

**Assessment of the current STI response in Fiji  
and Vanuatu, and exploration of models to  
strengthen access to STI and HIV services by  
maximizing the value of client interactions  
with health services**

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## Acronyms

AHD	Adolescent Health and Development Center
ANC	Ante-natal clinic
ART	Antiretroviral therapy
CMS	Central Medical Store
FSW	Female sex worker
GBV	Gender-based violence
HC	Health Center
HTC	HIV testing and counseling
HIS	Health Information System
IBBS	Integrated Biological and Behavioral Surveillance
IEC	Information, education, communication
Indo-Fijian	Fijians of Indian decent
ITaukei	Indigenous Fijians
KPHR	Key populations at higher risk
MEN-Fiji	Men's Empowerment Network of Fiji
MOH	Ministry of Health
MSM	Men who have sex with men
MSP	Medical Services Pacific
NGO	Non-governmental organization
NHEC	National Health Executive Committee (Fiji)
NCD	Non-communicable disease
NSP	National Strategic Plan
PCSS	Pacific Counseling and Social Services
PICs	Pacific Island Countries and Areas
PID	Pelvic inflammatory disease
PLHIV	People living with HIV
POC	Point of care
RH	Reproductive Health
RPR	Rapid plasma reagin (syphilis test)
RTI	Reproductive tract infection
SAN Fiji	Survival Advocacy Network, Fiji
SGS	Second Generation Surveillance
STI	Sexually transmitted infection
SPC	Secretariat of the Pacific Community
TCS	HIV treatment, care and support
TG	Transgender
TPHA	<i>Treponema pallidum</i> hemagglutination assay (syphilis test)
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VCCT	Voluntary confidential counselling and testing
WHO	World Health Organization

## Executive Summary

Sexually transmitted infections (STIs) are present at high levels in the Pacific, with many countries having Chlamydia rates of >20% among antenatal clinic (ANC) clients. The current assessment examined the STI interventions implemented in Fiji and Vanuatu.

A strength of the Fiji programme is that it is supported by national funds. However, Fiji has relatively conservative programming for STI management, e.g., the constrained role of nurses, and centralization of laboratory services. Thus, in Fiji, there is scope for introduction of new technologies and approaches. These include a clearer and more permissive role for nurses in syndromic treatment, the introduction of take-home STI packs for partners, presumptive treatment of ANC clients and their partners for chlamydia, and introduction of HIV and syphilis rapid tests to lower levels of the health system via introduction of point of care tests. The hub clinics provide a strong focus for STI activities, but these clinics should be allowed to integrate family planning and other reproductive health functions, thus creating a one-stop shop for reproductive health services. A number of these initiatives are already described in the National Strategic Plan (NSP) but they require concrete steps to be taken in implementation.

Vanuatu was found to have promising and innovative service delivery approaches. Furthermore, the basic strategy for STI control in Vanuatu is good: etiologic diagnosis is centralized; syndromic management is used widely at lower levels; and laboratory capacities are being gradually expanded via introduction of VCCT and mentoring. But all of these positive aspects were compromised by poor commodities management – in particular of laboratory commodities – which made it impossible for service providers to do their job.

The three biggest needs in Vanuatu are: simple SOPs for central facilities that do etiologic diagnosis and screening; clear central budgeting that lists all sources of funding; and collaboration with the central medical store to develop a better system for commodities management by the National Laboratory. Once the budgeting is done properly, activities need to be redesigned to stay within this budget and avoid constant budget shortages and stock-outs. Any expansion beyond this minimal set of activities would require finding new sources of funding. In summary, the central unit needs to concentrate on its core functions of defining, monitoring, and procuring for a standard set of activities.

Both countries would benefit from the increased use of STI (not just HIV) messages in their health communication and HIV prevention efforts. There is also a need to strengthen targeted interventions for HIV and STIs among the key populations at higher risk (KPHR) such as better linkages between civil society peer and outreach and government services, addressing laws that impede access by KPHR and strengthen condom programming. Fiji in particular could make greater use of its NGOs to strengthen targeted interventions for HIV and STIs among key populations at higher risk. Finally, the STI response should be monitored more intensively, including efforts to quantitate the success of partner treatment and syphilis screening efforts.

## Background

### Context

In low-income countries, sexually transmitted infections (STIs) and their complications are one of the top five reasons that adults seek health care.<sup>1</sup> STIs are also a major threat in the Pacific. In the latest second generation surveillance (SGS) in 2008, chlamydia was seen in 27% of ANC attendees in Fiji<sup>2</sup> and 25% in Vanuatu;<sup>3</sup> similarly high numbers were seen in a number of other Pacific countries. The corresponding rates for syphilis and gonorrhoea were 2.7% and 2.2% in Fiji and 5% and 3% in Vanuatu. This report seeks to describe and assess the response to this health threat in Fiji and Vanuatu – in particular the high rates of chlamydia – and to suggest a way forward.

### STIs and their consequences

A clarification on terminology and classification is important. The term “STI” refers to the way that the disease is transmitted, whereas “reproductive tract infection (RTI)” refers to the site where the infection develops. In addition, STIs and RTIs can be classified broadly into genital ulcer and discharge syndromes (Table 1).<sup>4</sup> This report covered primarily the STIs that are also RTIs, thus excluding HIV (an STI but not an RTI) and yeast infections and bacterial vaginosis (which are RTIs but not STIs). Based on the associated burden of disease, most of the emphasis was placed on three curable STIs: gonorrhoea, chlamydia, and syphilis.

**Table 1: Common sexually transmitted infections (STIs) and reproductive tract infections (RTIs)<sup>4</sup>**

<b>STI/RTI</b>	<b>Organism</b>
<i>Genital Ulcer</i>	
Syphilis	<i>Treponema pallidum</i>
Chancroid	<i>Haemophilus ducreyi</i>
Herpes	Herpes simplex virus 2 (HSV-2)
Granuloma inguinale (donovanosis)	<i>Klebsiella granulomatis</i>
Lymphogranuloma venereum	<i>Chlamydia trachomatis</i>
<i>Discharge</i>	
Bacterial vaginosis	Multiple, bacterial
Yeast infection	<i>Candida albicans</i>
Gonorrhoea	<i>Neisseria gonorrhoeae</i>
Chlamydia	<i>Chlamydia trachomatis</i>
Trichomoniasis	<i>Trichomonas vaginalis</i>
<i>Other</i>	
Genital warts	Human papilloma virus (HPV)

<sup>1</sup> WHO (2013). Sexually transmitted infections (STIs): The importance of a renewed commitment to STI prevention and control in achieving global sexual and reproductive health.

<sup>2</sup> Fiji Ministry of Health; Secretariat of the Pacific Community. Second generation surveillance surveys of HIV, other STIs and risk behaviors in Fiji, 2008.

<sup>3</sup> Vanuatu Ministry of Health; Secretariat of the Pacific Community. Second generation surveillance of antenatal women, STI clinic clients and youth, Vanuatu, 2008.

<sup>4</sup> WHO (2005). Sexually transmitted and other reproductive tract infections: A guide to essential practice.

The health consequences of these STIs are often indirect and hidden. For infected neonates, chlamydia and gonorrhoea can result in conjunctivitis and either pneumonia (chlamydia) or corneal scarring and blindness (gonorrhoea). In women, approximately 8-10% of chlamydia and 8-20% of gonorrhoea infections progress to pelvic inflammatory disease (PID), leading to a 15-25% or 50-60% risk of infertility (after one or three episodes of PID, respectively) and a 6-10-fold greater risk of ectopic pregnancy. Pelvic or upper genital tract infections are in general responsible for an estimated 15-40% of gynaecology admissions in Africa and South East Asia, and, across all low resource settings, for most infertility, 7-29% of maternal deaths related to unsafe abortions, and up to 30% of maternal deaths overall.<sup>4</sup>

Syphilis brings another set of sequelae, with serious adverse outcomes for pregnancy in up to 80% of cases. Globally, untreated maternal syphilis is estimated to be responsible for over half a million adverse outcomes per year,<sup>5</sup> including 20% of stillbirths or miscarriages, 15% of perinatal deaths, 20% of prematurity or low birth weight, and 75% of any adverse maternal health outcomes.<sup>6</sup> Tests and treatment are both low cost and therefore constitute one of the most cost effective health interventions available.

STIs are an indicator of unsafe sexual practices, and the resulting symptoms lead to increased risk of HIV transmission.<sup>4</sup>

### STI response strategies

In response to these health impacts, WHO and partners have developed a global strategy for the prevention and control of STIs,<sup>7</sup> a guide to essential practice for STIs and RTIs,<sup>4</sup> and a strategy for the global elimination of congenital syphilis.<sup>6</sup> At the regional level, the Western Pacific Regional Office developed a Regional Strategic Action Plan for the Prevention and Control of STI, 2008—2012.<sup>8</sup> This covers the entire region (i.e., not just the Pacific). The priority objectives and key result areas of the Action Plan were to improve STI case management, expand access to STI care, eliminate congenital syphilis, reduce STI transmission and improve data management.

Leaders in the Pacific developed an HIV/STI strategy specifically for the Pacific.<sup>9</sup> Subsequently, the STI Working Group for the Pacific developed a Strategic Framework, which was outlined in the “Breaking the Silence” report.<sup>10</sup> It included eight components:

- 1) Strategic health communication
- 2) Syndromic management for symptomatic STIs
- 3) Counselling, testing and treatment for asymptomatic STIs, including proactive screening for chlamydia, syphilis and HIV among vulnerable and most at risk groups
- 4) Improved partner management
- 5) Epidemiologic (presumptive) treatment for chlamydia in antenatal women and their partners in high burden Pacific Island Countries and Areas (PICs).
- 6) Prophylaxis for neonatal conjunctivitis at birth

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<sup>5</sup> Newman et al. Global estimates of syphilis in pregnancy and associated adverse outcomes: Analysis of multinational antenatal surveillance data. *PLOS Med* (2013) 10:e1001396.

<sup>6</sup> WHO (2007). The global elimination of congenital syphilis: Rationale and strategy for action.

<sup>7</sup> WHO (2007). Global strategy for the prevention and control of sexually transmitted infections: 2006-2015.

<sup>8</sup> WHO Western Pacific Region (2008). Regional strategic action plan for the prevention and control of sexually transmitted infections, 2008-2012.

<sup>9</sup> Secretariat of the Pacific Community (2009). The Pacific regional strategy on HIV and other STIs for 2009-2013.

<sup>10</sup> STI Regional Working Group (2010). Breaking the silence: Responding to the STI epidemic in the Pacific.

- 7) Effective drugs available for the treatment of STIs
- 8) Framework for monitoring prevalence and long-term consequences of STIs and evaluation of the impact of the STI strategy.

## STIs in the Pacific

The prevalence of STIs in the Pacific<sup>11</sup> can be compared to those seen regionally and globally (Table 2).<sup>12</sup> Specifically for countries studied in depth in this report, the prevalence of syphilis and gonorrhoea in Fiji and Vanuatu are similar to those seen across AFRO but greatly exceeds the averages for WPRO. The biggest contrast between the Pacific and the rest of the world comes with chlamydia prevalence, which averages only 2.3% for AFRO and 4% for WPRO.

**Table 2: Prevalence of selected STIs in AFRO, WPRO, Fiji and Vanuatu**

STI	AFRO (adults)	WPRO (adults)	Fiji (ANC)	Vanuatu (ANC)
Chlamydia	2.3%	4%	27%	25%
Syphilis	3.7%	0.1%	2.7%	5%
Gonorrhoea	2.1%	1.4%	2.2%	3%

HIV remains at a very low prevalence in the Pacific, with the exception of Papua New Guinea.<sup>13</sup> Over the past 5 years, ~0.1% of HIV tests in Fiji resulted in an HIV+ diagnosis.<sup>14</sup> To date, there have been 482 people living with HIV (PLHIV) identified in Fiji<sup>15</sup> and nine in Vanuatu.<sup>16</sup> Six of the PLHIV in Vanuatu are still alive; the corresponding number for Fiji is not clear. In 2012, Fiji identified 62 PLHIV, which was half of the total PLHIV identified in 2012 across all 21 PICs.<sup>17</sup>

A 2010 review of Fiji's HIV and STI program is summarized in the country's national strategic plan (NSP); one finding was the need to expand the country's response to STIs.<sup>14</sup> The response to HIV and STIs in Vanuatu was recently reviewed,<sup>16</sup> although with a greater emphasis on HIV than on other STIs. The current review expands on these efforts but focuses on STIs other than HIV.

Risk for HIV and other STIs in the Pacific is multifactorial.<sup>18</sup> Both Fiji and Vanuatu have young populations with a widening gap between first sexual experiences and marriage. In Vanuatu, most youth are not married, not employed, not in school, and not living on their home island where they would have parental and community support.<sup>19</sup> Unsafe sexual practices are often associated with alcohol and kava use. However, there has not been a clear concentration of STIs in traditional key populations at higher risk (KPHR) in these two countries. For example, sex

<sup>11</sup> Secretariat of the Pacific Community (2010). STI epidemiological update for Pacific Island Countries, 2009.

<sup>12</sup> WHO. Global incidence and prevalence of selected curable sexually transmitted infections – 2008.

<sup>13</sup> UNAIDS Pacific Region (2009). Turning the tide: An OPEN strategy for a response to AIDS in the Pacific. Report of the Commission on AIDS in the Pacific.

<sup>14</sup> Ministry of Health, Fiji. Republic of Fiji national strategic plan on HIV and STIs, 2012-2015.

<sup>15</sup> Fiji Ministry of Health (2013). Annual report 2012 (draft HIV and AIDS section).

<sup>16</sup> Ministry of Health, Vanuatu; UNICEF Pacific Office (2013). Comprehensive review of the national response to HIV/AIDS/STIs in Vanuatu.

<sup>17</sup> Wanyeki, I. Presentation at 2013 STI and HIV Programme Managers' Meeting for the Pacific Island Countries and Areas. Nadi, Fiji, 11-13 June 2013.

<sup>18</sup> Buchanan-Arawafu/SPC (2007). An integrated picture: HIV risk and vulnerability in the Pacific.

<sup>19</sup> UNICEF. I no bin gat protection: Understanding HIV and AIDS risk and vulnerability among Vanuatu youth.



workers in Fiji had low HIV prevalence and their chlamydia rates were similar to those among ANC women, perhaps because the sex workers reported high levels of condom use with paying clients.<sup>20</sup> (Gonorrhoea and syphilis rates in Fiji were, however, 5-10-fold higher in sex workers than in ANC clients.<sup>20</sup>) Men who have sex with men (MSM) may represent a KPHR in Fiji, as they were over-represented among STI clients: Male to male sex was reported by 15% of STI clinic clients in Fiji, compared to only 3% of seafarers and 6% of youth.<sup>21,22</sup>

Travel is another risk: Second generation surveillance (SGS) in Vanuatu revealed that almost one quarter of women attending the ANC clinic at Vila Central Hospital had travelled “off island” in the last 12 months, and 43% of those women reported having sex while off island with someone who was not their regular partner;<sup>23</sup> these numbers for travel and associated sex were even higher for male youth in Fiji.<sup>21</sup>

STIs were also an acknowledged presence in people’s lives. Among youth in Vanuatu, more women than men (42% vs 28%) reported having at least one STI symptom in the last month. But treatment seeking by women was low: only 32% of these women had sought treatment compared to 93% of the men.<sup>23</sup>

### **Fiji and Vanuatu: population and health characteristics**

Based on the continuing challenges with STIs in the Pacific, an assessment of the STI response, based on the existing strategies and frameworks, is warranted. We undertook this process in Fiji and Vanuatu: two Melanesian countries that both have high rates of chlamydia and, for the Pacific, significant population sizes (Table 3). Fiji’s population of 837,271 (2007 census; 53% below the age of 25 years) lives on approximately one third of the country’s 330 islands (Figure 1).<sup>24</sup> Vanuatu’s population of 234,023 (2009) lives on 60 of the country’s more than 80 dispersed islands (Figure 2).<sup>25</sup>

Both countries face the triple challenges common to the 21 PICs: a reduced but continuing burden of communicable disease; an increasing burden of non-communicable diseases (NCDs); and climate change.<sup>26</sup> Both countries also have large youth populations, and substantial rural to urban and work-related migration (both domestic and international) – all factors associated with STIs.<sup>27,28</sup> Further background on the country situations are provided elsewhere.<sup>16,29</sup>

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<sup>20</sup> UNAIDS Pacific Office, Ministry of Health of Fiji, Fiji National University (2013). Integrated biological behavioral surveillance survey and size estimation of sex workers in Fiji: HIV prevention project. [DRAFT]

<sup>21</sup> Fiji Ministry of Health, Secretariat of the Pacific Community (2008). Second generation surveillance surveys of HIV, other STIs, and risk behaviors in Fiji, 2008. [DRAFT]

<sup>22</sup> Note that an IBBS survey has been conducted among MSM in Fiji, but this has not been released and was not available for review.

<sup>23</sup> Vanuatu Ministry of Health, Secretariat of the Pacific Community (2008). Second generation surveillance of antenatal women, STI clinic clients and youth, Vanuatu, 2008.

<sup>24</sup> WHO, Ministry of Health of Fiji (2012). Health service delivery profile, Fiji, 2012.

<sup>25</sup> WHO, Ministry of Health of Vanuatu (2012). Health service delivery profile, Vanuatu, 2012

<sup>26</sup> WHO Western Pacific Region (2012). WHO multi-country cooperation strategy for the Pacific, 2013-2017.

<sup>27</sup> Mayaud et al. Approaches to the control of sexually transmitted infections in developing countries: old problems and modern challenges. *Sex Transm Infect* (2004) 80:174-182.

<sup>28</sup> Zenner et al. Sexually transmitted diseases and HIV/AIDS in Vanuatu: a cause for concern and action. *NZMJ* (2005) 118:1-10.

<sup>29</sup> WHO (2011). The Fiji islands health system review.

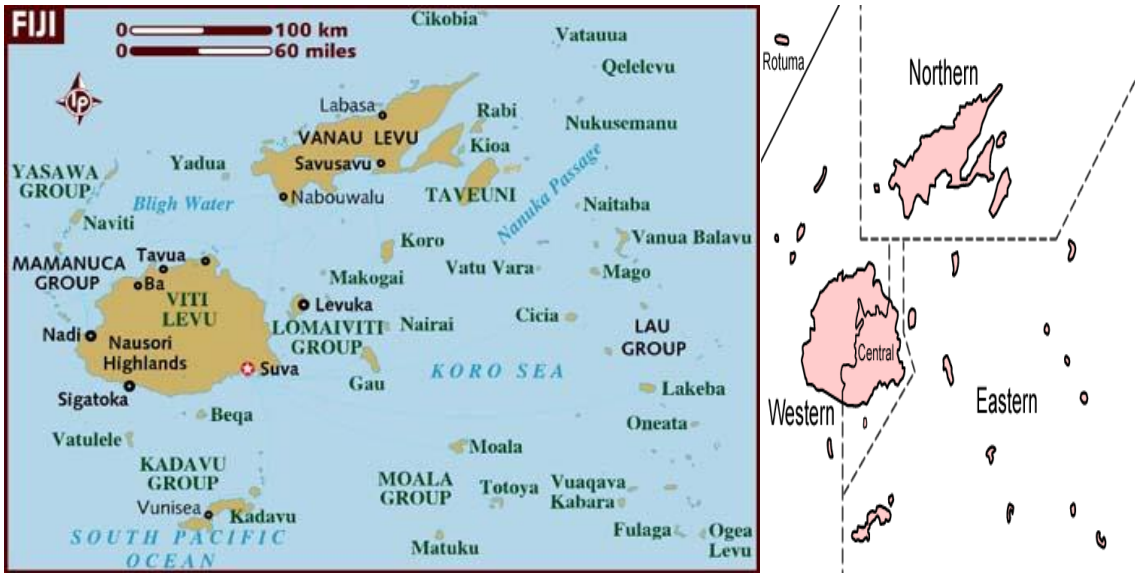


Figure 1: Map of Fiji (left) and its divisions (right)

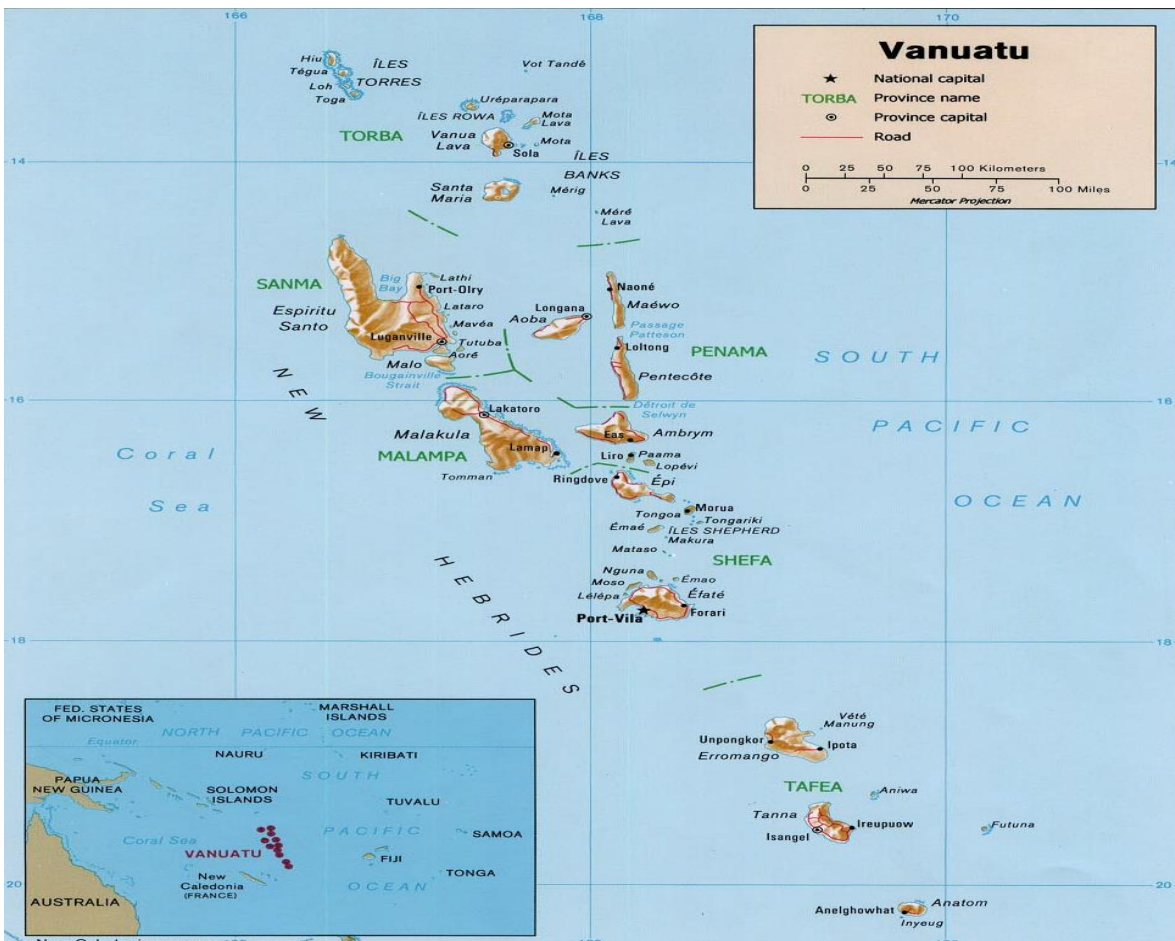


Figure 2: Map of Vanuatu and its provinces

**Table 3: Population and health indicators for Fiji and Vanuatu<sup>24,25</sup>**

Indicators	Fiji		Vanuatu	
	Measure	Year	Measure	Year
Population	837,271	2007	234,023	2009
Human development index	0.688	2011	0.617	2011
Literacy rate	93%	1996	74%	1999
GDP per capita (PPP, 2012 est) <sup>30</sup>	\$4,800	2012	\$4,900	2012
Total health expenditure as % of GDP	4.9%	2010	5.3%	2010
Population living under the poverty line	31%	2008-09	n/a	
Life expectancy at birth	69.2	2011	71	2011
Infant mortality rate	13.1	2010	25	2010
Maternal mortality rate	22.6	2010	110	2010

### Reproductive health linkages and integration

In addition to the focus on STIs as a stand-alone intervention, there has also been increasing attention on cross-programme collaboration. This work is a part of an effort to provide client-centered services, in which clients get maximum benefit from each one of their interactions with health services. For example, Fiji's NSP recommends that HIV prevention be integrated with STI prevention and with improvements to reproductive health.<sup>14</sup>

Many of the earlier examples of cross-programmatic initiatives came from sub-Saharan African settings with high burdens of both HIV and TB. To adapt this thinking to the Asia-Pacific setting, the Guilin framework was developed.<sup>31</sup> As noted in this framework:

*...common underlying causes and shared solutions provide the basis for linkages that can strengthen all services and increase the reach of HIV prevention and testing. ...The emphasis is not on creating all possible linkages, but on doing what is possible and advisable given local factors such as epidemiology, current skill sets, the current organization of the health system, resources available, and health system usage patterns. In settings with low HIV prevalence, for example, outreach to specific populations may be more important than forming linkages between two broad-based services. Especially when resources are limited,*

<sup>30</sup> CIA World Factbook.

<sup>31</sup> WHO, UNICEF, UNFPA, UNAIDS (2007). Asia-Pacific operational framework for linking STI/HIV services with reproductive, maternal and child health.

*linkages that add information (such as prevention messages or a simple screening) will be easier to implement than linkages that require extensive clinical judgment for referral or clinical treatment.*<sup>31</sup>

Adaptation of this framework has occurred for several Asian countries, notably including Cambodia and Viet Nam, and resulted in roll-out of some very successful cross-program national initiatives. In the Pacific, a mapping revealed some integration but considerable barriers to realizing all possible gains.<sup>32</sup> There remains a gap in determining the optimal approach to these linkage and integration activities that is suited to the local context.

In particular, the low population of the PICs means that there is already substantial overlap in programmatic responsibilities, with a single individual typically responsible for multiple technical areas. However, it is still important to determine whether client interactions (including consultations, education and outreach) are focused on single or multiple issues, and whether there is still scope to increase the impact of client interactions by addressing multiple issues per encounter. There is a need to articulate more clearly the specific opportunities to address STIs and HIV at national, provincial, and peripheral levels and in the context of major health priorities such as MCH and NCDs. Ideally, this analysis would include justifications for these linkages to other services, and specific accountabilities and responsibilities, including management and financing structures for those activities. Elaboration of these models could contribute to national health strategy development and Global Fund proposal development, and implementation of these models should then allow health workers to achieve more with current investments and to increase the sustainability of health outcomes that have already been achieved by the programmes.

## Objectives

The objectives of this cross-programmatic review are two-fold:

- To assess the current STI response in Fiji and Vanuatu, using the frameworks from the regional Action Plan and the Pacific “Breaking the Silence” report, and to make recommendations for further improvement of the response.
- To derive a set of recommendations and models that will enhance collaboration between STI and HIV services and other functions of the health system, thus using these services to enhance prevention, diagnosis and management of STIs including HIV and maximizing the benefits for every interaction that clients have with health services.

## Methodology

- 1) A desk review was conducted to analyze existing information on STIs, HIV, NCDs and MCH in the Pacific, including health system capacity (facility numbers and staffing) and health seeking behaviors.
- 2) Further ideas were gathered via attendance and discussions at the 2013 STI and HIV Program Managers’ Meeting (11 to 13 June) and the STI Working Group for the Pacific (14 June).

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<sup>32</sup> Population Action International, Family Planning International (2010). Integrating HIV and sexual and reproductive health: A Pacific-specific mapping.

- 3) From June 17-28, site visits and discussions with relevant country stakeholders (WHO, MoH and partners) were conducted to assess the STI response and set a strategic direction for cross-programme linkages in Fiji and Vanuatu.
- In-country visits and interviews were conducted at health facilities at national and peripheral levels to assess the STI response and to define the extent of linkages (see Annex 1 for a full list of interviewees).
  - Site visits in Fiji covered two of the country's four divisions (central and Western) and included a private hospital, the national referral hospital (Colonial War Memorial Hospital), a sub-divisional hospital, two peri-urban health centers, a rural health center, two reproductive health "hub" centers (in Suva and Lautoka), and two other reproductive health clinics in Suva (one run by an NGO; another by the government).
  - In Vanuatu, visits were made on the islands of Efate and Espiritu Santo. On each of these islands, the visits included the main hospital (Vila Central Hospital in Port Vila, Efate, and Northern Provincial Hospital in Luganville, Espiritu Santo), a rural health center, and two NGO clinics providing reproductive health services (Wan Smolbag's Kam Pusum Hed clinic in Port Vila and Northern Care Youth Clinic in Luganville, and the Vanuatu Family Health Association's clinics in each town). Discussions were held at national and regional level agencies to provide additional context.
- 4) Based on the WPRO Regional Strategic Action Plan 2008-12,<sup>8</sup> the "Breaking the Silence" report on STIs in the Pacific,<sup>10</sup> and the analysis of Mayaud et al.,<sup>27</sup> the following were outlined as some of the issues that could allow STI transmission to continue: limited condoms and prevention efforts; limited service availability; limited partner testing; delayed or incorrect syndromic treatment; a reservoir of asymptomatics due to limited screening, diagnosis and/or lack of presumptive treatment; and gaps in monitoring and evaluation that hinder programming decisions.
- 5) This analysis led to the report structure outlined below and the major questions that were posed in semi-structured interviews:
- 1) What is the best approach to generate a large-scale STI prevention campaign when HIV prevalence is still low?
  - 2) Where are STI services currently delivered, and does this availability match client needs?
  - 3) How can partner approaches be optimized?
  - 4) Is syndromic treatment efficient and effective?
  - 5) For chlamydia:
    - a. Can presumptive treatment in ANC be strong enough (e.g., with partner treatment and prevention) to have an impact?
    - b. Would population efforts for chlamydia ever be practical?
  - 6) For elimination of congenital syphilis:
    - a. What is the current coverage for ANC testing?
    - b. Can point of care tests be used to increase coverage?
  - 7) Are there any missed opportunities to deliver STI services?
  - 8) What are the gaps in monitoring and evaluation?

In addition, questions on integrated and linked services were included. These were an abbreviated version of the questions present in existing guidance.<sup>33</sup>

## Findings

### Prevention and outreach

Prevention activities have focused more on HIV and awareness and less on other STIs and behavior change. Mass media in Fiji has been concentrated in brief periods around events such as World AIDS Day. Vanuatu has benefited from some more long-term initiatives such as a soap opera produced by the NGO Wan Smolbag.

There were many HIV posters in NGO clinics in Vanuatu and the hub reproductive health clinics in Fiji. But HIV messages dominate: there were no posters referring to other (non-HIV) STIs seen in Vanuatu and only a single poster of this type in Fiji. Information, education and communication (IEC) materials were restricted to HIV in Vanuatu, and in Fiji the IEC for other STIs was out of print. There were some videos available from Wan Smolbag in Vanuatu; further use of video was recommended for clients waiting in ANC and other clinics. Male-led behaviour change communication, e.g., in nakamals, was suggested as the most likely way to change male behaviour on issues such as partner treatment, but this does not currently take place.

In posters, IEC, and health counselling, there is a potential to appeal to people more directly regarding STIs by making reference to the increased risk of still births, neonatal mortality, maternal mortality and infertility. One of the hub centers in Fiji provided excellent counselling messages on these themes in order to encourage partner treatment, but these messages were rarely used or mentioned by other healthcare workers, and they were not available to send home to promote partner treatment.

In both countries, condoms were available for free in many health clinics, although in some Vanuatu public facilities these condoms were not readily visible (e.g., in a closet in a rural health center and inside the poorly used VCCT room at Vila Central Hospital). Maintaining condom supplies for clinics was not reported to be a problem. In addition, some of the NGOs placed free condoms in various commercial facilities in their respective towns. Two condoms were included in each of the STI packs in Vanuatu (these are given to STI clients who are treated syndromically).

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<sup>33</sup> IPPF, UNFPA, WHO, UNAIDS, GNP+, ICW, Young Positives (2009). Rapid assessment tool for sexual and reproductive health and HIV linkages: a generic guide.



Figure 3: Sign for condoms in Vila Central Hospital ANC clinic, Port Vila, Vanuatu; Poster in Northern Provincial Hospital, Luganville, Vanuatu

In terms of impact, awareness of HIV messages has reached much of the Vanuatu community surveyed in the 2008 SGS, but widespread stigma remains among both youth and older populations, and condom use is very low (15% at last sex for ANC women).<sup>23</sup> In addition, women's health seeking behaviour for STI symptoms is extremely poor; only one third of women reporting STI symptoms sought treatment.<sup>23</sup>

Gender-based violence (GBV) and gender power issues are significant factors in both the HIV and STI epidemics in the Pacific.<sup>34</sup> Bringing about change in this area is no easy task. In the absence of a large HIV epidemic (on the scale of the Papua New Guinea epidemic), there have not been large resources dedicated to this work.

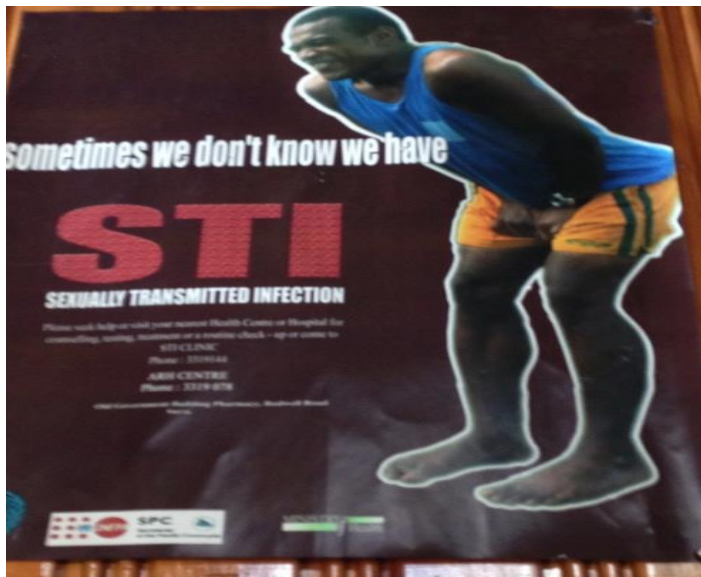


Figure 4: Poster in hub clinic, Suva, Fiji. This was the only poster seen that referred to non-HIV STIs.

<sup>34</sup> AusAID (2007). Violence against women in Melanesia and East Timor: A review of international lessons.

## Service availability

Service availability is aimed at attracting and retaining clients in the diagnosis and treatment cascade. For an STI program to be successful, healthcare facilities should screen for asymptomatic cases, build appealing services and messages that maximize health seeking behaviors, and provide rapid, accurate diagnoses, correct treatment, and verified completion of treatment.<sup>4</sup> Services should be available for key populations at higher risk such as youth, MSM and sex workers.

STI services in the two countries are organized somewhat differently (Table 4). In both countries, large numbers of clients go to the main hospitals. In addition, Fiji has specialized STI clinics in the public sector, and a larger private sector. Vanuatu has stronger NGO clinics (in the two main towns only).

**Table 4: Location of STI services in Fiji and Vanuatu**

<u>Diagnosis and treatment site</u>	<u>Use by STI clients: Fiji</u>	<u>Use by STI clients: Vanuatu</u>
Provincial hospitals	High	High
Health centers	Low	Low
Specialized public sector STI clinics	Medium	Not available
Specialized NGO reproductive health clinics	Low	Medium
Private sector providers	High	Low

Fiji's public health services are organized into four divisions (north, east, south and west). The public facilities consist of 4 divisional hospitals, 16 subdivisional hospitals, 78 health centers (managed by a medical officer or nurse practitioner), and 101 nursing stations (staffed by a single nurse).<sup>29</sup> ANC services are generally at health center level or above, and most deliveries and laboratory services are at the subdivisional and divisional hospitals. Approximately 130 private general practitioners and two private hospitals in Suva cater to a richer clientele, although poorer clients are reportedly more likely to use such services when they have STIs, in order to maintain confidentiality.

In Fiji, three "hub" centers in Suva, Lautoka and Laboratory are designated as major centers for STI treatment (Figure 5), but the main locations for screening activity are the ANC clinics in hospitals and health centers. Working at just five major hospitals (3 divisional and 2 subdivisional) in Fiji, Pacific Counseling and Social Services (PCSS) projected having access to 80% of mothers,<sup>35</sup> and reported providing pre-test counseling to 8881 ANC clients (~half of the birth cohort) in 2011.<sup>36</sup> Outside of the hospitals, any health center with ANC services collects blood that is referred for testing for syphilis, HIV and hepatitis B.

The populous Suva area used to have more specialist reproductive health facilities. With the ending of the Marie Stopes and AIDS Task Force clinics, Suva's non-hospital RH services are

<sup>35</sup> Cohen, J. Integrated antenatal HIV and STI counseling. PASA, Secretariat of the Pacific Community, No. 35 – January 2010.

<sup>36</sup> Cohen, J. Integrated antenatal HIV and STI test counseling a success in Fiji. PASA, Secretariat of the Pacific Community, No. 38 – May 2012.



divided between different outlets, some of which have low client loads:

- 1) The Adolescent Health and Development Center (AHD, also known as “Our Place”) is a public clinic intended to be youth-friendly (Figure 5). It has suffered from a loss of donor funding and saw only 190 clinical clients in 2012, of whom only a third were youth and 11% (21) were adolescents.<sup>37</sup> Youth attendance has likely suffered due to limited outreach: AHD’s peer educators were only able to visit 5 of 69 schools in the area during 2012. For STIs in 2012, a total of 16 asymptomatic clients were screened and 67 symptomatic clients were tested.
- 2) Medical Services Pacific (MSP) is a local NGO that evolved from the Marie Stopes operation. It provided 4406 services in quarter 3 of 2012; over half of these consisted of condom provision, with 463 clients reached for clinical services.<sup>38</sup> It is focused more on family planning and outreach activities, and brings expertise on sexual and reproductive health to the zone nurse system. MSP also works with a small number of sexual assault clients referred by the police. There are not enough clients in Suva to justify the presence of a full-time doctor at the MSP clinic, and MSP is not yet doing syndromic management of STIs.
- 3) The Oxfam Clinic provides primarily family planning services. It saw 10,345 clients in 2011.
- 4) The Reproductive Health Clinic in Suva is the hub center for HIV and STIs in the central and eastern divisions. Despite rebranding, it is still commonly known as the STI clinic, as noted by a printed sign on the door, and this is the main reason for client visits. In 2012 this clinic had 1310 clients who were symptomatic for STIs; two thirds were male and two thirds had a known contact.<sup>39</sup> All newly identified PLHIV are referred to the hub, and the HIV testing conducted by the hubs has been responsible for 40% of the PLHIV detection in Fiji thus far.<sup>40</sup> But for detection of other STIs, however, the hub does not appear to be very connected to the zone nurse system at health centers, which could help to promote STI discussions and screening during outreach activities.
- 5) A large but unknown number of STI clients are thought to attend the numerous private physicians in the Suva area.

Some quantitative estimates were gathered during site visits to allow a comparison of STI patient loads. Symptomatic STIs were seen once every 3 months in a small rural health center (Korovisilou), 9-10 times a month in a medium-sized, peri-urban health center (Raiwaqa), and 3-4 times a day in a large health center (Nausori). The Nausori numbers are less than in the Central Division hub, but still significant. Suva Private Hospital reported seeing only 2-3 symptomatic STI cases per month, but more STI clients were expected to go to individual private physicians.

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<sup>37</sup> AHD (2013). Adolescent Health and Development Centre, Annual Report, 2012. Youth are classified as those 24 or younger, and adolescents as 19 or younger.

<sup>38</sup> MSP (2013). Quarterly report.

<sup>39</sup> Reproductive Health Clinic, Central/Eastern Division (2013). Annual report.

<sup>40</sup> Ministry of Health, Fiji (2013). Family Health Annual Report, 2012.



**Figure 5: In Fiji, one-stop and inviting RH services are not available: the Lautoka Hub Center (and other hubs) have prominent HIV signs (left); Suva hub still calls itself an STI clinic (center); Suva's "Our Place" has a very formal and visible waiting room (right)**

Vanuatu's health services are organized based on the country's six provinces, each of which has a single hospital and multiple health centers. The two tertiary referral hospitals are in the two main towns of Port Vila (Vila Central Hospital, Efate island) and Luganville (Northern Provincial Hospital, Espiritu Santo island). Specimens can be collected at some of the 32 health centers, mostly through the skills introduced along with the establishment of voluntary confidential counselling and testing (VCCT) services at a total of 17 government and NGO clinics (Figure 6),<sup>16</sup> but laboratory services are generally restricted to the provincial hospitals. The main hospitals in Santo and Tanna send urine samples to the central laboratory for chlamydia testing using the BD Probe Tec. Larger health centers see only 2-3 symptomatic STIs per month.

There are two major NGOs providing reproductive health services in Vanuatu. Vanuatu Family Health Association has 50-55 clients per day in Port Vila and 35-40 per day in Luganville. Both clinics are centrally located in their respective towns. Most clients in Port Vila come for family planning, though some come primarily for symptomatic STIs. The family planning clients do not routinely get a genital examination for STIs, but an estimated 20-30% have symptoms such as discharge or abdominal pain, in which case they get a genital examination including speculum examination. Blood (for syphilis testing of symptomatic clients) and urine (for chlamydia testing of all clients, when operational) are referred to Vila Central Hospital. In the Luganville clinic, there are few family planning clients; instead, the intake is split equally between those with STIs and general medical overflow from the provincial hospital.

Wan Smolbag's Kam Pusum Hed clinic is in a discreet location on the outskirts of Port Vila. This clinic appears to attract a less settled clientele – the percentage living with their sexual partner is half that seen at the hospital's ANC clinic (36% vs 74%); and their condom use at last sex was several-fold lower than for ANC clients and youth.<sup>23</sup> An estimated 70% of the clinic's clients come for family planning services and 30% because of symptomatic STIs. Those with STIs are mostly 17-25 years old, and include almost as many men as women. The clinic has small groups of FSW and MSM peer educators. Wan Smolbag's Northern Care Youth Clinic (Figure 6) sees both family planning and STI clients and has a comfortable and inviting reception area with couches and educational DVDs. At both sites, Wan Smolbag has extensive drama and public education initiatives. Vanuatu Family Health Association and Wan Smolbag both supply condoms to

nakamals, shops and nightclubs.



**Figure 6: Health Center with VCCT room, Fanafo, Santo, Vanuatu (left); Wan Smolbag's Northern Care Youth Clinic, Luganville, Vanuatu (right)**

RH services at these NGO clinics in Vanuatu are well integrated and the clinics refer samples for testing at the hospital laboratory. However, relative to the hospital testing numbers, the testing volume is 4 times lower at the Northern Care Youth Clinic run by Wan Smolbag, and 12 times lower at the Vanuatu Family Health Association (Table 5). Within the Northern Provincial Hospital itself, the ANC clients account for 80% of the serological testing volume for HIV, syphilis and hepatitis B.

**Table 5: Testing volumes in Sanma province, Vanuatu, in 2011**

Sanma province, serological testing volume	# people tested	% of total test volume
Northern Provincial Hospital ANC	808	41%
Northern Provincial Hospital, all other wards	199	10%
Northern Provincial Hospital, blood donors	409	21%
Northern Care Youth Clinic	180	9%
Vanuatu Family Health Association	60	3%
Port Olry Health Center (HC)	245	13%
Fanafo HC	55	3%
	<b>1956</b>	

At the lowest levels of the health system in both countries, only syndromic management of STIs is offered (see section on syndromic management below). Larger facilities offer more screening and etiologic testing (Table 6).

**Table 6: Testing, screening and referral sites**

Etiology	Where STI test is conducted		Additional sites providing specimens for transport and testing	
	Fiji	Vanuatu	Fiji	Vanuatu
Chlamydia	Central laboratory	Central laboratory at	Hubs are	3 main

	(Mataika House), but no reagents for BD Probe Tec	Vila Central Hospital only, but no reagents for BD Probe Tec	supposed to send	hospitals (Vila, Santo, Tanna)
Syphilis	Divisional hospitals, some subdivisional hospitals (RPR/THPHA)	RPR at 3 main provincial hospitals	Hubs, subdivisional hospitals and half of HC	Some HCs with VCCT
Gonorrhoea	GC Culture and sensitivity at Divisional; Subdivisional do Gram stain* or send to Divisional for culture	Sometimes culture at Vila Central	Hubs	None
HIV	Divisional hospitals (1 <sup>st</sup> test only) – Transitioning from Elisa to multiple rapid HIV tests	Hospitals – Rapid HIV tests	Hubs, Hospitals and HC with ANC	HCs with VCCT
<b><u>New initiatives</u></b>	<b><u>Fiji</u></b>	<b><u>Vanuatu</u></b>		
Presumptive azith for ANC clients	No	Yes		
Point of care (POC) syphilis tests	No	Yes, some		

\*Much of the Gram staining was reported to be of doubtful efficacy, as it was taking too long for swabs to be transported from NGOs, hubs or subdivisional hospital clinics to laboratories.

In both countries, major hospitals had high client loads so there was insufficient time for staff to counsel STI clients or provide additional tests. For example, at Vila Central Hospital (40-50 ANC clients per day) the number of ANC clients and shortage of staff led to no speculum examinations, no gonorrhoea testing, no prophylactic tetracycline for newborns, and very few ANC clients getting HIV tests – all services that were offered in at least some other provincial hospitals in Vanuatu. This issue is even more acute in Fiji due to the highly centralized services. There have been efforts in Fiji to decentralize and encourage the use of health centers, e.g., through extended opening hours for health centers around Suva. However, the divisional hospital in Suva (Colonial War Memorial Hospital) still delivers almost half of all babies in the nation.<sup>41</sup>

In both countries, the majority of services are focused on the general population such as ANC clients. It is of course important to reach key affected populations, which include young people, MSM and sex workers. Fiji has youth outreach workers at some of the larger hospitals, and NGOs exist to focus the efforts to reach MSM (MEN Fiji), PLHIV (FJN+), and sex workers (SAN Fiji). But, with rare exceptions, the reach of these NGOs is not used by the Fijian public sector to enhance

<sup>41</sup> As further context, this represents 12-fold greater ANC volume than Northern Provincial Hospital in Vanuatu.

service delivery. Sex workers and others in Fiji have expressed concerns about confidentiality and overly visible entrances of the hub clinics, and the desire for more welcoming health facilities for reproductive health and STI checkups.<sup>20</sup> In Northern Division, Empower Pacific was a preferred location for regular testing of sex workers (conducted in cooperation with the hub), but this was stopped due to concern that it might be against the law.

Vanuatu benefits from the youth-friendly facilities and peer educators of Wan Smolbag. One health center in Efate was copying some of the talks and other ideas from Wan Smolbag to reach youth with reproductive health concepts.

In part because of their small size, both countries have implemented many cross-program initiatives. Clients diagnosed (either syndromically or etiologically) with an STI are tested for other STIs and offered HIV testing; ANC mothers are generally tested for HIV, syphilis and hepatitis B. During family planning sessions, testing for HIV and other STIs is offered in some facilities but not others.

The end result of all these facilities and activities is service coverage. Regionally, 11 PICs reported in 2009 on their testing rates. Among ANC clients, coverage for chlamydia and gonorrhoea testing ranged from 12% in Melanesia to 34% in Micronesia.<sup>42</sup> In 2011, ~39% of pregnant mothers in Vanuatu were tested for chlamydia.<sup>43</sup> A higher level of coverage may be needed to have a significant impact on Chlamydia prevalence.

### Partner tracing

One of the biggest challenges with STI control is to get treatment to partners of index cases. Partner treatment is important when index cases have genital ulcers, urethral discharge (men), lower abdominal pain (women, although non-STI causes are possible), and relapses of vaginal discharge (women).<sup>4</sup> Without treatment of these partners, there is a high likelihood of re-infection of the index case. But standing in the way of partner treatment are the stigma of STIs and the fear of gender-based violence or other consequences for the index case.

Various approaches have been used. Notification of the partner by the index case (patient-led referral) is often seen as the easiest path for both patient and healthcare provider. But a number of more active strategies have shown evidence of being more effective.<sup>44,45</sup> These include:

- 1) contact by the healthcare provider (provider-led referral);
- 2) treatments sent home with the index case (patient-delivered partner therapy), preferably supplemented by take-home information booklets;
- 3) giving the index case the choice between patient-led referral, provider-led referral, and patient-delivered partner therapy;

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<sup>42</sup> SPC (2010). STI epidemiological update for Pacific Island Countries, 2009. Note that a more recent version of this report does not yet exist.

<sup>43</sup> SPC (2012). 2009-2011 STI surveillance report, Vanuatu. This report also provides some figures from routine reporting that are similar to those from the 2008 SGS cited earlier. In the updated report, positive results for chlamydia and gonorrhoea were lower among ANC clients (22% and 5%) than among STI clinic clients (32% and 31%). (The chlamydia rate dipped to 13% of ANC clients in the 2005 SGS but has otherwise been consistently high.) Syphilis tests were positive for 3% of ANC clients.

<sup>44</sup> Trelle et al. Improved effectiveness of partner notification for patients with sexually transmitted infections: systematic review. *BMJ* (2007) doi: 10.1136/bmj.39079.460741.7C

<sup>45</sup> Matthews et al. Strategies for partner notification for sexually transmitted diseases. *Cochrane Database Syst Rev.* (2001):CD002843.

- 4) stipulating a limited time for patient-led referral after which the provider takes the lead (contract referral);
- 5) take-home information with a referral card;
- 6) healthcare vouchers for partners; and
- 7) more extensive counselling of index cases.

In general, “involving index patients in shared responsibility for the management of sexual partners improves outcomes.”<sup>44</sup>

For regular partners in Vanuatu, the providers rely mostly on patient-delivered partner therapy using pre-packaged STI kits. There were some reports that it was easier to convince male partners to take a pill than to visit a clinic – especially for ANC clients given presumptive treatment for chlamydia. But if an index symptomatic case is in contact with their partner more by phone than in person, Vanuatu providers will rely on patient-led referral.<sup>46</sup> On a routine basis, Fiji uses only patient-led referral.<sup>47</sup> To achieve patient-led referral, providers gave out a coded referral card to the index patient at the VCCT sites in Vanuatu but only at the two hub sites visited in Fiji; other sites in Fiji relied on verbal instructions only. No other strategies for partner treatment were seen.

Qualitatively, it appeared that the efficacy of partner interventions depends on the time (and skill) put into the counseling of the index case: this is highest in NGOs and hubs; and lowest in busy hospitals. Healthcare workers reported more success – particularly with stable couples – when they described the threats to unborn children and to fertility.

In Fiji, the Public Health Act provides for enforcement of partner tracing related to notifiable diseases. In the past this reportedly did lead to some actions by health inspectors, but currently this threat was described as entirely “theoretical”.

Neither country had any systematic monitoring of partner outcomes: did the partner come to the health facility; or did the index case confirm that the partner took the drugs. There is no easy way to scan for this in the current reporting systems, and thus there is no available quantification of proportion of partners managed. For example, in Fiji any check would involve going into each patient folder and cross-checking individually. In Fiji, a sexual health form was mentioned – this would have follow-up details for action by the zone nurses, rather than the nurses having to go through the whole register – but this system was not seen in operation.

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<sup>46</sup> Some public sector providers used a different approach: first they tried patient-led referral, and only switched to patient-delivered partner therapy if the partner had not shown up by the index case’s second visit. However, it was acknowledged that the index case often did not come for a second visit, so this strategy seems unwise.

<sup>47</sup> The only exceptions to this were in the hub clinics: two of them very occasionally resorted to provider-led referral; and two did patient-delivered partner therapy but only if the partner lived in a very distant village on another island, or if the partner did not return with the index patient on the second visit.



Figure 7: Visual encouragements to do partner testing or treatment were rare; this home-made poster from Suva's hub was the exception

### Syndromic management

In both countries, syndromic management was seen as a practical approach for the periphery. This approach has been challenged because vaginal discharge is a poor predictor of cervical infection,<sup>48</sup> but in other respects syndromic management remains a very useful and practical approach for symptomatic patients in low resource settings.<sup>4,49</sup> It does result in some overuse of antibiotics, but this use is generally of short duration (often only a single, directly observed dose).

Flow charts for syndromic management, adapted for each country,<sup>50</sup> were widely available and visible in public health facilities in both countries. There was some confusion about what algorithm to use in facilities that did both syndromic management and the collection of blood or urine for etiological STI screening at other sites.

Some delays in health seeking were reported with women and in rural areas of Vanuatu (mostly due to the use of traditional healers),<sup>3</sup> but these delays were less in urban areas and with men. In general, men with symptoms were thought to seek out care promptly.

In Fiji, the nurses' scope of practice doesn't allow them to prescribe antibiotics, which presents a challenge for syndromic management. Nurses who are trained on syndromic management can administer STI drugs, but only after consulting a prescribing doctor. Among healthcare workers and policy makers, there is widespread confusion about this distinction between prescribing and administering.

<sup>48</sup> Trollope-Kumar et al. Syndromic approach for treatment of STIs: time for a change. *Lancet* (2006) 367:1380-1.

<sup>49</sup> Lush et al. Transferring policies for treating sexually transmitted infections: what's wrong with global guidelines. *Health Policy and Planning* (2003) 18:18-30.

<sup>50</sup> These flow charts were adapted from the STI guidelines issued by the Oceania Society for Sexual Health and HIV Medicine Ltd (OSSHHM) and from WHO (2008). *Comprehensive STI case management for Pacific Island countries: Field testing manual*.

## Chlamydia

Chlamydia rates in both Fiji and Vanuatu are amongst the highest in the world. In Vanuatu, prevalence was reduced in 2005 possibly due to a mass treatment campaign, but by 2008 had almost doubled again.<sup>3</sup> Between the two countries, there are some differences in the approach to the common challenge of chlamydia.

In Vanuatu, epidemiological (presumptive) treatment for chlamydia started in May 2012.<sup>16</sup> All ANC clients at hospitals and health centers, and their partners, are meant to get azithromycin at their first ANC visit. Apart from some stockouts of azithromycin (see section below), in general the presumptive treatment was occurring for ANC clients, with partner treatments mostly sent home with the women, and checked verbally on the next ANC visit.

For chlamydia screening in Vanuatu, urine specimens are being collected from ANC clients at hospitals in Efate, Espiritu Santo and Tanna islands; additional specimens come from some health centers with VCCT sites that refer to these hospitals. All of these specimens are then transported to the national laboratory in Port Vila for testing with a BD Probe Tec. At the time of the review, this testing had been non-operational for several months due to maintenance problems. At other times, results take a long time to get back to the patient, if they do at all, and by then the healthcare workers have long ago completed presumptive treatment of the ANC clients. Thus, this activity is functional in terms of surveillance but it rarely impacts treatment decisions.

Fiji has the opposite challenge: rather than dealing with the cost and logistics of widespread activities, it has few activities for chlamydia resulting in low awareness even among healthcare staff. Presumptive treatment is proposed in the NSP,<sup>14</sup> but currently neither presumptive treatment nor routine chlamydia testing are implemented for ANC clients. Healthcare workers in smaller facilities therefore have low awareness of chlamydia's prevalence or consequences. The exceptions were the staff members in Suva Private Hospital and, especially, in the national referral hospital's Obstetrics and Gynecology Department. Due to the health system's centralized services, they are among the few who deal with the various sequelae of chlamydia infection on a daily basis.

One possible approach to the exceptionally high levels of chlamydia is mass antibiotic administration to the entire adult population. This addresses the issue of asymptomatic disease and the shortage of routine screening opportunities in low income settings. In various countries, mass treatment at regular intervals – called periodic presumptive treatment (PPT) – has reduced prevalence of gonorrhoea and chlamydia by up to half but is usually implemented only amongst defined sex worker populations.<sup>51,52,53</sup> In Cook Islands and Nauru, two of the smallest PICs, mass treatment for chlamydia was recently used for the entire adult population with considerable success.<sup>54</sup>

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<sup>51</sup> Steen et al. Periodic presumptive treatment of curable sexually transmitted infections among sex workers: a systematic review. *AIDS* (2012) 26:437-445.

<sup>52</sup> Steen et al. Periodic presumptive treatment of curable sexually transmitted infections among sex workers: recent experience with implementation. *Curr Opin Infect Dis* (2012) 25:100-106.

<sup>53</sup> WHO, LSHTM, Population Council (2008). Periodic presumptive treatment for sexually transmitted infections: Experience from the field and recommendations for research.

<sup>54</sup> Presentation at 2013 STI and HIV Programme Managers' Meeting for the Pacific Island Countries and Areas. Nadi, Fiji, 11-13 June 2013. Nauru treated 96% of 15-44 year olds and chlamydia dropped from 49% in 2009 to 4% in 2012.



However, such an approach would be far more challenging in a larger country. There was little appetite for stand-alone mass campaigns for chlamydia in either Fiji or Vanuatu. In Vanuatu, numerous mass campaigns for various diseases have attempted to compensate for the shortcomings of the existing health system. But these campaigns repeatedly draw workers away from their usual duties and thus contribute to the ongoing poor performance of the health system.

Although mass campaigns specifically for chlamydia seem unlikely to gain sufficient support in either Fiji or Vanuatu, there is an opportunity to use other mass campaigns (for yaws in Vanuatu and trachoma in Fiji) to deliver antibiotics that are also active against chlamydia. This is particularly attractive in Fiji as the planned trachoma campaign is anticipated to have nationwide coverage. Ideally, such campaigns would also include an evaluation of their effect on chlamydia rates. However, the lesson from PPT is that any large scale drug administration should be paired with extensive communications and prevention campaigns in order to sustain any initial gains.<sup>51,52</sup> Vanuatu has experienced this phenomenon in the past, with mass treatment leading to decreased chlamydia prevalence in 2005, only to rebound by 2008.

*N. gonorrhoeae* etiologic diagnosis has been of less interest in the Pacific due to the lower prevalence and low antibiotic resistance. Etiologic diagnosis does occur via culture in the national hospitals in both Fiji and Vanuatu, with referral from some other NGO and hub sites. However, this approach has low sensitivity due to decreases in isolate yield as a result of poor laboratory techniques, which is further compromised by delays in getting swabs to the relevant laboratory. In any case, providers implement syndromic management without waiting for any laboratory diagnosis. In Vanuatu, gonorrhoea testing was previously being done on the BD Probe Tec, but these reagents were removed from the machine due to their expense and the relatively lower prevalence of gonorrhoea relative to chlamydia.

In Fiji, Tetracycline ointment was available for ophthalmia neonatorum but was only being used for symptomatic cases rather than prophylactically, as recommended.<sup>4</sup>

## Syphilis

As recommended internationally,<sup>6</sup> syphilis screening is routine for all ANC clients in both Fiji and Vanuatu. Ideally, to assess this effort it would be necessary to have all of the following: number of pregnant women; number of ANC first visits; number of syphilis tests performed; number of reactive syphilis results; and number of pregnant women treated for syphilis.<sup>55</sup> However, syphilis screening efforts are not monitored in this detail in either country.

Screening is recommended for the first trimester, since most transmission and/or harm to the unborn child occurs after the 16<sup>th</sup> week.<sup>6,56</sup> However, early screening is not currently possible for most clients in Fiji and Vanuatu as the first ANC attendance is usually later in pregnancy (e.g., in Vanuatu, 70% have their first ANC visit in the second trimester and 26% in the third trimester<sup>3</sup>). There was also little evidence of partner involvement in ANC visits or in syphilis screening, so reinfection is a significant possibility.

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<sup>55</sup> Steen, R. (2012). Strengthening STI surveillance globally – a road map for improving the use of STI data to improve programmes.

<sup>56</sup> Berman, S.M. Maternal syphilis: pathophysiology and treatment. Bull WHO (2004) 82:433-8.

In Fiji, syphilis testing was by rapid plasma reagin (RPR), with confirmation of any positives with *Treponema pallidum* hemagglutination assay (TPHA). Due to the need for refrigeration, reagents, training and equipment with these assays, testing was therefore limited to subdivisional and divisional hospitals, and health centers had to refer blood. Health centers reported considerable (~5%) loss of blood samples to hemolysis prior to testing (i.e., during transport), and other transport and reporting delays. One interviewee reported that WHO had recently traced the final outcome of 100 syphilis results, and found that many were lost before reaching the client.

The AusAID-supported project at MoH Fiji is reportedly introducing rapid syphilis tests, but there was insufficient time to meet with the people involved in this project, and the Family Health team did not have further details. It is starting in more isolated areas where sample transport is challenging or impossible.

In Vanuatu, the three larger provincial hospitals were meant to use RPR followed by the Determine rapid test, whereas the three smaller provinces would use only Determine. In reality, however, diagnostic algorithms for syphilis varied over time based on available tests and reagents (according to one interviewee: “we use whatever we have”). At various times, provincial laboratories at the main hospitals were using various combinations of RPR, TPHA, or rapid syphilis tests either alone or in combination. The origin of this problem is with commodities management by the central laboratory (see section below for more details).

The northern provincial laboratory in Luganville had trained some VCCT sites on the use of syphilis rapid tests. Initially the health center staff continued to deliver the blood to the provincial laboratory and did the rapid tests, under supervision, while they were there. But the eventual plan was to transition these tests to use in the health centers. Unfortunately, the momentum of this plan was lost due to a year-long stock-out of the rapid tests.

Use of a single, rapid treponemal test will overestimate the amount of syphilis. In 2012, when both tests were available for syphilis, the laboratory at Northern Provincial Hospital found 4.3% reactive by a rapid test, but only 1% of the original clients had active syphilis infection (Table 7).

**Table 7: Syphilis testing result, Sanma Province, Vanuatu, 2012**

<b>Sanma province, 2012</b>	
% reactive by Determine syphilis TP	4.3%
% of Determine +ves that are RPR+ for current infection	23.2%
% of total test volume RPR+ for current infection	1.0%

### Monitoring and evaluation

The “cornerstone of STI surveillance” is the routine reporting of patients seen at health facilities, as this allows programs to monitor a wide range of sites on a regular basis.<sup>55,57</sup> Incidence of new infections is estimated from monthly case reports (e.g., for gonorrhoea and syphilis; the denominator is the total population) and prevalence from routine, voluntary screening

<sup>57</sup> WHO (2012). Strategies and laboratory methods for strengthening surveillance of sexually transmitted infection.

programmes (e.g., for syphilis in ANC women; the denominator is the number of women tested). Incidence estimations from routine reporting were done for 11 PICs in 2009.<sup>42</sup>

Indicators should be chosen based on feasibility and public health importance. In low income countries, etiologic reporting is far more common than syndromic reporting. If syndromic reporting is done, it should occur in all sites, including those that use etiologic diagnosis.<sup>55</sup> Any syndromic reporting typically includes only urethral discharge and genital ulcers (vesicular and non-vesicular) as these are reliable indicators of an STI; ophthalmia neonatorum can also be included. By contrast, vaginal discharge and lower abdominal pain are not reliable indicators of an STI and thus are not included in international and Pacific guidance (although the syndromic reporting being rolled out by Fiji includes both of these syndromes).

The PICs have reached agreement on STI case definitions and the minimum data set expected for reporting.<sup>58</sup> The Global Fund provided the funding to implement this in the regional grant that included Vanuatu but not Fiji.<sup>59</sup> Syphilis reporting remains somewhat less reliable, as some is based only on treponemal tests (and thus over-estimates by including past infections) – the inclusion of non-treponemal results varies both by country and over time.

In general, STI reporting is not prioritized or institutionalized; international requirements for HIV reporting mean all the attention lies there instead. On a national level, both countries report only etiologic diagnosis systematically. Vanuatu's etiologic reporting is from its central laboratory using the SPC format (with some results sent to the central laboratory from the laboratories in Tanna and Santo). Fiji uses its system of notifiable disease reporting – this is supposed to be for etiologically confirmed cases only, although clinically diagnosed cases are included by some centers. The Northern division takes a different approach – like Vanuatu, they use the laboratories as the source of etiological reporting.

New schemes to collect syndromic data are in development in both countries and therefore not assessable. Fiji is rolling out a stand-alone STI syndromic reporting system. This scheme has been endorsed by the National Health Executive Committee (NHEC), and rollout in Fiji is most advanced in the Northern Division, which was not visited during this consultancy.

In Vanuatu, some sites already report syndromically to the national program, but different sites use different syndrome categories and send results in different formats either by email or phone calls. None of these data are collated or used, and some are duplicated in existing Health Information System (HIS) forms. In the future, the plan is to strengthen Vanuatu's HIS system to collect syndromic data. The HIS system in Vanuatu already includes a form covering the number of HIV, syphilis and hepatitis B tests, but this reporting was said to be very incomplete. Of note, there is only one national HIS officer in the country. Another reporting template developed by a VSO volunteer is dedicated to HIV (mostly VCCT, prevention of mother to child transmission, and TB-HIV), with an additional section on treatment of other STIs. It is far too detailed and complex for the current environment in Vanuatu, where most providers in most facilities do not currently encounter any PLHIV.

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<sup>58</sup> SPC, WHO, UNICEF, UNFPA, OSSHHM, STI Working Group for the Pacific (2008). Improving national sexually transmitted infections surveillance in Pacific Island Countries and Territories: Consensus document on sexually transmitted infections case definitions and minimum data set.

<sup>59</sup> SPC (2012). The Pacific responds to STIs: Progress made (2008-2011).

In both countries, there are signs of data being reported multiple times. In Fiji, STIs are variously reported via the notifiable diseases book, the consolidated monthly report for maternal and child health and family planning, and the stand-alone syndromic reporting being rolled out now.

In Fiji, the three hub centers and AHD all generate their own annual reports. There are several challenges in using these reports to determine the national situation. First, the reports are not standardized, so national aggregates even for these four government centers are not available for all indicators (Table 8 in Annex 2). Second, the reports cover only the activities in the four centers. This is sufficient for HIV reporting, as all diagnosed PLHIV are referred through the three hub centers. But the syndromic and etiological management of STIs occurs in a wide variety of other settings that are not surveyed by the hub reports. Finally, the reports provide a lot of raw numbers but do not include the coverage calculations that would allow a true assessment of program performance.

For congenital syphilis, standardized diagnosis is not possible in low-resource settings, so process indicators are recommended to track success.<sup>6</sup> These include:

- 1) % of ANC clients tested for syphilis;
- 2) % of clients presenting for first time at delivery who get screened for syphilis;
- 3) % of ANC clients whose partners are tested
- 4) % of syphilis-positive ANC clients treated in first, second and third trimesters;
- 5) % of syphilis-positive ANC clients with babies receiving prophylactic treatment.

It was not possible to calculate these figures with the existing information.

Multiple interviewees in Fiji identified the private sector as a common place to seek care for STIs. These general practitioners have often resisted reporting notifiable diseases, including STIs, in part because the previous reporting format disclosed client identity. It was noted that there are many fewer private laboratories than private practitioners, so it may be much easier to collect data from the 4-5 private laboratories rather than from individual practitioners.

Other strategic information in Fiji (e.g., SGS reports and other studies) frequently languish for up to 5 years or more without official endorsement and dissemination. The result is that information is incompletely understood and there is little or no follow-up on recommendations.

### **Supply management in Vanuatu**

In Vanuatu, there were numerous stockouts: with test kits; reagents; drugs; specimen tubes; and swabs. The resulting inability to deliver services discourages clients and healthcare workers, and reverses any gains in health seeking, outreach or training. For example, Fanafo Health Center in Santo had done successful outreach that had boosted syphilis testing rates, but then test kits were out of stock for months and all gains were lost as the word got around that the Health Center could not deliver on its promises.

The Central Medical Store (CMS) reported that drug stockouts in Vanuatu are due to issues in the periphery: the requisitions from health facilities are irregular, and there is little or no supervision by provinces to improve the situation. However, several facilities reported non- or under-fulfilment of orders of Azithromycin by CMS, even in Efate. In addition, drug supplies to NGOs can reportedly be deprioritized because of concern that NGOs should not be giving out family

planning and STI pills to young people, including sex workers and MSM.

The largest issue was laboratory-related stockouts, due to both money shortages and mismanagement. For example, the Northern Provincial Laboratory was short on reagents for HIV, syphilis and hepatitis B testing. For syphilis, only blood donors were getting RPR, leaving provincial hospital ANC mothers with only rapid tests, and VCCT sites with nothing for the entire past year.

Project funding through AusAID and Global Fund allowed expansion of activities into VCCT sites, but then there was insufficient national funding to sustain these activities. The number of clients was more than expected and budgeted, other items (e.g., sample tubes) were not budgeted in the project and these over-taxed the recurrent government funding. National orders have reportedly used the same forecast for last 2-3 years despite expansion of services into VCCT sites.

There was some debate over which items (STI drugs, test reagents, and other consumables) in which sites (provincial hospitals and VCCT sites) were theoretically covered by which budgets (government, Global Fund, or other donors). In theory, the government funds hospital diagnostics and drugs via the Department of Curative Services, whereas VCCT site supplies may be at least partly Global Fund money. Global Fund money is nominally under the STI and HIV unit of the Public Health Department, but it is administered regionally by SPC. Neither the STI and HIV unit or the Global Fund office in Port Vila were able to locate a current budget for these expenditures. As a final complication for establishing clear budgetary responsibilities, the government is currently proposing to abolish the Public Health Department. In summary, there is an urgent need for a consolidated budget that outlines all drugs, reagents and consumables and details the funding source and amount for each.

## Recommendations

### General

Given the relative burdens of disease, PICs should simplify their approach for HIV interventions and prioritize STI prevention and control. The call in the Pacific for simplification and integration of activities – to match the human resources available on the ground – has been made repeatedly.<sup>16,60</sup> Countries and regional technical organizations should push for prioritization of STI activities in Global Fund processes and negotiations.

The comprehensive STI management guidelines available in Fiji,<sup>61</sup> Vanuatu,<sup>62</sup> regionally<sup>63,64</sup> and

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<sup>60</sup> Godwin et al. (2011). Vanuatu case study (Annex 5 from the Report of the independent progress review of the Pacific regional HIV and STI Response Fund, AusAID.

<sup>61</sup> WHO, OSSHM, SPC, Fiji Ministry of Health (unpublished). Comprehensive management guidelines for sexually transmitted infections: 2<sup>nd</sup> Edition.

<sup>62</sup> Ministry of Health, Vanuatu (2007). Guidelines for the management of sexually transmitted infections in Vanuatu: Guidelines for service providers.

<sup>63</sup> SPC (2012). Comprehensive sexually transmitted infections management guidelines.

<sup>64</sup> OSSHM (2013). Recommendations for HIV and sexual health care in Pacific small island countries and territories, 3<sup>rd</sup> Ed.

globally<sup>65</sup> are very long, complex documents, with considerable repetition. Some useful syndromic management charts have been extracted from these guidelines, but there is scope for additional simplified SOPs to be designed and used. These should have flow diagrams that describe which screening, testing and treatment services are supplied in which facility types. In Vanuatu, it will be particularly important to stick to those programmatic decisions. Otherwise, as now, it will not be clear what to order, or what to put in the budget.

In Vanuatu, the STI/HIV unit lacks basic management tools. It is suggested that they collaborate with the Reproductive Health program to develop and use simple management tools such as budgets and commodities forecasts. Some very hands-on technical assistance – from the Reproductive Health Unit and technical assistance agencies – is needed to get the unit on a firmer footing.

One advantage of the PICs' small size is that, due to limited human resources, their health programs are more integrated than in many larger countries. Technical assistance should not run counter to that reality, e.g., by creating overly complex reporting forms or narrowly focused training or implementation plans.

### Prevention and outreach

Both countries would benefit from several information-related efforts:

- 1) Bring more messages about non-HIV STIs into their IEC, posters, and behaviour change efforts. Fiji has some IEC specific for non-HIV STIs, but it is out of print. It would be useful to produce and distribute this again. Vanuatu lacks such IEC. In both countries, IEC should outline not just the obvious symptoms but the hidden sequelae of STIs.
- 2) Create flipcharts that healthcare workers can use to explain the sequelae of STIs to clients and the importance of partner involvement.
- 3) Promote peer-led behaviour change efforts, especially for progress on male participation and on the prevention of GBV.
- 4) Integrate STI services in HIV prevention initiatives including targeted interventions for key affected populations and condom promotion and programming.

The simplest and most cost effective approach will be to integrate STI messaging in existing HIV prevention initiatives. The opportunities vary between the two countries, but include radio programming in Vanuatu, school education programs in Fiji, and work with community leaders and church groups in both countries.

Screening is not just a means to an end, but also an educational opportunity. In other countries, syphilis screening has often been performed without informing those tested about the purpose of the test, asking them about STI signs or symptoms, explaining the test results, or discussing the importance of condom use.<sup>66</sup> Healthcare workers need continued STI-related education to reinforce the need for complete STI care at every opportunity.

### Service availability

Fiji would benefit from one-stop shop RH services, rather than fragmenting RH into separate, poorly attended STI and FP services (as in Suva), or relying on busy hospitals to provide all

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<sup>65</sup> WHO (2003). Guidelines for the management of sexually transmitted infections.

<sup>66</sup> Hawkes et al. Antenatal syphilis control: people, programmes, policies and politics. Bull WHO (2004) 82:417-423.

services. Hubs should be able to provide the full selection of FP services: FP is a key site for providing proactive STI screening, including inquiring about STI symptoms in both clients and their partners.

A one-stop clinic is more inviting to clients, as no one knows why an individual client is entering the clinic. Ideally, the clinic would be situated in a more anonymous location, such as an office block downtown, so that clients would not be so visible as they are entering. The AIDS Task Force clinic, which is no longer active, was cited as an example of this set-up. Finally, the clinic would ideally have a welcoming reception space where educational videos could be played.

A further suggestion was for a men's wellness clinic that combined screening for NCDs, HIV and other STIs, and other aspects of sexual reproductive health. Such a clinic would partially address the low testing among men, who are generally not involved in the screening that occurs in ANC.

Efforts to decentralize services in Fiji need to go further. Despite the high workload at provincial hospitals, physicians and nurses at these hospitals should be involved in outreach and rotation efforts that would boost the skills and confidence of staff in other facilities. This is the only way to build up these more peripheral facilities so that they eventually take the client burden from the provincial hospital. And decentralization of laboratory services will be vital to attract clients to more peripheral facilities. Currently, patients who present at smaller facilities get sent to larger facilities for tests – or they have to wait while their blood is sent to those facilities. Thus, they rationally skip the smaller facility and go straight to the source of the comprehensive services at the larger national hospital. Decentralization of laboratory services can start to reverse this trend. Finally, the hubs should be staffed and empowered to connect more actively outside their clinic – in particular with the zone nurse system – so that more STI outreach can be implemented.

Too easily, STI services become restricted to “primary health care services... [that are] offering a minimal service of antenatal care, immunization and family planning, thereby excluding the populations most likely to present with symptomatic STIs (men, adolescents and high risk groups such as commercial sex workers).”<sup>49</sup> Continued support is therefore needed for the hub clinics in Fiji (with a broadened mandate; see above), the NGO clinics in Vanuatu, and associated outreach and peer education programs.

### **Partner tracing**

Partner testing and treatment are critical to prevent reinfection. Therefore, in collaboration with a local institution and/or development partner, both countries should consider a pilot for a partner reporting format. This would monitor the number of partners coming into a clinic for treatment plus the number of returning index cases who confirm that the partner had directly observed treatment.

Fiji is recommended to start using take-home treatments for partners.

In both countries, partner return slips should be distributed more widely, and used in a more proactive system to determine which partners are returning.

Partner management should be prioritized and enhanced for men with urethral discharge, men and women with laboratory-diagnosed chlamydial infections and positive syphilis serology and

men and women with genital ulcers. Management of asymptomatic partners is difficult in most countries, and small-scale social research may be needed to provide local ideas about how these interventions might be packaged in a way that is acceptable and adopted by more partners.

### Syndromic management

In Fiji, a number of steps would improve syndromic management:

- 1) Training for syndromic management should become part of the core, pre-service curriculum for nurses.
- 2) A catch-up, multi-skill, in-service training for nurses may be required for skills that were not in the pre-service training but are required in peripheral facilities (e.g., syndromic management of STIs, IMCI, and IVs).
- 3) Mechanisms are needed to disseminate minor guideline changes without retraining the entire nursing cohort.
- 4) Determine a way to resolve any conflicts between the current nursing scope of practice and the STI guidelines (either current, or future revisions). E.g., tetracycline is currently used only for symptomatic infants with neonatal conjunctivitis, even though the Fiji and regional STI guidelines recommend its prophylactic use to prevent neonatal conjunctivitis.
- 5) The Nursing administration and Family Health unit should discuss and clarify training requirements and operational limitations, i.e.,
  - a. what training is required before nurses can *administer* STI drugs; and
  - b. under the 2010 policy, can nurses ever *prescribe* STI drugs.
- 6) If nurses cannot currently prescribe, the Nursing administration may consider syndromic management as a specific exception to this rule.
- 7) Such an exception may be more acceptable if the country introduces STI packs that include condoms, information, a referral slip, and the correct medications. This approach would also discourage the current diversion that takes place in which drugs intended for STI treatment are used for other indications.
- 8) STI packs could also be used for take-home therapy of partners (see above), as in Vanuatu and other countries.

In Vanuatu, the most significant issue with syndromic management appears to be drug management (see below).

### Chlamydia

The chlamydia testing in Vanuatu represents a lot of expensive sample collection, transport, and testing that is not driving any treatment decision. SPC and regional partners should clarify the objective of any testing that is not connected to treatment, e.g., the chlamydia testing in Vanuatu. This could be periodic testing only for surveillance purposes.

In Vanuatu, due to supply management issues, limited time and initially low coverage rates, the existing interventions such as presumptive treatment of ANC clients have not had the chance to succeed. Going forwards, the country should monitor the coverage rates of presumptive treatment and assess whether or not this has an epidemiological impact.

Fiji should conduct enough chlamydia testing at least for ongoing passive surveillance. Most importantly, it should revive its policy discussions about presumptive treatment of ANC clients and their partners for chlamydia, and push forward with implementation of this intervention.



This is in line with regional recommendations for countries that have >15% chlamydia among ANC clients.

Globally, PPT has shown larger effects where gonorrhoea or chlamydia prevalence was greater than 20%.<sup>51</sup> And the Avahan India AIDS Initiative has shown that large numbers of people can be reached – in their case, 300,000 sex workers in 6 states over 5 years.<sup>51</sup> But can this approach be extended to the general population in the Pacific?

In theory, mass treatment approaches in the general population may be more successful than PPT in sex workers as the latter approach does not address the role of partners. However, there are major operational issues that need to be considered before undertaking any population-level activity. Notably, in PICs that are larger or have many islands, there are difficulties in identifying movement within and out of the countries, and enormous logistical challenges. As a result, the Pacific STI Technical Working Group recently recommended that presumptive treatment of the entire population should be limited to smaller PICs with fewer islands.<sup>67</sup> This would exclude Fiji and Vanuatu.

If epidemiological treatment is used for either the entire population or all ANC clients, when would success be declared? A consultation on PPT suggested that, among sex workers, PPT might be tapered or withdrawn once the sex workers had a combined gonorrhoea/chlamydia prevalence of 10% or less, and 70% reported condom use with last client.<sup>52</sup> The equivalent numbers for the general population would have to be identified through regional discussions.

## Syphilis

Unfortunately, it is common globally to have no monitoring or evaluation built into syphilis screening efforts.<sup>6</sup> However, for syphilis screening efforts to succeed, women must access ANC clinics (and do so early), ANC clinics must provide prompt testing and results, and clients must receive the results, get treated appropriately, and remain uninfected during the remainder of the pregnancy (Figure 8).<sup>68,6</sup> A simple quantitative study in one or more parts of Fiji and Vanuatu would be useful to assess how these countries are doing in this cascade – a checklist of the expected standards already exists.<sup>69</sup> Other interventions to improve screening<sup>70</sup> could be considered.

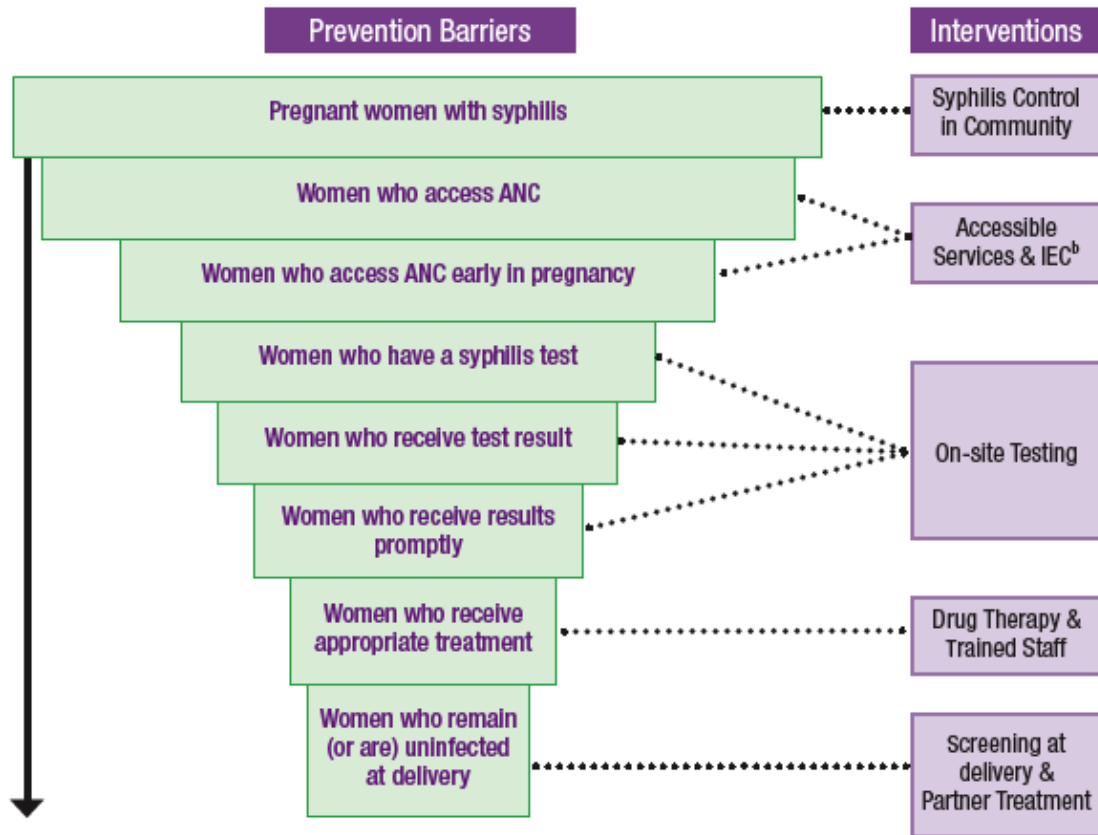
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<sup>67</sup> STI Technical Working Group Meeting Notes, 12<sup>th</sup> June 2013.

<sup>68</sup> Schmid, G. Economic and programmatic aspects of congenital syphilis prevention. Bull WHO (2004) 82:402-409.

<sup>69</sup> WHO. Prevention of mother-to-child transmission of syphilis. Section 3.1 of the Standards for maternal and neonatal care.

<sup>70</sup> Hawkes et al. Effectiveness of interventions to improve screening for syphilis in pregnancy: a systematic review and meta-analysis. Lancet Infect Dis (2011) 11:684-91.



**Figure 8: Interventions to prevent loss to detection and treatment of pregnant women with syphilis<sup>6</sup>**

Point of care tests for STIs have great potential.<sup>71</sup> For syphilis specifically, introduction of same-day testing has resulted in a halving of congenital syphilis, perinatal death, and stillbirths.<sup>72</sup> In one study, decentralized RPR testing reduced the percentage of RPR-positive mothers not getting treatment from 41% to 0%, and reduced the rates of congenital syphilis by 75%.<sup>73</sup> This can hold true even if the point of care tests are considerably less sensitive than a centralized test,<sup>74</sup> as point of care testing should reduce loss to follow up. The switch in HIV testing algorithms in the PICs (from Elisa and Westerns to three rapid tests) provides an opportunity to co-introduce POC syphilis testing. Such co-introduction was another recommendation of the recent Pacific STI Technical Working Group meeting.<sup>67</sup>

Introduction of rapid syphilis tests makes most sense when current testing approaches have

<sup>71</sup> Peeling et al. Rapid tests for sexual transmitted infections (STIs): the way forward. *Sex Transm Infect* (2006). 82(Suppl V):v1-v6.

<sup>72</sup> Hawkes et al. Effectiveness of interventions to improve screening for syphilis in pregnancy: a systematic review and meta-analysis. *Lancet Infect Dis* (2011) 11:684-691.

<sup>73</sup> Fitzgerald et al. Decreased congenital syphilis incidence in Haiti's rural Artibonite Region following decentralized prenatal screening. *Am J Public Health* (2003) 93:444-6.

<sup>74</sup> Gift et al. The rapid test paradox: when fewer cases detected lead to more cases treated: a decision analysis of tests for Chlamydia trachomatis. *Sex Transm Dis* (1999) 26:241-2. This modeling example is for chlamydia, but similar concepts would apply for syphilis or other diseases.

limited coverage or quality.<sup>75</sup> Since many Fijian clients seek services centrally, coverage for syphilis testing may be reasonable. But the percentage of clients returning promptly for test results is unknown. Rapid tests are also more cost effective than RPR, even when the RPR is on-site.<sup>6</sup> Finally, point of care testing in the community during outreach can not only increase case finding but also increase awareness. For reasons such as these, introduction of rapid tests was recommended in Fiji's NSP,<sup>14</sup> and should be pursued by the national program. There will need to be a sustainability plan for the MoH to take over the syphilis rapid test activities being rolled out currently with AusAID support.

What rapid test should be used, and in what combination with other tests? All samples yielding a positive rapid test result can be tested with RPR (to determine active syphilis and response to treatment). But if RPR is not available, or results will take too long, a rapid treponemal test alone can be used to indicate treatment for pregnant women.<sup>76</sup> Alternatively, rapid syphilis tests with both a treponemal and non-treponemal result in a single strip are now available (e.g., Chembio's DPP® syphilis screen and confirm assay).

If funding is available, POC syphilis testing should also be expanded to more VCCT sites in Vanuatu (those that are accessible for quality assurance). Initial, supervised testing at the hospital should transition to true POC testing at the health centers.

Introduction of POC testing is not without its challenges. First, a reliable supply of test kits must be established to the more peripheral health facilities. Second, there must be a mechanism to capture reporting of the results, now that not all testing is being done in a centralized laboratory setting. And, finally, the appropriate task shifting must be facilitated by training and, if necessary, legislation. In Fiji, only a medical officer can conduct the etiologic diagnosis of an STI, but a rapid test would put the etiologic diagnosis in the hands of nurses.

### Monitoring and evaluation

Monitoring makes the success (or failure) of an action visible. Data from monitoring are usually needed to prompt health workers to make any corrective measure. And health workers typically prioritize the actions that they know will be monitored. Ideally, STI reporting should be incorporated into routine health facility recording and reporting using health facility monthly reporting forms. Programme managers and health providers should then use and interpret these data for ongoing planning.

In Fiji, private laboratory should be included in the etiological reporting system. In the public sector, laboratory could be considered as an alternative source of data, rather than providers, as the providers often include both clinical and laboratory-confirmed diagnoses. For syndromic reporting, a new system has been endorsed by NHEC but some disagreements on implementation persist within the Family Health unit. A consultation is needed to resolve these disagreements so that the rollout – of either the current or a modified system – can proceed. Collation of the results should then lie with the Health Information Unit (HIU), not the Family Health Unit.

In Vanuatu, etiological reporting is relatively simple (with data coming from 1-3 laboratory.

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<sup>75</sup> WHO/TDR (2006). The use of rapid syphilis tests.

<sup>76</sup> Regional STI Technical Working Group for the Pacific (undated). Rapid advice for syphilis screening and treatment.

Syndromic reporting is too large of a task for the STI/HIV unit in Vanuatu; the adoption of this task by the HIS should continue and the duplicative syndromic data collection by the STI/HIV unit should be discontinued.

Vanuatu should focus on using its reporting to identify program problems. For any reporting period where the number of reported cases from a particular facility are low or zero, HIV/STI program staff should ask why, and try to solve the underlying problem.

Due to the stigma associated with STIs, health seeking behaviour is critical to understand, so any reporting should seek to track the source of cases (i.e., which health facility type they first attended). M&E should also track the “co-administration” of services (e.g., STI screening of clients attending ANC, or HIV testing of those presenting with a symptomatic STI).

Finally, as noted in the sections above, both countries should undertake short evaluation projects to generate quantitative estimates of syphilis screening efficiency and partner tracing efficiency. And, as noted above, if POC syphilis testing is adopted more widely, a reporting system will be needed for the results.

### **Supply management in Vanuatu**

The first priority in Vanuatu is to fix the supply management issues (and underlying programming, budgeting, and forecasting issues). MoH should insist that the laboratory collaborates with CMS to define which services are provided where; use that knowledge to define demand and budget required; ensure sufficient buffer stocks; and determine appropriate amounts to order.

### **Summary and Conclusions: Fiji**

A strength of the Fiji programme is that it is supported by national funds. However, Fiji has more conservative programming for STI management, so there is considerable scope for expansion. Certainly, if the country is to achieve its NSP goal of halving STIs,<sup>14</sup> more action is needed to make services more accessible. Possible initiatives – many of them already described in the NSP<sup>14</sup> – include one-stop RH services at hubs, a clearer and more permissive role for nurses in providing antibiotics for syndromic treatment, presumptive treatment of ANC clients and their partners for chlamydia, and introduction of HIV and syphilis rapid tests to lower levels of the health system via introduction of POC tests.

### **Summary and Conclusions: Vanuatu**

The basic strategy for STI control in Vanuatu is good: etiologic diagnosis is centralized; syndromic management is used widely at lower levels; and laboratory capacities are being gradually expanded via introduction of VCCT and mentoring. Many of the key recommendations of the recent HIV review<sup>16</sup> – including youth and vulnerable population outreach, a procurement review, and a partner treatment strategy – are clearly also relevant to the control of other STIs.

The three biggest needs are: simple SOPs that specify which types of etiologic diagnosis and screening are conducted by which of the higher level facilities; clear budgeting that lists all sources of funding; and collaboration with CMS to develop a better system for commodities

management by the National Laboratory. Once the budgeting is done properly, activities need to be redesigned to stay within this budget and avoid constant budget shortages and stockouts. Expansion beyond this minimal set of activities will require finding new sources of funding. In summary, the central unit needs to concentrate on its core functions:

- 1) Defining what is done. This requires clear guidelines and SOPs for use at different levels of the health system, with adherence to these checked via supervision.
- 2) Defining what is needed and procured in order to achieve those aims. This requires collaboration with CMS and the budgeting and commodities management steps outlined above.

## Annex 1: List of interviewees

### *Regional (Pacific)*

Alan Garvez, HIV treatment and care adviser, SPC  
Jason Mitchell, Oceania Society for Sexual Health and HIV Medicine (OSSHHM)  
Ian Wanyeki, Surveillance, SPC  
IDER DUNGERDORJ, HIV and AIDS specialist, UNICEF South Pacific  
Susan Best, Director, National Serology Reference Laboratory, Victoria, Australia  
Elena Decima, Grant Management Solutions consultant  
Dong-II Ahn, WHO Representative, South Pacific, and Director, Pacific Technical Support  
Madeline Salva, Medical Officer, STI and HIV, WHO South Pacific  
Ezekiel Nukuro, Technical Officer, Human Resources and Health systems, WHO South Pacific  
Sophaganine Ali, STI and treatment adviser, SPC  
Timothy Vatuloka, Senior Program Officer, Adolescents, International Planned Parenthood Foundation (IPPF), Suva  
Michael Sami, Program Officer, HIV, IPPF, Suva

### *Vanuatu*

Caleb Garae, STI/HIV/AIDS Coordinator, MoH, Vanuatu  
Apisai Tokon, Reproductive Health Coordinator, MoH, Vanuatu  
Jacob Kook, CLO, WHO Vanuatu  
Rufina Latu, Medical Officer, WHO Vanuatu  
Elizabeth William, nurse, Saupia Health Center, Efate, Vanuatu  
George Pakoa, Head of National Laboratory, Vanuatu  
Helen Nabbanja, midwife, ANC, Vila Central Hospital  
Sangita Robson, M&E officer, HIV STI unit  
Danstan Tate, Executive Director, Vanuatu Family Health Association  
Emily Bovu, Nurse, Vanuatu Family Health Association, Port Vila  
Leias Obed, Nurse, Vanuatu Family Health Association, Port Vila  
Rose Nirambath, nurse, Kam Pusum Hed clinic, Wan Smolbag, Port Vila  
Siula Bulu, Health program manager, Wan Smolbag  
Joseph Mape, Provincial Health Manager, Santo Province, Vanuatu  
Jeffrey Vutilolo, Head of Serology and Blood Bank, Northern Provincial Hospital; focal point for HIV and STI  
Willie Tangis, nurse in charge, Fanafo HC, Santo, Vanuatu  
Julie Namaka, midwife at Vanuatu Family Health Santo Branch  
Tousei Lesteour, Nursing Director, Northern Provincial Hospital  
Lydia Aga, midwife, ANC, Northern Provincial Hospital  
Mari Manwo, midwife, Northern Provincial Hospital  
Wilma Luan, ob/gyn registrar, Northern Provincial Hospital  
Thomas Sala, Officer in Charge of Northern Provincial Health and Northern Provincial Hospital  
Marie-Michelle Tsiabon, nurse in charge, Wan Smolbag clinic, Santo  
Amanda Sanburg, Principal Pharmacist, Central Medical Store  
Myriam Abel, WHO, and former STI/HIV coordinator

*Fiji*

Rachel Devi, National Adviser, Family Health, MoH, Fiji  
Dashika Balak, medical officer in charge, Central Division Hub  
Margaret Amonaki, Adolescent Health and Development Center (AHD), clinical nurse  
Silina Waqa Ledua, Director, Nursing Services  
Atunaisa Drivatiyawae, Fiji Network Plus (FJN+), Programme Officer  
Vani Dulaki, Executive Director, FJN+  
Lidia Butuivalu, Clinic nurse, Reproductive Health Hub Center (Central Division)  
Lusiana Ravea, Medical officer in charge, Raiwaqa HC  
Talei Tamaka, Medical officer, Nausori Health Center  
Sister Unaisi Sikivou, Unit sister for maternity unit, Nausori Health Center  
Camari Nale, Health screening counselor, Empower Pacific  
Alanieta Tuamoto, ANC midwife, Nausori Health Center  
Suman Lata, Acting sister for general outpatient department, Nausori Health Center  
James Fong, Ob/gyn Consultant, Colonial War Memorial Hospital, Suva  
Lisi Tikoduadua, Consultant, Paediatrics, Colonial War Memorial Hospital, Suva  
Joseph Kado, Head of Department, Paediatrics, Colonial War Memorial Hospital, Suva  
Khalid Mahamuud, Consultant, Paediatrics, Colonial War Memorial Hospital, Suva  
Ilisapeci Vareti, Chief Medical Officer, Paediatrics, Colonial War Memorial Hospital, Suva  
Reapi Mataika, Principal Medical Officer, Paediatrics, Colonial War Memorial Hospital, Suva  
Ashna Shaleen, Program manager/counselor, Medical Services Pacific (MSP)  
Tima Nabati, nurse, MSP  
Jennifer Poole, Executive Director, MSP  
Oripa Bune, medical officer, Korovisilou Health Center  
Karlaini Savumiramira, acting senior medical officer, Nadi subdivisional hospital  
Rahena Mainaz, medical officer in charge, Lautoka Hub Center  
Julie Rika, clinic nurse, Lautoka Hub Center  
Rani Ravudi, Survival Advocacy Network (SANFiji), Project coordinator, Transgenders  
Naina Marama, Team Leader, Nursing, Suva Private Hospital  
Daryl O'Connor, clinical coordinator, Suva Private Hospital  
Pablo Romakin, principal medical officer, Labasa district; Divisional Medical Officer, Northern division; and Chief Medical Officer, Northern Division Hub clinic

## Annex 2: Hub and clinic reporting in Fiji

Table 8: Variations in reporting between Reproductive Health hubs and clinics in Fiji

<u>Service in 2012</u>	<u>Western</u>	<u>Central/Eastern</u>	<u>Northern</u>	<u>AHD</u>
STI consultation	1804	4134	160	143
<b>Syndromic reporting</b>				
STI symptomatic clients	569	1310	89	67
Urethral discharge	290	667	60	n/a
Vaginal discharge	90	243	22	n/a
Genital ulcers	49	64	n/a	n/a
Lower abdominal pain	52	72	n/a	n/a
Scrotal swelling	14	n/a	n/a	n/a
Other symptom	74	373	29	n/a
# Returning for results	n/a	1803	71	60
<b>Etiological testing</b>				
VDRL	n/a	2111	n/a	80
TPHA	n/a	207	n/a	79
HIV	n/a	2142	n/a	64
Hbsag	n/a	1516	n/a	78
Urethral swab	n/a	492	n/a	25
Cervical swab	n/a	218	n/a	5
Vaginal swab	n/a	244	n/a	0
Total tests	893	n/a	n/a	n/a
# of those tests during outreach	396	0 <sup>&amp;</sup>	n/a	n/a
# additional tests during outreach	0	753	n/a	n/a
# HIV tests conducted in each type of site (OPD, VCCT, etc)	n/a	n/a	Described	All in AHD
Reason for HIV test	n/a	n/a	Described	n/a
<b>Etiological diagnosis</b>				
Gonorrhoea	256 (incl NSU)	72	11	n/a
Syphilis	49	176	77	7
Chlamydia	0	0	0	n/a
HIV <sup>^</sup>	n/a	n/a	n/a	2
<b>Other services</b>				
New HIV clients seen	13	40	6	
Total PLHIV who should be under care*	Not clear. >16 are on ART	n/a	32	
Of those, # lost to follow up <sup>@</sup>	Unclear	n/a	17	
# FP clients	97	16	149	47
# PEP clients	4	n/a	n/a	n/a
Free condoms distributed	n/a	125,686	4,832	n/a
# people reached in community outreach	n/a	n/a	5,947	493
# school children reached	n/a	n/a	2,337	5/69 area schools

n/a = not available from the various annual reports issued by these clinics

<sup>&</sup>Outreach numbers in separate report

<sup>^</sup>The hubs report the number of newly identified PLHIV, as all of these individuals are referred to the hubs to initiate treatment. But the number being identified due to a test initiated by the hub is not always clear.

\*Presumably this means both pre-ART and ART clients, but ideally these two categories should be separated

<sup>@</sup>Requires a standard definition.