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DetecTB study shows intensified case finding can reduce burden of TB within community with high HIV prevalence

By Theo Smart

Going into communities to actively screen for tuberculosis (TB) can uncover a very large number of TB cases in settings with a high prevalence of HIV — and within a couple of years, reduces the community's burden of TB, according to the DetecTB study conducted in Harare, Zimbabwe and presented as a late breaker at the 40th Union World Conference on Lung Health held in Cancún, Mexico in December.

The study, which provided six rounds of periodic intensified case finding (ICF) (one week every six months) to a community with about 100,000 adults, found that TB screening provided via a mobile van visit detected significantly more cases than door-to-door screening. However, during the course of this two and a half year study, 41% of all smear-positive TB within the community was diagnosed by the study's two interventions.

Even more importantly, by conducting parallel surveys for TB prevalence in the same population at the start and conclusion of the study, the researchers demonstrated that providing periodic ICF had a population level impact — reducing the burden of undiagnosed culture positive TB in this crowded urban setting by 43% (and the burden of smear-positive TB by 44%) by the end of the study.

"The effect we saw was actually huge," said the primary investigator, Dr Liz Corbett of the London School of Hygiene and Tropical Medicine. "And it's this secondary outcome that makes our study results so exciting."

The failure

Indeed, because of the magnitude of the effect (and the rigour of the study), these findings are likely to have a major public health impact — potentially changing the approach to diagnosing TB in high HIV burden settings where traditional passive case finding and DOTS (therapy administered by a well-run TB programme that provides adequate support for treatment adherence) have failed to control the TB epidemic.

Well-supported TB treatment cures the disease — once it is diagnosed — and can reduce onward transmission, but according to Dr Corbett, "we've got lots of prevalence data to support the fact that in poor communities, DOTS simply does not penetrate well enough to control undiagnosed TB to the rate you want."

Part of the problem is that programmes rely on passive TB case finding, which essentially means waiting for people with symptoms of TB to present themselves to a clinic for diagnosis.

But as Professor Bertel Squires of the Liverpool School of Tropical Medicine reminded conference participants during the opening session, each visit to a health facility costs time and money that the poor may ill afford — and given the difficulty in diagnosing TB, as well as problems in the health and laboratory services, it may take repeated visits to access TB services.

"Also, the symptom profile of undiagnosed TB can be quite mild," said Dr Corbett. "And as everywhere, patients just put off going to see the doctor."

The best way to address this is through intensified case finding (ICF) within the community according to Dr Corbett.

"We know that there has been a huge epidemic of HIV-related TB presented to the facilities," she said, "but the way to control that is to go into the communities because most of these patients have been recently infected in the community by casual contact with undiagnosed smear-positive TB. That's what makes these cases such an important target: you'll be aiming to cut those cases — which you can do tomorrow if you want to, there's no time-delay involved in case finding — and theoretically within a short period of time, you will see a reduction in the number of new TB cases and deaths occurring in that community."

But while many smaller studies have shown that ICF can detect TB cases among people with HIV or within communities, they have been unable to demonstrate population impact due to a lack of baseline prevalence data.

DetecTB

So at the start and end of the study, Dr Corbett and her colleagues in Harare carried out two household enumerations in a community with a population of about 110,000 adults around 41,000 households, which were divided into 46 clusters containing two to three thousand individuals each.

Each census was linked to a survey (involving a one in ten random sample of the population) to establish the prevalence of undiagnosed TB in the same community. The survey at the start of the study contained 10,000 adults; the second, after the last round of case finding, had 11,000 adults.

In the prevalence surveys, sputum samples were obtained from every survey participant, regardless of symptoms, and cultured for undiagnosed culture-positive TB.

The 46 clusters were randomised to be provided with case finding services for one week every six months via one of the two community-based strategies (door-to-door or mobile van screening), with the primary outcome looking at the rate of diagnosis per round, and the secondary outcome comparing the burden of undiagnosed TB before/after the study.

Dr Corbett pointed out that the study also involved some community mobilisation about TB, delivered by loudspeakers and leafleting, with simple public health messages: 'TB can be infectious for months or years with mild symptoms — especially if HIV-negative — and undiagnosed TB puts families and friends at risk.'

"So in addition to directly averting smear-positive days by diagnosing people earlier, we will have perhaps had an impact on health seeking between rounds and on TB transmission," said Dr Corbett. However, she pointed out that the cluster size of two to three thousand was sub-optimal to pick up effects on TB transmission.

The interventions were "not terribly labour intensive," said Dr Corbett. Both case finding strategies relied on community workers — one team of six for door to door screening and one team of three for the mobile van.

Community workers looked for people with symptoms of TB by asking whether anyone in the household had had a cough for two weeks or more or was experiencing unintentional weight loss, drenching night sweats, or coughing up blood. Any symptomatic individual could submit sputum specimens that were sent for smear microscopy, with positive results reported back to participants.

Baseline characteristics among the arms were well matched with an HIV prevalence of 21 to 22%. The prevalence of culture-positive TB was approximately 65 per 1000 in both arms in the 2005/2006

survey. By the time of the second survey, there was a 12-13% increase in the population and number of households (as well as a slight decrease in HIV prevalence to 19%).

Results: Cumulative TB case rate

Going into the study, everyone had expected that the door-to-door strategy would be more effective, according to Dr Corbett. "But at every round, to our surprise, we found the mobile outperformed door-to-door — and this was a strong effect."

Overall, the study reached about 10,177 participants, but the difference was not in participation in each arm but in the yield: with 4.7% of the participants diagnosed with smear-positive TB in the mobile arm, 2.9% in the door-to-door arm.

Comparing the cumulative rate for smear-positive TB between the two arms, the unadjusted rate ratio in favour of the mobile arm was 1.7 (95% confidence interval (CI) 1.3 – 2.3), and 1.5 in an analysis that adjusted for other factors (95% CI 1.1– 2.0, $p = 0.009$).

The difference in yield was most pronounced in the crowded high HIV prevalence clusters. "In the lower HIV prevalence, more middle-class neighbourhoods, we did not see a difference between the two arms," said Dr Corbett. "So again, it shows the mobile does the job best in the very communities where you're most interested in improving TB."

Dr Corbett suggested a number of reasons why the mobile van may have performed better. For instance, the mobile van would set up shop in the neighbourhood, and subjects with symptoms would have to go to them — so it was a more active process for the participants. Also, the mobile van intervention was available for a few days instead of just briefly.

"If you stop to think how you react to a knock on the door, you may start to understand perhaps why the mobile performed better," said Dr Corbett. "You may catch people in their homes at an inconvenient time or they haven't had time to think about it, and you're asking for an 'on the spot decision'. You're asking people to report symptoms in their household for people who might not be there - they might not feel empowered to do that."

"If the mobile is there people can see other people going there, can get encouragement from their neighbours. You can even get a sort of 'party atmosphere'," she said.

However, there were some differences in the population reached by each intervention: for instance, the door-to-door participants tended to be slightly older. So there may also be a value in performing some door-to-door screening.

"With the door-to-door you might be reaching people who just would not present in any other way. Whereas the mobile you are reaching people who basically want to be diagnosed but haven't quite got round to it or haven't quite managed to complete it," she said.

Dr Corbett noted that 70% of the TB patients and 78% of the TB suspects had not previously sought healthcare anywhere else. "So we getting people before they've done any other health seeking," she said.

Results: population level impact

Again, the study diagnosed 41% of the smear-positive TB cases within the community during this time. However, if the interventions only speeded up diagnosis by a little, there was potentially a chance that they would have little effect on the burden of TB in the community.

"If people are going to be diagnosed tomorrow, you've just wasted money and gone to a lot of effort for nothing," said Dr Corbett. "But if you've actually managed to reduce the burden of undiagnosed TB through an intervention, it is likely to have an impact of major public health significance."

And indeed, the TB prevalence surveys before and after the study showed the interventions resulted in a marked reduction in undiagnosed TB in the community overall: with a 43% in the pre-set definition of culture-positive TB (confirmed by follow-up studies), a 44% reduction in smear-positive TB; a 38% reduction in all TB cases and a 44% reduction in culture positive isolates.

"And the reduction was to rates that are low for rates regionally, so we've really had an impact," said Dr Corbett.

Although the numbers were too small to be statistically significant, a subgroup analysis suggested that the reduction in undiagnosed TB cases was most pronounced in women and the HIV-negative population. For instance, there was a 59% reduction in the burden of undiagnosed TB in the HIV negative population, but only a 25% reduction in people with HIV in the prevalence survey. "I think this is an important proviso here, maybe that the six-month screening strategy is not so good for HIV-positive TB," said Dr Corbett.

But it is also important to note that the interventions relied on smear microscopy to diagnose TB, and smear microscopy often fails to detect culture positive TB in people coinfected with HIV as they are often smear negative.

In addition, people with HIV are at increased risk of contracting TB within health facilities that do not practice adequate TB infection control — and so may be less impacted by interventions within the community.

Even so, continuing reductions in the number of undiagnosed cases within the community should benefit everyone in the long run.

Indeed, Dr Corbett believes that the reduction in the burden of undiagnosed TB in the community, "is likely to correspond with a major impact on TB transmission rates."

Implications and discussion

More research is needed to expand the evidence base for case finding, Corbett added. For instance, more work is needed to find out how to engage men in TB case finding, and to improve yields in people with HIV.

"But I would also like to stress that in all case finding interventions, if you don't have prevalence data, you really can't interpret your results," said Dr Corbett.

Community case finding has been attempted elsewhere in the pre-DOTS era, but Dr Corbett noted that its public health impact had never been well-evaluated because of the difficulty in doing concurrent prevalence surveys. As a result, community-based screening has been discouraged up till now, partly due to concerns about sustainability and cost-effectiveness.

But these data may help change that.

"As far as the implications for global TB control, I think we really do have something here," said Dr Corbett, adding that this 'not very intensive intervention' could help meet the Millennium Development Goals on TB. "If it is readily replicable, we would expect major declines in TB incidence within a few years if this could be kept up. And I would just like to stress that the cost-effectiveness of intervening against an infectious disease far exceeds what you would predict by counting cases."

During the discussion, Dr Ken Castro from the US Centers for Disease Control noted that similar interventions had been done in the US, but proved to no longer be cost-effective as the TB incidence went down.

"I think we can use this approach to fast-track TB control for a short period, I wouldn't see this as being indefinite," Dr Corbett responded. "But I think this is a way that you can make quick, cheap, high-impact gains and then move on to something more suitable for the long term."

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HIV and TB in Practice

Studies report challenges and successes in the roll-out of intensified case finding and IPT

This regular feature on TB/HIV integration is kindly supported by the Stop TB programme of the World Health Organization.

By Lois Eldred and Theo Smart

Two large urban HIV clinics in Windhoek, Namibia have been able to scale up the provision of isoniazid preventive therapy (IPT) (after screening for active TB) to about half of their patients with HIV in less than a year, through the use of a 'quality improvement' programme, according to presentations at the 40th Union World Conference on Lung Health held in Cancun in December. Furthermore, they have been able to achieve better than average treatment completion rates of between 56% and 67% for a 9-month course of IPT – with results growing better with each successive round of quality improvement (see below).^{1, 2}

"Integrating isoniazid preventive therapy into HIV care is feasible as part of routine care if all staff are engaged in planning and implementing it," said Dr. Sandya Wellwood, a clinical mentor with the ITECH (International Training and Education Center for Health) in Namibia, who gave one of the presentations.

"Well structured quality improvement programs can be used to accelerate implementation of all the 3 I's," said Dr Tehetena Zarou of Katutura Health Center. "And I would like to stress that no additional staff was added to the clinic, or no additional financial resources were allocated. It was basically done with minimum resources."

Other presentations at the conference from Sao Paulo, Brazil and Kenya also addressed some of the challenges in connecting TB screening with putting people onto IPT in a programmatic setting—sharing some of their lessons learned and practical recommendations.

Background

Namibia has a fairly small population of around 2 million people, but a very high HIV prevalence – 17.8% in antenatal clinics, with a total population of about 196,000 people living with HIV.

TB is considered a national health priority in Namibia. It has one of the highest TB case notification rates in the world, at 665/100,000 in 2008. TB is the leading cause of death among those with HIV. Fifty-four percent of TB patients have been tested for HIV and 59% of those are HIV-infected.

Namibia has rapidly rolled out antiretroviral therapy, achieving coverage of around 80% for those with CD4 counts below 200, and enrolling over 70,000 people. But a 2007 study revealed only about 6% of the HIV-infected were receiving IPT, even though it is recommended by WHO as one of the essential activities to reduce the burden of TB in people with HIV – and is national policy in Namibia.

HIVQUAL Namibia

IPT provision was also found to be quite low at sites involved in HIVQUAL Namibia.

HIVQUAL Namibia is a national quality improvement programme to improve the quality of care for people living with HIV/AIDS led by the Ministry of Health and Social Services, and launched in 2007 in collaboration with the US Centers for Disease Control and HIVQUAL International USA.

"It's an internal process which allows facilities to access, plan and implement strategies timeously and in a manner which is uniquely applicable to that facility," said Dr Zarou.

HIVQUAL has three basic programme components:

- Performance measurement: this is based on the (core set) of performance indicators. Eleven indicators have been selected at national level in Namibia – these include TB screening and IPT provision. Reviews are performed every six months. The review period is from January till June and then again from July until December and reports are generated after the end of each review period.
 - Quality improvement projects based and selected on performance data and the priorities of the facility. Different facilities can have different priorities and can therefore select different quality improvement projects.
 - Programme infrastructure and capacity development, which involves putting structured, facility-specific quality management plans in place, setting goals and establishing committees tasked with meeting these goals.
- "Clinicians involved in HIVQUAL and the ITECH clinical mentors selected TB-IPT and TB screening as an important priority area for intervention," said Dr Zarou.

The barriers to IPT in Namibia

Two clinics were selected to participate in the study: Katutura Health Centre, a large urban health centre in a low income district of Windhoek, and Windhoek Central Hospital ARV clinic, a smaller HIV clinic within a tertiary national referral hospital. The two clinics have over 7,000 HIV-infected registered patients. At the start of the study in September 2008, most of the clients with HIV were reportedly screened for TB, but only 2% were receiving IPT.

A baseline survey was conducted asking about reasons for using or not using IPT, and three root causes were identified:

- Clinician reluctance: Clinics noted that there was no "habit" of prescribing IPT. Furthermore, clinicians were concerned about missing (and under-treating) subclinical TB in the screening process. There was also no on-site pharmacy stock of isoniazid, so patients would need to travel to obtain IPT, unlike other medications.
 - Language barriers between the clinicians and the patients: Clinicians in Namibia often could not speak the local dialects, which hindered communication during the screening process to rule out TB.
 - Poor record keeping: In Namibia, health information is documented in a 'health passport' that the patient takes with them. Often this was the only place where things were documented – the information was not being transferred to the patient booklet retained by the clinic. In the case of IPT, the prescription was written in the health passport. Particularly when patients went from one facility to another, the staff had no way to be sure whether a script had been written, let alone whether the patient had completed their course of treatment.
- According to Dr Zarou the decision of whether to provide IPT essentially came down to a few simple yes no questions:
- Has this patient been screened for tuberculosis?

- Does the patient have tuberculosis?
- If the patient does not have TB, are they on IPT?

"It became pretty evident that even though we had ruled out or excluded tuberculosis, the next logical step was to put that patient on INH prophylaxis. And we could see that we weren't actually doing that in the majority of cases," she said

Quality improvement project: interventions

A few interventions were put in place to address some of these barriers. In order to convince the facility physicians on the safety and efficacy of IPT, sensitisation sessions were held reviewing the evidence base of the WHO guidelines on the use of IPT in patients living with HIV.

An IPT Stamp was developed to help locate that initial script for IPT (and its initiation date) in the patient's health passport, make it more visible and to make it easier to prescribe.

Lay counsellors were put on the frontline of TB screening and reporting.

"Lay counsellors communicate in the patient's language," said Dr Zarou, "overcoming the language barrier faced by clinicians, so they were given the responsibility for actually screening the patients for TB."

A checklist was prepared and displayed in each counsellor's room, and after screening, counsellors recorded their findings both in the patient's health passport and in the clinic's patient file.

A quality improvement plan was developed to put these interventions into practice.

"We had multi-disciplinary staff meetings every two weeks, to discuss performance data and sensitise staff to the quality improvement work plan" said Dr Zarou.

The plan included having the clinicians train counsellors on IPT (the duration of treatment and the need for monthly screening for side effects and TB), "who then were to empower the patients with the knowledge of why they were actually being put on IPT," said Dr Zarou.

The TB screening check-list was developed and distributed to the lay counsellors. TB suspects would then be referred to the nurses for sputum requests, after which they were booked for review by doctors, who were to initiate IPT. Then the pharmacy was to dispense, register and monitor the INH.

"This final step was found to be the most labour-intensive of the whole project," said Dr Zarou. "The process of screening, registering, recording and dispensing of TB-IPT was found to be time-consuming for a pharmacy staff that is already burdened with dispensing of ARVs."

Results

Despite the initial barriers and low uptake, by August 2009, over 3000 patients were prescribed IPT (49% of all patients). This success actually presented something of a challenge, according to Dr Zarou, because of the high growth rate and a very high daily clinic patient load. But with each round of quality improvement (every quarter), a higher percentage of patients are being put on IPT — and completing the regimen.

According to Dr Wellwood, there was a low default rate primarily due to health systems issues rather than patient default. The prescription of IPT became, and remains, the standard of care, and the problems that arose were primarily facility specific," said Dr Wellwood who recommends developing facility-specific operating procedures, orienting all staff, and addressing systems flow issues early.

Dr Zarou pointed out that the quality improvement tools and programmes empower the staff to come up with innovative solutions to problems that arise — and that solutions also come

from regional meetings where they can learn from the experience of other facilities.

Ongoing monitoring is also key to the programmes success

"Well structured monitoring and evaluation tools (e.g. electronic data bases) are essential to track the use and outcomes of TB-IPT. This can also be done without electronic databases, but it becomes more labour intensive work," said Dr Zarou.

Barriers and successes in other studies: in Kenya

These two clinics have very quickly scaled up IPT — to a much larger percentage of patients than reached by some of the first programmes to pilot IPT.

For instance, the Eastern Deanery AIDS Relief Programme (EDARP) in Kenya has been much praised for its early adoption of IPT for people with HIV, and the programme reports the highest treatment adherence/completion rates ever recorded for IPT in a clinical setting (84.9%). It helps assure high treatment adherence by excluding patients with known adherence or substance abuse issues, and by providing weekly community health worker visits, random nurse home visits for pill counts and other unscheduled visit to check for side effects and other illnesses.

But what usually goes unnoticed is that the programme only puts about 10% of its patients on IPT because it only targets the 'well' patient. It excludes pregnant women, people with a prior TB history or because of monitoring or adherence concerns — but the vast majority do not qualify simply because they have symptomatic stage III/IV HIV disease.

One of the problems with people with symptomatic HIV is that the symptoms often overlap with the key symptoms used in TB screening: cough, fever, recent weight loss. According to a presentation by Dr Lucy Wanjiku Nganga, of the US CDC in Kenya, EDARP does a very thorough job at screening for TB —the challenge is in getting the TB diagnosis.³ Checklists for TB screening are integrated into routine patient visit forms. Nurses perform TB screening before the patient sees the clinical officer or doctor. In addition, all new patients have sputum collected and sent for smear microscopy regardless of symptoms, and if they are smear-negative but symptomatic they also receive a chest x-ray. Any returning patient is put through this same process if they are symptomatic.

Dr Nganga reported that TB screening has identified about 12,071 (58%) of EDARP 20,707 HIV patients as TB suspects. Although most are not found to have TB, 31% of the patients are eventually diagnosed with active TB. However, only 63% are diagnosed as a result of the screening process at enrolment. Thirty-seven per cent are diagnosed in follow-up — with the majority of these only recognised after they have started antiretroviral therapy.

Although there are concerns about missing 'subclinical TB', much of the problem is that it is very difficult to diagnose extrapulmonary or smear-negative TB, partly because TB culture in this setting is only available for retreatment cases — not to investigate suspected TB in people with HIV. As a result, the majority of the people who are most at risk of TB in this programme remain in sort of a therapeutic limbo, either waiting for a diagnosis or to go on and develop TB. One potentially more humane option, suggested by Dr Stephen Lawn of Cape Town, to be discussed in a future *HIV and TB in Practice* column, would be to simply put such patients on empiric TB treatment.

Barriers in São Paulo

In Brazil, people with HIV also face a number of decision points after entering care that will determine whether they get IPT — and each offers an opportunity for something to go wrong, according to Dr Mariangela Resende, of the University of Campinas in São Paulo.

Brazil has a much-admired ART programme and the Brazilian National AIDS and TB programmes also recommend IPT for people with HIV who screen positive on tuberculin skin tests (TST) (and who do not have active TB).

“However, this recommendation has not been instituted regularly among individuals with HIV, even in settings with organised programmes like metropolitan Brazilian areas,” said Dr Resende.

So Dr Resende and colleagues performed a review of medical records to evaluate missed opportunities for treatment of latent tuberculosis among HIV-infected patients at the Brazilian University Hospital, a general, tertiary care facility in São Paulo, where in-patients have a TB incidence rate of about 38/100 000 inhabitants. The study included 271 people with HIV without previous active TB.⁴

As in other studies, they found that tuberculin skin tests (TST) make an IPT programme much more complicated.

Of the 271 subjects, the TST was solicited from 219 (80.8%). Results were only available for 155 (70.8%) – and health care workers interviewed by Dr Resende stressed that the TST takes two clinic visits; the application of the test and the reading schedule for the skin reaction make it difficult to get patients to come in to have their test results read on the right day.

Of those for whom TST results were available, 37 (16.9%) had a reaction greater than/equal to 5 mm (which was the cut-off for latent TB in this study). Twenty-two (59.5 percent) patients received full isoniazid treatment.

Fifteen others clearly should have been put on IPT, but Dr Resende pointed out that overall, after tallying up all the missing tests and results, as many as 131 of 271 (48.4%) patients ‘may’ have qualified for IPT. While not all would ultimately have qualified for IPT, this does suggest that a fair number of people with HIV and latent TB would be missed by this process.

A chart review like this doesn’t tell one everything, and in follow-up interviews with health care workers involved in the facility, it was noted that some of these subjects could have been TB suspects, and that there is often a delay in getting TB investigated.

However, the challenges posed by requiring TSTs should serve as a cautionary tale to any programme considering introducing TST in response to the findings of the Botswana IPT study (see [December 18 2009 edition of HATIP](#)).

Even so, the healthcare workers interviewed by Dr Resende and her colleagues recommended a number of operational measures and interventions to improve IPT uptake. These included putting the TST protocol in all charts of HIV-infected patients and making sure that the TST status was checked and updated during the follow-up visits for every HIV patient. Patients with a positive TST results, but who had never received isoniazid treatment should be evaluated immediately for IPT.

There was also a call to evaluate the cost-effectiveness of IGRAs (interferon gamma release assays) compared to TST among HIV patients – an advantage of the IGRA is that it doesn’t require a repeat visit to read. However, they are much more expensive

Finally, the health care workers called for stronger linkages with the local TB programme, not only to optimise the TST process at primary health care facility but to guarantee early diagnosis of both TB and HIV in patients.

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Accelerating efforts to control TB

By Theo Smart

The world is still a long way off meeting some of the TB control targets linked to the UN Millennium Development Goals (MDGs). At the Union World Conference on Lung Health in December, several experts proposed taking more aggressive action to reach targets to reduce the global burden of TB and TB-related mortality.

Recommendations ranging from adopting more proactive strategies to detect cases sooner and shorten diagnostic delays, to rolling out HIV treatment earlier in order to prevent TB, and offering TB treatment to all people with advanced HIV (even without a confirmed diagnosis). This article reviews some of the proposals for more aggressive action.

Targets

Technically, the world has already met the 2015 MDG goal of halting and reversing the increasing incidence of TB, because it peaked at a very high level in 2004. But the World Health Assembly and the Stop TB Partnership set the bar a bit higher by linking this goal to several other targets or milestones to be achieved by 2005 including:

- Detecting 70% of new smear-positive patients arising each year, and successfully treating 85% of these cases;
- Cutting TB prevalence and death rates to half the 1990 level by 2015;
- Cutting the global incidence of active TB to less than 1 case per million people per year by 2050 (thus eliminating the TB as a health threat of global significance).

But of these other milestones, only the 85% treatment success target has been reached – and that has only happened very recently, in 2008 – though not in every important region, such as sub-Saharan Africa, according to the recent update to the 2009 Global Tuberculosis Report).¹

Even so, the epidemiological impact of this achievement may be limited because programmes only seem to be diagnosing or at least reporting about 62% of the estimated number of smear-positive TB cases. That means that close to 40% of smear-positive (infectious) TB cases could remain undiagnosed and capable of spreading the disease in the community and sometimes (see below) in health facilities.

“Many DOTS countries are achieving 85% cure rates, which is reassuring, but the minimum of 70% case detection is not yet achieved in many settings,” said Dr Léopold Blanc of the World Health Organisation’s Stop TB Department, during a session on TB case finding among vulnerable populations.² “And I just want to stress that 70% case detection was a target for 2005 – we are in 2009. Four years later, we have to get out of this 70%. We have to aim for 100%.”

Likewise, even though TB prevalence and mortality rates are falling in most settings, the 2015 targets are unlikely to be met globally, according to the update to the Global Tuberculosis Report, because of the continuing high rates in Africa. Rather disturbingly, the reported death rates don’t even include the deaths of HIV-positive people with TB, so the actual mortality rates have to be much higher. Nevertheless, because of the impact of HIV on the TB

epidemic during the 1990s and 2000s — and the large population of people with HIV and at increased risk of TB, it will be impossible to achieve the TB prevalence and mortality targets in Africa without tackling HIV.

Of course, recommended activities including collaborative TB/HIV activities such as the Three I's, health systems strengthening, developing new tools for diagnosis, treatment and prevention, and empowering and educating people with TB and in the affected communities (Advocacy, Communication and Social Mobilisation or ACSM) could have a great impact on TB control. But Dr Blanc stressed that these interventions have not been widely implemented. (Encouragingly, this Union World Conference contained a large number of symposia on the Three I's, often running concurrently).

Improving case detection

Nevertheless, a way forward is needed to more rapidly achieve the MDGs according to Dr Blanc: “we need to accelerate efforts in TB control by aiming at 100% case detection — universal access — and by shortening diagnostic delays.”

He described a framework WHO has developed to identify bottlenecks and constraints that limit identification of TB in vulnerable populations; and to indicate actions to reduce delays (whether due to the patient or health sector) and improve case detection and notification. The framework considers the steps between the time of infection and starting treatment, including the development of active disease, the recognition of symptoms, approaching the health services, getting a diagnosis from the health system, to case notification. Each step provides an opportunity for intervention.

For instance, delays in patient health seeking behaviour could be reduced by more effective ACSM programmes that educate people to recognise the symptoms of TB and seek a diagnosis, and by minimising barriers to accessing a diagnosis, perhaps by decentralising diagnostic services.

Delays on the part of the health service could be addressed by making sure effective TB screening is implemented with broader indications for who should be screened, and by taking actions to improve the quality and efficiency of diagnostic services.

Developing effective collaboration between the public health sector and private providers (including non-governmental organisations, faith-based organisations, traditional and informal health care providers) referred to as a public-private mix (or PPM) could also help alert the health system to TB cases that have been identified but not yet notified, making certain that they receive appropriate referrals and care.

“But there is a short cut for some targeted groups through this path and around the many obstacles to diagnosis— active case finding,” said Dr Blanc. Active case finding can avoid both patient and health system delays entirely through early identification and diagnosis of active disease before an individual seeks medical attention.

Dr Blanc stressed that active case finding “is not about screening the entire population, but should be focused at the populations and groups most at risk” such as prisoners, the poor, people living in congested urban settlements, refugees, migrants, women, household contacts and in particular children. Analysis of local epidemiological data should guide the selection of which groups to target first.

However, some audience members stressed that active case finding among the general population might be justified in settings where the burden of TB is particularly high. Indeed, this approach paid off in Dr Corbett's DetectTB study in Harare — though the yield was greater in some communities than others.

Meanwhile, an active case finding study performed in a rural district of Ethiopia had a very high yield of smear-positive TB.³ The study used health extension officers to provide door-to-door active case finding which identified 2.5 times the number of cases identified by passive case finding during the same period. In other words, for every smear-positive TB case in treatment, there were at least 2.5 undetected smear positive TB cases. The survey also identified a higher proportion of female patients than were being diagnosed by passive case finding.

A similar finding was made by another study that compared the gender of people diagnosed by passive case finding versus active case finding (screening of household contacts) in Peru.⁴ Over a period of five years, 60% of the 1259 TB cases identified by passive case finding were men, while active case finding identified TB in an approximately equal proportion of men and women (51%). “Furthermore, active case finding in household contacts diagnosed TB after a significantly shorter cough duration than passive case finding (median 15 days (IQR 7-30) vs. 30 days (IQR 15-60) respectively, $p < 0.001$,” the authors wrote.

A number of other presentations and posters at the conference explored some of these other community-based approaches to increasing case detection in more depth.

Public-private mix: engaging more providers in case finding and notification

Dr Noor Ahmad Baloch, the National TB Control Programme Manager in Pakistan described how diverse types of formal and informal providers can be engaged in TB case finding and management.⁵

TB is a major public health problem in Pakistan. In a population of 170 million there are about new 300,000 cases (75% among people of reproductive age) and 15,000 new MDR TB cases each year. DOTS was introduced in 2001 and fully implemented at all public facilities by 2005. But around 40% of the total population lives in peri-urban low-income communities, with poor housing, inadequate water, sanitation and little or no access public health services.

Most of this population is dependent upon “a huge and diverse private sector providing health care to the population,” said Dr Baloch. “There are general practitioners, hospitals, for-profit, not-for-profits and non-governmental organizations — and one NGO has 108 outlets that exclusively provide TB services. There are also informal practitioners, many of whom are not qualified, not registered, not licensed, illegally practicing.”

A systematic approach was adopted to research and prepare for implementing the PPM. This started with a study assessing the knowledge of providers, conducted at sample sites in two large cities with 600 doctors providing TB services. Out of all of these doctors, only one knew that the first and the priority diagnostic tool for TB is sputum smear microscopy — most were instead relying on chest x-rays.

Once these doctors were trained and provided with free TB medications, an evaluation found that they readily adopted the DOTS strategy.

Next, a country-wide institutional analysis was conducted among all the stakeholders, assessing the capacity, gaps and needs of hospitals, NGOs and others providing TB care.

Based on this analysis, a national strategic framework was developed with six different models for delivery of TB services working with the different types of providers available in different areas (rural and urban). Operational guidelines and a mechanism for monitoring and evaluation were also developed.

The presentation focused on two models: social franchise marketing targeted to peri-urban low-income communities in very

large cities; and a district led model, serving low income populations with poor access to TB services in both urban and rural areas.

In social franchising models, the private sector providers are trained and empowered to delivery branded and quality assured health services: in this case, TB diagnosis and treatment services.

In Pakistan, the social franchise marketing model provides active case finding through media marketing, 'chest camps' and interpersonal communication with community advocates who identify and refer suspects for diagnosis, with smear microscopy provided by a private laboratory.

The district-led model strengthens passive case finding — with diagnostic services being provided after the patient presents for care and smear microscopy is performed by either a public lab or NGO/ CBO supported lab.

In both models, the department of health provides free treatment, which is prescribed to the patient by a trained GP — though directly observed therapy may be provided by the practitioner, an outreach worker or lay healthworker. The social franchisee is responsible for default tracing, reporting and quality assurance in the franchise social marketing model, while the district health sector provides these services for the district-led model.

Of course, before launching, materials, including the ACSM strategy and reporting and recording tools, were developed and resources mobilised (the Global Fund initially supported the Social Franchise Marketing). The target population had to be identified, surveyed and mapped. A training programme was developed and implemented and supply logistics worked out.

But in the space of just a few years, the social franchise marketing model engaged about one thousand GPs, large numbers of community workers and 54 private labs in five very large cities in Pakistan — covering a total population of 40 million. After 2005, the number of TB cases (smear-positive and all types) diagnosed and notified by GPs jumped dramatically (by around 12-20 fold). In the last couple years, the private sector has contributed 18-26% of the cases to national case notification.

While the model is feasible to provide TB services to the vulnerable population, "it needs evidence-based refinement for scale-up, keeping in mind sustainability," said Dr Baloch, because there have recently been concerns about the sustainability of the project as Global Fund support for staff salaries has dried up.

In Myanmar, TB services are also being provided by the private sector via social franchising.⁶ Population Services International (PSI) presented a poster at the conference reporting that TB services — free to the patient but made available through the private sector — could be scaled up very rapidly (to over 600 clinics within five years), and reach significant numbers of cases (the programme is responsible for 10% of case notifications nationally). As time goes on, and new, more remote clinics join the franchise, the programme has become more effective at reaching the poor.

The TB service is branded as 'Family DOT' using the same logo as the National TB Programme, and in addition to TB diagnosis and care, participants receive free nutritional and adherence support. Community health workers are paid both to perform active case finding and provide treatment support. The National TB Programme provides treatment for free and franchisees are not paid to delivery TB services (though they can charge for other services they may provide the patients).

PSI currently pays for many of the services that are provided but argues that the model would be sustainable with public funding — though the cost effectiveness of some services might be a concern. (A paper on the earlier days of the programme by Lönnroth et al in *Health Policy and Planning Advance Access* is also [available online](#).)

Engaging private and informal care providers to reduce diagnostic delay

Several posters from Africa emphasised another important reason to engage healthcare providers (formal or informal) — to reduce diagnostic delay. A study in Kampala found that the mean delay between symptoms and reaching the public health services was 7.4 weeks — during which time people had consulted 4 different healthcare providers outside the public health services, including nurses, midwives, drug shops and private GPs.⁷

Another poster reported that in the slums near Nairobi, 72.6% of TB patients first sought care from one of these providers, and as a result the average patient delay (between recognition of symptoms and diagnosis) was seven weeks.⁸

A pilot programme was launched in one of the settlements (Kawangware). First, a mapping exercise was conducted to identify all the potential providers in the area. They were then invited to a sensitisation/training meeting on TB and on the tasks that the providers would be expected to carry out. Participants were given referral forms and asked to refer all patients with a cough of two weeks or more to the nearest diagnostic centre, and provided with regular supervision.

Out of 106 providers identified, 48 attended the training session and 25 participated in the initiative. In the space of six months 267 TB suspects were referred, though only 26.5% completed the referral. Almost half of these were diagnosed with TB however, and TB case finding at the diagnostic lab increased by 46% during that period. Subsequently, the programme has been expanded to other communities — and a number of new DOTS centres established to reduce clinic congestion.

With an estimated 200,000 traditional healers (or sangomas) in South Africa, compared to 25,000 doctors, 80% of the black population go to a sangoma as their front-line healthcare provider, according to a poster from Dr Krista Dong and colleagues from iTEACH and Edendale Hospital in KwaZulu Natal.⁹ Despite calls for greater cooperation between the health services and sangomas, there has been no systematic integration of the traditional healers into South Africa's TB or HIV programmes.

In 2006, iTEACH engaged a network of 300 sangomas interested in improving their knowledge about TB and HIV, but existing certification services were only available in English. iTEACH developed materials, including a patient referral form to document the signs and symptoms of TB, AIDS or drug side effects and in 2009 launched a counselling certification course in the local language (isiZulu). During 2010, traditional healers will be engaged to provide adherence support/default tracking and a pilot study will evaluate the use of healer referral form.

Dong et al note that many doctors and nurse are reluctant to work with traditional healers — particularly because they have observed cases of toxicity due to ingestion of herbal remedies. However, the sangomas engaged in the iTEACH programme "uniformly acknowledge that TB and HIV cannot be cured with traditional or herbal remedies and infection and that patients must be referred to clinics and hospitals for effective treatment and management," Dong et al reported. Meanwhile, the majority of patients are enthusiastic about being able to receive support from both the formal health services and their local sangoma.

Reducing diagnostic delay at the health facility

Dr Dong also gave an oral presentation on the use of community-based workers to increase the use of bacteriologically confirmed diagnosis, increase diagnosis and reduce diagnostic delay at Edendale Hospital.¹⁰

She first reviewed all the frightening facts related to the HIV and TB epidemics in KwaZulu-Natal, South Africa where Edendale

Hospital is situated: the province is the epicentre of the HIV epidemic, and has the highest TB burden in a country with the fifth highest TB burden globally; district cure rates are extremely low, and there are rising rates of multidrug resistant- (MDR) and extensively drug resistant- (XDR) TB. Edendale Hospital serves an area covering about one million people – the antenatal HIV prevalence is 60%, and 50-80% of the beds contain patients with HIV. There is also a high inpatient TB burden with about 200 new cases each month – and a 2007 MRC study found that 40% of coughing patients had culture positive TB.

But despite all this, “there have been no deaths due to TB in three years,” said Dr Dong, pausing for effect, “because they die in OPD, they die on arrival to the ward before receiving TB results – and their deaths are never registered.” However, post-mortem results suggest that at least 40% of deaths in the public sector in KZN are TB culture-positive.

In 2005, bacteriologic coverage was only 23%. Sputum request forms were not filled in, were filled in incorrectly or simply not getting to the lab. Doctors complained that they never got results back anyway, and the average turn-around time did indeed exceed the average length of hospital stay.

[HATIP 105](#) has previously described how Dong and colleagues were able to turn the situation around by hiring and training a couple of community health workers, called ‘TB warriors’, who were given the responsibility to collect sputum specimens, make sure that sputum request forms are filled out, take specimens to the lab, collect results and get them to the patient.

Bacteriologic coverage at the hospital has now increased to 95% and within a few months of launching the TB warriors, the lab turn around times have shortened dramatically to less than 0.5 days. Dr Dong says that provincial “buy-in has now occurred” and the programme will soon be scaled up by the government.

Quality assurance programmes for laboratories can also improve the confidence of clinicians and decrease the turnaround time (and diagnostic delay). According to a presentation on the FIDELIS initiative, a case finding venture funded by Canada and the International Union Against Tuberculosis and Lung Disease, projects that implemented innovative activities in microscopy laboratories were among the most successful interventions piloted.¹¹ Fidelis supported 52 different case finding projects for patients with limited access to TB care – using strategies such as general health systems strengthening, active or semi-active case finding, IEC/ACSM projects, PPM activities, incentives, and lab improvement. Unfortunately, the initiative was not really designed to establish the relative effectiveness of the strategies.

Improving screening tools and targeting HIV

The effectiveness of active case finding may be limited by the appropriateness of screening tools being used in the target population, and [HATIP has previously described](#) efforts to refine TB screening tools in people with HIV.

There were a couple of important presentations at the conference with more recent findings on this matter, including one with the preliminary results on a meta-analysis undertaken by WHO’s STOP TB Department to identify the best constellation of signs and symptoms to confidently exclude active TB disease in people with HIV. We will discuss these findings and their implications in a future issue, since WHO will be holding a meeting in a couple of weeks to discuss the data, and the development of a new policy that will more closely integrate intensified case finding in people with HIV with the delivery of isoniazid preventive therapy (IPT) to those in whom TB is excluded.

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News from the World Lung Health conference

Household contact tracing of XDR and MDR-TB index patients in KwaZulu-Natal, South Africa

by Lois Eldred

Lois Eldred is Associate Professor of Medicine and Epidemiology at the Center For TB Research, Johns Hopkins University School of Medicine, Baltimore.

Approximately half of adult household contacts of drug resistant TB cases had resistance profiles that differed from the index case of TB, according to a presentation given by Dr. Tony Moll at the 40th Union World Conference on Lung Health in Cancun, Mexico.

“This discrepancy between drug resistance in index cases and their household contacts suggests community spread of MDR- and XDR-TB,” stated Dr. Moll of the Church of Scotland Hospital in Tugela Ferry, South Africa. The household contact tracing study was conducted in Msinga, a rural sub-district of KwaZulu Natal, where the annual TB case rate is over 1,000/100,000 population and about 75% of TB patients are also infected with HIV. Since 2005, 852 drug resistant TB cases have been identified. Of these, 43% of these have been multidrug resistant TB (MDR-TB), and 57% extensively resistant (or XDR-TB).

Methods

In a four-year period from 2005-2008, the homes of each index case of multi- and extensively resistant TB cases were visited an average of 2-3 times, and every adult contact within the household was screened for TB (the study excluded children under the age of 13 due to the difficulty in diagnosing pulmonary TB in young children). A TB symptom history was conducted; sputa were collected on all sputum producers, and a chest X-ray was obtained for each adult contacts with productive cough or other signs and symptoms of tuberculosis. A physician evaluated each TB suspect.

Results

There were 711 index cases. Of these, 306 persons were identified as having MDR-TB: household contact tracing was possible in 255 (83%) of these cases but only 221 (72%) were included in the final analysis (some were excluded because there were no adults available for evaluation or missing data). The remaining 405 index cases had XDR-TB: 333 (82%) of their households were traced, with 287 (71%) were included in the analysis. In all, 508 households were included in the study.

Nearly two-thirds (64%) of index cases were sputum smear positive but only 50% had a previous history of TB, indicating transmission of already resistant strains in the 50% presenting with their first episode of TB. Eighty-one percent of index cases died with a median survival of only 32 days.

There were 1059 adult household contacts among the MDR-TB cases: 793 (75%) were screened for respiratory symptoms and 773 (97%) provided sputum sample for culture and drug sensitivity testing. Among the 1372 household contacts of XDR-TB cases, 973 (71%) were available for screening and 940 (97%) provided sputum sample for culture and drug sensitivity testing (DST). In all, complete data was available for 1713 adult household contacts identified.

A median of 79 days passed from sputum collection of the index case to identification of household contacts, although the time for the actual household contact tracing was usually within a week of the diagnosis of drug resistant TB in the index case. The delay in susceptibility testing prolonged the period of time during which household contacts were exposed to the drug resistant TB case.

Contact tracing identified cases of TB in 55 (11%) households. Of these, 47 households had only one TB case, 14 had two cases and 1 household had 3 cases. Although survival was better for household contacts compared to index cases, there was still significant mortality (14% and 52% of MDR-TB XDR and XDR TB household cases, respectively) within the median 506 day follow-up period.

Notably about half of the household contact TB cases had DST results that were discordant from the household's index case, suggesting possible transmission in other community settings. The spread of resistant TB within the community needs further investigation.

	Contacts of MDR-TB index cases with positive TB Culture (N=32)	Contacts of XDR TB index cases with positive TB Culture (N=32)
Sensitive or mono-resistant TB cases	2 (6%)	2 (6%)
MDR-TB	14 (44%)	8 (25%)
XDR-TB	10 (31%)	19 (59%)
Susceptibility pattern unavailable	6 (19%)	3 (9%)

Limitations of the study included unknown HIV status on most household contacts, so there was no control for HIV infection in the comparison of outcomes in the survivors and index patients. The study considered only household contacts and not other casual or close contacts. The investigation provides a minimum estimate of the household contacts, as they were not able to find each household contact.

Discussion

Further studies are needed to examine prevention control at the household level. "This study underlies the need for earlier diagnosis, particularly in this setting where the mortality is so high in the index cases," stated Dr. Tony Moll, the study investigator.

Today, the TB cure rate is 83% in Msinga and the default rate 0%. There are dedicated tracing teams to investigate households of resistant cases. "The strong commitment by the district managers of the TB program is a key part of its success," said Dr. Moll. The study team hopes to extend the household tracing to children and report on those results in a future meeting.

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Improving contact screening and isoniazid use in the Indian TB control programme

By Lois Eldred

India is home to 21% of the world's tuberculosis cases, with 1.8 million new cases diagnosed each year, yet the case notification for children is less than 2%, according to a presentation given by Dr. Soumya Swaminathan at the 40th Union World Conference on Lung Health in Cancun, Mexico.

"Contact tracing could greatly improve the number of children identified with tuberculosis," said Dr Swaminathan, who has recently joined the World Health Organization, "and preventive therapy could decrease childhood TB, though both interventions are underutilised."

Background

The Indian Revised National TB Control Program (RNTCP) recommends household contact tracing of smear-positive pulmonary TB cases to identify adults and children at high risk for TB; it also recommends that six months of isoniazid preventive therapy (IPT) be administered for asymptomatic children under six years of age.

Dr. Swaminathan and her former colleagues at the Tuberculosis Research Centre in Chennai conducted a study in two rural and two urban TB units in the state of Tamil Nadu to assess whether the RNTCP's child contact screening and IPT policy is being implemented.

The study

Using TB treatment registers and patient treatment cards, they identified smear positive TB patients who started treatment between April and June 2008. Among the 253 TB patients identified, there were 607 adult household contacts and 136 children, of whom 84 were less than six years old.

Twenty-four percent of patients were informed by health care workers that their close contacts needed screening; 14% of child contacts aged 0-14 were screened for TB. Only 19% of children under six years old were initiated on IPT.

In focus groups with health care workers, differences in knowledge and performance were noted between rural and urban health workers – with rural health care workers being more

reluctant to screen for TB and less aware of the concept of initiating IPT for children under six.

An assessment of the procedures for screening and delivering IPT found some critical gaps— for example, there was no mechanism for the periodic follow-up of children on IPT, or for ensuring drug intake.

None of the patient treatment cards documented the details of contact screening, administration of IPT, drug monitoring or follow-up. Completion of IPT often ended after treatment of the index case was completed, whether or not the child had completed the recommended six months of IPT.

Implications

Dr Swaminathan believes that simple lessons can be drawn from the study and lead to practical recommendations that — if implemented — could improve the rate of household contact tracing and implementation of IPT in young children.

For instance, creating a separate treatment card for contacts and children receiving chemoprophylaxis should be developed.

Training on contact tracing and IPT should be given a high priority, particularly in rural districts.

Health workers need to be reassured that every child does not need to be seen by a physician before initiating IPT.

“This information is timely”, Dr Swaminathan concluded, “and can be particularly useful to the World Health Organization as it develops its revised contact tracing guidelines in the coming months.”

Tuberculosis and HIV within prisons skyrocketing, a public health threat

By Mara Kardas-Nelson

Overcrowding, low access to health care, lack of political will and the prominence of high-risk populations among prisoners all contribute to a “perfect storm” for HIV and TB infection among prison populations worldwide, researchers announced at the 40th Union World Conference on Lung Health in Cancun, Mexico.

Dr. Fabienne Hariga of the UN Office on Drugs and Crime and UNAIDS’ Dr. Alasdair Reid both highlighted dismal health statistics for those behind bars. According to Hariga, up to 65% of some prison populations are infected with HIV.

Adding to this, says Reid, TB rates in prisons are up to fifty times higher than in the general population. Increased rates are found in prisoners who have served longer sentences, tying TB acquisition with prison time. Prisoners are also more likely to die from TB and/or default from treatment than non-incarcerated populations.

Dr. Hariga insists that such poor indicators not only pose a threat to prisoners’ health, but the health of the general public as well. Given the high rate of return to society, prisoners’ HIV and TB are easily spread to communities.

Prison staff are also affected by the high incidence of HIV and TB. Dr. Salome Charalambous of South Africa, speaking about HIV and TB prison projects sponsored by the country’s Department of Corrections and the Aurum Institute, notes that many prison staff supported greater testing, treatment and infection control because of concerns over their own health.

“Prisons are not isolated from the community,” says Hariga. “You have people working in [them], you have prisoners moving in and out very often.”

But despite dismal health statistics, effective penal reform that includes increasing health services for prisoners is far from a reality. Dr. Hariga claims that “there is a lack of interest” among policy makers, resulting in a shortage of funds to address health problems

for prisoners. “In many places in the world, there is no health-in-prison programme,” she states.

The difficult nature of prison populations also contributes to the low number of programmes. Dr. Charalambous cited logistical concerns that hampered the testing and treatment of prisoners in the South Africa study, who are often moved from prison to prison or released, interrupting HIV and TB follow-up and treatment.

In large part due to this mobility, 21% of patients initiated onto ART within one of the study’s programmes were lost. In another prison, seven of the 22 prisoners who were called for follow-up had been transferred prior to undergoing review.

In order to combat low programme retention, the ongoing study only enrolls prisoners with a sentence of four months or longer. Researchers also “tag” those enrolled, alerting prison authorities not to transfer them unless essential for trial purposes.

Additionally, using symptom-based diagnosis to identify possible TB patients is difficult among prison populations. In the South Africa study, 46% of patients demonstrated any symptom for TB, while 37% displayed a trio of symptoms.

However, Charalambous surmises that some of these can be attributed to the prison environment in general rather than TB infection specifically, and therefore states, “symptom screening might not be as effective in this environment.”

Despite these challenges, Dr. Charalambous is hopeful that prisoners present a captive audience for TB and HIV testing and treatment. Her study suggests that prisoners may be responsive to such programmes: in one site, 98% of prisoners agreed to join. Dr. Reid agrees, claiming that prisons offer unique opportunities for treating marginalised populations.

In order to encourage more prison health programmes, Dr. Reid calls for further research that assesses the rate of acquiring HIV and TB behind prison bars: while data that demonstrates the high rate of both infections among prison populations is readily available, numbers that point to prisons as conducive to their spread is harder to find.

In order to fuel political will, Reid condones the “advocacy, naming and shaming” of countries who boost some of the worst indicators for prisons with regards to overcrowding, HIV and TB, and human rights violations. “Global reporting is essential to get countries to take this seriously,” he says.

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UNAIDS, WHO and Stop TB team up to create TB and Human Rights Task Force

By Mara Kardas-Nelson

In an effort to better coordinate the work of UN agencies and partners, and in recognition of the human rights component of TB and related illnesses, UNAIDS, the WHO and the Stop TB Partnership are in the process of creating a TB and Human Rights Task Force.

The Task Force, currently in the planning stages, will aim to promote a “rights-based approach” to the illness and strategise on

how to best protect the human rights of those most vulnerable to and impacted by tuberculosis infection.

The WHO's Diana Weil, speaking on behalf of the group, says the idea stemmed from a 2001 Stop TB forum which highlighted the potential threat to and protection of rights for vulnerable groups, including women, migrants, prisoners, refugees, and those living with HIV.

Since that time, however, other issues with regards to TB and human rights have emerged, perhaps most prominently MDR-TB.

"Recently, we've seen a lot of questions concerning the rights of individuals" says Weil, pointing to cases in South Africa where people "diagnosed with MDR-TB were being detained."

Such methods "did not address the needs of those patients. They didn't have proper facilities, access to due process, and it wasn't clear why they were being isolated or for how long, and what would happen in terms of access to treatment."

Weil continues: "With the new...government they've said 'we want community-based treatment and community based options.' People may need to be hospitalized if they get ill...but that should be for the most limited period of time possible."

The Task Force is concerned with protecting both the rights of TB patients, as well as those vulnerable to TB infection.

"How do you protect the rights of as many people possible from infection, as well as those who are ill?" asks Daina Weil. "We believe in the right to the protection from the risks to health," which includes access fulfilling the right to adequate housing, food, water, and health care.

In order to comprehensively address human rights for all vulnerable populations, the Task Force will aim to include broad representation from across the world. At a planning meeting for the group that took place in preparation for the 40th Union World Conference on Lung Health last week, "various stakeholders from as many communities as we could [get] together...discussed what should be the aim of this task force, who should participate, and the key objectives that we want."

While there is already a plethora of work being done on human rights and illness, coordination between such efforts is needed. Groups interested in specific constituencies, such as those that work with prisoners and migrants, are also already involved with the intersection of human rights and health.

But while many agencies and organizations are already "working in very close groups...we want to look at how we can make it bigger" and specifically "harmonise the work that's been done on TB, HIV and human rights amongst UN agencies." Weil highlights UNAIDS work on rights and responsibilities of states with regards to HIV as an example of a potential direction for the group.

While the Task Force is still in its infancy, Weil says the team hopes to "put together a policy framework...that would lay out what is a rights based approaches. But more important is a strategic agenda of what partners could do to respond to the issues and problems. We don't just want to do a problem statement."

"We want to enhance rights and the application of rights," she continues. "This isn't about maintaining the status quo, but enhancing the understanding of human rights approach." Weil says the group also hopes to tackle legal issues through legislative documents that could help to identify and rectify so-called public health laws that restrict human rights.

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Global Fund predicts funding shortages for MDR-TB, asks donors to fulfill their commitments

By Mara Kardas-Nelson

Despite increases in funding for some U.S. global health programmes, the world faces a "huge gap" for HIV, TB and malaria funding, especially with regards to MDR-TB, with some countries pegged to lose much of their international financial support in the coming months.

Dr. Amy Bloom of USAID told delegates of the 40th Union World Conference on Lung Health, which took place in Cancun, Mexico, "this is a very exciting time for those of us in the U.S. government. Over the last few years we've seen an increase in our funding, especially for PEPFAR, our malaria fund and TB funding, but now we've entered a phase where we've reached a much more holistic approach as well."

Bloom is especially optimistic about President Obama's recently announced Global Health Initiative, which could offer up to \$63 billion towards global health programmes over the next six years.

She claims that this initiative, coupled with an increase in funding and expanded mandate of PEPFAR, will allow for general health systems strengthening with a focus on HIV and TB integration.

While initially created primarily as an "emergency response," PEPFAR is now broadening its mandate to include other health issues. TB, for example, is now a "priority area for PEPFAR programme work," says Bloom.

Over the last decade tuberculosis programmes have seen an enormous increase in funding from the US government, going from no money allocated in 1998 to \$176 million allotted for 2009.

Despite this, the Global Fund's Dr. Rifat Atun warns that without continued commitment and increased funding, the progress made could be easily lost. "Next year is our replenishment year," he says, "and it's very important that the level of funding...not just be on par with what we've received from funders in the past, but go beyond for further scale-up."

The bulk of US government and Global Fund money goes to sub-Saharan Africa and Southeast Asia, epicenters of the HIV and TB epidemics. Partially as a result, Eastern Europe and Latin America and the Caribbean—areas that have less generalised epidemics but still face large burdens of disease—are strapped for cash.

The funding situation for Eastern Europe is especially worrisome to Atun, as many countries in the region face high rates of MDR-TB but will soon be ineligible for Global Fund money as their status changes from "low-income" to "middle-income." This change, however, is unlikely to be met with an increase in domestic funding, and programmes are predicted to face an even larger financial shortfall.

"Many countries with high MDR-TB, especially within Europe, will not be eligible for the Global Fund but need external funding," he explains. While USAID efforts are increasing in the region, the money allocated is still "quite small," adds Bloom.

According to Atun, "there's no one to pick up this shortfall...It's unlikely that we will find money [for the gap]." Many Latin American countries will also soon face exclusion from Global Fund grants.

"No one has really thought about this issue," says Atun. "It's a big problem. There's no earmarked funding, and if we begin to think about it now, it will take two to three years to get this in place."

On a global scale, Atun is encouraged by the increase in applications for TB grants during Round 9 of Global Fund funding. "For the first time the TB community has joined the 'billion dollar club,'" he says, referring to the amount of money allotted for diseases. "That's very good news."

"The best performing grants in our portfolio are TB grants," he continues. "The TB community is doing something right. For Round 9, the applications have been less formulaic and more ambitious...particularly in relation to TB and HIV, [with] some thinking about integration with health systems."

Atun encourages more TB-focused Global Fund proposals, as well as more advocacy and research into the economics of TB treatment and care. "It's very important...that the TB community is not left behind," he says.

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TB world looking to successes of HIV advocacy to guide renewed efforts

By Mara Kardas-Nelson

In order to garner more media attention, funds and political commitment for tuberculosis, scientists, policy-makers and advocates are looking to the successes of the HIV movement to help guide a powerful patient-driven approach to lung health.

Throughout the weekend-long the 40th Union World Conference on Lung Health that took place in Cancun, Mexico, speakers and delegates pointed to the advocacy and activism of the AIDS movement and its effects on domestic and international investment in combating the virus.

While tuberculosis has plagued humanity for much longer than its viral counterpart, and claimed a near-equal number of lives over the last 30 years, media attention, policy concentrations, and funding efforts have been lacklustre in comparison to the robust reaction to HIV.

"HIV has been very effective at mainstreaming [the virus] across the development community, and TB...has many of the same characteristics...in terms of how it affects society," says Diana Weil of the WHO. "So the question is how can we get similar responses...and draw on the lessons of the HIV community."

According to David Gold of Global Health Strategies, the relatively small TB response is demonstrated primarily through scant funding and minimal media attention. In 2008, for example, the Global Fund granted \$327 million for TB, or 11% of its total funding, with the rest going to malaria and HIV. During the same time, HIV and TB claimed nearly 2 million lives each.

Media coverage is equally disproportionate with regards to the effects of TB. Gapminder assessed the frequency of news reports regarding swine flu and tuberculosis respectively from 24 April to 6 May 2009. During this time 31 people died of swine flu, with 253,442 reports being written about the virus, while 63,066 people died of tuberculosis, with only 6,501 news reports mentioning the disease. The news-to-death ratio based on these findings is 8176:1 for H1N1, and 0.1:1 for tuberculosis.

A Global Health Solutions analysis of TB in the media, assessing news reports from August 2006-April 2009, found that the majority of tuberculosis-focused articles were written during World TB Day or international lung conferences, often focusing on drug access and research, and diagnostics.

NAM publishes an issue of *Speaker XDR-TB incident*, during which an

international drug-resistant TB patient flew from the Atlantic against

medical advice, potentially infecting his fellow passengers and

thereby their communities, also made headlines throughout North America, Europe and South Africa.

Generally, reporters focused more on MDR- or XDR-TB than non-drug resistant strains. As is the case with funding, malaria and HIV outshone tuberculosis coverage.

Gold suggests that media is an important component to advocacy and activism, and was essential to the strong HIV response. Media coverage increases awareness and can help to disseminate important public health messages regarding prevention, testing, treatment and care.

Gold notes that the 2000 Durban International AIDS Conference helped to bring the world's attention to the virus, particularly by highlighting a patient perspective and bringing together often disparate groups, such as affected communities, advocates, funders, and policymakers.

Patient advocacy and involvement is most important to the strength of the HIV response, Gold continues. While "TB is considered a public health control issue led by health care professionals rather than activists," there are more opportunities, including paid work, for patients and patient advocates within the HIV/AIDS sector.

In comparison with TB organisations, there is "greater incorporation of patients into all aspects of AIDS organisations, including governance," he says.

Dr. Bertel Squire, president of the International Union Against Tuberculosis and Lung Disease, agrees, claiming that the "inclusion and participation by persons affected by lung disease across all levels of all endeavours," coupled with "permanent...funding" is necessary to "sustain and increase our efforts."

Gold sees the 2007 Speaker incident as a "lost opportunity" in which the global TB community could have used the case to highlight the threat of drug-resistant tuberculosis, the need for better diagnostics and treatment, and the incidence of TB even in wealthy, industrialized nations like the United States.

Instead, Gold contends, the case was "shunned and rejected by the TB community," with Speaker not being encouraged to tell his story, thereby foregoing the chance to engage a patient advocate.

In order to make TB better represented, Gold suggests forging a stronger connection between activists in the global North and South, and "[focusing] on moral issues and patient rights in terms of the fight for better drugs, diagnostics...and stock outs."

High burden countries such as India and South Africa should also act as leaders in the fight against the bacterium, in the same way that Brazil, Thailand, Botswana and Uganda responded urgently and innovatively to the HIV epidemic.

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about HATiP

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