mentioned by Dr Okello, it should also be noted that the HIV response was only able to achieve many of its targets by bringing down the costs of diagnosis, care and treatment. In part, this was done by using flexibilities in the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), including compulsory licensing and parallel importation, to promote access to affordable medicines in resource-limited settings. The health response will remain lopsided, with inexpensive care for HIV and expensive care for everything else, unless governments in these countries become more aggressive in the application of the TRIPS flexibilities to access affordable essential medicines for other health indications — and resist efforts to get them to give away these intellectual property rights in exchange for free trade agreements with the United States and/or European Union.

In an environment where the health system is held accountable for improving outcomes, increasing the local government's allocation for health is in the best interest of the entire health system, including the HIV programme. In this economic crisis, it can be to everyone's benefit to work together on innovative funding mechanisms for health — such as good national health insurance plans. Also, now that health system strengthening has received more funding from outside funders since 2008 — there may be areas where HIV programmes and health systems can pool their resources to achieve some common goals.

Areas of clear synergy include increasing human resources for health — in some countries, HIV funding has been used to strengthen healthcare educational institutions and training, including the development of strategies to better retain and manage those human resources. At the same time, HIV education clearly needs to be made part of the standard health education curriculum.

Health systems and HIV programmes can also benefit from the development of better patient management information systems. These were often piloted by HIV programmes, but are now being explored for use in overall patient management within the medical system.

Finally, the HIV response has improved the laboratory infrastructure in some countries. But a more important development may be the recent shift to developing simpler diagnostics, including point-of-care (POC) technologies that can be implemented by non-specialised healthcare staff in more remote clinics (such as POC CD4 and glucometers) — and which may play a key role in improving the services at primary healthcare clinics.

"In many countries, this is beginning to change the understanding of the essential healthcare package at the primary healthcare facilities," said Dr Okello. "In many countries, there is a revision of this, because the scope of services provided at the primary healthcare clinics has expanded in terms of screening and provision of treatment."

If indeed, there is a growing recognition of the potential synergies on both sides of the health systems 'versus' HIV programmes debate, there may be more opportunities to increase programme efficiencies through strategic integration in different services and areas of the health response — without compromising quality of care for people living with HIV.

### When to consider service integration?

If any one person could be given more credit for building bridges between health systems and the HIV response, it would be Prof. El-Sadr. During the discussion session, she cited the "tremendous

transformation that the investment in HIV" has made in lives and health systems — and the many unique innovations that had come from it — and asked the audience whether we can use what we've learned to accomplish more — not just for HIV indicators, but for health in general.

"At this moment in time in the history of the epidemic, we are at the crossroads. We have tremendous opportunities not just to think about these transformations but also think very deliberately about what we are going to do with what we've learned and how can we look forward to learn more and also to achieve more — not just in HIV — and we have a long way to go in terms of reaching our goals, in terms of prevention and management of HIV — but also in achieving global goals, of reaching the Millennium Development Goals, and now the NCD goals and so on."

"We need to think very carefully of where there are synergies in terms of these investments," she added, listing a few key areas:

- Prevention of parent-to-child transmission (PPTCT) and enhancement of antenatal care to reduce maternal mortality and infant and child mortality
- TB and HIV
- Sexual and reproductive health and HIV
- Looking/planning ahead: Applying HIV's lessons to confront non-communicable diseases and improve maternal child health services.

"People have commented on the many tools and many resources that HIV has brought about. But we have an opportunity now to see how would those work — can these tools be adapted to confront NCDs? Can these tools be adapted to enhance maternal and child health? Peer Educators have been very important for the HIV programmes — can they work in achieving optimal outcomes for diabetics; can they achieve optimal outcomes for maternal health and so on," said Prof. El-Sadr, who went on to suggest that there are "massive opportunities" to adapt innovations in the delivery of care from the HIV field to serve other objectives in the health system.

But specific areas most ripe for integration, or collaboration, will depend largely upon the country.

"One size does not fit all," said Dr Okello, since synergies vary from country to country. "Each country has to identify the areas where health systems and HIV programmes can work together to improve health-related outcomes," she said, "These should be incorporated into each country's strategic frameworks to strengthen both health systems and the HIV response, and donors and development partners should adhere to the Paris Declaration principles of aligning aid to national priorities and systems."

"This choice has an ethical component to it, and those who are best positioned to make those decisions are those who are in the country and in the country leadership," said Dr Goosby. However, he stressed that by country leadership, he did not mean just the government, but also civil society.

"In civil society those who are using the services are in the best position to feed back to allocators/appropriators who are prioritising a large unmet need to make the correct decision [regarding resource allocation]," Dr Goosby said, adding that the success of the US government's Global Health Initiative, will "require that feedback loop to be intact and empowerment of the community to keep the dialogue honest."

An example of this was provided by the final panelist, Svetlana Moroz, of All-Ukrainian Network of People Living with HIV, who stressed the disconnect between what the government in her country claims it does *and what it is in fact doing*.

“Despite the fact that the Ukrainian government has declared the support of the UNAIDS programme on universal access, they have made no provision in the state budget to fund it,” she said. “At the moment just one quarter of those who are in need of ARV treatment in the Ukraine receive it. The government of Ukraine has used the economic crisis as an excuse for its lack of political will.”

Structural problems in the Ukraine also limit access to services, and civil society in Ukraine has specifically demanded the scale-up of integrated services for HIV, TB and substitution therapy services for people using drugs. However, according to Moroz, the government in Ukraine, as well as other governments in the region, continue to waste money on narcological services that “are consuming large amounts of money while violating patient’s human rights but have minimal impact for public health and people’s lives.” In contrast, “evidence-based, human rights-based, gender-sensitive integrated services not only save money but are a response to patients’ needs, in particular confidentiality; and make it possible to receive several services in one place.”

Similar pressure must be applied to governments in Africa to adequately fund their health systems and the HIV/AIDS and TB response.

“But our countries in turn, should demonstrate their commitment towards increasing funding, by first fulfilling, or aiming towards fulfilling the Abuja declaration using available in-country resources and opportunities that exist to boost the health budgets,” said Dr Okello, stressing that governments must be held accountable for improving health outcomes in their countries. “Despite the economic crisis, the population still expects us to continue to provide health as a basic human right. So we have to be innovative, think outside the box and ensure that future generations do not blame us for failing them,” she concluded.

### The importance of operational research into the effects of integration and decentralisation

A third speaker at the symposia, Dr Fred Oboko, a political scientist from the French Research Institute for Development, in Marseille, France reported on a study evaluating the effects of ART decentralisation in Cameroon (which will be discussed more fully in an upcoming HATIP on the risks and benefits of decentralisation).

The clear subtext of the presentation was that new strategies to extend the reach of HIV services – whether integration or decentralisation – need to be evaluated to be certain that quality of care is not compromised, that other programme goals, such as prevention, are ultimately achieved – and that the approach is cost effective.

A number of the discussion panellists picked up on this theme.

“Clearly integration is a very popular concept but it is not a panacea, and we have to be careful. There’s a train that’s moving towards integration. *We have to very carefully think and plan ahead and develop the indicators also to measure the outcomes in order to see whether we are losing some benefits by integration or gaining some benefits from integration,*” said Dr El-Sadr.

Dr Goosby emphasised, “that the operational research agenda be explicitly defined and strategic in each country situation. And I think that operational research will give us the means through which we can make those decisions in an informed way and not in a random way. Having the ability to stop infections; having the ability to identify and retain the patient in care for the duration of their life is a system of care that needs to be robust on day one, and robust, still, thirty years later”

However, as noted in the *HIV and TB in Practice* section in this edition, it has been challenging even to demonstrate the true extent of improvement in health outcomes from HIV and TB integration. As Dr Getahun pointed out, several recent systematic reviews had failed to find evidence of the benefits of integration in the peer-reviewed literature. One study found no evidence to support the integration of PMTCT into other health system areas, while another pointed out that HIV integration into sexual health and reproductive services was always productive. It should be noted though that these systematic reviews cannot possibly have access to all the operational findings that have been generated by rapidly scaled up programmes. In the last ten years of the HIV response, interventions have evolved quickly, and implementation experiences have been shared at conferences, and best practices adopted, long before publication in the peer-reviewed literature.

Nevertheless, while Cochrane Reviews may be running behind the field, it remains important to generate, and document, the evidence in support of integration, and to identify if there are key factors that may make a difference between the success or failure of integrated interventions.

“There is a huge research agenda that is wide open; there are hundreds of questions that are actually very important to answer today. Some of these questions fall under the terms of implementation science or operations research. But I think it will behove many people who are involved across the many disciplines, i.e. economists, health systems experts, clinician implementers and many others to sit together and really come across to bridge those divides and try to sync up a common research agenda that will advance not only the learning and the science and technology but can also advance the gains that we are all trying to make in terms of population health,” concluded Dr El-Sadr.

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## Practical experiences of integration

By Theo Smart, Lance Sherriff

The train for integration has already left the station, judging from various presentations made during the 2011 International AIDS Society conference, as well as a large number of other posters on integration presented at the conference.

Areas of integration between HIV services and other health care needs already underway reflect a number of different approaches to integration, and include:

- Integration of malaria prevention and treatment with HIV testing in antenatal care
- Delivery of a basic care package for people with HIV that includes malaria prevention and safe water interventions.
- Delivery of a basic care package for people with HIV that addresses all the co-morbidities identified in the target population
- Leveraging of the HIV programme to improve diabetes care for the general population;

These studies demonstrated that integration is best tailored to local opportunities and needs. These projects are also generally a work in progress – and not every aspect always goes according to plan.

### Integrating HIV, family planning and malaria prevention and care

In post-conflict Northern Uganda, there is a high rate of maternal mortality 440/100,000 (2008 UNICEF), and there is a low uptake of many of the services that are critical to improving maternal health.<sup>1</sup> For example, the uptake of family planning services was around 18% in 2006, coverage with two doses of intermittent preventive treatment (IPT2) for malaria stood at only 33%, and the uptake of HIV testing was around 64% (2009 UNICEF).

“These services were generally offered separately and many opportunities to better serve eligible women get missed,” according to Dr Andrew Ocerro of JSI and the Northern Uganda Malaria AIDS TB Program, who described a study on the uptake of these services once they were integrated together and provided at antenatal clinics in Northern Uganda.

Two population-based surveys were conducted, one in 2008 (before integration) and the other in 2010, that included women who had delivered in the past two years. The sample size was 855 women in both surveys. The uptake of reproductive health services was examined and compared during the two survey periods.

In 2010, there was an increase in service uptake for each of the critical interventions. The percentage of women who tested for HIV during ANC increased significantly from 71% in 2008 to 88% in 2010; the percentage who received their results went up from 67% to 84%, while the percentage who disclosed their result went up from 62% to 81%.

There was also a significant increase in the uptake of malaria interventions. Ownership of at least one mosquito bed net rose from 56% in 2008 to 91% in 2010; the proportion of those who received at least two doses of intermittent preventive treatment (IPT) for malaria increased from 59% to 70%. Those who tested for HIV were slightly more likely to have received two or more doses of IPT2 (OR 1.62). Also, in 2010, 71% reported having slept under a mosquito bed net throughout their pregnancy, compared with 48% in 2008.

Although still low, 19% of all women interviewed reported using a modern method of family planning compared to 13% in 2008.

“We certainly learnt that there was an increase in service uptake in all the various areas - malaria, family planning, and HIV testing... and PMTCT services were more integrated. However they were challenged by the frequent stock-outs of PMTCT drugs that were being provided by the Ministry of Health,” said Dr Ocerro. In addition, “we thought there was still a missed opportunity by women not routinely attending the post-natal clinics.”

Among the policy implications, Dr Ocerro concluded that the provision of free insecticide treated bednets or the provision of malarial services at the ANC could act as an incentive to improve the uptake of antenatal services. He also noted that having community-based peer supporters who would help follow up and provided community sensitisation of women for the antenatal services was critical.

### Integrating HIV and TB and maternal care

“Intelligent use of data” is needed to select good targets for integration, according to one poster presentation, which suggested that HIV and TB services should be integrated into maternal care in

Nigeria because women are disproportionately less likely to be aware of HIV and TB than men.<sup>2</sup> The conclusion was based on data drawn from a 2008 Demographic and Health Survey collected through a 2-stage stratified random sample of 33,358 Nigerian women aged 15-49 years.

11.68% of Nigerian women had not heard of AIDS with 9 states (24%) accounting for over 50% of the total burden. 28.93% have not heard of tuberculosis (TB) with 11 states (29.7%) accounting for over 50% of the burden. 31.06% have not heard of AIDS and/or TB with 11 states (29.7%) accounting for over 50% of the burden. In all categories analysed, younger age, no education, rural residence, and poverty were found to be significant predictors of low knowledge about HIV.

However, between 29% and 39.7% of these women had accessed ANC care.

“This study shows, in the face of limited resources, significant achievements can be recorded by focusing efforts on ANC/Delivery rather than FP services,” wrote the study’s author Osondu Ogbuaji.

### Integrating basic care packages

Basic packages of preventive care (BCPs) can include a variety of interventions that target a variety of infections, chronic illnesses and other health risks.

After [several studies in Uganda](#) had previously shown benefits from the delivery of a basic package care and prevention package for people living with HIV, it became a major objective in the Ugandan National Strategic Plan, according to Simon Sensalire, of the Program for Accessible Health Communication and Education in Kampala, Uganda.<sup>3</sup>

Sensalire gave a presentation on the results of a cross-sectional study, evaluating the effects of integrating the basic care package into care and treatment services for people living with HIV in that country.

The basic care package included two long lasting treated mosquito bed nets (ITBN), a safe water system (*WaterGuard* solution), condoms and information education and communication (IEC) materials on how to prevent opportunistic infections (OIs) and HIV transmission.

Cotrimoxazole (CTX) was not included in the kit, but was distributed to the same population by the National AIDS Programme.

In addition to the BCP, trained health providers and peer educators provided multiple channels of communication on the prevention of opportunistic infections, family planning, palliative care, TB/HIV and nutrition during routine HIV primary care visits, to people living with HIV.

The cross-sectional survey recruited a nationally representative sample of 2,567 PLHIV at 50 sites in 2010. Findings on the use of the BCP products on the health of PLHIV and other behaviour indicators and how this was affected by the use of communications were compared with a baseline survey conducted in the same target population in 2004/5 (when they would have had to buy some of these components, like the insecticide-treated bed net, for themselves, or boil their water for drinking).

The behavioural indicators include the use of the kit, the consistent use of the condoms among those who are sexually active; sleeping under a treated mosquito bed net every night; treating water with *WaterGuard* solution; and daily uptake of CTX.

Compared to 2005, the survey found profound improvements in all of these indicators.

### Use of the basic care package

Behavioral Indicator	Baseline April 2005	Evaluation Jan 2010	significance
Takes CTX (Septrin) daily	69.3 (n=2567)	91.5 (n=2567)	P<0.001
Slept under ITBN last night	29.9 (n=944)	68.6 (n=1004)	P<0.001
Used a condom at last sex	55.3 (n=601)	71.8 (n=675)	P<0.001
Current water is treated with WaterGuard	0.05 (n=1007)	52.2 (n=1023)	P<0.001

Simple provision of the kits improved the behavioural indications, but uptake was significantly increased when combined with “increased exposure of the information about the BCP kits, specifically the peer education activities,” said Sensalire. Likewise, provision of the kit improved the perceptions among PLHIV that they could always find CTX and condoms, to around 90%. Although perceptions also improved regarding the availability of the insecticide treated bed-net, this was less universal (58.7%).

“This BCP kit is an essential component for PLHIV and should really be integrated into care and treatment services, especially in poor resource settings [as it] is associated with the uptake of these products for healthy living, but also positive prevention behaviour,” said Sensalire. “The involvement of peer educators, who are PLHIV themselves, backed up by IEC on the BCP kit was associated with improved uptake of these products, at the same time positive prevention behaviour. So this calls for the greater involvement of people living with HIV, in HIV programmes. Finally, the BCP is a valuable approach for promoting public private partnerships for HIV care and prevention programmes.”

### A basic care package incorporating IPT and screening for non-communicable diseases in Botswana

Of course, the basic care package can also refer to interventions that are more difficult to deliver in a kit, but which should nonetheless be provided for any person living with HIV. Once ART has been stably delivered, many of the health risks confronting people living on long term ART change, and according to a team from the Botswana-Baylor Children's Clinical Centre of Excellence (COE) in Gaborone, Botswana, there is a need to adapt and implement basic care packages in this setting as well.<sup>4</sup>

“Public policy on HIV in resource-limited settings has focused primarily on expanding access to antiretroviral therapy (ART), with less emphasis on preventive care for HIV-infected individuals. However, as life expectancy of HIV-infected patients improves due to ART and the importance of associated co-morbidities and chronic diseases increases, preventive care will become increasingly important,” the poster's authors wrote.

After a comprehensive regional literature search, an assessment of clinic-specific prevalence data of other chronic conditions in their patients, national guidelines, and an assessment of public-sector resources, the team adapted the existing general basic care package to recommend, providing the following for adults enrolled in family model care at the facility:

### Basic care package components: Botswana-Baylor Children's Clinical Centre of Excellence

- Clean water provision and water storage
- Isoniazid Prophylaxis (IPT)
- Contraceptive provision
- Screening and treatment for depression, cervical cancer, breast cancer, hypertension, hyperlipidaemia, diabetes, viral hepatitis, sexually transmitted infections
- Assessment of other risks including: domestic violence, road safety, smoking and alcohol abuse.

“This preventive care package addresses the comprehensive health needs of stable HIV-infected adults in a particular resource-limited setting in an evidence-based, systematic manner, while minimizing manpower and resource costs of development,” wrote the authors, who suggested the same process be utilized to develop similar guidelines in other resource-limited settings.

It should be noted that another poster from the same facility reported on excellent uptake, retention in care, and completion of treatment of IPT at their site— in contrast to the poor retention and completion rates reported for the national programme in Botswana — which perhaps illustrates that the Botswana-Baylor Children's Clinical Centre of Excellence is indeed just that — and somewhat better resourced than other public sector facilities. Other presentations on TB and HIV integration are described in the *HIV and TB in Practice* section of this edition.

Leveraging HIV programmes to support diabetes services through integrated care, the team in Botswana concluded that their basic care package should include screening and management for non-communicable diseases (NCDs), such as diabetes and hypertension, because there was a significant risk of these chronic illnesses in their population. Note, that this may be the mark of a more mature ART programme. In early ART programmes, where ART is initiated in late stage disease, other complications such as TB and opportunistic infections are initially more common].

### Adoption of HIV care models to improve diabetes care

Another study, presented by Dr Miriam Rabkin of ICAP and Columbia University looked at the connection between HIV and NCDs from another angle — what can HIV platforms do to improve the health of people living without HIV but with other chronic illness, in this case, diabetes?<sup>5</sup>

“This work focused on... observations that in many resource-limited countries, the HIV scale up has created the first large scale chronic disease programmes; that a lot of the effort that's put into implementation of HIV services actually goes to creation of continuity care; and that in many countries there are no other chronic disease programmes,” said Dr Rabkin, who pointed out that in these same countries, the burden of other chronic diseases — NCDs such as diabetes — is high and growing rapidly.

Notably, in Ethiopia, the prevalence of diabetes is estimated to be 2.0% compared to an HIV prevalence of about 2.1%. Ethiopia's HIV programme receives more than US \$1 billion in donor support and over 246,000 people have been put onto ART. But there is no diabetes programme, and little donor funding to support such programmes — in fact, in 2007, only 2.3% of the official development assistance went to all NCDs combined. Therefore, access to prevention, care and treatment services for diabetes remain out of reach for most people.

So the ICAP team conducted a rapid proof-of-concept study to explore the feasibility of adapting HIV-specific resources that were developed for an HIV clinic for use in a diabetes programme at Adama Hospital, a large urban hospital in Ethiopia. Following a baseline assessment, key strategies, systems and tools originally developed for the Adama HIV clinic, and so had already been tested, validated, translated, adopted and in use in this hospital, were quickly adapted and introduced into the outpatient department (OPD) where diabetic patients were being treated.

"It's important to note that we didn't introduce any new or experimental services into this study," said Dr 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:

### 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

To see what sort of impact this would have, a chart review, knowledge, attitude and practice survey with the clinicians and focus groups were conducted with patients at baseline; then a follow up assessment was performed after six months.

### Results

About 260 adult diabetic patients were actively engaged in care in the last 3 months. The median age was 47; about half were men; 57% were on insulin and they were a relatively sick group – 21% of them had been hospitalised for diabetes; 20% of them had been diagnosed with peripheral neuropathy; 8% had visual impairment which was attributed to diabetes but only 2% had had amputations.

At baseline, there were no algorithms or standard operating protocols in use to support diabetes care. Almost half of clinicians had completed their training over 10 years ago, and only 16% had received further training in diabetes management since graduating.

The team had identified a limited number of monitoring and evaluation indicators to track the performance of quality diabetes management. Key clinical services were rarely documented at baseline, but rose sharply after the intervention package was implemented.

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%

"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."

She reiterated that this was done with no additional staff, but there was an expansion of services to include some things that hadn't been there before including expanded peer educator services and point-of-service diabetes screening for patient's family members.

Dr Rabkin pointed out that this was a proof-of-concept study – it was performed at a hospital, at the regional healthcare level, and not at the level of primary healthcare, which would be the point of care for most people.

"I think it does suggest some different approaches/different ways to think about integration, even if it's not at the point of service yet. It's a provocative idea that we're going to follow up on," she concluded.

### Practical take home messages

During the poster discussion session on integration, presenters were asked what advice they had to offer to those attempting to do this kind of cross-discipline and cross-systems integration.

"My advice would be to evaluate and see what is working, and be willing to keep changing direction, as you find things that are working and aren't working – especially when you're out there in the community," said Dr Sue Ann Meehan, who presented a study on integrating TB screening at HIV counselling and testing facilities.

"I agree, the most important thing is design something which is tailored to your situation," said Dr Sabine Hermans, who presented on a one stop clinic for TB and HIV services. She added that engaging everyone who was going to work in their clinic was very important "Trying to design something and make other people implement it, wouldn't work. It is the whole team effort, which made it work, and which is continuously adapting it."

Simon Sensalire stressed the importance of managing “opportunistic infections, where they are not controlled — and provide opportunities for people living with HIV by way of providing for these interfaces, so that you really make treatment viable,” he said.

“I would say to be extremely precise about what questions you are asking regarding the integration of services: What is the purpose of integrating these services? Because integration means different things to different people and there’s a lot of confusion about what we’re still seeking to integrate with what, and why?” said Dr Rabkin. “So some of these studies are designed for the purpose of improving the quality of care, for people living with HIV. In others we have heard about at this conference — the questions that are being asked about integration include questions of efficiency; they include questions of cost; and they also include questions about the impact of HIV scale-up on health systems.

“We need to shift our mindset,” said Dr Ocero. “If we want to provide an integrated service and improve the quality of care for our patients, then we have to look at it from a broader sense. Therefore the health system has to also think of integration — those that coordinate the health system also have to think in a more integrated manner.”

Dr Ocero also pointed out that many of these presentation concerned larger facilities, but that at smaller facilities where services are being decentralised, the same health workers are already providing multiple integrated services.

One audience member asked how to avoid healthcare workers feeling as though integration was just adding another task to their already heavy burden of work — and how to give them more incentive to take on the new task.

“In our clinic, we operate as more of a team — than the rest of the HIV clinic. So people really like to work in our clinic because they get more support, there’s also more opportunities to be supervised and also to grow career options,” said Dr Hermans.

Mr Sensalire agreed that in his setting, the people who operate at the community level are not service specialists in one area, but are trained in multiple disciplines. “They go out into the community and mobilize and sustain the skills that the community needs.”

Dr Rabkin noted that these skills have to evolve in HIV caregivers depending upon the changing needs of their patients.

“We’ve seen this very issue amongst HIV caretakers in wealthy countries, as we evolve from being sort of ART delivery people, to people who are really spending a lot of time speaking about hyperlipidaemia and diabetes and cardiovascular disease, and so I think some of the lessons can be extrapolated and there’s a whole lot to do with multidisciplinary teams and task shifting,” she said.

Dr Ocero stressed the importance of the community in the delivery of integrated services. “Integrating our services into the community is really synonymous with trying to enhance the continuum of care. And with NUMAT, and many others, we show that we first ‘attempt’ to work with PLHIV teams — that has been something that we have been trying to work upon. Previously we were working with ‘Expert Clients’ — people who are self-motivated, who were trained and given basic training and became people who could support the health workers; go out into the communities, enhance the care and retention — you know, basic psychosocial support — and navigate the patients to other forms of care that they require. And in this sense, integration was still continuing in that direction.”

Finally, a programme director in the audience said that with all the pressure to ‘integrate’ “we have to know the right question — what are we asking? Because integration can increase efficiency

but decrease quality of care,” she said. She suggested that it might be worthwhile to consider if the integration of certain services is AFASS — the old acronym used for determining whether or not the provision of formula food was advisable in a setting based upon if it was acceptable, feasible, affordable, sustainable and safe in a particular setting.

Dr Rabkin agreed that that was an interesting approach. She pointed out that most of the examples at the conference involved the integration of clinical services, but there could also be integration around each of those six health systems building blocks, around procurement systems financing, governance and supervision.

“There are opportunities for integration, and there are also risk with integration, and I think a lot of these questions have not necessarily been answered. Its worth considering whether what you integrate is connected to your output. What’s your rationale? Are you trying to be cheaper — which I think a lot of the pressure towards integration is about efficiency. Okay, lets prove it’s more efficient. It sounds like it should be but I don’t think there’s the data necessarily in all of our contexts. Is it better? It might be better; it seems better. I would prefer the patient to go to a one-stop shop rather than having to go to all different service points. But then again, there is a research agenda needed around integration.”

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## TB and HIV in Practice

By Theo Smart

### Successes and challenges in TB/HIV integration: reports from IAS 2011

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With additional reporting by Lance Sherriff.

In 2004, WHO’s STOP TB Department and the Department of HIV/AIDS jointly released the *Policy on Collaborative TB/HIV activities*. The goal of the policy was to direct national tuberculosis and HIV programmes to step out of their separate silos and begin to work more closely together to tackle the co-epidemic of HIV/TB.

The impetus for the policy was the realisation that TB control would never be achieved in most high-burden countries without tackling the HIV epidemic, and that unless diagnosis and treatment improved, TB would continue to be the major cause of death in people with HIV.

The policy recommended a framework for programme collaboration, and described the key interventions that each programme needed to include in order to make certain that patients received essential services to prevent, more rapidly detect and treat the other disease.

These activities included:

- Screening TB patients for HIV, and
- Making certain that TB patients who are HIV positive are providing with HIV care, such as cotrimoxazole and support, and timely access to antiretroviral therapy (ART);
- Routinely screening all HIV patients for TB, provide isoniazid preventive therapy to those without symptoms of TB, and adopt good TB infection control policies to reduce TB transmission in the health facility. (These activities were subsequently rebranded as the Three I's for HIV/TB).

Adoption of HIV and TB collaborative activities had been slow, initially restricted to pilot studies and vanguard international NGO-supported programmes. After the policy was released, Rwanda (from the HIV programme side) and Kenya (from the NTP side) reported successful implementation of some TB/HIV activities on a national scale (see [HATIP 88](#)). Over time more countries would follow suit, although the alignment of national policies with WHO guidance hasn't always translated into performance on the ground.

### What are the outcomes of service integration?

But many operational questions persist for programmes regarding how to prioritise activities in a time of tight funding. Programmes are reaching different conclusions about how TB/HIV services should be structured and provided, and what support services are really needed. There are also differences in views between countries regarding the optimal time to initiate treatment for each disease in order to optimise survival while minimising the risk of immune reconstitution inflammatory syndrome (IRIS).

Certain details can make a big difference to how effective a service proves to be. For instance, it is easy to lose patients in the reference process, so some implementers began engaging expert patients to provide accompanied referrals between HIV and TB programmes, which has proven to be highly effective in some settings. In the absence of such mechanisms, many clinics simply gave coinfecting clients referral letters sending them to access the services they couldn't provide on-site. All too often, programmes discovered that their patients were not completing their referrals even when the TB and HIV clinics were right around the corner from each other (see [HATIP 114](#)).

The integration of TB/HIV services on-site is one alternative. Many patients prefer to receive integrated care for all their health needs at the same site — at a one-stop shop — because it is more convenient, less expensive and less time-consuming. In fact, in some countries, key HIV/TB-affected populations with individual medical needs, such as people who inject drugs, may have great difficulty accessing the care they need from rigidly disease-specific programmes, and are instead pushing for nationwide scale-up of integrated care sites, where people can get TB treatment, ART, substitution therapy and other basic health services at the same time (see [HATIP 159](#)).

But there is no guarantee that co-located services (or the patient support systems provided) will always be of the same quality or as effective compared to what could have been delivered through referral to the other programme — particularly if the effort is under-resourced.

Additionally, as ART programmes become decentralised to smaller, less well-resourced facilities, these sites are unlikely to be able to offer the full range of services available at larger facilities. Laboratory capacity in particular will be harder to access at more remote sites.

One poster presentation at the IAS conference described a structured facility survey that was administered in 663 health facilities providing HIV care and treatment to over 900,000 patients across nine sub-Saharan African countries. Each facility was asked about the availability and types of TB diagnostic services they could provide access to, and their responses were assessed in relation to the type of facility (primary, secondary, tertiary, private), setting, years providing HIV care and their patient loads. Not surprisingly, there was better access to more sophisticated TB diagnostic capability at big public hospitals.

"As HIV care decentralizes, continued scale-up of laboratory and radiology services in lower levels of the health care system is essential," the study's authors wrote. But it may be difficult to achieve this before more widespread availability of low-cost, reliable point of care diagnostics, that can be operated by non-laboratory technicians.

Consequently, the models of integration may need to be adapted to the service delivery level and local resources. At virtually every step of the process, data will have to be generated that can be used to determine whether the approach is effective.

This ongoing research and evaluation process is critical, according to Dr Haileyesus Getahun, one of the chief architects of the WHO's TB/HIV policy.

Although TB/HIV integration is increasingly being helped as a model for other service integration, "so far, it is unclear what the outcome of TB/HIV service integration has been. We know this or that model may increase the uptake of testing, for instance. But we don't really know how it has affected outcomes," he told an audience attending a panel discussion at the conference on integration and financing.

He noted that despite a great push to extend the reach of PMTCT by integrating it into other parts of the health system, a recent Cochrane review had concluded there is virtually no data to support the recommendation to integrate.<sup>1</sup>

### Progress towards integration

Data do now finally show that more programmes are providing integrated TB/HIV services. For instance, data from the WHO TB database show that there is more widespread adoption of TB/HIV integration in Africa, and particularly in the PEPFAR-supported countries.<sup>2</sup> The researchers analysed seven years of pooled country data to assess the proportion of TB patients who were tested for HIV and the proportion of estimated HIV-related TB cases receiving ART, and compared results in the WHO African Region, the rest of the world, PEPFAR (and non) supported countries in Africa.

Between 2003 and 2009, the proportion of TB patients tested for HIV increased from 4% to 58% in the African region, but from 5% to only 21% in the rest of the world. The proportion of all people living with HIV-related TB who began ART increased from 0.1% to 12.2% in Africa, compared with an increase from 3.2% to 6.8% in the rest of the world. Improvements were somewhat more

pronounced in the 19 PEPFAR countries, which account for around 90% of the TB burden.

Over the same period, HIV testing of TB patients increased from 4% to 61% in PEPFAR-supported countries, compared to an increase from 1% to 40% in non-supported countries; while the proportion of coinfecting people who received ART went from 0.1% to 13.1% in PEPFAR countries, and 0 to 2.7% in non-PEPFAR countries

“A person with HIV and TB, presenting to TB services in Africa, is now more likely to have been tested than in the rest of the world, especially in PEPFAR-supported countries – this reverses the situation in 2003,” the poster’s authors wrote.

But getting reliable programmatic data on health outcomes resulting from TB/HIV integration has proven extremely challenging for the Department, according to a study by Sculier et al., co-authored by Dr Getahun. While the study suggests the push for collaborative activities has had some impact, incomplete data make it impossible to clearly determine the impact on key outcomes.

Data drawn from the World Health Organization’s Global Tuberculosis Database show that the number of PLHIV who were diagnosed and registered with TB increased from 14,188 in 2004 to 123,297 in 2008 (an 88% increase).<sup>3</sup> Much of this was presumably due to improved case detection of TB/HIV and/or increased TB case registration. Registration among HIV-negative people with TB also increased over the same time period, but only by 20%.

The data for other indicators seem to point in a similar direction. For instance, the reported mortality rate has gone down significantly ( $p < 0.001$ ) from 16% in 2004 to 12% in 2008, while it remained steady (though at a much lower rate – 5%) among the HIV-negative TB cases. The reported failure rates are low regardless of HIV status (2%). There were also reductions in treatment default and the percentage of cases that went without an evaluation – but these bad indicators were still too high – at 7% and 9% among people living with HIV/TB. Anything might have happened in these cases – they might all be dead. It is impossible to say with any certainty that the outcomes, aside from case registration, had really improved.

“The evaluation of TB treatment outcomes is still poor,” wrote Sculier et al. “Appropriate recording and reporting in both TB and HIV clinics is critical to ascertain TB treatment outcomes among PLHIV, especially mortality, and to monitor progress in TB prevention and control, particularly with increasing access to earlier antiretroviral therapy.”

But these reporting gaps may be due to the very nature of collaborative activities, according to a study from researchers at the London School of Hygiene and Tropical Medicine.<sup>4</sup> The study looked specifically at the use of the standardised TB/HIV indicators at facilities in India, Malawi and Uganda, each operating different models of integrated TB/HIV services. Each facility provided the researchers with anonymised, aggregated data pertaining to the TB/HIV indicators, which the researchers then assessed for strengths and weaknesses.

Problems like inconsistent data collection, and registers that have not yet been updated to include the new indicators, are common to many settings. But other problems may be intrinsic to the delivery model. Notably, facilities that relied mainly on referrals had a much more difficult time reporting outcomes for the service. This may be due to poor communication between facilities. However, Khan et al also noted that there were challenges for sites with full service integration, due to additional reporting requirements for separate national TB and HIV programmes which used entirely different reporting systems (one paper-based, one electronic).

Notably, the researchers concluded that the varying reporting challenges faced by different care models would “hinder

comparisons of the effectiveness of service integration between different models of care.”

But regardless of whether WHO can get more reliable data, health departments and academic institutions also need to perform their own research to optimise TB/HIV integration and provide more effective TB/HIV services in different settings.

“There is a huge need for operational research. While we move ahead doing those things that are really no-brainer issues, at the same time we have to generate the evidence,” said Dr Getahun.

## Short reports on integration

While not always conducted on a grand scale, a number of studies reported both successes and challenges for TB/HIV integration in different programmes and types of facilities.

### Integrated HIV and TB screening services

Dr Sue-Ann Meehan of the Desmond Tutu TB Centre described how TB screening has been integrated into HIV counselling and testing services in Cape Town, and how HIV counselling and testing was taken out into the community in order to reach groups with low testing rates, particularly men.<sup>5</sup>

Nine outreach sites were established (in shipping containers, rented property or mobile caravans) at non-medical sites in high burden communities.

After going online, these proved to reach a much larger and notably healthier population. During 2008-2009, 34,287 clients accessed the testing services – 80% of whom were accessed through outreach, and 47% of these clients were male. 26,262 (95%) consented to be tested for HIV at the outreach sites – compared to only 6325 who consented to be tested at the main Desmond Tutu TB Centre Site.

Nine per cent of the total population tested HIV positive – 8% at the outreach sites and 15% at the main site. However, only 1093 of the 1997 who tested positive at the outreach sites accessed HIV care and treatment services, and 588 of the 922 who tested positive at the clinic site.

Every client was also given a symptom screen for TB, and 11% turned out to be symptomatic for TB (10% at the outreach sites, and 17% at the main site). About 187 ultimately received an ‘early diagnosis’ with TB, 142 of whom accessed treatment.

Among the clients who tested HIV positive, 529 were symptomatic, only 340 (64%) had a diagnostic evaluation. 37 (11%) were diagnosed with TB, and 30 (81%) accessed treatment.

Having both types of sites proved complementary since the outreach sites could “reach populations that don’t usually access HIV counselling and testing”, said Dr Meehan. “However, there are more challenges that exist getting this population into care.”

Indeed, this is a situation where a strong partnership with patient networks could improve linkage and retention in care. For example, other community members could be hired and employed as part of the health team, to provide adherence and follow-up support. As noted in a previous issue, another outreach group performing both HIV and TB screening in South Africa assigns each person who tests positive to an expert patient/community worker – which considerably improved links to care.

### The 'one stop shop' model in Uganda

If diagnosed coinfecting patients do make it into care, they are more likely to be retained if high quality treatment services for both illnesses can be conveniently delivered at the same site.

Accordingly, Dr Sabine Hermans, of Makerere University and the Amsterdam Institute for Global Health and Development, the Netherlands, reported on the performance of a 'one stop shop' model integrated TB/HIV clinic, established at the Infectious Diseases Institute – a very large urban outpatient HIV clinic serving around 15,000 patients in Kampala, Uganda.<sup>6</sup>

Previously – even though medical officers could diagnose TB during routine follow-up visits, the clinic was not performing TB screening and diagnosis systematically. If a client was diagnosed with active TB they would have to report to a TB nurse based in the pharmacy, who provided them with treatment and follow-up.

In December 2008, however, the clinic set up an outdoor integrated 'one-stop shop' TB/HIV clinic in the Institute's grounds, where TB suspects and patients diagnosed with TB could access care for both diseases simultaneously.

A trained team of two medical officers, two nurses and a nurse-counsellor provided care. Once TB treatment was completed, the patient would be referred back to the general HIV clinic.

To try to assess how this one stop clinic is affecting outcomes, data were compared on ART initiation in clients with active TB in 2009 and 2007 (before the one stop clinic was established). In 2007, 161 coinfecting subjects were identified, compared to 130 in 2009. Baseline characteristics (CD4 cell count, etc) were similar at TB diagnosis in both periods.

Fewer treatment-naïve TB patients were initiated on ART in 2009 than 2007 (56 and 66%,  $p=0.03$ ), but Dr Hermans noted these were all people with CD4 over 250 (who didn't meet the criteria for starting ART during that period). However, in 2009, significantly more people started ART while they were still on TB treatment (94 vs 81%,  $p=0.001$ ). In fact, most clients (60%) started ART during the intensive phase of TB treatment, as recommended by WHO. The median time to ART initiation fell significantly from 101 (IQR 63, 204) days in 2007 to 44 (IQR 21, 105) days in 2009 ( $p=0.01$ ). Most of the early initiation of ART occurred in patients with CD4 counts below 100 at TB diagnosis.

"When looking at outcomes: overall, survival and retention improved," said Dr Hermans. However, this wasn't due to improvements in response of those put on earlier ART – there was no significant difference in survival between ART-treated patients in 2009 and 2007 (83% vs 80%).

In fact, the improvement in survival occurred in the group of patients who were not initiated on ART: 52% of whom survived in 2009 versus 33% in 2007 ( $P=0.015$ ).

This improvement in survival certainly wasn't explained by those in the lowest CD4 count strata (below 100) who all died or got lost to follow-up if not started on ART in both time periods. But there was a marked difference in survival and retention in people with CD4 counts between 100-249, who were not started on ART: 71% in 2009 vs. 25% in 2007.

And yet, given that this wasn't a randomized controlled study, it is not clear how much should be made of this finding, particularly as it wasn't seen in the next CD4 cell strata (CD4 cells above 250), even though a substantial proportion of these coinfecting individuals also died or were lost to follow-up.

If anything, it underscores the need to implement the recommendations of the 2010 ART Guidelines – that ART should be started in all HIV-infected individuals with active TB, *irrespective of the CD4 cell count*.

A similar analysis at the same facility, only looking at TB outcomes, was presented as a poster at the meeting.<sup>7</sup> An evaluation in 2007 had found that 30% of the hospital's patients with HIV who were diagnosed with TB, defaulted after starting treatment.

This was another reason why the outdoor clinic was established. An active tracing system was established and employed whenever patients missed appointments.

It worked; in 2009, the defaulter rate had fallen to 8%, and treatment completion rates went up from 68% to 81%. Deaths increased from 2% to 11%, but the poster's authors wrote that it was probably due to better tracking of the losses to follow-up, rather than a real increase in mortality.

The researchers also noted that contrary to what other groups have reported, most of their treatment defaults happened in the first two months on TB treatment, suggesting that 'interventions during the first two months could drastically reduce the number of patients lost to follow-up.'

### Screening but no follow-through

A less optimistic report described the challenges of trying to introduce routine intensified case finding into ART clinics in Lusaka District, Zambia – which has around 150,000 people on ART care.<sup>8</sup>

Despite having a high burden of TB and TB/HIV coinfection, in Zambia, the electronic data system wasn't designed to collect data on TB screening. However, the low rates of TB diagnosis in Lusaka district (just 568 cases diagnosed over a year out of 99,000 people living with HIV starting ART), suggested that TB symptom screening was not being done routinely.

Since 2005, the Centres for Infectious Disease Research in Zambia (CIDRZ) has been working with the Zambian Ministry of Health trying to implement TB/HIV service integration.

To introduce TB symptom screening, CIDRZ performed baseline assessments of patient flow and registers at 17 clinics. They produced a worksheet to improve the quality and consistency of symptom screening (and link it to the diagnostic work-up). They provided nurses and clinical officers with intensive training and mentorship on TB/HIV management over three to four years.

Earlier this year, CIDRZ conducted a file review, comparing the year from late 2009-10 with the six-month period after that. They found that documentation of symptoms in the patient files increased from 87 to 93% – suggesting that staff were indeed asking the patients about their symptoms. However, the healthcare workers had refused to fill out the TB screening worksheet because "it was perceived as extra work."

But without forms, there was no way of telling whether patients who screened positive had been sent for diagnostic work-up, and what their outcomes were. The authors suggested development of electronic data collection might improve reporting.

But it is difficult to understand why the healthcare workers' refusal to use the worksheet wasn't picked up and – addressed – earlier.

### Primary health care clinics can integrate TB/HIV services

In stark contrast to such defeatism, a poster from Dr Kate Clouse and colleagues from the Clinical HIV Research Unit in Johannesburg, and the University of North Carolina at Chapel Hill, described rather encouraging results from a cross-sectional study to assess the extent to which HIV testing and care formed part of the normal clinical practice at a busy primary healthcare clinic in Johannesburg.

The facility, Witkoppen Health and Welfare Centre has around 8500 patient visits each month. It is supported by USAID via the NGO Right to Care, and by the Gauteng Department of Health and private donors. The clinic has dedicated HIV/TB staff five days a week (including a doctor for three days). Since 2004, it has been providing ART, with 4200 clients currently on treatment.

In addition to general HIV services, the clinic provides TB screening and treatment, pre/postnatal care, general/chronic care, paediatric care, social services and a pharmacy. Blood for CD4 cell testing is drawn at the clinic, and sent off-site. Likewise, TB diagnostic services, such as chest x-ray, microscopy, and culture have to be performed off site.

The clinic had already raised the CD4 threshold for starting ART to 350 (as the South African Ministry of Health has also recently done). In addition, it is clinic procedure to offer provider-initiated testing and counselling to all patients, especially TB suspects, with blood for CD4 cell counts drawn the same day as the positive test results. It is also clinic policy to screen all patients for TB at every visit, regardless of the reason for the visit.

Data were collected on 200 patients with suspected smear-negative TB. Participants were mostly women, 45.2% were unemployed, almost a third were born out of South Africa, 28.5% did not attend high school.

Almost half the participants did not know their status at the time they were tested for TB. All were offered HIV tests and 85% accepted (about 70% of these were tested for HIV on the same day as their TB test. 63.3% tested positive for HIV).

80% were given a CD4 test on the same day they tested positive. The median CD4 cell count in the TB suspects was 196, and 140 among those who just tested positive. Among those who already knew their status, 79.3% were on ART — 36% (n=7) of those who had not yet initiated were also eligible for ART. 86% among the newly diagnosed were eligible for ART, 70% of those had initiated ART by the end of data collection, with a median time to initiation of 26.5 days.

Overall 20% of the suspects were eventually diagnosed with TB, 90% of whom were co-infected with HIV. Conversely, 42% of the TB suspects newly diagnosed with HIV did have active TB. Of those who were eligible, 57.1% initiated ART within a median of 34 days of starting TB treatment. Note, the clinic also has tracing procedures in place to track down patients who tested TB-positive so that TB treatment is not delayed.

“The results suggest successful HIV-TB integration is possible at a high-volume clinic when all the relevant services (TB screening, TB treatment, HIV counselling and testing and ART) are available on site,” wrote Clouse et al.

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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).

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