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The Cost of Providing HIV/AIDS Counseling and Testing Services in Vietnam

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ABSTRACT

Objective: This article aimed to provide estimates and analyses of the cost of providing voluntary counseling and testing (VCT) services for HIV/AIDS in a province in northern Vietnam. **Methods:** This facility-based costing study was conducted in the Thai Nguyen province, located 85 km north of Hanoi. Cost data were collected in six facility-based VCT units and two freestanding ones by using an ingredient approach. Both financial and economic costs of VCT services for HIV/AIDS were estimated from the perspective of the service providers. **Results:** The mean total annual financial costs of a facility-based and a freestanding VCT unit in the study site were US \$15,673 and US \$42,237, respectively. The mean total annual economic costs of these services were US \$16,695 and US \$44,682, respectively. The cost per visit to the facility-based VCT unit was lower than in the freestanding facility

(financial cost of US \$28.4 vs. US \$36.8; economic cost of US \$30.3 vs. US \$38.9). The same was true for the cost per complete VCT procedure (financial cost of US \$34.7 vs. US \$38.0; economic cost of US \$36.9 vs. US \$40.2). The cost per HIV positive case detected in facility-based VCT unit was higher than that of the freestanding VCT unit (financial cost of US \$149.3 vs. US \$111.2; economic cost of US \$159.0 vs. US \$117.6). **Conclusions:** The results of the present study offer preliminary evidence on economic aspects of providing VCT services in Vietnam. The findings from this study can serve as a basis for further studies as well as for program and policy development.

Keywords: cost, HIV/AIDS, Vietnam, voluntary counseling and testing.

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Introduction

HIV/AIDS is a major public health problem worldwide. Estimates from United Nations Programme on HIV/AIDS suggest that between 30.6 and 36.0 million adults are living with HIV/AIDS globally [1,2]. The HIV/AIDS epidemic in Vietnam is still in a concentrated stage, with prevalence between 0.3% and 0.7% in the general population. However, there is fear of an imminent generalization of this epidemic [3], given the growth in prevalence among injecting drug users (IDUs) and female sex workers (FSWs) that by 2006 was already as much as 32% and 6.5%, respectively [1].

Voluntary counseling and testing (VCT) services are considered important as an entry point for interventions in both prevention and care for HIV/AIDS [4]. The main activities of VCT include 1) a pretest counseling session between a trained counselor and a client, couple, or group; 2) laboratory tests, for those clients who decide to go ahead with the test; 3) a posttest counseling session for those who have been tested; and 4) a follow-up counseling session (subject to needs and requests from clients). VCT has received greater prominence because of the increasing availability of interventions to prevent mother-to-child transmission and options for the care and management of opportunistic infections (e.g., preventive therapy for tuberculosis) [5–7].

VCT cost estimations have been discussed in internationally published literature. The per-client cost of VCT was US \$29 in

Tanzania and US \$27 in Kenya in 2000 [8]. In India, the cost per complete VCT procedure in 2003 ranged between US \$2.92 and US \$17.14 [9]. In South Africa, the financial expenditure and economic cost of a complete procedure in 2003 were found to be US \$60.06 and US \$101.58, respectively [10]. A study from Uganda found that the costs per client (2007 US \$) were US \$19.26 for stand-alone VCT and US \$11.68 for hospital-based VCT [11].

In Vietnam, VCT services were first piloted in 2002 and have been scaled up more recently with support from Center for Disease Control/Life GAP project, Global Fund, World Bank, and Family Health International. Now all provinces nationwide are covered. The number of VCT sites increased from 24 in 2003 to 238 in 2008. The coverage of the VCT service, however, was still modest. As of 2006, only 11% of FSWs, 15% of IDUs, and 16% of men who have sex with men received HVI tests [9]. Scaling up VCT services is identified as a high-priority activity of the National HIV/AIDS Strategic Plan in Vietnam in the coming years [12]. As the support from international donors is expected to decrease, it will be the role of the Vietnamese government to fully finance the VCT.

At present, there is very little information available on the costs of VCT in Vietnam. This article aimed to estimate and compare the costs of VCT services provided at facility-based and freestanding sites in a province in the north of Vietnam. The information on the cost of providing VCT services is essential for planners

Conflicts of interest: The authors have indicated that they have no conflicts of interest with regard to the content of this article.

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and managers to have an idea of the extent of resources required for scaling-up or replicating that model.

Methods

Study design

This was a facility-based costing study. We aimed to estimate the full costs of VCT from the perspective of the service providers.

Study setting

The study was conducted in the Thai Nguyen province, located 85 km north of Hanoi, the capital of Vietnam. The Thai Nguyen province has 10 cities/towns/districts and covers an area of about 3542.6 km². The total population of Thai Nguyen in 2007 was 1,095,400 (www.thainguuyen.gov.vn).

Thai Nguyen was selected for this study because the province is experiencing a rapid rise in the incidence of HIV/AIDS infection. The first HIV case was detected in July 1996, and by October 30, 2007, there were 3372 HIV-infected persons in the province, among whom 1042 had developed AIDS; 657 cases had resulted in death. HIV cases have appeared in most areas of the province (159 of 180 administrative units) and have been recorded among not only high-risk groups but also other population groups [13]. The first VCT unit in Thai Nguyen was established in 2003. In 2007, Thai Nguyen had eight VCT units and all of them were included in the study. In Thai Nguyen, antiretroviral drugs are available in several health facilities, including provincial hospitals, district hospitals, and the provincial center for HIV/AIDS prevention and control.

In 2007, Thai Nguyen had six facility-based VCT (integrated into hospitals or preventive medicine centers) and two freestanding VCT (functioning as separate facilities) units. Freestanding VCT units had more staff than facility-based units. The numbers of service outputs (client visits, completed VCT procedures, and HIV positive cases detected) were higher in the freestanding VCT units (Table 1).

Scope of the study

Both financial and economic costs of VCT services were estimated from the perspective of the service providers. Financial costs represent actual expenditures on goods and services purchased. Financial costs are thus described in terms of how much money has been paid for the resources used in the project or service. Economic costs include the estimated value of goods or services for which either there were no financial transactions or the price of a specific good did not reflect the cost of using it productively else-

where [14]. The differences between financial and economic costs are shown in Table 2. The costs of land used for buildings and long-term staff training (e.g., cost of medical education) were not included because these data were not available.

The total annual cost of a VCT and the cost of three main types of output of the VCT services in the Thai Nguyen province were estimated (cost of VCT visit; cost per complete VCT procedure = pretest counseling + HIV test + posttest counseling; and cost per HIV positive case detected).

Data collection

Data for 2007 were collected during January to April 2008. The cost data were collected by the investigators of this study through 1) reviewing annual payroll, activity, and accounting reports of the studied VCT units; 2) interviewing VCT unit staff to collect information on the activities of the VCT unit and the time each type of personnel spent on activities related to the VCT procedures; and 3) observing buildings, vehicles, and equipments used for the VCT services.

At the facility-based VCT units, the shared costs (i.e., the resources used jointly by different services of the VCT units), such as administration, water, electricity, office supplies, and telecommunications, were allocated according to the number of clients of each service type (family planning, treatments of sexually transmitted diseases, and VCT services, etc.).

Data processing and analysis

Data were processed and analyzed by using Excel spreadsheets. Consumer price indexes were used in computing adjusted total annual cost of VCT. In calculating depreciations, the useful life of buildings and equipment was assumed to be 33 years and 10 years, respectively (according to the regulations issued by the Ministry of Finance of Vietnam). To calculate annualization (for estimating economic cost), we used the following formula:

$$a(r, n) = \frac{r(1+r)^n}{(1+r)^n - 1}$$

where a is annualization, r is the discount factor = 3%, and n is the useful life of buildings and equipment.

Viet Nam dong were converted into US \$ by using the average exchange rate: US \$1 = Viet Nam dong 16,000.

Ethical considerations

Confidentiality was ensured by using codes for patient identification, and the relevant laws were strictly observed while processing clinical information. No identifying information was published or available after the requisite clinical data had been collected, and consent was obtained for the use of all data and tissues. Data were accessible only to members and coordinators of the tissue procurement facility and research team, under approved guidelines.

Table 1 – Characteristics of the studied VCT units, Thai Nguyen, 2007.

Characteristics	Facility-based	Free-standing
Number of VCT units	6	2
Number of staff per VCT unit (mean; min-max)	(4; 3-6)	(5.5; 3-8)
Number of client visits (mean)	551	1150
Number of completed VCT procedures (mean)	452	1111
Number of HIV positive detected (mean)	105	380

Notes. Facility-based VCT unit = integrated into hospital or preventive medicine center; Freestanding VCT unit = functioning as separate facility; A complete VCT procedure = pretest counseling + HIV test + posttest counseling. VCT, voluntary counseling and testing.

Results

Total annual cost of VCT

The total annual financial and economic costs of providing VCT services in the Thai Nguyen province and the percentage breakdown of the cost by item are shown in Table 3. The mean total annual financial cost of a facility-based VCT was US \$15,673 (max: US \$16,384; min: US \$15,459) and of a freestanding VCT unit was US \$42,237 (max: US \$42,738; min: US \$41,736). The mean total annual economic cost of a facility-based VCT was US \$16,695 (max: US \$17,452; min: US \$16,467) and of a freestanding VCT unit was US \$44,682 (max: US \$45,212; min: US \$44,152). Approximately 60% of the total annual economic cost of a facility-based VCT was covered by funds from international donors and the remaining 40% came

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