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## Expanding Provider-Initiated HIV Testing at STI Clinics in China

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### Abstract

Despite expanding sexually transmitted epidemics in South China, the majority of patients presenting to sexually transmitted infection (STI) clinics are not routinely screened for HIV infection. Identifying barriers to offering HIV testing among STI care providers is an important public health priority. The aim of this study was to investigate the frequency of offering HIV testing among STI care providers in South China and reported physician barriers to offering HIV testing. More detailed operational data regarding HIV test offer frequency and barriers to testing may enhance routine HIV testing at STI clinics. A sample of 62 STI care providers within the Pearl River Delta Region of South China completed a survey including socio-demographic and training background information (including sex, age, medical education, year of terminal medical degree, HIV-specific training), reasons for not offering HIV testing routinely, and physical examination and sexual history taking practices. Frequency of offering HIV testing was calculated based on reports from research assistants and operational data. STI care providers offered HIV testing to 3011/10592 (28.4%) of their patients. There was substantial variability across providers in the frequency of offering testing, ranging from 3% to 100%. None of the identified physician factors were associated with offering HIV testing 100% of the time in the multivariate model. The most commonly physician reported barriers to HIV testing included: 1) low perceived prevalence of disease; and 2) not recommended by current guidelines. Forty-seven providers (76%) reported asking about same sex behaviors rarely or never. Further research on HIV screening practices of STI care providers may help scale up HIV provider-initiated testing and counseling programs.

### Introduction

South China faces expanding syphilis (X. S. Chen et al., 2007; Z. Q. Chen et al., 2007) and sexually transmitted HIV (Lu et al., 2008) epidemics, broadening the importance of clinic-based HIV testing programs. Previous work in South China suggests that public STI clinics have the laboratory infrastructure, human personnel, and public health connections to implement more widespread HIV testing (Tucker et al., 2010). Expanded HIV testing programs could identify undiagnosed HIV in order to provide timely initiation of anti-retroviral therapy and to initiate behavioral counseling (Bassett & Walensky, 2010).

Implementing HIV testing largely relies on the routine practice of physicians who discuss, counsel, and ultimately recommend HIV testing to their patients. Many factors potentially decrease the likelihood of physicians offering HIV testing (Burke et al., 2007; Rank, Remis, Swantee, & Wu, 2010). Systematically incorporating HIV testing into clinical practice is difficult and demands an understanding of the physicians at the frontlines of HIV testing.

In order to increase provider HIV testing, the WHO issued provider-initiated HIV testing and counseling (PITC) guidelines in 2007 (UNAIDS/WHO, 2007). China has also issued similar draft PITC guidelines focused on promoting HIV testing among physicians. These guidelines are critically important in public STI clinics which see a large number of patients at risk for sexually transmitted HIV infection (Tucker, Wong, Nehl, & Zhang, 2012). The goal of this study was to survey STI physicians in order to better understand frequency of offering HIV testing, socio-demographic factors associated with more frequent HIV testing, and physician reported barriers to HIV testing.

## Methods

The Plum Blossom Project was launched in September 2009 in order to expand HIV testing at public STI clinics. Briefly, a total of six public STI clinics were selected using probability proportional-to-size sampling (Tucker et al., 2011). Data were collected from STI care providers at the launch of the study and from STI patients over a five month horizon. 64 providers were eligible and 62 participated. Our study included three components: 1) STI care provider HIV test offer frequencies across five months; 2) socio-demographic characteristics of STI care providers and their association with HIV testing; 3) provider barriers to HIV testing. Reasons for not offering HIV testing were adapted from other operational research surveys (Arbelaez et al., 2009) following input from local providers (Tucker, et al., 2010). STI providers self-reported the frequency of asking their patients about same sex behaviors.

Frequencies of HIV test offer were obtained by dividing the total number of HIV tests offered by the total number of unique STI encounters (one patient per encounter) during the five month study. Test offer was determined by a trained research assistant asking the patient whether or not patients had been offered a test following the clinical encounter. All participants provided informed consent and this research protocol was approved by respective IRBs.

A multivariate logistic regression model was used to examine physician variables associated with offering HIV testing to all STI patients as a dichotomous outcome. Analyses were also done to examine physician variables associated with greater than 50% and 80% HIV test offer frequency. STI physician variables included the following variables: sex, age, medical education, year of terminal medical degree, HIV training, volume of STI patients evaluated.

## Results

Physicians offered HIV testing to 3011/10592 (28.4%) of their total STI outpatients. There was substantial variability across providers in the frequency of offering testing (3% to 100%). None of the identified physician factors were associated with always offering HIV testing in the multivariate model. Additional analyses examining 50% and 80% HIV test offer as dichotomous outcomes also did not identify significant factors.

The provider sample contained 38 (61%) men, with a mean age of 38 years old. The number of providers at each site ranged from 4–14. The terminal medical degree (Anand et al., 2008) was less than a Masters among 33 (54%) providers. Thirty-eight providers (61%) reported receiving post-medical school HIV training. STI physicians saw a mean of 240 (2–

785 range) STI patients during the course of the five month study. Forty-seven providers (76%) reported asking about same sex behaviors rarely or never, seven (11%) providers asked about same sex behaviors occasionally or most of the time, and four (7%) providers reported asking all their STI patients about same sex behaviors.

Several barriers to HIV testing were identified by providers (Table 1). The most common barrier was perceived low HIV prevalence, followed by lack of formal guidelines. Only four providers (7%) listed HIV stigma as a barrier to testing. Fourteen providers listed more than one barrier to HIV testing and 11 providers did not list any barriers to HIV testing.

## Discussion

HIV testing is a critical public health priority in order to fully realize the gains of HIV prevention and treatment. China's "Four Free and One Care" Policy provides free ART for a subset of Chinese individuals. While draft PITC guidelines exist in China and successful pilots have been launched, PITC guidelines have neither been formalized nor widely implemented. This study analyzed physician HIV test offer and predictors at STI clinics in South China. The high recruitment rate improves on previous physician HIV surveys in China (Cai, Moji, Honda, Wu, & Zhang, 2007; Hesketh, Duo, Li, & Tomkins, 2005).

To our knowledge this is the first study to report HIV test offer in China, suggesting that providers are only offering HIV testing to a minority of the patients they evaluate. The missed public health opportunity to identify HIV cases at STI clinics has been observed in high-income nations as well (Weinstock, Dale, Linley, & Gwinn, 2002). Whereas other studies have found that administrative barriers (Arbelaez, et al., 2009) and informed consent (Jain, Wyatt, Burke, Sepkowitz, & Begier, 2009) limit HIV testing, neither of these issues were reported among Chinese providers. More important barriers in this sample of Chinese STI providers were lack of clear guidelines and a perceived low prevalence of HIV. Local Guangdong Province research has shown an increase from 102 HIV cases in 1997 to 4,593 HIV cases in 2007 (HIV Infection--Guangdong Province, China, 1997–2007, 2009).

An alarmingly low percentage (24%) of STI physicians regularly inquired about same sex behaviors among STI patients. Given the high incidence of both HIV and syphilis among MSM in China (Wong et al., 2009), more training on providing MSM clinical services is critical. Pilot MSM training courses for STI providers have been organized in several major Chinese cities (Goh, Saunders, & Yang, 2011).

There are several limitations to this study. First, the small sample size limits the generalizability of these results. Second, although this study found 61% of physicians received HIV training, comparable to earlier studies (Li et al., 2007), our study sites may have received more HIV training compared to other parts of China. Hence, the HIV test offer frequencies observed in this sample may be substantially higher than other regions. Third, this study could not account for many factors that likely influence the frequency of HIV testing – policy environment, HIV stigma, clinic factors, and local norms.

This study provides a basic description of the STI providers who are critical to widespread implementation of HIV screening in China. STI physicians in China, like in many parts of the world, are already stretched thin for time in their typical clinical encounters. Operationalizing PITC at the local level will demand further physician training and qualitative research to elucidate physician attitudes, practices, and barriers.

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**Table 1**

Reasons for not offering HIV tests according to a sample of 62 STI providers.\*

1. Low prevalence of disease	21 (34%)
2. Not currently recommended by guidelines	12 (20%)
3. Not enough time in my clinic	6 (10%)
4. I am worried about HIV stigma affecting my patients	4 (7%)
5. I cannot provide adequate HIV follow-up services	3 (5%)
6. Many of my patients would refuse HIV testing	3 (5%)
7. I feel uncomfortable or inadequately trained to deliver a new HIV diagnosis	2 (3%)
8. Not my responsibility	1 (2%)
9. I feel uncomfortable or inadequately trained to discuss HIV risk behaviors	1 (2%)
10. Economic reasons (the patient would not be able to afford the test)	1 (2%)
11. The clinic does not have a routine HIV testing system	1 (2%)
12. Not professional	1 (2%)

\* Physicians were allowed to choose more than one response.