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Voluntary counselling and testing uptake and HIV prevalence among tuberculosis patients in Jogjakarta, Indonesia

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Summary We aimed to establish HIV prevalence and uptake of unlinked anonymous testing and voluntary counselling and testing (VCT) among tuberculosis (TB) patients in Jogjakarta, Indonesia. We introduced unlinked anonymous HIV testing for TB patients attending directly observed treatment, short-course services between April and December 2006. Patients were additionally offered VCT services. Of 1269 TB patients who were offered unlinked anonymous testing, 989 (77.9%; 95% CI 75.6—80.1%) accepted. HIV prevalence was 1.9% (95% CI 1.6—2.2%). HIV infections were less frequently diagnosed among TB patients who attended a public health centre [odds ratio (OR) 0.15; 95% CI 0.03—0.70] rather than public hospital. They were more frequent in TB patients with a university education background (OR 5.16; 95% CI 1.01—26.63) or a history of HIV testing (OR 57.87; 95% CI 9.42—355.62). Of the 989 patients who accepted unlinked anonymous testing, only 133 (13.4%; 95% CI 11.5—15.7%) expressed interest in VCT. Of these, 52 (39.1%; 95% CI 31.2—47.6%) attended VCT, but interest was higher among students and those offered VCT by public health centres. The HIV prevalence in Jogjakarta is higher than expected and needs to be monitored cautiously. Unlinked anonymous HIV testing is well accepted and can be implemented with modest additional efforts.

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1. Introduction

Indonesia's National TB (tuberculosis) Control Programme (NTP) achieved international targets for case detection (>70%) and treatment success rate (>85%) in 2006 (WHO, 2008). However, recent trends suggest the potential for a dual TB—HIV epidemic. The number of reported AIDS cases in Indonesia has increased 15-fold over the past 10 years (MOH-ROI, 2007). Patients with TB-HIV co-infection are reported from hospitals and jails in several provinces. Furthermore, TB is one of the leading opportunistic infections among hospitalized AIDS patients (NIHRD, 2003).

WHO recommends HIV testing among TB patients as a key component of the health sector's response to the intersecting TB and HIV epidemics. HIV testing among TB patients can serve as a pillar for integrated surveillance that is much needed to monitor the dual epidemic trend and to enable the development of sound prevention strategies (WHO, 2004a, 2004b). Moreover, it can facilitate referral for appropriate care, support and treatment for TB patients with HIV infections (Godfrey-Faussett et al., 2002).

In view of the high HIV infection rates in some settings and the improved prospects for HIV/AIDS treatment, an ethical debate has emerged surrounding HIV testing among TB patients, particularly with regard to unlinked anonymous or 'blinded' methods (WHO, 2004b). This led to linked confidential testing through an 'opt in' approach, which has been offered in centres designated for voluntary counselling and testing (VCT) (Bock et al., 2008). Recently, however, WHO encouraged adoption of provider-initiated linked confidential testing and counselling (PITC) (WHO, 2007a). In contrast to VCT, PITC is based on an 'opt out' approach in which the clinician initiates counselling when an individual is seeking medical care with signs or symptoms compatible with HIV infection (Bock et al., 2008).

Ultimately, decisions about whether and how to implement HIV testing in TB patients, particularly in countries with low-level and concentrated epidemics like Indonesia, should be guided by an assessment of the local epidemiological context and the feasibility of alternative testing strategies. This study aimed to determine the HIV prevalence among TB patients in the different types of health facilities in Jogjakarta, Indonesia, and to assess the feasibility of unlinked anonymous HIV testing for routine surveillance and 'opt-in' linked confidential HIV testing as an entry point for integrated TB-HIV care.

2. Methods

2.1. Study context

Jogjakarta province is located in the central part of Java Island, has 3.2 million inhabitants and covers an area of 3185 km^2. The province's primary care offer consists of some 650 private practices and 117 public community health centres staffed with doctors, midwives and nurses. This first-level network is backed up by nine public and 24 private hospitals. The provincial TB control strategy involves all 117 public health centres, five chest clinics and 18 hospitals (public and private), linking them for monitoring of diagnosis and treatment outcomes as well as quality assurance for smear microscopy (Irawati et al., 2007).

The province is currently facing a concentrated HIV epidemic, with 92 AIDS cases (2.3 per 100 000 population) reported as of 2006 (MOH-ROI, 2007). The HIV prevalence among the general adult population in Jogjakarta is estimated at 0.15—2.0% (NAC-MOH, 2006), though much higher among high-risk groups: clients of commercial sex workers (0.69—1.19%), commercial sex workers (3.6—7.4%), prisoners (3.7—8.0%) and injecting drug users (29.0—52.9%) (MOH-ROI, 2007). HIV surveillance in the province is mainly based on routine reporting of AIDS cases by hospitals and on annual seroprevalence surveys among risk groups. VCT services have been established in four hospitals and one non-governmental organization clinic in Jogjakarta municipality. These services are provided free of charge and can be reached from the surrounding districts within 45 min by public transport.

2.2. Study design

We piloted unlinked anonymous HIV testing among TB patients attending directly observed treatment, short-course (DOTS) services in Jogjakarta province and additionally facilitated linked confidential testing. The protocol was developed iteratively in consultation with key stakeholders and informed mainly by the WHO guidelines on TB-HIV surveillance (WHO, 2004b).

A minimum sample size of 916 was required based on the following assumptions: the WHO (2006) estimate of percentage of HIV infection in TB cases in Indonesia (0.6%), a desired precision of 0.05% (with $\alpha = 5.0\%$), and an additional number of subjects to anticipate 5% poor quality blood specimens. Out of five districts in the province, we selected three districts which well represented urban, semi-urban and rural settings. Within the three districts, we involved all 88 DOTS facilities: 68 health centres, 16 hospitals and four chest clinics. We weighted the minimum sample size for each facility type to reflect their contributions per district to TB case finding in 2005.

Between April and December 2006, consecutive new TB patients (smear-positive, smear-negative or extrapulmonary) and relapses, aged 15 years and above, who gave informed consent were recruited into the study until the required sample size was reached. The TB case definitions of the NTP guideline (MOH-ROI, 2003) were employed. The guideline prescribes diagnosis of smear-positive pulmonary TB on the basis of: (1) at least two positive results out of three consecutive sputum samples; or (2) one positive result out of three consecutive sputum samples complemented by chest X-ray indicative of TB. Smear-negative pulmonary TB has to be diagnosed based on: (1) negative results from all three consecutive sputum samples; (2) chest X-ray indicative of TB; (3) no clinical improvement after empirical non-TB antibiotic treatment; and (4) physician's judgement. Persons who were too ill to be counselled or unable to comprehend the procedure were excluded.

Eligible TB patients were recruited during their initial treatment visits and recorded in the TB register to avoid double enrolment. Specifically trained health workers offered TB patients unlinked anonymous HIV testing and addition-