The use of reproductive healthcare at commune health stations in a changing health system in Vietnam

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Abstract

Background: With health sector reform in Vietnam moving towards greater pluralism, commune health stations (CHSs) have been subject to growing competition from private health services and increasing numbers of patients bypassing CHSs for higher-level health facilities. This study describes the pattern of reproductive health (RH) and family planning (FP) service utilization among women at CHSs and other health facilities, and explores socio-demographic determinants of RH service utilization at the CHS level.

Methods: This study was based on a cross-sectional survey conducted in Thua Thien Hue and Vinh Long provinces, using a multi-stage cluster sampling technique. Questionnaire-based interviews with 978 ever-married women at reproductive age provided data on socio-demographic characteristics, current use of FP methods, history of RH service use, and the health facility attended for their most recent services. Multiple logistic regression analyses were used to identify socio-demographic determinants of their use of CHS RH services.

Results: Eighty nine percent of ever-married women reported current use of birth control with 49% choosing intra-uterine device (IUD). Eighty nine percent of pregnant women attended facility-based antenatal care (ANC) with 62% having at least 3 check-ups during their latest pregnancy. Ninety one percent of mothers had their last delivery in a health facility. Seventy-one percent of respondents used CHS for IUD insertion, 55% for antenatal check-ups, and 77% gynecological examination. District and provincial/central hospitals dominated the provision of delivery service, used by 57% of mothers for their latest delivery. The percentage of women opting for private ANC services was reported at 35%, though the use of private delivery services was low (11%). Women who were farmers, earning a lower income, having more than 2 children, and living in a rural area were more likely than others to use ANC, delivery, and/or gynecological check-up services at the CHS.

Conclusions: Women choice of providers for FP and RH services that help them plan and protect their pregnancies is driven by socio-economic factors. While the CHS retains significant utilization rates, it is under challenge by preferences for hospital-based delivery and the growing use of private ANC services.

Background

With the introduction of its “Doi Moi” or ‘renovation’ policy in 1986, Vietnam has shifted from a centrally planned towards a market-oriented economy. Health sector reform has introduced user fees in public hospitals and legalized private practice. In urban centers in particular, the private health sector has been growing rapidly, and increasingly is in competition with the public sector in providing health services. These changes have produced profound effects on the use of health services at state health facilities, including RH care at the local CHS - the basic unit of the primary healthcare system in Vietnam [1,2].

To date, no study has examined the use of FP and primary RH services in the context of the current health-care system in Vietnam, as it shifts from a state monopoly to a more pluralist system. To address this
shortcoming, this study aims to describe the pattern of FP and RH service utilization among women at the CHS and other state and private facilities, and to explore socio-demographic determinants of RH service utilization at the CHS level. It is intended to inform policy and program reviews that will strengthen the CHS primary RH network in the changing health system of Vietnam.

The state health system in Vietnam consists of 4 levels: the national level with the Ministry of Health and central hospitals; the provincial level with the Provincial Department of Health and provincial hospitals; the district level with district health centers and district hospitals; and the communal level with CHSs. RH and FP services are available at all-level state health facilities: central, provincial, district hospitals and CHSs.

Despite the changes in the health sector, the CHS retains its responsibilities as the primary access point to primary RH and FP services subsidized by the state budget, and is required to meet government numerical targets on basic RH and FP service use indicators. Every CHS is staffed by at least one midwife who acts as the focal point for RH services, including antenatal and post-natal care, delivery, gynecological examination and treatment, and FP services such as IUD, oral contraceptives, and condoms. Some CHSs located close to a hospital are restricted from providing delivery services. Local residents are entitled to free services at their local CHS but not at the CHS in other communes.

In addition to everyday RH services, CHSs are entrusted with responsibilities to register and manage all pregnant women in the commune, conducting 1-day monthly antenatal check-ups. There are also 3-day semi-annual RH campaigns based at the CHS with assistance of midwives or doctors from the district hospital. The primary purpose of these campaigns is early detection and treatment of reproductive tract infections (RTIs) including sexually transmitted infections, based on clinical examination [3]. Since the restructuring of the national population program, there is a network of population collaborators affiliated with the local CHS, who have basic training in RH health education and services. Population collaborators conduct regular outreach communication activities, providing RH counseling and contraceptives (e.g. condoms, pills), and referring couples to the CHS for further FP and RH services such as IUD insertion, gynecological and antenatal check-ups [4].

Private healthcare services in Vietnam comprise three differing service structures [5,6]. Private hospital care is principally located in major cities. Compared to state hospitals, they have a reputation for their access to more advanced diagnostic and therapeutic technology, and their capacity to provide technically demanding services. Private outpatient clinics are operated by individuals or groups of full- or part-time physicians in urban, sub-urban and rural areas, under a license from provincial health authorities. They largely provide general or specialized health services for middle income patients. Third, “mobile” private practitioners—who can be nurses, assistant doctors, or retired doctors—are commonly present in rural areas, providing health services from their own homes without a license. These health practitioners are not included as part of the formal health system, although they play an important role in providing basic health services [6]. For RH services at the commune level, private providers include doctors or practitioners (e.g. midwives, assistant doctors), and traditional birth attendants, who provide home-based delivery services [7,8]. In addition, local pharmacies can offer the commercial sale of birth control commodities such as oral contraceptives, without prescription.

With the reduction in government subsidies for CHS facilities, equipment, and human resources development, the quality of health services at CHSs has been perceived as deteriorating and is associated with less-qualified health staff, outdated equipment, limited drugs and supplies [2]. At the same time, the private sector has been increasingly popular and is associated with convenient opening hours, more competent staff, better equipment, and effective drug prescriptions [9]. Reports suggest that increasingly, patients are seeking care at private clinics or bypassing their local CHS for higher level health facilities, willing to pay higher fees based on their perceptions of better quality and enhanced technology [1,2,10,11].

The Study Sites
This study is part of the baseline assessment of a project supported by Marie Stopes International Vietnam, that aims to create public-private partnerships to improve access to services and the quality of primary RH care, in two provinces, Thua Thien Hue and Vinh Long, in Vietnam. Thua Thien Hue is located in the center of Vietnam with a total population of 1,143,500, of which 284,149 women are at reproductive age (15 - 49). The province has 1 central hospital, 9 district hospitals, and 152 CHSs located in urban, semi-urban, rural, and mountainous areas. Based in the Mekong delta region, Vinh Long province has a population of 1,057,000. The state health care network consists of 107 CHSs, 8 district hospitals, and 1 provincial hospital. People in districts bordering with Can Tho city may seek RH services at the Can Tho central hospital. Almost all CHSs in the 2 provinces are staffed by a doctor [4].

Studies sites included 1 urban district (Hue city), 2 rural districts of Thua Thien Hue, and 3 rural districts of Vinh Long. As these districts received no external support for primary RH care, they can be considered to represent the baseline for state provided RH services. In
holdings with 1,417 women were included in this study. Women at reproductive age (15-49). In total, 900 house-
lage or residential group in each commune where 30 
selected districts, using proportional to population size 
cluster sampling design to recruit participants. 
The study was a cross-sectional survey, using a multi-
techniques, totaling 30 communes in the 2 provinces. 

Methods
The study was a cross-sectional survey, using a multi-
stage cluster sampling design to recruit participants. 
The first stage selected 5 communes from each of the 
selected districts, using proportional to population size 
techniques, totaling 30 communes in the 2 provinces. 
The second stage involved the random selection of 1 vil-

each commune where 30 households were randomly drawn for interviews of all 
women at reproductive age (15-49). In total, 900 house-
holds with 1,417 women were included in this study.

Data was collected using questionnaire-based interviews, 
consisting of multiple-choice questions on respondents’ 
socio-demographic characteristics (e.g., age, marital status, 
occupation, education, number of living children, income), 
their RH and FP service use (see Additional File 1). 
Women were also asked about the health facility where 
they attended antenatal care during their last pregnancy or 
received their most recent gynecological examination, and 
the place where they had their latest delivery. These three 
RH services were considered to constitute basic RH health-
care provided at the local CHS or other state health facil-
ties in Vietnam. Women were interviewed at home by a 
trained interviewer who was a member of the commune 
Women’s Union. Data collection was completed from 
April to May, 2010. As mentioned earlier, the research was 
undertaken as a baseline survey, commissioned by Marie 
Stopes International Vietnam for planning an intervention 
in the 2 selected provinces. Ethical approval was given by 
the Ethic Committee of the Thua Thien Hue and Vinh 
Long Provincial Departments of Health.

Data were entered into Epi Info, then transferred to 
STATA version 9.0 for processing and analyses. Ten 
percent of questionnaires were double entered to check 
consistency. Data analyses consisted of two sequential 
steps. First, descriptive analysis was performed of the 
socio-demographic characteristics of all study particip-
ants and the frequency distributions of variables of 
interest, including the current use of FP method(s), his-
tory of ANC, delivery, and gynecological check-up ser-
vice use, and the health facility where women attended 
for their most recent service.

Second, logistic regression analyses were performed of 
factors related to the use of the following services in the 
local CHS: (i) antenatal check-ups during the last preg-
nancy, (ii) their latest delivery, and (iii) their most recent 
gynecological examination. The dependent variable was 
based on whether or not women who visited a health 
facility for these services reported selecting their local 
CHS. Independent variables of interests included: 
women’s age (above vs. below the median), number of 
living children (having 2 children or less vs. 3 children or 
more), religion (Buddhist, Catholic, other, and none), 
nativity (majority vs. minority), occupation (farming vs. 
other), education (secondary school or less vs. high 
school or more), income (4 quartile groups), current liv-
ing location (urban vs. rural), and study province (Vinh 
Long vs. Thua Thien Hue). The statistical model for the 
use of CHS delivery services excluded those who required 
a cesarean section and those who reported that delivery 
service was unavailable at their local CHS at the time the 
women gave birth. Each socio-demographic variable was 
analyzed first as a univariate predictor to obtain a crude 
ods ratio (OR) and 95% confidence intervals (CI). Signif-
antly related variables (p < 0.05) were subsequently 
included in a multivariate analysis to obtain an adjusted 
OR and 95% CI. Only factors that were significantly asso-
ciated with the outcome variable in the multi-variate ana-
lytical model were retained in the final reduced model.

Results
The sample consisted of 678 women (48%) in Vinh 
Long and 739 women (52%) in Thua Thien Hue. Medi-
an age was 31. Sixty-six percent of respondents were 
marrried; 31% were single, and 3% were widowed or 
divorced. The demographic characteristics of respon-
dents are presented in Table 1.

FP service use
Among 439 single women, only 13 (3%) reported having 
a current sexual partner, and 9 reported current use of 
a birth control method. Given these small numbers, ana-
yses of FP service use were limited to ever-married par-
ticipants (n = 978). The rate of FP service use among 
ever-married women was 88.5% after excluding those 
who reported not using a birth control due to one of 
the following reasons: being pregnant, having just given 
birth, or being menopausal. IUD appears to be the most 
common method, utilized by 49% of women, followed 
by condoms (16%), oral contraceptives (15%), and the 
rhythm method (14%). Male or female sterilization was 
used by 5.5%, and injected contraceptives by 3.8% of 
marrried women. The sum of these percentages was 
104% as a few women reported concurrent use of con-
doms and the rhythm method.
Regarding the source of FP services, 71% of the 464 women using IUDs reported visiting the local CHS, with 19% selecting district hospitals, 8% private clinics, and 2% other facilities for their last IUD insertion. For condoms and other contraceptives (e.g. oral, injections), the CHS appears to be the major source, reported by 61% women, followed by population collaborators (37%), and then pharmacies (18%). Only 5% of women had obtained these birth control supplies from a hospital, with 2% using a private clinic (Table 2). The total percentage of 123% reflects the availability of contraceptives from multiple sources.

Antenatal care service use

Of 964 women who had ever experienced a pregnancy, 857 (89%) reported having facility-based antenatal care with 62% having at least 3 check-ups during their last pregnancy. Among these 857 women, more than half (55%) used the CHS, 35% private clinics, and 31% the district hospital. Approximately 10% of women went to the provincial or central hospital for this service. The total percentage was greater than 100%, as women may visit multiple health facilities during the gestational period (Table 3).

Analyses of data by provinces found that in Thua Thien Hue, the local CHS was the most favorable service provider in rural districts, attracting 76% of women, compared to district hospitals (34%), and private clinics (15%). In the city, private clinics ranked first, visited by 50% of women, with the local CHS and district hospital each reporting access by 32% of women. In both settings, around 5% of women reported visiting Hue central hospital for ANC services during their last pregnancy (Figure 1). In Vinh Long where the survey

Table 1 Socio-demographic characteristics of surveyed respondents (n = 1417)

| Variable          | n   | %   | Variable          | n   | %   |
|-------------------|-----|-----|-------------------|-----|-----|
| Province          |     |     | Religion          |     |     |
| Vinh Long         | 678 | 48  | Buddhist          | 556 | 39  |
| Thua Thien Hue    | 739 | 52  | Catholic          | 75  | 5   |
| Age               |     |     | Other             | 58  | 4   |
| < = 31            | 740 | 52  | None              | 728 | 52  |
| > 31              | 677 | 48  |                   |     |     |
| Marital status    |     |     | Occupation        |     |     |
| Single            | 439 | 31  | Farmer            | 570 | 40  |
| Ever-married      | 978 | 69  | Non-farming job   | 847 | 60  |
| Number of children|     |     | Location of living|     |     |
| None              | 435 | 33  | Urban             | 213 | 15  |
| 1 or 2            | 635 | 45  | Rural             | 1204| 85  |
| > 2               | 307 | 32  | Income            |     |     |
| Education         |     |     | 1st quartile      | 356 | 25  |
| Secondary school or less | 960 | 68  | 2nd quartile      | 416 | 29  |
| High school or more | 457 | 32  | 3rd quartile      | 296 | 21  |
|                   |     |     | 4th quartile      | 349 | 25  |

Table 2 Sources of FP services

| Health facility                  | Last IUD insertion (n = 464) | Condoms/other contraceptives | |
|----------------------------------|-----------------------------|-----------------------------|---|
|                                 | n   | %       | n     | %     |
| CHS                              | 329 | 71.0    | 345   | 60.8  |
| Pop. Collaborators               | NA  | NA      | 208   | 36.7  |
| Pharmacy                         | NA  | NA      | 102   | 18.0  |
| Dist. Hospital                   | 8   | 18.5    | 24    | 4.2   |
| Provincial/central hospital hospital | 8   | 1.7    | 5     | 0.9   |
| Private clinics                  | 37  | 80.0    | 11    | 1.9   |
| Other                            | 4   | 0.9     | 11    | 1.9   |

NA: Not applicable
only included rural communes, an almost equal proportion of women (47% and 46%) reported using CHSs and private clinics, with 29% visiting the district hospital, and 15% going to the provincial or central hospital for ANC services (Figure 2).

Delivery service use
Of 942 women who reported a delivery, 854 (91%) had their latest delivery in a health facility. The district hospital was selected by the highest proportion of women (37%), followed by provincial or central hospitals (20%), then CHS(19%), and private providers(11%). Only 7% of women had home-based delivery with a birth attendant and 2% practised self-delivery (Table 3).

Gynecological check-up service use
Sixty four percent of surveyed women (n = 759) reported having undertaken gynecological check-ups. During the most recent check-up, the highest percentage (77%) visited the local CHS, 11% opted for private clinics, 8% went to the district hospital. Only 3% went to the provincial/central hospital for this service (Table 3).

Socio-demographic determinants of RH service use at the local CHS
Table 4 presents the results of the logistic regression analyses. The analyses found that the CHS antenatal check-up and gynecological examination services were both strongly related to number of children (< = 2 vs. > 2), religion (Buddhist vs. each of other groups: Catholic, non-Buddhist and non-Catholic, and non-religious affiliation), occupation (farmers vs. other groups: government cadres, factory workers, small traders, and students), and self-reported income (first quartile vs. each of other 3 quartiles). Women with more than 2 children, having a non-Buddhist/non-religious affiliation, or living in Thua Thien Hue (compared to Vinh Long) were more likely than others to attend antenatal check-ups during their latest pregnancy, or to have their most recent gynecological examination at their local CHS.

Table 3 The use of antenatal check-up and delivery service by health facility

| Health Facility | Antenatal check-up (n = 857) | Delivery (n = 942) | Gyn. examination (n = 759) |
|-----------------|-----------------------------|--------------------|--------------------------|
|                 | n   | %  | n   | %  | n   | %  |
| CHS             | 473 | 55.2| 181 | 19.2| 585 | 77.1|
| Dist. hospital  | 269 | 31.4| 351 | 37.3| 62  | 8.2 |
| Prov./Cent. hospital | 84  | 9.8 | 188 | 20.0| 24  | 3.2 |
| Private clinic  | 303 | 35.4| 106 | 11.3| 80  | 10.5|
| Home            | NA  | NA | 66  | 7.0 | NA  | NA  |
| Self-delivery   | NA  | NA | 22  | 2.2 | NA  | NA  |
| Other           | 6   | 0.7| 28  | 3.0 | 8   | 1.0 |

NA: Not applicable

Figure 1 Health facility visited for antenatal check-ups at the latest pregnancy in Thua Thien Hue (n = 402)
Women with a non-farming occupation or earning a higher income were less likely than others to visit their local CHS for these two services. Regarding delivery service use, mothers of minority ethnic groups were more likely than those of the majority ethnic group to have their latest delivery at the local CHS, which was also true for non-Buddhist/non-religious mothers compared with Buddhist mothers. Women from non-farming occupations, or earning a higher income, were less likely to choose CHS-based delivery. It is noted that the use of CHS antenatal check-up service was significantly related to living location, with rural women more likely

Table 4 Factors related to the use of RH services available at the local CHS (Reduced logistic regression model)

| Factors                | Category | Antenatal check-up (n = 835) | Delivery (n = 577) | Gynecological check-up (n = 718) |
|------------------------|----------|------------------------------|-------------------|----------------------------------|
|                       |          | OR (95% CI)                  | OR (95% CI)       | OR (95% CI)                      |
| Children               |          |                              |                   |                                  |
| ≤ 2                    | Ref      | Ref                          | Ref               | Ref                              |
| > 2                    | 1.61 (1.13-2.31) | NS                           | 1.62 (1.01-2.06)  |                                  |
| Religion               |          |                              |                   |                                  |
| Buddhist               | Ref      | Ref                          | Ref               | Ref                              |
| Catholic               | 2.91 (1.36-6.25) | 3.05 (1.49-6.26) | 3.19 (1.04-9.85)  |                                  |
| Other                  | 3.10 (1.39-6.90) | 2.85 (1.16-7.01) | 7.91 (2.24-27.97) |                                  |
| None                   | 2.01 (1.38-2.92) | 2.17 (1.39-3.38) | 3.60 (2.36-5.49)  |                                  |
| Ethnicity              |          |                              |                   |                                  |
| Majority               | Ref      | Ref                          | Ref               | Ref                              |
| Minority               | NS       | 2.20 (1.32-3.69)             | NS                |                                  |
| Occupation             |          |                              |                   |                                  |
| Farming                | Ref      | Ref                          | Ref               | Ref                              |
| Non-farming            | 0.64 (0.45-0.90) | 0.22 (0.15-0.33) | 0.72 (0.57-0.91)  |                                  |
| Living location        |          |                              |                   |                                  |
| Urban                  | Ref      | Ref                          | Ref               | Ref                              |
| Rural                  | 2.79 (1.59-4.91) | ND                           | NS                |                                  |
| Province               |          |                              |                   |                                  |
| Vinh Long              | Ref      | Ref                          | Ref               | Ref                              |
| Thua Thien Hue         | 2.83 (1.88-4.26) | NS                           | 3.33 (2.11-5.26)  |                                  |
| Income                 |          |                              |                   |                                  |
| 1st quartile           | Ref      | Ref                          | Ref               | Ref                              |
| 2nd quartile           | 0.79 (0.53-1.17) | 0.73 (0.47-1.13) | 0.41 (0.24-0.71)  |                                  |
| 3rd quartile           | 0.52 (0.33-0.83) | 0.57 (0.34-0.97) | 0.40 (0.22-0.75)  |                                  |
| 4th quartile           | 0.42 (0.26-0.67) | 0.33 (0.18-0.61) | 0.24 (0.18-0.63)  |                                  |

NS: not statistically significant so not included in the model; ND: the variable is excluded because none of the urban women reported delivery at CHSs
than their urban counterparts to use this CHS service. None of women in the city reported having their latest delivery at the CHS.

Discussion

This study is among the first examining the pattern of RH and FP service utilization at the CHS and in other health facilities in the context of change in the healthcare system in Vietnam. With basic RH services available from a range of health facilities, women in Vietnam, especially those in urbanized areas, have been given a range of alternatives. However, state services continue to dominate, though private services are playing a significant role. In general, the local CHS appears to be the most frequently used health facility for FP, ANC, and gynecological examination services, all free or heavily subsidized. Hospitals dominate the provision of delivery services. There were marked differentials in women’s selection of service providers for ANC and delivery services between rural and urban areas.

Data on behavioral RH care indicators in the selected districts were impressive with a very high proportion of married women currently using a birth control method, high rates of pregnant women having sufficient ANC and giving birth at a health facility. These data were comparable with the national-level statistics over the past 5 years [13] that reported high national rates of contraceptive use (80%-90%), at least 3 antenatal visits in pregnant women (87%), and deliveries attended by trained health personnel (95% or higher) [14,15]. The pattern of birth control methods currently used was also keeping with the national data that reported IUD to be the most popular method applied by around 56% of married couples [14].

The high levels of contraceptive use, with the local CHS as the major supplier, indicates that the model of providing FP services in Vietnam is effective, and able to meet local needs. Historically, the CHS has been serving as the primary access point for FP services under the national population and family planning program since early 1960s. Over time, the CHS has gained a reputation for its provision of subsidized FP services, with delivery of FP services strengthened by the population collaborator network, providing women with easy access to low-cost, community-based services. The contribution of the local pharmacy is also significant, diversifying the provision of condoms or other contraceptive commodities at the commune level. The hospital and private providers appear to have a little role in the provision of IUD services and other FP commodities (i.e. condoms or pills).

The CHS also appears to be a major provider for antenatal check-ups, particularly in the rural area, although the number of private antenatal service users was significant. This finding counters previous studies that reported lower use of primary healthcare and outpatient treatment services at CHSs compared to private clinics or hospitals [1,16]. Antenatal care check-ups at the CHS are subsidized and accompanied by free prenatal tetanus vaccination, and the CHS is proactive in inviting mothers to register for the monthly antenatal clinic when their pregnancy is confirmed. However, while CHSs continue to dominate the provision of ANC services, a preference for delivery in hospitals was clear in these districts, a finding consistent with rising economic status and increasing patient expectations of the health system in Vietnam [2,8,17].

Living location affects the selection of ANC service providers, with rural women more likely than their urban counterparts to use the CHS. The same differential was not seen in the choice of services relating to delivery, with women living in rural areas as likely to choose a hospital as those in the city. In both settings, district hospitals have become the most popular provider for this service, while the role of the local CHS has tended to diminish. Our data support earlier studies that found a low use of CHS delivery services, with most women preferring district hospital-based delivery because of the perceived better quality of services for both mothers and newborn [7,8]. The data also support the qualitative study in these provinces that noted the 2-child population control policy has made couples more cautious about outcomes for their baby, choosing hospital-based delivery where they are more confident in provider’s expertise and equipment, and life saving emergency care is readily available [4].

The high use of gynecological check-up services at the local CHS was attributed in part to the national RH semi-annual campaign. Although this national campaign is aimed at early detection and treatment of RTIs, population-based studies conducted within the last 10 years, including one study in Thua Thien Hue, reported a prevalence of RTIs ranging from 21% to 39% among women of reproductive age [18-20]. The RTIs prevalence was found to be even higher in hospital- or clinic-based studies, though these were subject to selection bias [21,22]. While RTIs can change overtime and vary by provinces, such high prevalence raises questions around the strategic use of CHS-based free gynecological check-ups during the national semi-annual RH campaign, with questions over the quality and efficacy of this service as an intervention strategy.

Private physicians were important providers for ANC services in both rural and urban areas, despite their uneven geographical distribution. With RH private clinics mostly concentrated in urban areas, using private services not only incurred higher fees, but also travel expenses for rural women. Yet, a significant proportion
of rural women used private clinics during their latest pregnancy. Previous studies report criticism of state facilities and a preference for reproductive healthcare provided at private clinics, though, paradoxically, these private clinics are serviced by physicians who routinely work in state health facilities [23]. In the private clinics, clients may be entitled to direct access to more senior clinicians, and find staff more responsive, compared to their reception in state services [23]. While CHSs maintained dominance in provision of ANC services, there was a clear upwards trend for the use of private antenatal services, consistent with trends for other health service use in Vietnam [1,2].

In essence, the patterns of RH service provider choice were driven by socio-economic and geographic factors. Women of lower socio-economic status, who were farmers, earning a lower income, having more than 2 children, and living in a rural area were more likely to use antenatal, delivery, and/or gynecological check-up services at the local CHS. This finding is consistent with previous studies that found the poor tend to use the CHS more frequently than the rich [1,24].

Among the 2 provinces, a higher percentage of women in Thua Thien Hue reported visiting their local CHS for ANC and gynecological check up services. This difference can be explained by the higher number of CHSs in sampled communes in Thua Thien Hue staffed by a doctor (13), compared to those in Vinh Long (10) [25]. In Vinh Long, 2 of 3 districts included in the survey had an accredited private RH clinic, while there were none in rural districts of Thua Thien Hue. This was reflected in the findings that more rural women in Vinh Long used antenatal check-ups at private clinics and fewer of them used this service at the CHS compared to their counterparts in Thua Thien Hue, though in both provinces, there were low levels of delivery in private facilities. This difference also indicates a shift from CHSs to private doctors for ANC services where they are locally accessible, reducing the use for services delivered through the CHS system.

The study findings should be considered in conjunction with the limitations of the research. The sample was drawn from districts purposively selected for the intervention project, and thus not representative for the whole province. Although the percentage of women who have a current sexual partner (3%) was consistent with national data on prevalence of premarital sex among young women (5.2%), [26] the sample of unmarried women was too small for meaningful statistical analyses. Data were self-reported, and may incur recall bias with regards to the history of RH service use, particularly with ANC and delivery services.

Conclusions

Although the CHS in this study retains significant utilization rates and constitutes an important provider of primary RH services, it is under challenge on three fronts. The first challenge is from the significant use of private practice for ANC, where clients have direct access to higher grades of health care providers, and are willing to pay higher fees for their perceptions of better quality of care. Secondly, although the semi-annual gynecological screening continues to attract significant numbers of women with its subsidized service, its effectiveness as a population strategy is questionable, and the quality of services needs evaluation. Thirdly, the preference for delivery in district hospitals over CHS is marked, and arguably, government services would do well to move towards strengthened referral services and shared care with the CHS, rather than invest in duplication of these functions at both levels.

To address these challenges, the CHS system needs to be responsive to specific local needs. In areas with accessible alternative health services reducing the need for CHS services, rationalizing of services is needed. Those CHSs that attempt to function in the shadow of hospital facilities need to be protected by referral practices and clear differentiation of services to avoid unnecessary provision of routine RH care by more costly staff, in higher cost level facilities. At the same time, efforts should be made to improve service quality at the local CHS as the economy improves and clients demonstrate growing demand for higher quality services. With the reduction in government subsidies, a responsive payment scheme must be developed at the CHS level that generates income for the sustainable provision of quality services, but retains subsidized services for the poor who continue to rely on their local CHS for basic reproductive healthcare.

Additional material

Additional file 1: Study questionnaire

Abbreviations

ANC: Antenatal care; CHS: Commune Health Station; CI: Confidence Interval; FP: Family Planning; IUD: Intra uterine device; RH: Reproductive Health; OR: Odd Ratios

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Authors’ contributions
AN conceived research ideas, developed research protocol and data collection tools, and conducted data collection and data entry. AN performed data analysis and drafted the manuscript with input from PH. PH made a substantial contribution in revising the manuscript for intellectual content. All authors reviewed and approved the final version.

Competing interests
The authors declare that they have no competing interests.

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