1. Background

Efforts to improve access to reproductive health services in many developing countries have been driven much by the public sector, in large part because ensuring delivery of reproductive health products and services to the poor and underserved has been the priority of many national governments. At the same time, the private sector has been growing significantly, and their share in the provision of health care services has expanded in a number of countries. While the expansion of reproductive health service provision by the private sector may have eased the burden of the public sector, governments and policy makers have concerns about the effects of such an expansion on the poor: increasing the role of the private sector may reduce access to health care among the poor.

In Vietnam, the private health sector has been growing rapidly since the late 1980s. However, it was not until the early 1990s that health sector reform was introduced with the introduction of user fees for health services at higher-level public health facilities and legalization of private practice. Since then the private sector has been competing with the public sector in providing health services (mainly curative care). Private sector providers have become an important source of health services, not only for the rich but also for the poor, even in rural areas (Khe et al., 2002). As early as in 1994, about 20 million people in Vietnam had already routinely received health exams and medicines in the private sector (Le et al., 1994).

Despite such rapid development and the government's interventions to improve access to and quality of health services, mainly in the public sector, to our knowledge, there has been very limited studies looking at service utilization in the public and private sectors. A few studies examined access to and quality of reproductive health services and how they affect service utilization; however, these studies were limited to the public sector (see for example, Do and Koenig, 2006; Duong, Binns, and Le, 2004). Little is known about factors influencing the choice of service providers among reproductive health care users: individual characteristics, access to or quality of services in the public and private sectors; as well as inequity in access to and use of services.

2. Research questions

The proposed research aims to examine factors that influence women's use of antenatal care (ANC) services and how to what extent these factors may vary between the rich and the poor in rural Vietnam. Specific research questions are:

1) How access to services influence women's use of antenatal care services, and
2) How these individual and program factors may vary between women of different socio-economic status groups.

3. Data and methodology

Data for this study come from the latest Vietnam Demographic and Health Survey (DHS) conducted in 2002. It is a nationally representative sample survey of 5,665 ever-married

women aged 15-49 selected from 205 sample points (clusters) throughout Vietnam. It provides information on levels of fertility, family planning knowledge and use, infant and child mortality, and indicators of maternal and child health. Antenatal services are chosen for this study because of their increasing use in the past decade. The 2002 DHS showed that 86 percent of pregnant women received antenatal services from a trained provider, compared to 71 percent in 1995-1997.

The survey included an Individual Questionnaire, and a Community/Health Facility Questionnaire. The Individual Questionnaire included a section where women were asked about childbirths within the three years preceding the survey, including details about any antenatal care that she received. There were 1,317 such childbirths during the three-year interval. The Community/Health Facility Questionnaire, on the other hand, was used to collect information on all communes in which the interviewed women lived in and on services offered at the nearest health facilities. The first two of the four sections of the Community/Health Facility Questionnaire collected information from community informants on characteristics of the community and the location of the nearest sources of health care.

The outcomes of interest include whether the women had an antenatal visit during a pregnancy within three years prior to the survey, the timing of such visit (i.e. whether it was within the first trimester), and the number of visits. The main independent variables of interest are individual and community characteristics, and access to services. We will also examine how these factors may vary between socio-economic status (SES) groups. SES in this study is measured by an index constructed based upon household assets. Multi-level data analysis will be conducted because it is possible that a woman may have more than one childbirth during the three year interval, and many women may have been selected from the community. Statistical analysis was carried out with Stata version 9.2/SE.

4. Results

The analysis so far shows that just over half (53 percent) of pregnant women had their first ANC visits within the first trimester. Education and SES were strongest individual-level predictors of having first ANC visit in the first three months of pregnancy. The order of the birth was not a significant predictor. The probability of having timely first ANC visits was also higher for women who resided in the communities with better infrastructure, as measured by the availability of telephone services and types of road to the nearest urban center.

Access to ANC services in the public sector seemed important, as well as access to services in the private sector, although to a lesser extent (see Table 1). The presence of a commune health center (CHC) that provides ANC services within 5 kilometers significantly increased the likelihood that pregnant women would have first ANC visit in the first trimester. Women who lived within 5 km of a CHC that provided ANC visits were 1.7 times more likely than those who lived further away to have ANC visits within the first trimester. ANC services provided by private doctors within 5 kilometers was also

important at the level of .10. Other health centers that provide ANC services did not seem to make a difference in the multivariate analysis.

When interaction terms between measures of access and SES were included in the multivariate model, only access to ANC services at CHC within 5km was shown to have some reduction effects on the differentials in ANC service use between SES groups. The availability of private ANC service providers did not affect such differences.

Table 1. Effects of access to ANC visits on service utilization, controlling for individual and community characteristics, Vietnam, 2002

ANC services available at…	First ANC visit within first trimester		3 or more ANC visits	
	Bivariate OR	Multivariate OR	Bivariate OR	Multivariate OR
Private doctors within 5 km	1.09	1.27†	1.02	.71
Commune health center within 5km	4.41***	1.70*	8.97***	3.81**
Other health center within 5 km	1.79**	1.13	2.13**	1.31

† p<.10, * p<.05, ** p<.01, *** p<.001

Similarly to first ANC visit, more than half of women in the sample had at least three ANC visits – as recommended by the Ministry of Health - during pregnancies that resulted in live births within three years before the survey. Among individual characteristics, significant predictors of having three or more ANC visits include SES, education, exposure to media (newspapers and radio), and order of the index live birth. The probability of having three or more ANC visits was positively associated with most of these factors, but higher with lower birth order. There was no significant relationship between community characteristics and the number of ANC visits.

Among measures of access to ANC services in the public and private sectors, only that in the public sector was significantly related to the number of ANC visits. While 57.6 percent of women who lived within 5km of a CHC providing ANC services had at least three ANC visits, only 13.2 percent of women who lived more than 5 km away did so. Similarly, two-thirds of women who lived close to other health centers with ANC services compared to 45.6 percent of those who lived more than 5km away had three or more visits. Surprisingly, the percentage of women who had three or more ANC visits was higher among those who lived further away from a private ANC service provider: 53.8 percent versus 46.6 percent – the difference, however, was not statistically significant.

In the multivariate analysis that controlled for individual and community characteristics, the availability of CHC with ANC services within 5km was still a strong predictor of the number of ANC visits. Those who lived within 5km of such a CHC was 3.8 times more likely than those who lived far away to have at least three ANC visits during pregnancies

in the last three years. Neither the private doctors nor other health centers that provided ANC services emerged as important. Again, the availability of ANC services at CHC within 5km tended to reduce the differences in having at least three ANC visits between SES groups. Neither the availability of ANC services from private providers or other health centers within 5km made a difference to the inequity in ANC service utilization.

5. Conclusions

The analysis so far indicates that although ANC services were widely available in both public and private sectors, individual characteristics such as SES and education were still strong predictors of ANC service use. This is true for both outcomes: having the first ANC visit in the first trimester and having at least three ANC visits. More easy access to services at CHC was significantly related to both outcomes, while access to ANC services from private providers was associated only with timing of first ANC visits. This suggests that besides individual characteristics, access to services, especially in the public sector, was also important to a certain extent. What remains unanswered is the role of perceived or actual quality of ANC services in the public and private sectors. This is particularly important when CHC is ubiquitous and the private sector facilities have been growing substantially.

The preliminary analysis also shows that the availability of ANC services in the public sector, namely at CHC, had some effects in reducing inequity in service utilization. In the mean time, there is no evidence that the presence of a private ANC service provider would increase the differentials in service utilization between SES groups. In other words, there is no evidence against the expansion of service provision in the private sector.