



**EXPLORING BARRIERS TO ACCESSING
MATERNAL HEALTH AND FAMILY PLANNING
SERVICES IN ETHNIC MINORITY COMMUNITIES
IN VIET NAM**



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LIST OF ABBREVIATIONS

ANC	antenatal care
CHC	commune/community health centre
FGD	focus group discussion
FP	family planning
IUD	intrauterine device
LMICs	low- and middle-income countries
MDGs	Millennium Development Goals
MDRI	Mekong Development Research Institute
MICS	Multiple Indicator Cluster Survey
MMR	maternal mortality ratio
RMNCH	reproductive, maternal, newborn, and child health
MoH	Ministry of Health
NPSM	National Plan for Safe Motherhood
PNC	postnatal care
R-HFA	Rapid Health Facility Assessment
RMNCH	reproductive, maternal, newborn and child health
SDGs	Sustainable Development Goals
STIs	sexually transmitted infections
ToR	terms of reference
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WASH	water, sanitation and hygiene
WHO	World Health Organization

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It is our hope that this report proves useful to policy makers, programme managers, health professionals, researchers and donors in designing and implementing effective reproductive health programmes in order to achieve the ultimate objectives of the International Conference on Population and Development and the Sustainable Development Goals in Viet Nam.

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EXECUTIVE SUMMARY

This study draws on a mixed methods design to explore the perspectives of ethnic minority women in six provinces in the Central Highlands and Northern Midlands and Mountains regions of Viet Nam, answering the overarching research questions:

- According to the data available, what is the status of ethnic minority women's access to and utilization of maternal health and family planning services? What is the extent of inequalities in access to maternal health care and family planning services compared to national estimates, and what is the extent of inequalities within the ethnic minority population?
- What are the reasons for women not having access (or having inadequate access) to maternal health care services?

The primary objective of this report is to enhance understanding of childbirth practices, maternal health-seeking behaviour and the extent to which existing health services meet the needs and preferences of ethnic minority communities. The specific aims outlined in the Terms of Reference (ToR) for this study include to:

- Measure maternal health care utilization and family planning indicators of ethnic minority women in 60 communes selected from six provinces;
- Determine trends and disparities in maternal health care and family planning service utilization among women in ethnic minority communities;
- Identify determinants of maternal health care and family planning service utilization and non-utilization;
- Explore traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women's health-seeking behaviours, utilization and non-utilization of maternal health care, and family planning services;
- Explore opportunities for the primary health care system to provide culturally appropriate services, adaptive to the local contexts and responsive to the needs of local people, and provide recommendations that support the provision of culturally appropriate maternal health and family planning services for women in ethnic minority and remote communes.

The report is based on original survey data from 4,609 ethnic minority women, focus group discussions (FGDs) with more than 100 ethnic minority women, and interviews with health care providers and village leaders. The report covers key reproductive, maternal, newborn and child health (RMNCH) indicators related to health care access, disaggregated by four dimensions of inequality (place of residence, education level, economic status and ethnicity).

The report summarizes both strengths and weaknesses of the current systems and practices with respect to ethnic minority women's access to and utilization of maternal health and family planning services. The situation is better with respect to some indicators and subgroups of the population. For example, minimal differences were found in the use of modern contraceptives amongst ethnic minority participants compared to national estimates; coverage for community-based maternal health services is relatively high in Bac Kan Province, with more than 75% of women receiving

antenatal care from commune health centres (CHCs); and more than 85% of women from the Tay and Gia Lai minority groups having their last birth attended by skilled health personnel. On the other hand, inequalities still persist for most indicators related to health care utilization compared to national estimates. The inequalities within the ethnic minority population in this study were most prominent among women in disadvantaged subgroups; that is, the poorest, the least educated, those residing in specific regions, and those from certain ethnic groups. There is still much progress to be made in improving RMNCH indicators and reducing inequalities related to maternal health care access.

THE STATE OF INEQUALITY: DIFFERENCES BETWEEN ETHNIC MINORITY INDICATORS AND NATIONAL ESTIMATES

This section presents results on 30 key maternal health care utilization and family planning indicators of ethnic minority women. The study revealed inequalities across all ethnic minority groups compared to national figures. The largest gaps in coverage were reported for antenatal care (based on the standard of at least four visits), followed by institutional deliveries, births attended by a skilled health personnel, and content of antenatal care. Inequalities were also reported for antenatal care coverage (at least one visit), although to a lesser extent than for the four above-mentioned maternal health interventions.

- Antenatal coverage (at least four visits) was 58 percentage points lower amongst ethnic minority participants than estimates of coverage nationally (16% vs. 74%).
- The proportion of institutional deliveries differed by 53 percentage points between ethnic minority participants and national estimates (41% vs. 94%).
- The proportion of births attended by skilled health personnel differed by 45 percentage points between ethnic minority participants and national estimates (49% vs. 94%).
- Adequate content of antenatal care (e.g., blood pressure measurement, blood and urine testing) was 38 percentage points lower amongst ethnic minority participants than national estimates (18% vs. 56%)

THE STATE OF INEQUALITY WITHIN THE ETHNIC MINORITY POPULATION

This section identifies key determinants of maternal health care and family planning service utilization and summarizes trends and disparities for these determinants among women in ethnic minority communities. The composite coverage index is a single indicator that summarizes the level of coverage across the spectrum of maternal and reproductive health interventions. It includes nine indicators: antenatal coverage (at least one visit), antenatal coverage (four or more visits), antenatal care within 16 weeks of gestation, content of care, trained attendant at delivery, institutional delivery, post-natal health check for newborns within 48 hours of birth, modern contraceptive utilization, and health insurance coverage. Overall, the results indicate that the composite coverage index value was 46% for ethnic minority participants, with substantial differences across subgroups in the study, ranging from under 35% to over 80%. The composite coverage index can be used as a proxy for overall progress towards achieving universal coverage for health care (index value of 100%).

As a first step, a linear regression was conducted to determine the main significant predictors of coverage of maternal and reproductive health interventions. The results indicate that all five socioeconomic determinants of health investigated as part of the study were significantly associated

($p < 0.001$) with coverage of maternal and reproductive health interventions. These determinants included: maternal level of education, maternal age at delivery, socioeconomic status, place of residence (geographic area), and ethnicity. These determinants are related to demand-side factors and were explored in greater detail through descriptive analysis.

Furthermore, two supply-side factors were significantly associated ($p < 0.001$) with coverage of maternal and reproductive health interventions, including health insurance coverage and quality of CHCs. After controlling for other factors, women with health insurance scored 12% higher on the composite coverage score than women without, on average. In addition, for every one point increase in the health facility checklist score, women with health insurance had a 0.48% higher combined score, on average, than women lacking it. On the other hand, distance to CHCs was not significantly associated with coverage of maternal and reproductive health interventions, although distance to district hospitals was significantly associated with coverage, with respect to time (hours) but not with respect to actual distance (kms). In some areas, ethnic minority women did not access maternal health services despite living in close proximity to a CHC. Hence, the results indicate that quality of healthcare and health insurance coverage were more important predictors of maternal health care access than geographic location.

The descriptive analyses revealed that access to maternal health services within the ethnic minority population in Viet Nam is in a state of inequality. Understanding the state of inequality in maternal health care involves comparing the experiences of ethnic minority subgroups. It sheds light on questions such as: How does maternal health care differ between provinces? Do the richest members of a population have better access to maternal health care than the poorest? Are there disparities in access between women with higher versus lower levels of education? Finding answers to these questions is an important step towards improving programmes and policies to ensure that health services reach those most in need.

Descriptive analyses provided an understanding of maternal health care access within the population of ethnic minority women by key social determinants of health. These include: geographic location, economic status, level of education and ethnicity.

- There was a place-of-residence gap in coverage of more than 20 percentage points between Dak Nong and Bac Kan and the four other provinces studied (Son La, Lai Chau, Kon Tum, and Gia Lai). There was minimal place-of-residence inequality amongst the four provinces with the lowest levels of coverage for maternal and reproductive health services.
- There was a poorest-to-richest difference of more than 40 percentage points in combined interventions coverage; average coverage was 25% in the poorest quintile and 67% in the highest quintile.
- There was a level-of-education gap of 50 percentage points in combined interventions coverage; average coverage was 25% for those with no education and 75% for those with secondary schooling or higher education.
- There was an ethnicity gap of close to 25 percentage points in composite coverage index levels between Tay and other ethnic groups. Ba Na and H'Mong had the lowest composite coverage index levels (below 35%).

Overall, the results on composite coverage of maternal and reproductive health interventions indicate large inequalities within the ethnic minority populations studied. Ethnic minority women make up a heterogeneous group in terms of barriers to accessing maternal health care. However, even the most

advantaged subgroups (e.g., the richest, the most educated, those residing in Dak Nong and Bac Kan, and Tay women) reported lower levels of maternal health care coverage than national estimates.

WHAT ARE THE REASONS FOR LOW ACCESS TO MATERNAL HEALTH CARE?

This section explores traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women's health-seeking behaviours, and utilization and non-utilization of maternal health care and family planning services. Qualitative methods were used to investigate potential reasons for low access to maternal health care based on the perspectives of ethnic minority women, health care providers and village leaders. Four themes were identified. The first theme reflects women's views that pregnancy and childbirth are healthy and normal processes and it is therefore not necessary to visit health professionals unless complications arise during pregnancy or labour. This was a dominant theme that we call cultural and social acceptability of maternal health services, and includes factors that make it possible for women and their families to accept existing maternal health care services. The second theme relates to women's views that maternal healthcare services are under-resourced and the benefits do not outweigh the potential risks and costs of attending health facilities. We call this theme appropriateness in the quality of maternal health services, which reflects whether the quality of services provided addresses women's needs. The third theme relates to the geographic remoteness of many ethnic minority communities, especially in northern mountainous regions, and the need to journey to distant locations to receive maternal health care. We call this theme the physical accessibility of maternal health services, which refers to whether health services can be reached, both physically and in a timely manner, without experiencing undue hardship. The fourth theme relates to women's limited financial resources. We call this affordability of maternal health services, which includes the direct costs of services, opportunity costs related to loss of income, and indirect costs such as transport to get to health facilities.

Overall, a prominent attitude amongst women was that childbirth is a natural rite of passage and home delivery is preferred to institutional deliveries unless complications occur. Difficult access to health care personnel and facilities, in addition to unaffordable costs (direct, indirect and opportunity) of attending health facilities in remote areas were amongst the major reasons for preferring home delivery and limiting access to antenatal care during pregnancy. For most women, institutional delivery was not perceived as the most acceptable and appropriate practice. Women preferred to be close to their family and home during labour and childbirth. They viewed local delivery services at the CHC as inadequate and the perceived benefits of attending CHCs and other health facilities did not outweigh the potential harms and high costs of getting there.

Despite the preference for home delivery, there was little reluctance to having a female trained birth attendant present during home deliveries. The real challenge, however, is that CHC health personnel generally do not attend home deliveries unless there is a complication or emergency. Village ethnic minority birth attendants who are trained in home delivery are not available in many communes and, where they are available, they are in some cases perceived as young, inexperienced and lacking the supplies needed for a safe delivery. Consequently, in the absence of skilled health personnel who are willing or able to support deliveries in the home environment, many women continue to deliver with only the support of untrained, elder women in the community.

RECOMMENDATIONS

The study's findings shed light on opportunities for the primary health care system in Viet Nam to provide more appropriate services that are adaptive to local contexts and responsive to the needs of local people. Based on the evidence presented herein, the recommendations are grouped into policy mechanisms that are within the remit of MoH and its partners.

- The primary and overarching recommendation is to provide better quality maternal health services within existing CHCs. Health services in local communes are well positioned to provide safe, effective, timely, efficient and equitable maternal health care centered on norms, values and preferences of diverse communities.
- There are various ways to approach improving quality of care. It is recommended that Viet Nam draw on the World Health Organization (WHO) "Standards for Improving Quality of Maternal and Newborn Care in Health Facilities" to further explore and identify gaps in the quality of care within the national context and improve the provision and experience of care according to internationally recognized quality standards and guidelines adapted to local contexts.
- Improvements to the quality of maternal health services should focus on six strategic areas: clinical guidelines, standards of care, effective interventions, measures of quality of care, relevant research, and capacity building.
- Facility-based quality improvements should be combined with outreach and community engagement strategies to increase service uptake by ethnic minority families. The results of this study highlight the critical role of communities and service users in identifying their needs and preferences and in managing their own health.
- The government should ensure that disadvantaged ethnic minority women have access to health insurance coverage and understand how it works.
- National policies and guidelines should be adapted to ensure access to and utilization of RMNCH services of vulnerable populations at the primary health care level.
- Monitoring and evaluation by the National Assembly and MoH should be strengthened with the active participation of ethnic minority representatives in order to track accountabilities and responsibilities of local authorities on the performance of the local health care network in disadvantaged regions.
- Effective evidence-based interventions should be created to achieve progressive improvements in the education programme and delivery systems for ethnic minority midwives.
- Inequalities should be monitored across the spectrum of health and by multiple dimensions of inequality. This is necessary to better tailor and target programmes to meet the diverse health needs of ethnic minority groups.



Ảnh có nguồn Báo Châu chi in tại Hà Giang

1. INTRODUCTION

In response to global advocacy movements such as the Safe Motherhood Initiative and the UN Millennium Development Goals (MDGs), prioritization of reproductive, maternal, newborn, and child health (RMNCH) in developing countries has increased substantially in recent decades. Much progress has been made globally, as illustrated by improvements in maternal and child mortality rates: since the early 1990's both rates have decreased, by 45% and 50%, respectively [1]. Despite this progress, improvements have not been uniform across settings and there is much work to be done to ensure that equitable RMNCH outcomes are reached both between and within countries. Within countries, disparities between women and children belonging to high versus low socioeconomic groups, between ethnic minority and majority groups, and between those living in rural versus urban areas are widely acknowledged [2, 3].

While important gains have been made, maternal and neonatal mortality rates are still unacceptably high in many countries. Globally, approximately 830 women still die each day due to preventable causes related to pregnancy and childbirth, and 99% of these deaths occur in low- and middle-income countries (LMICs) [2]. Maternal mortality and morbidity is highest amongst the poorest populations in Sub-Saharan Africa and South Asia, which together account for more than 85% of maternal deaths worldwide [1]. In 2009, an estimated 2.6 million stillbirths occurred across the globe and about three-quarters of them took place in South Asia and Sub-Saharan Africa [4]. A vast majority of these deaths could be prevented if more equitable access to high quality health services during pregnancy and childbirth was achieved.

1.1. INEQUITABLE ACCESS TO HEALTH SERVICES

Most health systems continue to benefit advantaged women over disadvantaged women. Even when maternal health services are technically available and accessible, underutilization of services may result if the services are deemed inappropriate or undesirable by patients [5]. The challenges associated with achieving equitable access to maternal health services are therefore twofold in that they relate to both supply-side (health system) and demand-side (patient or client health-seeking) deficiencies [6]. Each side of this equation tends to reinforce the other: if health systems do not offer adequate facilities, infrastructure, medicines, human resources and culturally appropriate health services, then women and their families will be unlikely to utilize them. At the same time, low demand for high quality services can result in limited mobilization and political will to rectify existing health system limitations. For this reason, there is an ongoing need to better understand the specific barriers to health care utilization amongst disadvantaged populations in order to ensure equitable access for all.



1.2. REPRODUCTIVE, MATERNAL, NEWBORN AND CHILD HEALTH IN VIET NAM

In Viet Nam, which is now classified as a lower-middle income country, 75% of the population reside in rural areas, and an estimated 19% identify as ethnic minorities (i.e. non-Kinh) [7]. Urban, rural, socioeconomic, gender and ethnic disparities in literacy rates persist, particularly amongst the H'Mong ethnic group [3]. Viet Nam is home to 53 ethnic minority groups, most of whom live in mountainous or remote areas with limited socioeconomic development and low access to transportation. Ensuring that all women have equal access to quality health services during pregnancy and childbirth is a significant challenge (high quality health centers tend to be located in urban areas but not rural areas). Supply-side factors also play an important role in explaining inequalities in maternal health care uptake. Supply-driven services that are

of poor quality, are too costly, or that are not adapted to local contexts or do not respond to the specific needs of local people tend to result in low service utilization. For those who do attempt to access the formal health system, healthcare providers may not be tolerant of, or sensitive to, cultural beliefs and traditional practices, and/or may treat poor and/or ethnic minority women with less consideration and respect than Kinh women.

Improving the health of women and children is a policy priority for Viet Nam as evidenced by the government's National Strategy on Reproductive Health and National Plan for Safe Motherhood (NPSM). In 2012, the Ministry of Health (MoH) renewed the NPSM for 2011-2015 with a specific focus on underserved populations and regions [8]. To address the disparities in RMNCH between regions and ethnic groups, the Government of Viet Nam has committed itself to improving the capacity of the health care system, especially at the primary level in ethnic minority and remote areas. However, recent data show that wide disparities continue to persist in RMNCH outcomes and in coverage indicators between regions, ethnicities, and income groups. For instance, while the national maternal mortality ratio (MMR) has dramatically fallen in Viet Nam from 165/100,000 live births in 2002 to 69/100,000 live births in 2010 [9], the MMR in 225 of the most remote and mountainous districts with high proportions of ethnic minorities remains as high as 104/100,000 live births [10], with the MMR amongst ethnic minority groups being four times higher than the rate among the Kinh (majority) ethnic group [11].

1.3. BARRIERS TO HEALTH SERVICE UTILIZATION

Home-based delivery rates are high amongst ethnic minority women in northern mountainous provinces, ranging from 40-60%, whereas most deliveries occur in a health facility in lowland regions and amongst the Kinh majority [12]. A study based on data collected more than 10 years ago for the

2006 Multiple Indicator Cluster Survey (MICS) found that ethnicity, household wealth and education were all significantly associated with antenatal care (ANC) coverage and skilled birth attendance [13]. These determinants of maternal health care utilization were closely related to each other, though the effect of ethnicity was more significant than wealth and education. Ethnic minority mothers from poor households were at a three-fold risk of not attending any ANC, and six times more likely to deliver without assistance from a trained birth attendant. The results demonstrate that ethnicity is an important social determinant for maternal health care utilization in Viet Nam, and that ethnic minority women form a clearly disadvantaged group. Available data suggest that the utilization of maternal health and family planning (FP) services by women in many ethnic minority and remote communes remains low [14].

1.4. EVIDENCE GAPS AND RESEARCH NEEDS

Limitations in current data underscore the need for more comprehensive and in-depth investigations of the barriers in accessing maternal health and family planning services amongst women in ethnic minority and remote communities across Viet Nam. Many of the currently documented barriers to service access do not fully explain low service attendance and are based on scarce and often insufficient information. For example, most available studies on maternal health care and family planning have analysed differences between Kinh and ethnic minority groups overall, but fail to disaggregate results between the numerous and diverse ethnic minority subgroups due to data limitations. Furthermore, while existing studies often cite the remoteness or long travel distance to health facilities as a major barrier, the utilization of services remains low in many commune health centres (CHCs) located in close proximity to the village [15, 16]. It is claimed that “traditional customs”, language and “culture” account for low maternal health service utilization, but these are

often conflated, vaguely defined, and can conform to prevailing stereotypes regarding the ‘otherness’ and ‘backwardness’ of ethnic minorities [17].

1.5. STUDY AIMS

This study draws on a mixed methods design to explore the perspectives of ethnic minority women in six provinces in the Central Highlands and Northern Midlands and Mountains regions of Viet Nam, to answer the following broad research questions:

- According to the data available, what is the status of ethnic minority women’s access to and utilization of maternal health and family planning services? What is the extent of inequalities in maternal health care access compared to national estimates, and what is the extent of inequalities within the ethnic minority population?
- What are the reasons for women not having access (or having inadequate access) to maternal health care services?

The specific aims of the study are to (see Appendix A for the research proposal):

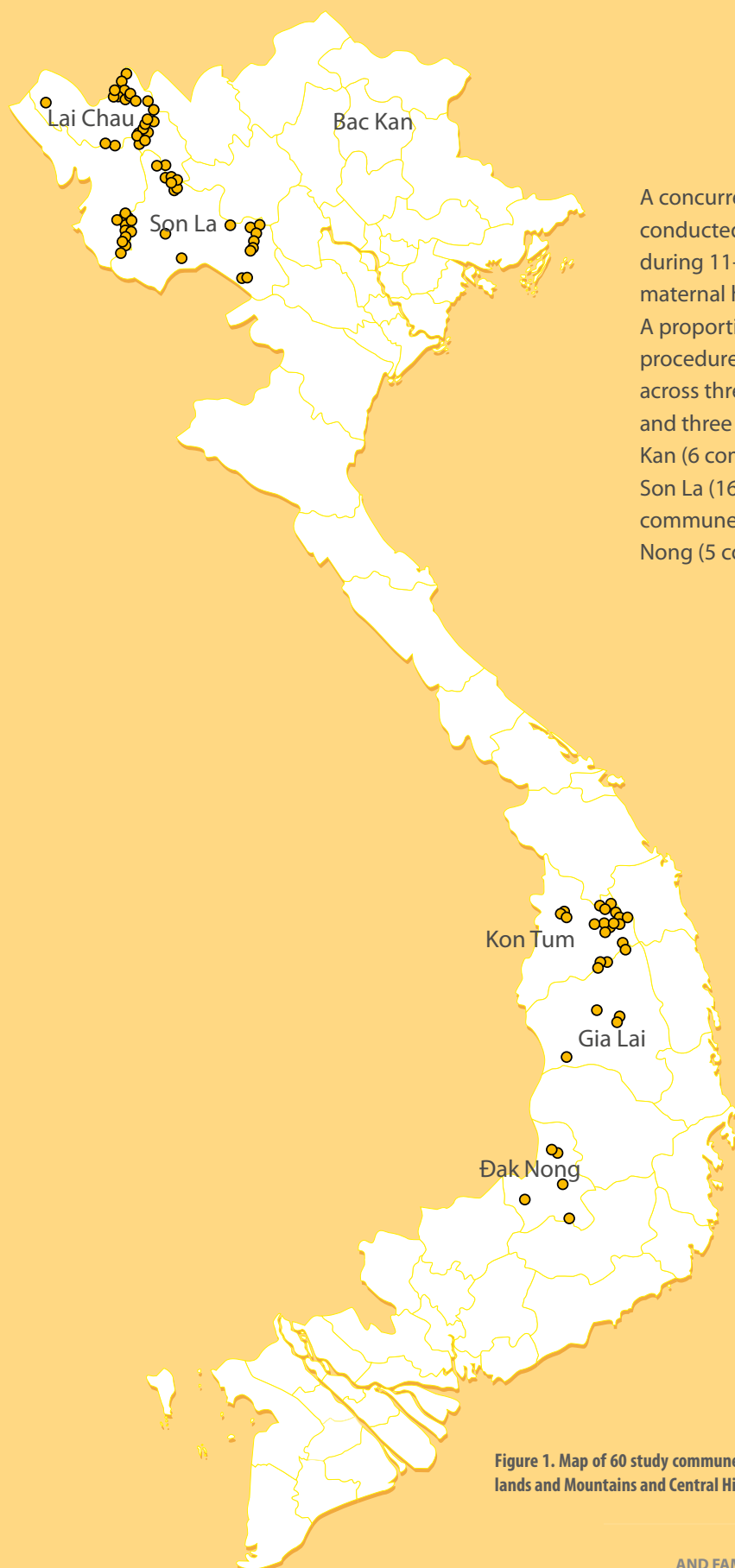
- Measure maternal health care utilization and family planning indicators of ethnic minority women in 60 communes selected from six provinces;
- Determine trends and disparities in maternal health care and family planning service utilization among women in ethnic minority communities;
- Identify determinants of maternal health care and family planning service utilization and non-utilization;
- Explore traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women’s health-seeking behaviours, utilization and non-utilization of maternal health care and

family planning services; and

- Explore opportunities for the primary health care system to provide culturally appropriate services, adaptive to local contexts and responsive to the needs of local people, and to provide recommendations that support the provision of culturally appropriate maternal health and family planning services for women in ethnic minority and remote communes.

The MoH, in consultation with provincial authorities, provided a list of more than 150 communes identified as having high rates of home deliveries, high levels of poverty and located at a far distance from hospitals. The study team randomly selected 60 communes from this larger list of ethnic minority communes. The objective of the study was to enhance understanding of childbirth practices, maternal health-seeking behaviour and the ways in which existing health service provision may be failing to meet the needs and preferences of ethnic minority communities. This study provided novel, large-scale survey data on key RMNCH indicators related to health care access. Focus group discussion (FGDs) and semi-structured interviews were conducted with ethnic minority women, health care providers and village leaders to explore the attitudes, beliefs and experiences that shape the environment for health service delivery and influence women's health-seeking behaviours.

2. Methodology



A concurrent mixed methods study was conducted, with data collection taking place during 11-29 January 2016 to collect data on maternal health and family planning services. A proportionate stratified random sampling procedure was used to select 60 communes across three Northern Mountain provinces and three Central Highlands provinces: Bac Kan (6 communes), Lai Chau (16 communes), Son La (16 communes), Kon Tum (8 communes), Gia Lai (9 communes), and Dak Nong (5 communes).

Figure 1. Map of 60 study communes in Northern Midlands and Mountains and Central Highlands regions



The research ethics review board of the University of Toronto, Canada, approved the study protocol (Protocol Reference #32324). The MoH and appropriate provincial and commune-level authorities provided approval to implement the study. The research is based on a mixed methods approach for the purposes of breadth (quantitative) and depth (qualitative) of understanding, and to obtain different but complementary data on access to and utilization of maternal health services. Quantitative survey data and qualitative interview data were collected during the same phase of the research process and each method was given equal priority. Together, the data provides a comprehensive picture of indicators of maternal health and family planning amongst a diverse group of ethnic minority women in geographic regions that have been under-researched, and of the reasons for low maternal health service utilization.

2.1. QUANTITATIVE PHASE

The primary purpose of the quantitative phase was: (i) to measure maternal health care utilization and family planning (FP) indicators of ethnic minority women, (ii) to identify determinants of maternal health care and FP service utilization (regression analysis),

and (iii) to determine trends and disparities in maternal health care and FP service utilization among women in ethnic minority communities (descriptive analysis). Survey data were collected from a non-randomized sample of 4,609 ethnic minority women with at least one live birth in the last two years. Data were collected from 27 ethnic minority groups in total; however, the disaggregated results in this report focus on nine groups that had sample sizes of more than 100 women participants (Ba Na, Dao, Gia Rai, Ha Nhi, H'Mong, Mnong, Sedang, Tay, and Thai). The primary focus of the quantitative phase was on collecting large-scale comparable data related to key indicators of RMNCH services across diverse provinces and ethnic minority groups. Thirty indicators relating to ANC, interventions at birth, postnatal care (PNC) and contraceptive care were selected for inclusion in this report. The generated data can be used for policies and programmes, and to monitor progress towards the Sustainable Development Goals (SDGs) and other internationally agreed upon commitments. With reference to existing literature, these indicators were selected on the basis of importance and relevance for improved RMNCH outcomes [18]. The selected indicators are listed in Table 1.

Table 1. Selected maternal and family planning indicators

CATEGORY	INDICATOR
Antenatal care	Antenatal care (ANC) coverage – at least one visit (%)*
	ANC coverage – at least four visits (%)*
	ANC within 16 weeks gestation (%)*
	Location of ANC checks (%)
	Provider of ANC checks (%)
	Content of antenatal care (blood pressure, urine, and blood testing) (%)*
Interventions at birth	Institutional deliveries (%)*
	Births attended by skilled health personnel (%)*
	Health care provider (%)
	Location of deliveries (%)
	Cost of delivery depending on location (%)
Postnatal care	Prenatal care (PNC) health checks for newborn within 48 hrs. of birth (%)*
	Provider of PNC checks (%)
	Location of PNC health checks (%)
Contraceptive care	Contraceptive prevalence – modern and traditional methods (%)
	Contraceptive prevalence – modern methods (%)*
	Demand for family planning satisfied (%)
Maternal health and family planning interventions, combined	Composite coverage index (%)
Health insurance	Health insurance coverage (%)*
	Health insurance utilization (%)
Quality** of Commune Health Centres (CHCs)	Staffing (%)
	Infrastructure (%)
	Supplies - neonatal (%)
	Supplies - antenatal (%)
	Drugs - child (%)
	Drugs - neonatal (%)
	Drugs - antenatal (%)
	Infection control (%)
	Training (%)
Availability of contraceptives (%)	

* Indicator is part of the composite coverage index.

** Adapted from relevant items on *The Rapid Health Facility Assessment (R-HFA) tool* [19].

2.1.1 Questionnaire of individual women

The primary data source for the quantitative phase was a field-based survey of ethnic minority women who delivered in the last two years based on a modified UNICEF MICS 5 (see Appendix A for women's questionnaire). The standardized questionnaire included 45 items entailing demographic variables, living conditions, ANC coverage, ANC content, trained attendant at delivery, institutional deliveries, PNC, perceptions of barriers to maternal health services, family planning and contraceptive practices, and health insurance utilization. The translated version of the survey was pre-tested and refined prior to fieldwork. Village leaders and health workers notified women who had delivered in the last two years that a research study would take place on a specific day and women were invited to a convenient commune location to participate in the study. The research team visited the households of individual women who did not or could not come to the central location on the first day of data collection in each commune. Participants were informed of the nature and objectives of the study, consented to participate and received a small remuneration for their time. On average, data were collected from 60% of women in each commune who had delivered in the past two years. Random sampling was not feasible given the nature of these difficult-to-reach communes combined with time and budget constraints. The research team included 24 female field researchers trained on the survey instrument and interview techniques. The field researchers conducted the interviews one-on-one and in private at the CHC or at the respondent's home; each interview lasted approximately 20 minutes. For the most part, participants could converse in Vietnamese. In a few communes where women could not speak Vietnamese, interpreters were hired to translate and explain survey items in the local language.

2.1.2 Quality of CHCs and ecological characteristics (commune-level)

The quantitative phase also included an ecological assessment in 60 communes, including key indicators of CHC quality and information on commune characteristics such as distance to the district hospital and main modes of transportation. The purpose of this was to document the commune-level (e.g., geographic, demographic and socio-economic) and health facility-level characteristics, and maternal health and FP service use indicators in the Northern Midlands and Mountains and Central Highland regions. A health facility checklist was used to collect information on quality of CHCs based on a modified version of The Rapid Health Facility Assessment (R-HFA) [19]. Staff at CHCs completed the 66-item checklist on indicators for maternal health services at the primary health care level, including the availability of infrastructure, personnel, supplies and medications for essential maternal health and neonatal care (see Appendix A for R-HFA). The research team verified all responses. The definition of "quality" healthcare varies considerably within the existing scientific literature. The CHC assessment tool used in this study was not designed to capture all documented dimensions of quality; rather this checklist was intended to be a rapid assessment of key service delivery indicators. It was not designed to assess the technical competencies of CHC staff directly, or the perceptions and experiences of patients with respect to quality of care. These data would need to be collected via direct observation of clinical interactions, exit interviews with patients, or through assessments of providers' knowledge/recall of key clinical protocols. This was not possible within the budget and timeline constraints of this study. Despite this limitation, the study did assess staff competencies *indirectly* by capturing information on whether healthcare providers were trained in the provision of key RMNCH services (including FP). To complement these findings, future studies could expand the CHC assessment tool to capture the perspectives

of patients who accessed RMNCH services and to observe technical capacities of staff directly rather than using training as a proxy.

A 10-item ecological checklist developed specifically for this study was used to collect demographic commune-level information from commune officials, including information on percentage of poor households, illiteracy rate, main modes of transport, health insurance coverage, distance to the main road, distance from the most remote village to the CHC, distance from the health centre to the nearest district hospital, travel time from villages to the health centre, and travel time from health centre to hospital.

2.2. QUALITATIVE PHASE

Qualitative data were collected from 12 communes to explore pregnancy and childbirth practices and differences (and similarities) between ethnic minority subgroups with respect to barriers to maternal health service utilization. The qualitative sample included more than 70 women of reproductive age who had delivered at least one child (Table 2). Interview data were also collected from 35 health care providers and village leaders, based on purposive sampling procedures (e.g. communes were selected based on ethnicity and were intended to include diverse ethnic groups). The qualitative research phase provides a contextualized understanding of childbirth practices, maternal health-seeking behaviour, and the ways in which existing health service provision does or does not meet local needs and preferences. The qualitative findings are not intended to be generalizable; rather, the purpose was to explore a range of traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women's health-seeking behaviours, as well as the utilization and non-utilization of maternal health services.

2.2.1 Focus group discussions and interviews

The data sources included FGDs with ethnic minority women of reproductive age and semi-structured interviews with health care providers and village leaders (see Appendix A for interview guides). Questions were structured around open-ended questionnaires and focused on exploring the attitudes, beliefs and experiences that shape the environment for service delivery. For example, questions included: "Where do women in this community prefer to deliver their babies?", "What are the reasons for choosing that location?", "Who makes the decision to deliver in that location?", and "Where do women receive information on maternal health care and is the information sufficient?" The qualitative phase of the study provided insight into the barriers to maternal health services and reasons why some women do not access health care, or access it inadequately even when it is made available. FGD participants in each commune included both women who delivered at home and women who delivered at a health facility in order to explore varying viewpoints and barriers related to accessing maternal health services. Study participants provided informed consent and received a small remuneration for their time. Six Vietnamese researchers and two Canadian researchers conducted the qualitative fieldwork following methodologies described by Huberman and Miles [20] as a guide. The research team was trained in interview techniques and facilitation of FGDs. All interview guides were pre-tested and refined prior to fieldwork.

Table 2. Qualitative research participants

#	Province	District	Commune	Focus group discussions participants		Interview participants
				No. of women	Ethnicity	
1	Son La	Phu Yen	Suoi To	7	H'Mong	1. Midwife - Female - Thai 2. Village head - Male - H'mong
2	Son La	Thuan Chau	Ban Lam	7	Thai	1. Head of Commune Health Centre (CHC)/ Assistant Doctor - Male - Thai 2. Assistant Nurse - Female - Thai 3. CHC midwife - Female - Thai
3	Lai Chau	Phong Tho	Huoi Luong	4	Ha Nhi	1. Midwife - Female - Thai 2. Village birth attendants (VBAs) - Female - Dao
4	Lai Chau	Sin Ho	Phin Ho	5	H'Mong	1. Health worker cum population collaborator - Female - H'mong 2. Women's Union leader - Female - H'mong 3. Midwife - Female - Tay
5	Bac Kan	Pac Nam	Cao Tan	11	H'Mong, Tay	1. Birth attendant - Tay 2. Leader of the village farmer's union - Tay 3. Male village leader of H'Mong village - H'mong
6	Bac Kan	Cho Don	Binh Trung	10	Dao, Tay	1. Midwife - Tay 2. Leader of village woman's union – Dao & H'Mong 3. Village health collaborator - Tay
7	Kon Tum	Tu Mo Rong	Dak Na	6	Sedang	1. Birth attendant - Female - Xedang 2. Head of CHC - Female - Kinh 3. Village leader - Male - Xedang
8	Kon Tum	Kon Plong	Dak Ring	6	Ca Dong (Sedang)	1. Village leader - Male - Ca Dong 2. Midwife - Female - Kinh 3. Health worker - Male - Ca Dong
9	Gia Lai	Mang Yang	Dak Trôi	7	Ba-Na	1. Traditional birth attendant - Female - Bahnar 2. Village leader - Female - Bahnar 3. Officer at CHC - Male - Bahnar
10	Gia Lai	Chu Se	la Tiem	7	Gia Rai	1. Midwife - Female - Giarai 2. Village leader - Male - Giarai 3. Health worker - Male - Giarai
11	Dak Nong	Tuy Duc	Dak R'Tih	6	Mnong	1. Birth attendant - Female - Mnong 2. Village leader - Male - Mnong 3. Midwife - Female - Kinh
12	Dak Nong	Dak Glong	Dak Som	5	Ma	1. Birth attendant - Female - Ma 2. Village leader - Male - H'Mong

2.3. ANALYSIS

Non-identifiable data were stored digitally with Microsoft Excel and analysed with IBM SPSS 23.0. Data on place of residence, education level, economic status and ethnicity were used to categorize ethnic minority populations into sub-groups. Quantitative data were first analysed descriptively to measure key indicators of maternal health care utilization and FP indicators of ethnic minority women from six provinces, and then compared to national estimates for these indicators. Next, a composite coverage index was created incorporating the following nine RMNCH intervention indicators: ANC coverage (at least one visit); ANC coverage (four or more visits); ANC coverage within 16 weeks of gestation; content of care; trained attendant at delivery; institutional delivery; post-natal health check for newborn within 48 hours of birth; modern contraceptive utilization; and health insurance coverage. The composite coverage index captures both the provision and use of key maternal and reproductive health interventions. The Countdown to 2015 initiative applied a similar composite coverage index as a summary measure to track key interventions in RMNCH, as has the World Health Organization (WHO) to monitor global health inequalities. As far as we know, this is the first time a composite coverage index has been used to measure composite coverage of RMNCH interventions in Viet Nam [21]. The composite coverage index can be used to indicate overall progress towards achieving universal coverage for maternal health care. A composite index tends to be more stable and representative of the overall situation than any one of the component maternal health intervention indicators, which are more sensitive to factors such as small sample sizes.

A linear regression analysis identified determinants of maternal health care and FP service utilization, with the composite score used as an outcome and key determinants agreed to in the study proposal based on the Commission on Social Determinants of Health (CSDH) set up by the WHO. These

determinants included: maternal level of education, maternal age at delivery, socioeconomic status, place of residence (geographic area), ethnicity, health insurance coverage, distances to CHC and hospital, and quality of CHC. Marital and employment status were not entered into the regression model because there was limited variance for these variables: nearly all women were married (99%) and were engaged in agriculture (95%). Descriptive analysis were used to further explore and to better understand trends and disparities in maternal health care and FP service utilization among women within ethnic minority communities, based on the set of socioeconomic predictors that showed a significant association with composite maternal health care. These included: maternal level of education, maternal age, socioeconomic status, place of residence (geographic area) and ethnicity.

- **Place of residence** is described in terms of provinces, with populations categorized into six subgroups: Bac Kan, Lai Chau, Son La, Kon Tum, Gia Lai, and Dak Nong.
- **Level of education** reflects the highest level of education attained by a woman, and four subgroups are specified: no education, primary school, middle school, and secondary school or higher education.
- **Economic status** is described in terms of a household assets index, which includes ownership of 12 possible assets (e.g., electricity, motorcycle, latrine) and is used as a proxy for living standards (welfare) and household income (wealth). On the basis of the wealth index, populations are categorized into five subgroups, the quintile (bottom 20%) with the lowest scores representing the poorest members of the population and the quintile (top 20%) with the highest scores representing the richest.
- **Ethnicity** consists of nine subgroups: Ba Na, Dao, Gia Rai, Ha Nhi, H'Mong, Mngong,

Sedang, Tay and Thai.

These four socioeconomic dimensions represent common sources of inequalities across populations in LMICs [21]. All qualitative data were transcribed, translated into English and analysed according to a content analysis approach [22]. Initial analysis was guided by the thematic areas defined in the interview and FGD guides, while a second stage identified sub-themes and contradictory views. The qualitative findings are used to contextualize and understand the patterns in health service utilization and non-utilization identified in the quantitative phase and to identify barriers and reasons why women cannot or choose not to use maternal health services. Feature profiles provide a more detailed description of childbirth practices and maternal health-seeking behaviour amongst three ethnic minority groups (H'Mong, Sedang/ Ca Dong, and Ba Na) that had the lowest maternal health indicators in the study. The featured profiles represent only a small sample of stories that can be told about the attitudes, beliefs and experiences that shape service delivery and influence women's health-seeking behaviours.

2.4. LIMITATIONS

The study has several limitations. The 60 communes selected were amongst those identified by MoH as being the most vulnerable and disadvantaged, using a non-randomized procedure. The study sites cannot claim to represent the situation amongst wider ethnic minority communities, especially those living in more advantaged circumstances or regions. Furthermore, it was difficult and sometimes impossible to reach women who lived at the furthest reaches of the commune (at high altitudes or deep in the forest). The qualitative fieldwork was limited due to time restrictions, including lengthy travel and difficult road conditions to reach communes. The research team could spend only a few hours in the commune, as at the request of commune leaders, foreign research team members were not granted access to conduct fieldwork in several communes. The fieldwork team benefited from a collaborative relationship with UNFPA and the MoH, whose staff facilitated access to communities, and a research partner (Mekong Development Research Institute) with extensive fieldwork experience in ethnic minority communities. Government and CHC staff served as gatekeepers to communities and some surveys and FGDs conducted within the CHC, which may have created biases in how the research team was perceived and may have inhibited discourse on the nature and quality of maternal health care provided by state services.



3. Setting the scene

Of the women who were interviewed for the survey, 3,119 (68%) resided in the three Northern Midlands and Mountains provinces of Bac Kạn, Lai Chau and Son La, and 1,490 (32%) resided in the three Central Highlands provinces of Kon Tum, Gia Lai and Dak Nong.

- **H'Mong and Thai were the two most common ethnic groups.** Each group had over 1,000 participants in the study and together constituted more than 50% of the sample (Table 3). Ba Na, Sedang and Dao were the second most common ethnic groups with 300 to 500 participants per group, and together made up 26% of the sample. Gia Rai, Ha Nhi, Mnong and Tay were the third most common ethnic groups with 100 to 200 participants per group and together made up 15% of the sample. There were smaller numbers of Mang, Khang, Kho Mu, Nung and other ethnic minority groups who participated.
- **Women tended to have little education; more than half had no formal education or had completed elementary school only.** There were wide regional and ethnic group variations in women's level of education. The proportion of women with no formal education was highest in the northern provinces of Lai Chau and Son La (53% and 40%, respectively) and amongst H'Mong (61%) and Ha Nhi groups (59%), who live mostly in the northern provinces. In contrast, the proportion of women with no formal education was

lowest in the Central Highlands province of Dak Nong (17%) and amongst Tay women (1%).

- **Families had predominantly low levels of wealth and welfare.** Overall, 52% of households were classified 'poor' or 'near poor' and had an average of six of 12 possible assets, indicating fairly low living standards. The proportion of households classified as poor/near poor was highest in the central provinces of Dak Nong (64%) and Kon Tum (61%) and amongst Mnong (85%) and Sedang (75%), living mostly in the central provinces. In comparison, the proportion of households classified as 'non poor' was highest in Lai Chau (63%) and amongst Tay groups (72%). Poverty levels were lower in the central provinces, but levels of education were lower in the northern provinces. More than 90% of women were engaged in agriculture as the main source of livelihood. Overall, 80% of households owned a mobile phone, but relatively few had Internet access (12%).
- **The majority of women were aged 25 and under.** Overall, 50% of participants were aged 19 to 25 years, few were over the age of 35 (7%), and 9% were considered 'youth' (aged 15-18). The sample included 39% primiparous women and 61% multiparous women. On average, participants had two children of their own and six persons living in the family house.

Table 3. Description of participant population, women's survey (N=4,609)¹

Place of residence	N	%
Bac Kan	394	8.5
Lai Chau	1,233	26.8
Son La	1,492	32.4
Kon Tum	511	11.1
Gia Lai	712	15.4
Dak Nong	267	5.8
Ethnicity		
H'Mong	1,283	27.8
Thai	1,087	23.6
Ba Na	447	9.7
Sedang	407	8.8
Dao	336	7.3
Gia Rai	176	3.8
Ha Nhi	171	3.7
Mnong	168	3.6
Tay	155	3.4
Other	379	7.9
Level of education		
No education	1,727	37.5
Primary education (Grades 1-5)	745	16.1
Middle school (Grades 6-9)	1,440	31.2
Secondary or higher education	697	15.1
Economic status		
Poor	1,895	41.1
Near poor	493	10.7
Non-poor	2,221	48.2
Age		
15-18 years	405	8.8
19-24 years	2,280	49.5
25-30 years	1,229	26.7
31-34 years	371	8.1
35-55 years	324	6.9
35-55 years	324	6.9

¹ See Table 15 for description of participants by province.

Commune-level data indicate long distances to hospitals in Lai Chau and Son La. Government officials at each commune office provided data on commune-level ecological characteristics (see Table 10). The findings indicate that motorbike was the main form of transport in 53 communes (90% of sample) and walking was the main form of transport in the remaining seven communes (10%). The average distance between the commune and district hospital ranged from 30km in Dak Nong to 55km in Lai Chau. On average, it took the longest amount of time to reach district hospitals from communes in Lai Chau and Son La (more than 2 hours); in other provinces, the amount of time was approximately 1 hour. The communes in Lai Chau and Son La also had the longest average distances to national roads (more than 30 km). In contrast, the average distance to CHCs (from the furthest household in the commune) was 6 km, and much shorter than the distance to hospitals; it took an average of 30 minutes from the furthest household to a CHC. Distances to CHCs ranged from 4 km in Gia Lai to 8 km in Lai Chai, indicating distance to CHCs was fairly uniform across provinces.

Overall CHC quality scores were slightly higher in the Central Highlands compared to the Northern Midlands and Mountains region (with average scores of 66% vs. 61%, respectively). Based on a multivariate health facility checklist, a scoring system was used to assess each CHC on 10 key dimensions of quality (e.g., staffing, infrastructure, supplies) and overall quality (Table 4). Scores are presented as proportions (%) out of a possible perfect score of 100%. The largest contributor to low quality scores was drug supply – child, delivery and antenatal medicine supplies were very low across all provinces and communes. Notably, only 45% of CHCs had safe delivery kits in stock, and CHC staff commonly reported this as a concern during fieldwork. Overall, 92% of CHCs reported there was at least one ethnic minority staff member, and 97% reported that at least one staff member spoke an ethnic minority language. It is not known in which capacity ethnic minority staff



were employed, nor whether they were from the local area and similar ethnic groups to that area or they were from a different area and different ethnic minority groups (e.g., numerous examples were found of Thai and Dao staff working in non-Thai and non-Dao ethnic minority communes).

There was variation in CHC quality between provinces: CHCs in Dak Nong Province had the highest average quality score (71%), a full 13 percentage points higher than the province with the lowest CHC quality, Son La, (58%). Average scores for staff training were consistently high across all provinces, ranging from 77% to 97%. However, there were large gaps between provinces in terms of CHC staffing, with Bac Kạn and Son La scoring the lowest on this dimension (63%) and Dak Nong scoring the highest (90%). There was wide variation in the availability of contraceptives between provinces (range: 33-77%), with CHCs in Gia Lai having the lowest stock levels. The average health facility scores by ethnicity ranged from 59% to 70%: Ba Na scored 66%, Dao 64%, Gia Rai 61%, Ha Nhi 70%, H'Mong 64%, Mnong 68%, Sedang 63%, Tay 63%, and Thai 59%.


Table 4. Health facility quality in 60 commune health centres, overall and by province (average score, %)

Quality Dimension	Total (n=60)	Bắc Kạn (n=6)	Lai Châu (n=16)	Sơn La (n=16)	Kon Tum (n=8)	Gia Lai (n=9)	Dak Nông (n=5)
1. Staffing	71.1	70.8	62.5	62.5	84.3	83.3	90.0
2. Infrastructure	65.9	74.2	66.4	62.5	63.6	66.6	67.2
3. Supplies – ANC	63.1	64.2	63.3	58.0	64.2	69.8	62.6
4. Supplies – Neonatal	70.0	63.3	67.5	70.0	57.5	82.2	84.0
5. Drugs – ANC	43.0	43.3	48.7	31.2	45.0	44.4	56.0
6. Drugs – Delivery	47.5	66.6	60.9	35.9	34.3	47.2	40.0
7. Drugs – Child	47.1	29.1	40.6	43.7	28.1	86.1	60.0
8. Infection control	69.2	54.1	73.4	70.3	68.7	69.4	70.0
9. Training	85.0	80.5	89.5	77.1	87.5	85.1	96.6
10. Contraceptives	58.1	38.8	70.8	54.1	70.8	33.3	76.6
Overall quality score	63.0	60.7	65.5	57.8	62.0	66.2	70.7

Notes:

Staffing includes number of staff; staff credentials/position; whether staff have specialized MNCH training (e.g., emergency obstetric care); number of ethnic minority staff; and number of staff who speak the local language. **Infrastructure** includes improved water source; functional latrine for clients; setting allowing auditory and visual privacy; power; communication equipment; emergency transport; and overnight beds. **ANC supplies** include blood pressure machine; autoclave; refrigerator for vaccines; syphilis testing kit; adult scale; HIV-testing kits; and malaria-testing kits. **Neonatal supplies** include essential supplies to support newborn health: resuscitation device; weighing scale;

safe delivery kits; heater/lamp of at least 150W to keep baby warm; and autoclave. **ANC drugs** include iron; folic acid; tetanus toxoid; vouchers for insecticide treated bed nets; and antimalarial for IPT. **Drugs at delivery** include MgSO₄; therapeutic antibiotics; oxytocin; and misoprostol. **Child drugs** include vaccinations for BCG; OPV (polio); measles; and DPT/Hepatitis B. **Infection control** includes latex gloves; syringes in sterile packets; sterile needles; and chlorine based disinfectant. **Training** includes newborn care; PNC; emergency obstetric care; family planning; reproductive health for adolescents; and treatment of sexually transmitted infections (STIs). **Contraceptives** include IUDs; pills; injectables; male condoms; and emergency contraceptives.

A photograph of a woman in a blue traditional garment and a black headscarf, smiling warmly while holding a newborn baby. The background is a soft-focus green outdoor setting. A yellow banner is overlaid on the bottom half of the image, containing the section title.

4. Reproductive, maternal, newborn and child health indicators in ethnic minority communities

This section reports on results for maternal health care utilization and FP indicators of ethnic minority women in six provinces and compared to national estimates, including: antenatal coverage (at least one visit); antenatal coverage (four or more visits); antenatal care within 16 weeks gestation; content of care; trained attendant at delivery; institutional delivery; post-natal health check for the newborn within 48 hours of birth; modern contraceptive utilization; unmet needs of FP services; and health insurance coverage. Qualitative insights in this section are used for the purposes of illustration, elaboration and clarification of the results. Table 5 contains detailed results on specific indicators by proportion/total and province.

Table 5. Summary estimates for reproductive, maternal, newborn and child health indicators

Key RMNCH indicators	Total (n=4609)	Bac Kạn N=394	Lai Chau N=1233	Son La N=1492	Kon Tum N=511	Gia Lai N=712	Dak Nong N=267
Antenatal care (ANC) coverage - at least one visit	73.1	89.1	69.0	68.2	73.0	75.7	94.0
ANC coverage – at least four visits	16.3	43.7	10.1	13.3	16.6	11.7	33.3
ANC within 16 weeks gestation	42.0	61.7	42.7	37.1	36.0	35.1	68.2
Content of ANC (blood pressure, urine and blood testing)	17.6	34.0	27.0	14.0	10.8	3.4	21.7
Births attended by skilled health personnel	48.7	61.7	45.0	45.9	39.5	49.9	77.2
Institutional deliveries	41.3	59.4	37.5	35.0	31.3	45.3	74.9
Postnatal care (PNC) health checks for newborn within 48 hrs. of birth	39.9	53.6	33.6	37.6	42.3	37.1	64.4
Contraceptive prevalence rate – modern methods	56.6	68.4	58.2	49.4	74.6	45.1	53.0
Health insurance coverage	81.2	87.3	78.8	80.8	87.3	77.7	82.8
Average number of children	2.04	1.88	2.14	1.91	1.76	2.37	2.22

4.1. FREQUENCY AND TIMING OF ANTENATAL CARE

The World Health Organization (WHO) recommends that all pregnant women receive a minimum of four antenatal care (ANC4+) check-ups, with the first visit occurring during the first trimester (< 16 weeks gestation). Antenatal visits encourage advance planning for childbirth and promotion of clean and safe deliveries attended by a trained health professional [22, 23], and serve as a critical entry point into the formal health system for women in rural areas who may not seek the assistance of a trained birth attendant otherwise. Utilization of these services enable

clinicians to promote healthy behaviours such as uptake of early PNC, immunization, healthy breastfeeding practices and family planning [25, 26].

Comparison of study findings to national estimates indicates large gaps in ANC coverage. Overall, the proportion of women receiving at least one ANC check-up during pregnancy was 73%, much lower than the 96% national average [14].² Only 16% of women received the recommended four or more antenatal visits, compared to the 74% national average. This indicates coverage gaps

² All national averages are taken from the 2014 MICS Viet Nam report.

of 23 and 58 percentage points, respectively. ANC visits were lowest in the first trimester compared to later stages of pregnancy: 42% of women attended ANC in the first trimester, whereas 55% attended in the second trimester, and 51% attended in the third trimester. Qualitative data indicated that most women preferred to wait to attend a health facility until they could have an ultrasound examination around the fourth month of pregnancy at the earliest (see Panel 1 on women's perspectives on ultrasounds). There was also a tendency for women to wait for several missed periods to be sure that they were really pregnant before investing the costs (both direct and indirect) into visiting a health facility. Focus groups in Gia Lai and Kon Tum (where early initiation of ANC was lowest) revealed very low awareness regarding the range of services offered through ANC.

CHCs and private clinics were the most common locations for ANC checks. Each type of facility accounted for 50% of ANC visits overall. In four of six regions, however, private hospitals were more popular than CHCs (Lai Chau, Kon Tum, Gia Lai, Dak Nong). The proportion of women who attended private facilities during pregnancy was especially high in the Central Highlands provinces, accounting for 64% to 82% of ANC visits. Qualitative findings suggest the main reason for this is that women desired ultrasound services and perceived the quality of CHCs to be low. Bac Kan was unique in being the only province where CHCs accounted for the majority of ANC visits (86%); in contrast, private health service utilization was lower in Bac Kan (40%) than in most other provinces. District hospitals were the second most common location and accounted for 26% percent of ANC visits. A small proportion of ANC checks took place at the family house (2%). Women who had multiple ANC checks generally attended different types of health facilities. All women who attended at least one ANC check-up reported that they received care from a midwife, physician or nurse.

4.2. CONTENT OF ANTENATAL CARE

At minimum, ANC visits should include blood pressure measurement, urine analysis, and blood testing for anemia and various infections, in addition to management of pre-eclampsia and at least two doses of tetanus toxoid vaccination [27]. Women at risk for obstetric complications should also be identified through ANC, and healthcare providers should counsel women and their partners on risk factors during pregnancy, labour, and delivery. The study explored receipt of eleven specific antenatal services outlined by the WHO (Textbox 1) [28]. Three variables (e.g., blood pressure measurement, urine testing, blood testing) comprise the international indicator for content of antenatal care.

Textbox 1. Components of effective antenatal services (World Health Organization)

1. Protection against tetanus
2. Due date estimate
3. Iron–folate supplementation
4. Nutrition and hygiene education
5. Blood pressure measurement*
6. Height and weight measurements
7. Counselling about danger signs
8. Urine testing*
9. Clinical examination
10. Blood tests*
11. Presumptive/preventive malaria treatment.

* Indicator is part of the composite content of antenatal care

Comparison of study findings to national estimates indicates a large gap of 38 percentage points in content of ANC.

Overall, 44% of women interviewed had received blood pressure measurement, 30% had at least one urine test, and 25% had a blood sample taken. Coverage for receipt of all three services (content of ANC) was 18%, compared to the national average of 56%. The results indicate that only a few women received the essential package of ANC services for screening and detecting health problems during pregnancy. Coverage was higher for preventive ANC measures including tetanus toxoid (68%) and iron-folate supplementation (54%), as well as due date estimates (58%). Coverage was below 50% for other components of ANC services, including advice and counsel on nutrition and hygiene (45%) and danger signs (39%), clinical examinations (30%), height and weight measurements during pregnancy (40%), and presumptive/preventive malaria treatment (8%).

Qualitative findings revealed that women sometimes received tetanus toxoid during village immunization days and iron-folate supplementation from the pharmacy, but did not attend specific ANC check-ups at a health facility. For example, in Gia Lai, vaccines administered during pregnancy (tetanus toxoid) were typically delivered during outreach days in the village, or women accessed the CHC specifically for this purpose if instructed to do so by a health care provider. In some cases, ethnic groups were reluctant to have blood drawn or to receive vaccinations due to religious reasons. For example, some H'Mong Protestant women reported that they did not receive vaccinations because 'God protected them'. Women's awareness of basic ANC services was quite low. For example, women interviewed in Gia Lai claimed they were never visited by a village health worker and were unaware of the need for vaccinations during pregnancy. In Kon Tum, women pointed out that most health education/communication/promotion on ANC

PANEL 1. WOMEN'S PERSPECTIVES ON THE IMPORTANCE OF ULTRASOUNDS

Qualitative data provided insights into women's selective use of available ANC services. FGDs with women revealed a strong preference for ultrasounds and many women were willing to travel to higher-level district or private clinics to obtain an ultrasound in order to check the health status of the fetus and to find out the sex.

Specifically, ultrasound examinations were used to determine whether the pregnancy would be normal and "easy" or complicated and "difficult". A predominant attitude amongst FGD participants was that there was no need to seek further ANC when the ultrasound was normal and there was nothing wrong with the pregnancy. This may explain, in some cases, the pattern of initial access but lack of continued engagement with ANC services following the initial ultrasound. Ultrasound examinations also played a role in determining the place of delivery: when ultrasound results were normal, women were encouraged by family and even healthcare providers to deliver at home, whereas complicated cases would be referred to upper-level health facilities. Although private clinics provided ultrasounds, women interviewed rarely received other components of ANC services at private clinics. Because women received vaccinations and ultrasounds independent of ANC visits, they tended to view ANC as a non-essential service.

is delivered in the Kinh language rather than the local language and is therefore difficult for them to understand. Some women stated that existing health education/communication/promotion for ANC has focused solely on the benefits for the mother, and they suggested that they may be more motivated to utilize services if the connection between ANC and improved child health was more clearly explained and emphasized. Some healthcare providers stated that CHCs were ill equipped to provide ANC services. For example, a CHC in Kon Tum had an ultrasound machine but none of the staff were trained on how to use it. The same CHC did not have proper supplies to conduct blood and urine tests. In addition, a village health worker from this commune claimed he had very little knowledge of best practices and recommendations for ANC and did not understand when or why women were supposed to attend ANC. Lastly, safe birth kits are often provided to women by CHC staff during their last ANC visit. Since the perceived importance of ANC is generally quite low,

some women may choose to attend only once during the third trimester to receive the birth kit.

4.3. TRAINED BIRTH ATTENDANT AT DELIVERY AND INSTITUTIONAL DELIVERIES

Given that the risk of maternal death is highest immediately postpartum and in the following 24-48 hours, the presence of skilled health personnel during childbirth is a key intervention for preventing maternal and newborn deaths. Skilled birth attendance requires a trained attendant (registered nurse, midwife or doctor), an enabling environment (adequate medicines, equipment, referral system and policies), and community acceptance of biomedical obstetric services.

Comparison of study findings to national estimates indicates a large gap of 53 percentage points in institutional delivery



PANEL 2 – THE ROLE OF VILLAGE-BASED ETHNIC MINORITY MIDWIVES

In order to improve RMNCH indicators and encourage births attended by skilled health personnel, the MoH with support from UNFPA has been training ethnic minority women to be trained birth attendants. Trainees are chosen from ethnic minority villages so that they speak the same language, are familiar with local norms, and remain accessible to local families. Given the local contexts, their education levels are generally low – most trainees have not completed secondary school. The midwifery education programmes focus on theoretical and clinical biomedical obstetrics to enable the village birth attendant (or ‘ethnic midwives’) to provide ANC such as information and examination (e.g., blood pressure measurement, fundal height measurement, due date estimation) and birth attendance in the home setting. The rationale behind educating local women to be midwives is that it can enhance the links between health care services and the community and increase the number of births attended by trained birth attendants.

Based on information provided by CHC staff, 57% of CHCs have at least one ethnic midwife associated with the facility. However, in 50% of communes (n=17) with an ethnic midwife, it was reported that they did not attend a single birth in the previous year. In the remaining communes (n=17), ethnic midwives attended an average of 16% of births, and were most active in Kon Tum. Most midwives had received 6 months of training (82%) and a smaller proportion received 12 or 18 months of training (15%). In more than 40% of communes, ethnic midwives were not provided an allowance and in more than 50% of communes they were not provided with supplies or safe delivery kits. In 85% of communes ethnic midwives were supervised by CHC staff and attended monthly meetings.

Qualitative findings revealed that ethnic midwives did not have a prominent role in local communities and were often perceived as young, inexperienced and ill equipped to support the delivery process. Limited training, lack of integration into local health systems, and limited or no health care supplies such as safe delivery kits meant that ethnic midwives were often not appropriately equipped to offer antenatal and delivery services. An ethnic midwife in Lai Chai commented that she received midwife training in Vietnamese; however, she did not know specific medical and health care terms in the local language and struggled to communicate what she had learned and to provide maternal health information to local women. Ethnic minority midwives are recruited on the basis of being able to read and write in Vietnamese, which excludes older, less-educated women from being trained in skilled birth attendance. In one community in Lai Chau, women preferred the traditional birth attendant for delivery to the ethnic midwife because the traditional birth attendant was more mature and had more experience with deliveries; however, she had not been recruited for midwife training because she was illiterate. In one Lai Chai community, the ethnic midwife admitted that women feel it is not necessary to call for her help since she can provide neither more skills than their mothers nor clean delivery kits. She only has one medical pincer and pair of scissors, no medical alcohol, and uses normal string/clew for baby cord. For women that received assistance from her during delivery, they do not want others in the community to know this, and they even avoid seeing the ethnic midwife again; therefore, referral and worth of mouth for the ethnic midwife’s service does not exist.

Efforts to strengthen collaboration between CHC health personnel, ethnic midwives and traditional birth attendants could improve service delivery and increase the proportion of births attended by a skilled health personnel. Training of traditional birth attendants would enable them to improve their skills and delivery practice and support younger midwives, under the supervision of health personnel.

coverage. Overall, 58% of women interviewed delivered their last child at home, whereas 41% delivered at a health facility, compared to the 94% national average. In contrast to ANC visits, district hospitals were the most common location for institutional deliveries. Amongst women who had a facility-based delivery, 64% delivered at a district hospital, compared to 30% at a CHC. Surprisingly, given the relatively high proportion of women who used private services for ANC, less than 1% of women delivered at a private health facility. Also, the percentage of women attending ANC visits at the CHC was much larger than the percentage that delivered at the CHC (37% vs. 13%, respectively). Delivery at hospitals and CHCs is covered by health insurance, but still involves indirect costs for families. The results indicate the average cost to families for delivery was VND 450,000 (approx. US\$20) at a CHC and VND 2,860,000 (approx. \$130) at a district hospital. In contrast, delivery at home cost an average of VND 225,000 (approx. \$10).

Comparison of study findings to national estimates indicates a large gap of 45 percentage points in trained attendant at delivery coverage. Overall, 49% of women reported that a skilled health professional attended their last birth, compared to the 94% national average. The majority of births delivered by a trained attendant occurred in a health facility. Only 7% of women delivered at home with a trained birth attendant. Amongst women who had a trained attendant at delivery, the majority (86%) reported that a midwife, physician or nurse attended their delivery; village ethnic minority birth attendants attended relatively few births (7% - see Panel 2). Mothers-in-laws and/or mothers were the most common family member to be present at delivery (39%). Husbands were present at 22% of births and relatives or friends were present at 22% of births. The presence of mothers, husbands and relatives during labour and delivery was highest in Kon Tum, where childbirth was a communal gathering. The proportion of births with traditional attendants present during labour was relatively low (3%), but this was more

common in Gia Lai (27%) and Kon Tum (26%) – see Panels 5 and 6 for further description. Qualitative interviews with healthcare providers in Kon Tum suggest that ethnic minority midwives are preferred to male clinicians, and are perceived to have better knowledge and obstetric skills compared to relatives and village health workers.

4.4. POSTNATAL CARE

Early PNC visits offer an opportunity for women to receive information and support for healthy parenting practices that are key to maternal and child health and survival, including exclusive breastfeeding, proper nutrition during breastfeeding, advice on the care of the newborn, and the use of family planning. Overall, 40% of women reported that their child received PNC within the first 48 hours of birth. The percentage was higher amongst babies born at a health facility (76%) compared to those born at home (15%). However, 8% of mothers who delivered in a health facility did not know whether their child received PNC, indicating a lack of awareness about care provided to newborns in health facilities in the hours after birth (i.e., newborns may be taken to a different room from the mother for PNC). PNC health checks were highest in Dak Nong at 64%, which can be attributed to the high percentage of institutional deliveries in this province. Coverage for PNC health checks was lowest in Lai Chau, Son La and Gia Lai (provinces where home deliveries were prevalent). Notably, even though home deliveries were relatively high in Kon Tum (at almost 70%), 42% of women still reported that their child received a PNC health check within 48 hrs.

Amongst those whose child received PNC, 85% reported that they received care from a midwife, physician or nurse; others received care from a village health worker or birth attendant. The district hospital was the most common location for PNC health checks for newborns, accounting for 53% of PNC visits. In contrast, CHCs accounted for 22% of PNC visits and 21% of visits occurred in family houses.

Overall, 25% of babies received PNC within the first 24 hours and received follow-up postnatal visits, and 14% received only one postnatal visit.

Qualitative findings and field visits revealed that there was a stronger focus in CHCs on advocacy and outreach for ANC compared to PNC. As described by one FGD respondent: “The doctor didn’t tell me to go for post-natal care, only to go for antenatal care.” FGD participants who delivered at home commonly reported that they did not take their newborn to the CHC following delivery. In most cases, women waited to visit the CHC for several months after delivery until it was time to vaccinate their child. Another woman questioned why she would take her newborn to the CHC after delivery when her child “wasn’t sick at all”. A major challenge confronting effective PNC in many ethnic minority communities is that the majority of deliveries occur outside formal health facilities. Reaching those women who deliver outside health facilities requires that most PNC services should not only be delivered within the facilities but must be located close to or at home, so that the majority of the women will benefit from these services. Health care providers in Kon Tum appear to be doing a better job at reaching women within the home environment, both at the delivery and PNC stages of care.

4.5 CONTRACEPTIVE METHODS AND FAMILY PLANNING

A comparison of study findings to national estimates indicates relatively small to no gaps in contraceptive coverage. Contraceptive prevalence was estimated as the percentage of women who are married, not currently trying to get pregnant, and who are using, or whose sexual partner is using, at least one method of contraception, regardless of the method used. Overall, 71% of women reported using a contraceptive method, compared to the 76% national average. The modern

contraceptive prevalence rate among the population studied was 57% overall, similar to the national average. There was wide variation between provinces, with 75% coverage of modern contraceptives in Kon Tum compared to 45% in Gia Lai (Table 6). There was also wide variation in modern contraceptive utilization with respect to ethnicity, ranging in coverage from 41-42% for Ba Na and Gia Rai groups to over 70% for Tay and Sedang (Table 7).

Overall, the most common modern contraceptive methods were oral pills and the intrauterine device (IUD). Although IUD was the most common method in the northern provinces, it was rarely used in Kon Tum and Gia Rai. For example, more than 30% of women used IUDs in Bac Kan and Lai Chau, compared to only 3% and 1% in Gia Lai and Kon Tum, respectively. There was large variation in IUD utilization between ethnic groups. In FGDs and interviews, women and health care providers reported that IUDs were not widely used in some ethnic minority communities due to perceptions that farming and manual labour could cause expulsion of the IUD. Health care providers also reported that IUDs were not suitable for nulliparous women due to higher rates of expulsion. Women in FGDs reported that IUDs caused painful side effects such as lower back pain, vaginal pain and bleeding, and irregular menstrual periods. At the level of service delivery, we found IUD uptake is influenced by the views of health care providers: some had received appropriate training and good knowledge of the IUD types, while others lack the skills and experience for providing adequate counselling and care for safe IUD use. In some cases, misinformation may dominate, fueled by reports of severe complications with IUDs and reservations among clinicians that it is not suitable for ethnic minority women because they engage in manual labour and tend to have ‘many children’, causing weak vaginal muscles and higher rates of IUD expulsion. Future research is needed to explore the health care providers’ perceptions and knowledge of IUDs,

PANEL 3. HEALTH INSURANCE COVERAGE IS HIGH, BUT UTILIZATION OF MATERNAL HEALTH SERVICES IS LOW

The study results indicate that 81% of women had valid health insurance during pregnancy (as self-reported by women), with minimal regional differences that ranged from 78% in Gia Lai to 87% in Bac Kan. Health insurance coverage correlated positively and significantly with family assets ($\rho = .12, p < .01$); more advantaged women were more likely to have health insurance. Possible explanations are that a) many disadvantaged women are unaware that they are entitled to health insurance, or b) they are not approached or reached by local authorities and therefore are not provided health insurance.

Amongst women who had health insurance, 52% used it for ANC services and 45% for delivery at a health facility, indicating that even when women had health insurance, many did not use it for maternal health services. Limited utilization of health insurance for ANC services can be explained partly by non-attendance at health facilities, but more importantly by the common practice of attending private clinics (with user fees) for antenatal services. In contrast, nearly all women who delivered at a health facility used health insurance for this purpose – in this case, low utilization of health insurance is related to women delivering at home rather than a health facility.

Ultimately, the findings on health insurance utilization indicate that even when health services are offered free of charge, many women still do not use state health services for ANC nor do they attend health facilities for delivery. Misinterpretation and misunderstanding amongst community members regarding eligibility for health insurance and lower coverage amongst the most disadvantaged families demonstrate an apparent failure of the MoH and the local authorities to communicate and explain the use and benefits of health insurance.

particularly with regard to ethnic minority women. Future interventions should focus on training to improve knowledge of IUDs in pre-service curricula, on-the-job training opportunities, and through evidence that IUDs can be used safely by a variety of women.

Oral pills and injectables were among the most common types of modern contraceptives, especially in the central regions. For example, 35% of women in Kon Tum used injectables and 36% used oral daily pills, and these methods were particularly popular among Sedang women. In contrast,

very few Tay and Thai women used injectables (preferring IUDs). Some women reported that they had difficulty remembering to take the pills daily, causing a barrier to appropriate utilization of this type of contraception, which could lead to increased rates of unplanned pregnancies. Ultimately, we found that when women were unsatisfied with one contraceptive method, the common scenario was to try a different method until they found one that worked for them.

Table 6. Contraceptive prevalence and type of contraceptive method (%), by province

	Total (n=3409)	Bắc Kạn (n=320)	Lai Châu (n=855)	Sơn La (n=1049)	Kon Tum (n=489)	Gia Lai (n=494)	Đắk Nông (n=202)
Contraceptive prevalence	71.1	76.9	70.9	69.4	79.6	58.5	82.7
Modern method prevalence	56.5	68.4	58.2	49.1	74.6	44.7	53
Type of contraceptive method							
Female sterilization	0.4	0.6	0.3	0.1	0.2	0.4	2.0
IUD	19.9	37.8	31.3	22.5	1.0	2.8	16.8
Injectables	12.1	8.1	8.7	4.5	35.2	16.2	6.9
Implants	0.4	0	0	0.1	1.2	1.0	0
Pill	20.7	16.9	15.2	18.3	36.2	21.1	24.3
Male condom	3.0	5.0	2.7	3.6	0.8	3.2	3.0
Lactational amenorrhea	11.2	7.8	11.7	16.5	4.7	5.3	16.8
Periodic abstinence	0.9	0	0.7	1.8	0	0.2	3.0
Withdrawal	1.8	0.6	0.2	1.5	0.2	4.3	9.9
Unmet needs	25.3	29.7	24.2	21.2	28.4	29.1	31.5

Table 7. Contraceptive prevalence and type of contraceptive method (%), by ethnicity

	Tây N=155	Gia Rai N=176	Mhôn N=168	Thái N=1087	Hà Nhi N=171	Dao N=336	Xê Đăng N=407	Ba Na N=447	Hmông N=1283
Contraceptive prevalence	82.3	63.2	80.1	75.6	64.7	73.2	78.6	50.5	65.3
Modern method prevalence	70.9	42.1	61.0	54.9	50.0	63.4	73.7	41.1	50.4
Type of contraceptive method									
Female sterilization	0.7	0.9	2.2	0.3	0	0.9	0	0.3	0.1
IUD	36.9	3.5	5.1	25.8	24.5	11.5	1.0	1.6	31.5
Injectables	2.1	21.1	23.5	0.9	12.7	22.6	35.2	16.2	8.2
Implants	0.7	0	1.5	0	0	0	1.0	1.3	0.1
Pill	20.6	14.9	27.9	22.1	11.8	22.7	35.5	19.1	9.4
Male condom	9.9	1.8	0.7	6.0	1.8	0.9	0.8	1.9	0.3
Lactational amenorrhea	8.5	10.5	10.3	17.0	14.7	9.8	4.8	0.3	0.8
Periodic abstinence	0.7	0	2.9	1.9	0	0	0	2.9	12.5
Withdrawal	2.1	9.6	5.9	1.6	0	0	0	1	0.1
Unmet needs	23.2	26.1	25.6	23.5	19.3	29.5	28.0	30.4	22.8

Male sterilization was non-existent and condom use was limited, with little variation between regions (1-5%). Notably, male condom usage was highest among Tay and Thai groups (9% and 6%, respectively), which may be linked to higher levels of education and/or financial resources. It should be noted that advocacy for contraceptive utilization was almost exclusively targeted towards women and focused on family planning rather than protection and prevention against STIs. Qualitative interviews with women and healthcare providers confirmed these findings – usually it is the woman who decides which contraceptive method to use “according to what is best for her” and, for the most part, only men object to using condoms. The prevalent contraceptive methods in these ethnic minority communities can reduce the risk of unintended pregnancies, but do not provide dual protection against unintended pregnancies and against STIs, including HIV.

“Before when there was no modern contraceptives, women would just give birth until they ran out of eggs. My grandmother had 12 children. Women complain about the difficulties of being a woman. They have to try out different contraceptive methods until they find one that really suits them. Injection makes women fat, the IUD is uncomfortable, and the pills make their periods heavier or longer. We women have to find a way ourselves. Men won’t accept the use of condoms as they don’t like them.” – Leader of Women’s Union, Bac Kan

Overall, the women’s survey indicates women’s average level of satisfaction with their current contraceptive method was 8 out of 10. The results indicate that family planning is widely available at a low cost and is easily accessible through CHC midwives and other trained health workers to anyone who is sexually active, including adolescents. In many communities, health care workers provide locally available and culturally acceptable contraceptive methods, but not in all contexts – such as in the case of IUDs, discussed above. Other trained health workers, such as village health workers, also provide counselling and

information on family planning methods. The most common reason for not using modern contraceptive methods was that they were perceived as not necessary (Table 8). Women who did not use modern methods often used traditional methods instead such as lactational amenorrhea, periodic abstinence, or withdrawal. Some women reported infrequent or no sex, or inability to get pregnant, and hence contraceptive methods were not necessary. The second most common reason for not using modern contraceptive methods was fear or experience of negative side effects. Some women were dissatisfied with quality of contraceptive methods available to them, which was sometimes presumed to be of poor or inferior quality. Relatively few women reported lack of information (5%), lack of availability (2%), or religious reasons (2%) for not utilizing modern contraceptives. For example, women in at least one H’Mong Protestant community attributed sickness and disease to having an IUD inserted and many women decided to have it removed. A few women reported that cost and distance to the CHC was a barrier to obtaining modern contraceptive methods, and some women reported that their husbands do not allow, or they feared that their husbands would not allow, them to use modern contraceptive methods.

Table 8. Main reasons for not using modern contraceptive methods (N=1458)

	N	%
Not necessary	1078	73.9
Negative side effects	138	9.5
Lack information on FP/contraceptive method	65	4.5
Infertility	53	3.6
Unavailability of FP/contraceptive methods	33	2.3
Religious reasons	31	2.1
Cost and distance to CHC	14	1.0

The majority of women reported that their last pregnancy was planned. Overall, 75% of women reported that their last pregnancy was planned and 25% reported that it was unplanned, with limited variance between regions and ethnic groups. The percentages of unplanned pregnancies ranged from 21% to 32% between provinces, and was highest in Dak Nong. A related finding is that traditional methods, such as withdrawal and lactational amenorrhea, were the highest in Dak Nong, at 30%, compared to other provinces. Although speculative, this finding suggests that the higher incidence of less-effective traditional methods may be contributing to higher rates of unmet need in some areas. The contraceptive benefits of lactation are limited to women who are exclusively breastfeeding, and they extend for six months after birth or the duration of postpartum amenorrhea, whichever is shorter. Many women citing this protection against pregnancy may not meet these criteria and may be underestimating their risk of becoming pregnant. A closer look at group differences shows limited variation in unmet needs, ranging from 19% to 30% between ethnic groups. Ba Na women had the highest reported rates of unplanned pregnancy, and they also had the lowest contraceptive coverage. Postpartum amenorrhea or breastfeeding was commonly cited as a contraceptive method in some

communities. However, many of these women's perceptions about not needing contraceptives may be incorrect.

In total, 7% of women reported having a past abortion, with the highest percentage in Lai Chau (11%). Overall, 83% of primiparous women and 22% of multiparous women reported that they would like to have another child in the future (in both groups, 5% were undecided). There was a preference for two children; however, it was common for families to have children until they had at least one boy (as males were expected to look after their parents in old age in many patrilineal communities). However, women in at least one commune in Bac Kan commented that the 'pressure' to have a boy child was not as strong as it was in the past. In one matrilineal community in Gia Lai Province, families actually preferred daughters to sons, and tend to continue having children until at least one daughter is born. According to FGD participants, girls are preferred because they can help with housework beginning at a young age and they are harder working than boys, who tend to be "spoiled and naughty".

4.6. DETERMINANTS AND TRENDS IN RMNCH

A linear regression was conducted to determine significant main predictors of coverage of maternal and reproductive health interventions. The results indicated that all five socioeconomic determinants of health investigated as part of the study were significantly associated ($p < .001$) with coverage of maternal and reproductive health interventions (Table 14). These determinants included: maternal level of education, maternal age at delivery, socioeconomic status, place of residence (geographic area) and ethnicity. Older women had higher coverage, after controlling for all other variables. The other determinants are related to demand-side issues and were explored in greater detail through descriptive analysis in the next section. Furthermore, two supply-side factors were significantly associated ($p < .001$) with coverage of maternal and reproductive health interventions: health insurance coverage and quality of CHCs. Women with health insurance scored 12% higher on the composite coverage score than women without, on average, controlling for everything else, and for every one point increase in health facility checklist score women had a 0.48% higher combined score, on average. On the other hand, distances to CHCs were not significantly associated with coverage of maternal and reproductive health interventions, though distance to district hospitals, in terms of time, was significantly associated with coverage. In some areas, ethnic minority women did not access maternal health services despite living in close proximity to a CHC. Hence, the results indicate that quality of healthcare and health insurance coverage were more important predictors of maternal health care access than geographic location.

Descriptive analyses provided an understanding of maternal health care access within the ethnic minority women population, by key social determinants of health. These include: geographic location,

economic status, level of education and ethnicity. The descriptive analyses revealed that maternal health care access of the ethnic minority population in Viet Nam is in a state of inequality. There are vastly different situations depending on where individuals live, their level of education, and whether they are rich or poor, etc. Understanding the state of inequality in maternal health care involves comparing the experiences of ethnic minority subgroups. It sheds light on questions such as: how does maternal health care differ between provinces? Do the richest members of a population have better access to maternal health care than the poorest? Is there a difference between maternal health care among women with higher versus lower levels of education? Finding answers to these questions helps to identify differences in maternal health access and is an important step towards better targeting health services to those most in need.

4.6.1. Place-of-residence inequalities

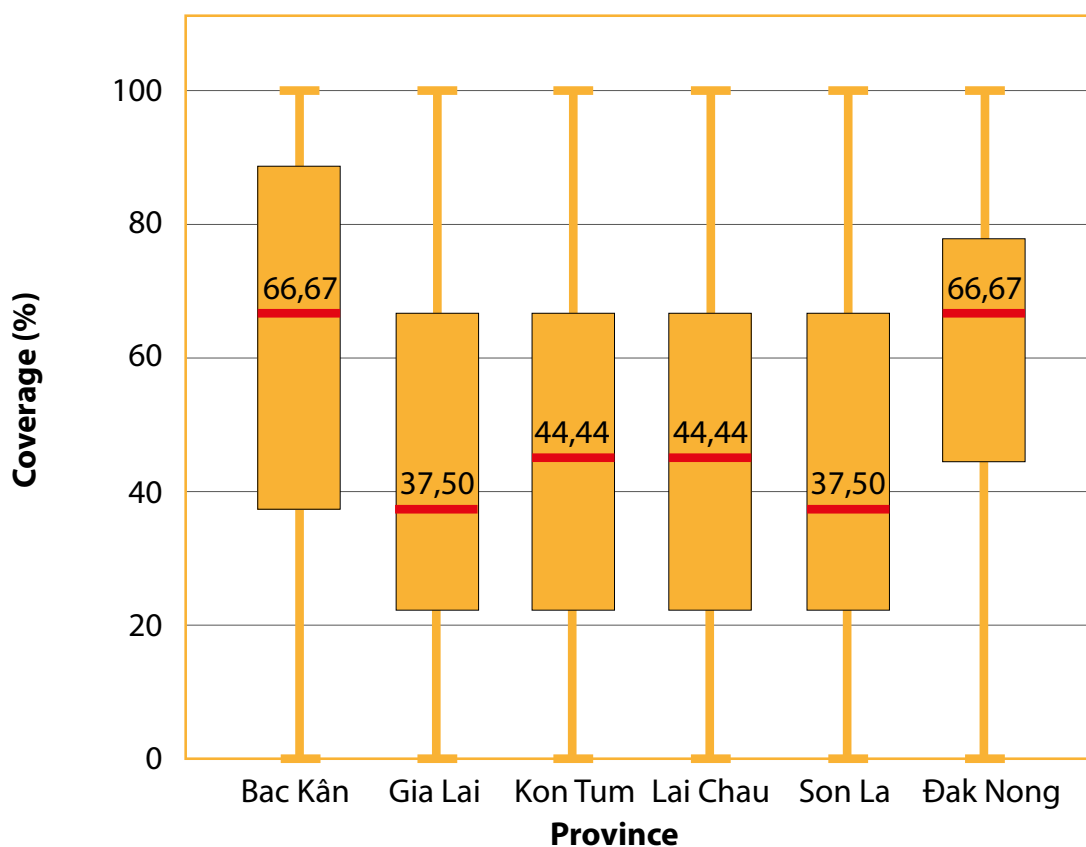
Composite coverage index values were highest in Dak Nong and Bac Kan (both 67%) and lowest in Son La, Lai Chau, Kon Tum and Gia Lai (38-44%). Comparison of results indicates a gap of more than 20 percentage points in composite coverage between these two groups. There was minimal place-of-residence inequality within the four provinces with the lowest levels of coverage; the results indicate a maximum difference of 7 percentage points. Although Dak Nong and Bac Kan had better composite coverage relative to other ethnic minority regions, the indicators in these regions were still below national estimates. Access to adequate ANC (four or more visits) was 44% in Bac Kan and 33% in Dak Nong, and ranged from 10% to 17% in the other four provinces. In particular, women in Gia Lai and Kon Tum had very low coverage of ANC (3% and 11%, respectively). Coverage for trained attendant at delivery was 50% or less in four of six provinces: Lai Châu (45%), Sơn La (46%), Gia Lai (50%), and was lowest in Kon Tum (40%). In these provinces,



the dominant scenario was for women to deliver at home without a trained attendant. In contrast, coverage for this indicator was higher in Bac Kan (62%) and Dak Nong (77%), although still much below the national

average. In these regions, the most dominant scenario was for women to deliver at the district hospital. Lastly, modern contraceptive utilization ranged from 45% in Gia Lai to 75% in Kon Tum.

Figure 2. Reproductive, maternal, newborn and child health composite coverage by place of residence

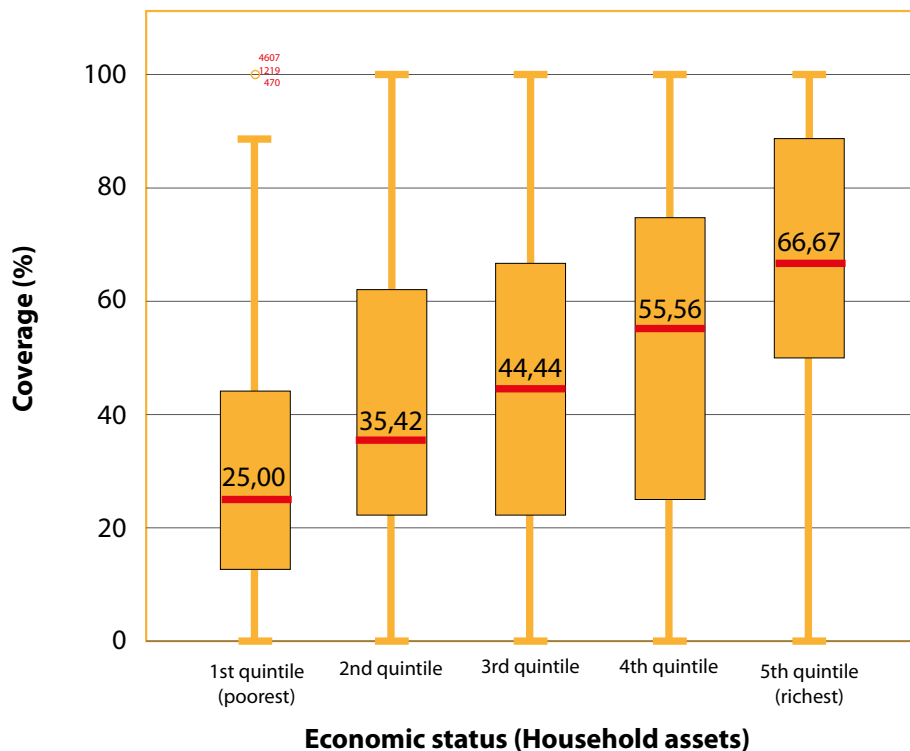


4.6.2. Economic-related differences

Mean values of the composite coverage index increased in a linear fashion across economic status subgroups, moving from poorest to richest. Economic-related inequality (expressed in absolute terms as a difference between the richest and the poorest quintiles)

was more than 40 percentage points. Average coverage was 25% in the poorest quintile and 67% in the highest quintile. Looking at specific indicators, the largest economic-related differences were found for trained attendant at delivery (26% vs. 80%) and institutional deliveries (21% vs. 71%).

Figure 3. Reproductive, maternal, newborn and child health composite coverage by economic status

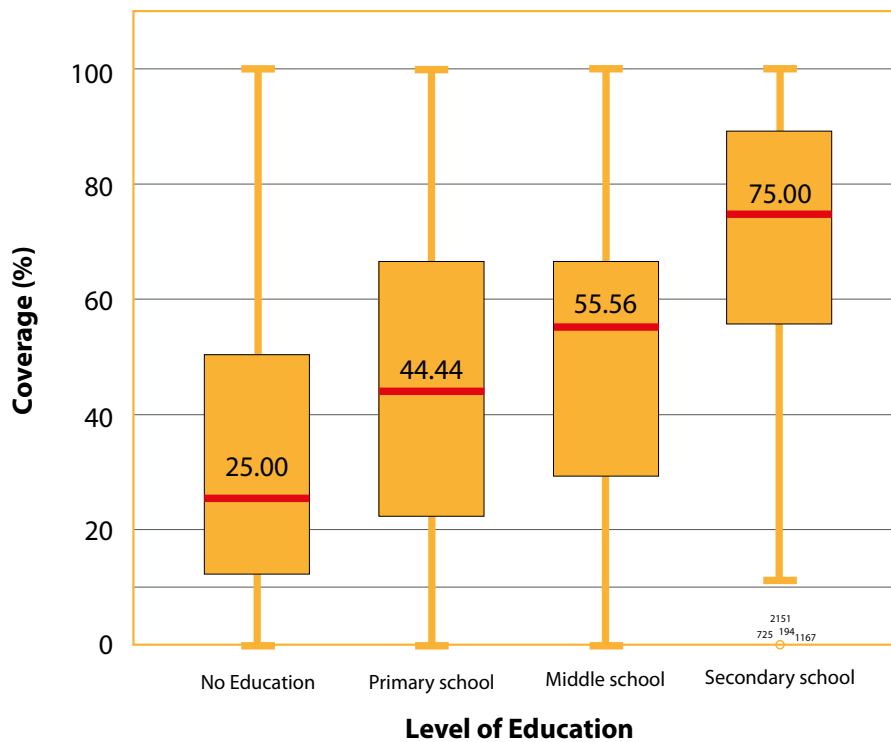


4.6.3. Education-related differences

Coverage index values were greater in the secondary education subgroup than in the no education or primary education subgroups. Education-related inequality was 50 percentage points, and ranged from an

average of 25% in the no education subgroup to 75% for women with some secondary school education. Similar to economic-related differences, the largest education-related differences were found for trained attendant at delivery (31% vs. 82%) and institutional deliveries (25% vs. 75%)

Figure 4. Reproductive, maternal, newborn and child health composite coverage by level of education

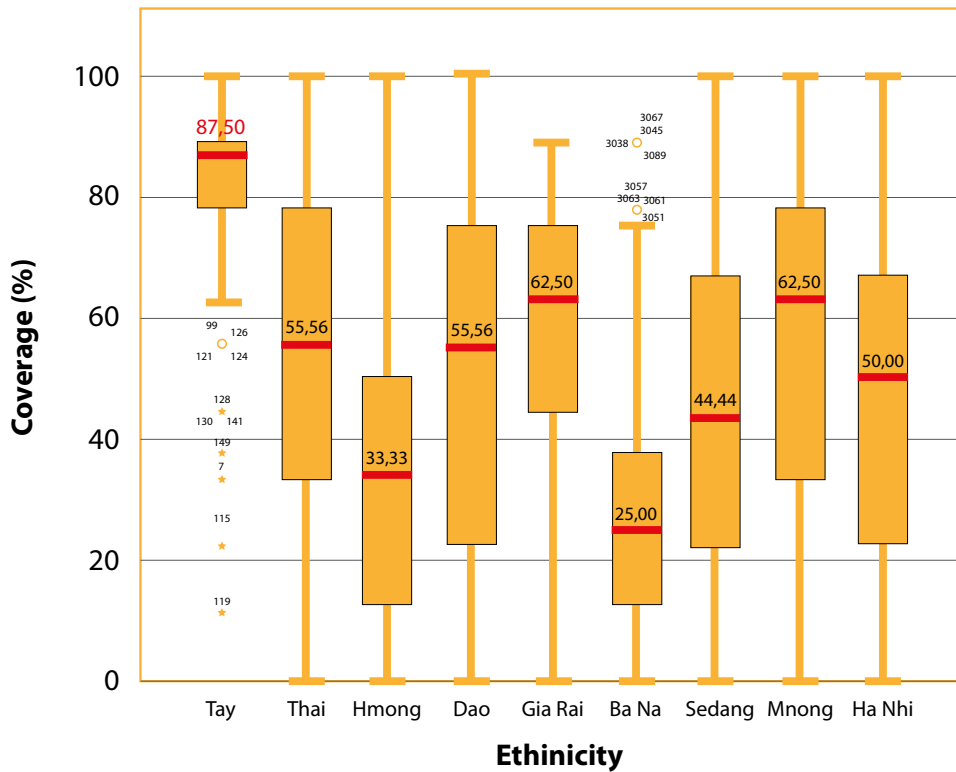


4.6.4. Ethnicity-related inequalities

There was an ethnicity gap of close to 25 percentage points in composite coverage index levels between Tay (88%) and other ethnic groups (below 65%). Of the remaining ethnic groups, Gia Rai, and Mnong had the highest coverage (both 63%). Thai, Dao and Ha Nhi had coverage between 50% and 56%. Sedang (44%), H'Mong (33%) and Ba Na (25%) had the lowest coverage levels. Access to adequate ANC (four or more visits) was 66%

for Tay and ranged from 6% to 21% for other ethnic groups. Content of ANC was particularly low for the Ba Na and Gia Rai subgroups (2% and 3%, respectively). Coverage for trained attendant at delivery was over 85% for Gia Rai and Tay, between 50% and 65% for Dao, Ha Nhi, Thai and Mnong, and was lowest for H'Mong (25%), Ba Na (26%) and Sedang (43%) – see Panels 4-6 for details on delivery and childbirth practices amongst these three ethnic groups.

Figure 5. Reproductive, maternal, newborn and child health composite coverage by ethnicity



“When we go to antenatal care, all women know whether their delivery would be easy or complicated. If we know it will be easy, we’d rather stay at home to deliver.”

Thai woman, Son La

5. Exploring reasons why women do not use maternal health services

“It is the same giving birth at home and in the health center”.

Ha Nhi woman, Lai Chau

“I was worried that delivering at home is unsafe. This is my first child, I didn’t know how to push.”

Thai woman, Son La

This section draws on qualitative findings to explore the reasons for poor ANC attendance and barriers to institutional delivery based on the views of ethnic minority women and health care providers who work in ethnic minority communities (Table 12). We identified four main themes, drawing on the dimensions of healthcare described by Levesque et al. [6] and Shengelia et al. [29].

Qualitative methods were used to investigate potential reasons for suboptimal access to maternal health care, based on the perspectives of ethnic minority women, health care providers and village leaders. Four themes were identified. The first theme reflects women’s views that pregnancy and childbirth are healthy and normal processes and it is not necessary to visit health professionals unless there are complications with pregnancy or labour. This was a dominant theme that we call



“The village birth attendant told me, ‘It will be an easy delivery. You should stay at home. There’s nothing to worry about.’”

Thai woman, Son La



“They are worried about the delivery of the first child so they picked the health center or a hospital. If the first childbirth went well, then for the second childbirth they would have a home birth instead.”

Leader of the Women's Union, Bac Kan

cultural and social acceptability of maternal health services, and includes factors that make it possible for women and her family to accept maternal health care services. The second theme relates to women's views that maternal healthcare services are under-resourced and the benefits do not outweigh the potential risks and costs of attending health facilities. We call this theme appropriateness of the quality of maternal health services, which examines whether the quality of services provided addresses women's needs. The third theme relates to the geographic remoteness of many ethnic minority communities, especially in northern mountainous regions, and the need to journey to distant locations to receive maternal health care. We call this theme the physical accessibility of maternal health services, which refers to whether health services can be reached, both physically and in a timely manner, without experiencing undue hardship. The fourth theme relates to women's limited financial resources – we call this affordability of maternal health services and important elements include direct costs

of services, opportunity costs related to loss of income, and indirect costs such as transport to get to health facilities.

“Some [H'Mong] don't want their body exposed to others. Some will not even inform the village health worker about their pregnancy.”

Village birth attendant, Bac Kan

5.1. CULTURAL AND SOCIAL ACCEPTABILITY OF MATERNAL HEALTH SERVICES

The dominant explanation for delivering at home was that childbirth was a natural process that was ‘quick’ and ‘easy’ in normal cases. Giving birth was “the same” natural process regardless of where women delivered, reported one Ha Nhi woman. Delivery was viewed as a normal life event, or a non-event, that women were expected to endure without showing their feelings or complaining. Health services were viewed as unnecessary unless it was a high-risk pregnancy or labour was prolonged. The preference for home deliveries was confirmed by interview findings. Only a minority of respondents reported delivering their last child at a health facility. Yet, many women had some access to health services during pregnancy, indicating a selective use of maternal health services. The most commonly reported scenario was that “easy” and normal pregnancies would take place at home, whilst pregnancies with complications would take place at a health facility. ANC checks (and specifically ultrasounds) would help women and families to determine whether the pregnancy was either an “easy case” or a “complicated case”, and would influence or determine the decision amongst family members on where delivery should take place. In numerous communes visited, CHC health personnel provided women with safe delivery kits and encouraged women with low-risk pregnancies to deliver at home. However, our study found a lack of awareness about signs of labour and symptoms that require medical care that can lead to delays in recognition and treatment of complications during pregnancy and labour.

“Right from the start, I thought to myself that I should go to the health center. I was afraid that mothers-in-law do not know how to deliver a baby. This is my first child so I’m afraid.”

Ha Nhi woman, Lai Chau

Nulliparous women who had not yet experienced childbirth more commonly utilized health services for delivery. The most common reason was that they were “afraid” because they did not have experience with childbirth and did not know how to push or deliver a baby. In this context, health facilities were perceived as safer locations than the home in the event of complications. Furthermore, some nulliparous women perceived health facilities to be cleaner and more hygienic than the home environment. In contrast, multiparous women who had experienced one or more healthy pregnancies tended to deliver at home. Multiparous women preferred to stay at home for a delivery so that they could take care of their children and family members and manage their daily household responsibilities. There were several instances where women had delivered their first child at a health facility and delivered their next child at home. In contrast, we did not find any women who had delivered at home and then delivered at a health facility.

“Even though our economic conditions are not good, I would have to choose a private clinic for better service [over the district hospital].”

Thai woman, Son La

Specific preferences related to childbirth were not conducive to or generally allowed at health facilities. For example, women reported a preference for squatting during labour with the use of a stool or kneeling on the floor while holding a scarf hung over the beams of the home, whereas supine delivery (lying on the back) is generally compulsory in health facilities. There was also a preference amongst some ethnic groups to bathe with herbal water immediately after delivery. Health facilities generally restricted bathing after delivery, although at least one CHC allowed women to take a sponge bath in an effort to overcome ‘cultural barriers’. Furthermore, it was customary to bury the placenta around the family home, especially if the child was a boy. However, FGD participants noted that they were aware of cases where families brought the placenta home from the health facility (so this is not necessarily a barrier). A common viewpoint in northern communities was that “old customs” are no longer practiced or are not considered essential to delivery and childbirth. FGD participants in northern regions seemed to have childbirth preferences, as described above, but were willing to forego such preferences if they perceived a better delivery alternative was available.

Traditional practices played a stronger role in delivery practices in Kon Tum and Gia Lai than in other provinces. Many women and families considered it essential to have a traditional healer present to perform sacred rituals to “encourage smooth births”, and it was customary to have many close family members present during labour. Presence of traditional healers and numerous people during labour is not permitted at health facilities. A CHC clinician confirmed these findings, explaining that women prefer to deliver at home despite a large NGO programme in the area that incentivizes women to deliver in a facility by paying them VND 500,000 (approx. US\$25) per delivery. For women who deliver at a CHC, the district provides VND 35,000 (approx. US\$1.50) per day to cover food costs. Although health insurance covers all institutional delivery costs (including transportation), many women in central regions prefer to follow family customs and deliver at home. In some communes in Kon Tum and Gia Lai, we found traditional healers were relied on as the first and primary recourse for childbirth and delivery. Attempts to divert women and families from these preferred providers may be futile, as described above, whereas a strategy of collaboration between the formal and informal or traditional health care providers is more likely to expand access to appropriate and safe maternal health care. This collaboration should be based on strengthening the ability of traditional healers to provide a basic level of care while encouraging referral to better-trained health care providers.

“If the CHC is well equipped, women will deliver here. They will not have to go to the district.”

Male H’Mong village leader, Bac Kan

A dominant explanation provided by health care providers was that ethnic minority women did not attend health facilities because they are “shy”. However, ethnic minority women less commonly reported this as a reason for non-attendance at health facilities. Of the women who did not attend health facilities, some but not all attributed it to an unwillingness to expose their bodies to strangers, particularly male clinicians, and there were cases of women leaving ANC visits because female clinicians were unavailable. A unique example was a Protestant H’Mong community in Son La where women reported a preference to deliver in a dark room with only their mother-in-law or another woman present. However, the issue of female shyness was not found in all ethnic minority communities. There were many communities, including H’Mong, where women were willing to have their husbands, male clinicians and other health care providers present during ANC and delivery.

“The quality of our CHC has degraded. They [Tay] came for check-ups here and know the situation so they decided to go to the district hospital. There is no doctor here (at the CHC). We also lack clean delivery kits.”

Ethnic minority village birth attendant, Bac Kan

5.2. APPROPRIATENESS OF MATERNAL CARE QUALITY

The CHCs in this study were often under-resourced, and women commonly chose to either deliver at home or bypass nearby facilities to access better services at the district hospital or private facilities. Many women were unconvinced by the focus and quality of maternal health care provided by CHC staff, and seemed unlikely to utilize maternal health facilities unless the quality of care is improved. CHCs tended to have limited specialized equipment, poor infrastructure and limited capacity to handle obstetric emergencies, which caused women to “feel worried”, and oftentimes there was only one staff member available (if any) to see patients. A common problem is that when women did seek services at the CHC, nobody was present to provide them with care, and thus “people lost confidence in the system”. Several CHC staff reported low confidence in their abilities to handle emergencies due to their lack of specialized expertise and proper equipment, including drugs. Members of the research team visited a number of CHCs and found that delivery rooms were cold and uninviting: walls were damp with mold, and rooms appeared to be rarely used. The overall atmosphere was that CHCs are a place of illness. Despite the low quality of CHCs, some women acknowledged that healthcare providers do the best they can with the limited resources available to them: *“The CHC staff made every effort to take care of us to the best of their ability and given conditions.”*



“There is not enough modern equipment (at the CHC). They (pregnant mothers) feel worried.”

CHC midwife, Lai Chau

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EXPLORING
REASONS WHY
WOMEN DO NOT
USE MATERNAL
HEALTH SERVICES

“The scariest thing is being cut in your perineum (episiotomy). It is so painful. We wanted to go to the hospital, but we are so scared. Those who went to hospitals and went through that, came back home and told other women not to go to hospitals like ‘Don’t go, your perineum will be cut.’”

H’Mong woman, Lai Chau

The social distance between the CHC health personnel and the community was also an issue. Some community members were hesitant to seek CHC services because of shame, fear or lack of approachability. In some cases, CHC staff members were not well integrated into local communities; women claimed they “did not want to bother them”. This may be partly explained by the fact that CHC staff members work on a rolling distribution system – they are assigned to a facility for several years at a time, and when they are assigned to a new facility, they do not speak the local language or belong to the same ethnic group as patients. FGD participants reported that women belonging to some ethnic groups are discouraged from delivering at a facility due to negative attitudes of health personnel and language barriers. For example, in Bac Kan Province, H’Mong women are reluctant to deliver at the CHC because they do not understand the Kinh language and nurses easily get annoyed by this. Some women claimed that traditional birth attendants could better relate to them and made women feel more comfortable than health care providers. The expertise of traditional birth attendants was valued due to their social and emotional closeness to the community, their long experience in providing services to mothers and infants, and the loyalty and trust established with local villagers.

“District hospital staff were not kind and attentive. They easily got angry with patients. If you had something (cash) for them ahead of time, then you would be taken care of. They act like that as a hint for you to understand and give them something.”

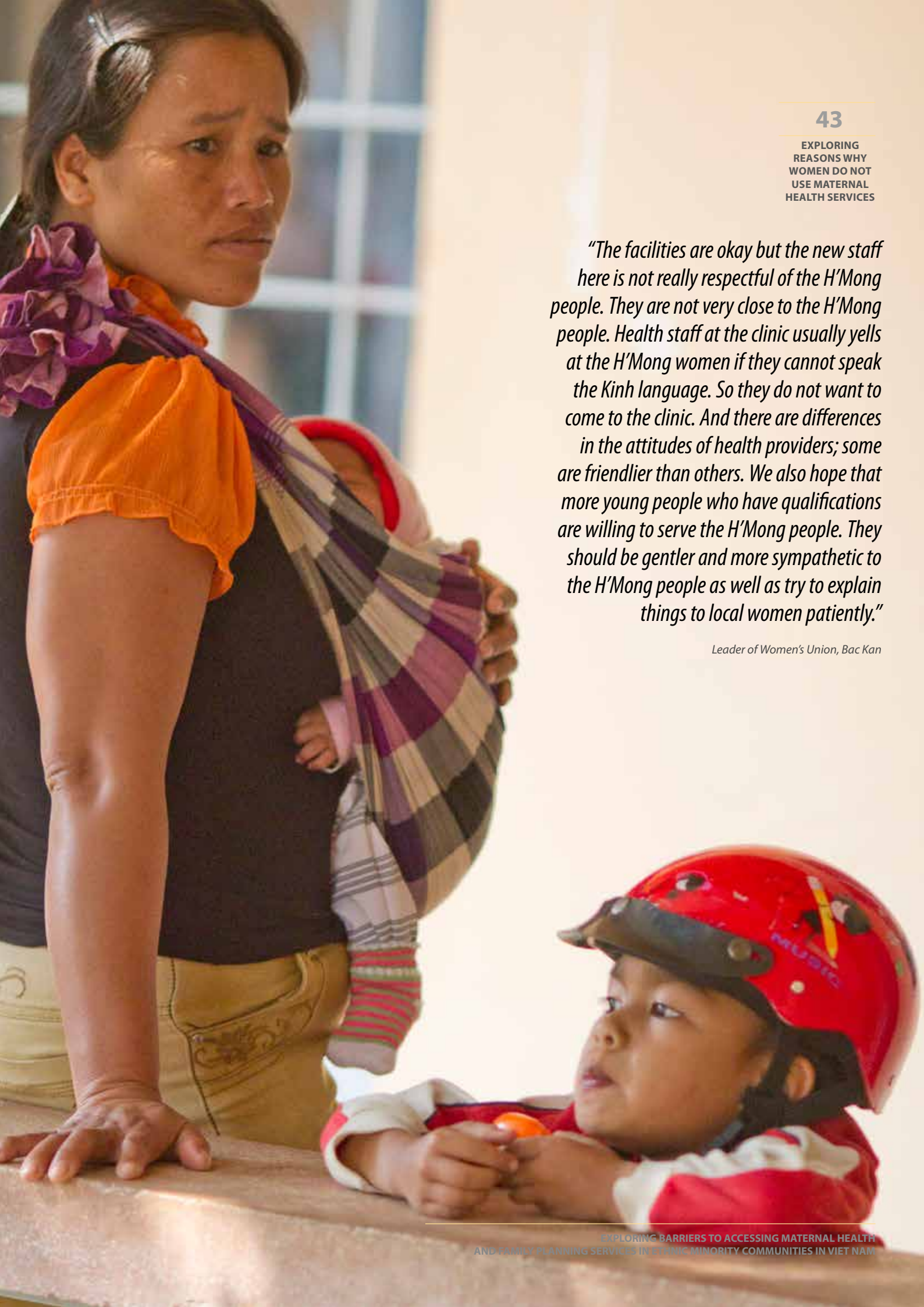
Một phụ nữ dân tộc Dao, Bắc Kạn

Community-based delivery services and human resources for maternal health services within the home environment were not accessible in many areas, despite high demand. Although there was reluctance to institutional delivery, many women were willing to have a female trained birth attendant present during home deliveries. The real challenge, however, is that CHC health personnel did not attend home deliveries unless there was a complication or emergency. Many communes did not have ethnic midwives and, in those that did, midwives were perceived as young, inexperienced and ill equipped to support labour and delivery. One commune in Kon Tum had 13 villages but only three ethnic midwives to cover the entire area. This means that women living in one of the 10 villages without a midwife must wait for her to make a long journey. Oftentimes they were not called until late stages of labour and thus the midwife does not make it in time to assist with delivery.

Hospitals were generally preferred over CHCs, though women had mixed opinions regarding the quality of services offered. Many women disliked that public hospitals were overcrowded and some did not trust the competencies of doctors at district/provincial hospitals. Another widespread barrier was the “fear of having to be cut” (i.e. episiotomy or cesarean section). In contrast, women who had delivered in a district hospital in Dak Nong were very satisfied with services, claiming that healthcare providers, “have good attitude, good equipment, better infrastructure, and more medicines available.”

“The facilities are okay but the new staff here is not really respectful of the H’Mong people. They are not very close to the H’Mong people. Health staff at the clinic usually yells at the H’Mong women if they cannot speak the Kinh language. So they do not want to come to the clinic. And there are differences in the attitudes of health providers; some are friendlier than others. We also hope that more young people who have qualifications are willing to serve the H’Mong people. They should be gentler and more sympathetic to the H’Mong people as well as try to explain things to local women patiently.”

Leader of Women’s Union, Bac Kan



Poor attitudes towards ethnic minorities amongst staff at health facilities restricted or delayed women's access to maternal health care. Women commonly described disrespectful and discriminatory treatment by facility healthcare providers, who sometimes took monetary bribes in return for better service/care. Discrimination of certain ethnic groups with respect to transportation costs to health facilities was reported in one commune. In some contexts, women recounted insensitivity, rudeness, neglect and even physical violence by health care staff (this appeared to be more of an issue for H'Mong than any other ethnic group). According to this participant, clinicians must learn to explain things to the local women more patiently and not shout at them. In contrast, Tay women in the same area do not experience harsh treatment from healthcare providers.

"In the district and province discrimination still exists. My daughter-in-law had to travel from the district to the province due to a complication. The Tay was charged only 800,000 for the transfer but my daughter-in-law is a H'Mong and was charged 1.8 million. They cheated us."

H'Mong male village leader, Bac Kan

5.3. PHYSICAL ACCESSIBILITY OF MATERNAL HEALTH CARE

In a number of communes, particularly in the mountainous northern regions, geographic inaccessibility make it difficult for women to access health facilities, and this is especially problematic for ethnic groups such as the H'Mong who tend to live furthest away from health facilities and may have to make lengthy journeys on foot. Roads are often poor or non-existent and it can be unsafe to travel, especially during the rainy season or at night. FGD participants expressed fears that they might not reach the health facility in time and would deliver in transit.

One of the strongest themes to emerge, especially in northern regions, was the importance of delivering close to a fire and keeping warm during and following delivery. This was more easily afforded at home than at under-resourced CHCs. There were numerous stories of women who delivered at a health facility and travelled home after delivery by foot or by motorbike, which made them ill during the postpartum period when their bodies were vulnerable to cold and wind. The findings suggest that the associated risks and challenges with getting to health facilities outweighed any benefits that might be gained from an institutional delivery. Women who planned to have an institutional delivery generally made arrangements well in advance for travel to a health facility. This often involved taxi fares and sometimes staying in rented accommodation in the district town in the week prior to the delivery date.

Husbands, mothers or mothers-in-law, or senior family members often made the decision to access health facilities.

The influence of in-laws was predominant in northern patrilineal communities (e.g., H'Mong, Thai, Dao), while the role of mothers in decision-making was strong in matrilineal communities in the Central Highlands (e.g., Sedang, Ba Na). What was common across communes is that few of the women made



decisions about where to seek maternal health services on their own; rather these decisions were most commonly made together by the woman with her husband, mother-in-law or mother, and possibly other family members. Among women who delivered at home, the majority reported that the primary decision-maker about where to deliver was their mother-in-law or mother, while women who delivered in facilities were more likely to report that their husbands or they themselves were the primary decision-maker about where to deliver.

Husbands have sometimes been seen to be less involved in decisions on pregnancy and childbirth; however, our results on this were mixed. In some cases, husbands were interested and involved in the delivery-site decisions and even overrode the preferences of elders, confirming the importance of understanding socio-cultural gender norms and roles. In other cases, husbands were neither interested nor involved in the delivery-site or other maternal health care decisions; the one exception may be decision-making around the use of contraceptive care. Importantly, husbands did not usually attend ANC visits and births in some (though not

“The men speak Kinh better and they also know how to drive the motorcycles. So the women pretty much depend on the men for visits to the health center.”

Leader of Women’s Union, Bac Kan

“At first, I wanted to go to CHC but because it was at night and rainy; I gave birth at home.”

Ha Nhi woman, Lai Chau

“Because of long distance to CHC, we are afraid of delivery on the way.”

Ha Nhi woman, Lai Chau

“If I were pregnant again, I’d deliver at home. The road is about 2 km but too difficult. The parents-in-law allowed me to go to the CHC, but I don’t want to go far and in cold weather.”

H’Mong woman, Lai Chau

“I had to walk downhill and it was very cold and painful when I walked back home after delivery. If I had one more child, I’d deliver at home because I don’t have enough money to hire a taxi. For the first child, I delivered at the district hospital and I travelled both from and back home by motorbike, which caused me serious headache afterwards because of cold wind.”

H’Mong woman, Lai Chau

all) communities, and therefore they were unfamiliar with the experience and procedure of pregnancy and childbirth. Husbands are gatekeepers to health services, especially ANC, because they are more likely than women to have access to the transportation needed to reach health facilities. Several women reported that they went to health facilities because their husband took them there; conversely, several women mentioned that they did not attend health facilities because their husband was not available or willing to take them. The role of husbands in providing access to health facilities was particularly pertinent during labour when women needed vehicle access to reach health facilities; in contrast, some women accessed ANC without their husband’s involvement because they were able to walk there on their own.

Our results confirm that frameworks considering gender roles in the family and norms within the larger community are essential when designing contextually relevant maternal health and family planning interventions to ensure husbands’ and elders’ involvement in the decision-making and planning processes. An important implication may be to complement maternal health and family planning interventions with community-level approaches, such as collective platforms for men and elders to be more engaged in and informed about RMNCH issues and good practices. These efforts may be strengthened by further qualitative research to understand variation in household decision-making in a given cultural context, in order to better tailor and adapt maternal health and family planning services to the diverse and unique needs of different ethnic minority groups.

5.4. AFFORDABILITY OF MATERNAL HEALTH CARE

Most families were affected by poverty and our findings suggest that the costs (both direct and indirect) of visiting health facilities were viewed as a barrier restricting or inhibiting adequate access to

ANC and institutional deliveries. Although services provided by the CHC were offered free-of-charge to women covered by health insurance, there was misinterpretation and misunderstanding amongst community members, especially the most disadvantaged, about eligibility and how the health insurance system works. Furthermore, most women desired access to better quality maternal health services outside of the commune. ANC, and especially delivery, involved indirect costs not covered by health insurance, including taxis, medicines, meals and companion costs and informal payments (or bribes) to health care providers to ensure good quality service and care. These indirect costs rendered attendance at health facilities outside of the commune unaffordable for many families. In some communes, delivery in a public location such as a health facility increased the social obligation for families to host a large celebration, placing additional strain on limited family finances.

Perhaps more important than financial costs were the opportunity costs in terms of lost labour or income associated with attendance at health facilities. FGD participants indicated that they were “too busy” and “did not have the time” to go to the health facility, including the CHC, because it was essential for them to work on the farms in order to contribute to basic household resources. In some communes, women worked in the farms right up until the time of delivery and felt the need to return to work as soon as possible following delivery due to both financial pressures and family expectations. For many women, long distances to health facilities meant that antenatal visits involved a full day of lost labour, which may explain why some women attended health facilities once or twice initially to check on the status of their pregnancy but attended no further ANC visits. There was also concern amongst women that institutional deliveries result in episiotomy or caesarean and thus delay women’s return to work. On the other hand, cost was not a significant barrier for some women. The cost of delivering at the hospital is high, but many



women were resourceful and planned ahead by saving or borrowing money and were willing to pay more for higher quality services offered at hospitals.

“Even if we had money, we wouldn’t go to hospitals. When we deliver at home, after 30 days we can do housework normally, except for very hard work, but if we go to the hospital, two months later the cut hasn’t healed yet, and is still painful.”

H’Mong woman, Lai Chau

PANEL 4. BA NA ETHNIC GROUP – “IT IS EASY ENOUGH TO DELIVER AT HOME”

The Ba Na, one of the poorest ethnic groups, live primarily in the Central Highlands provinces of Kon Tum and Gia Lai. The communities revolve around a traditional calendar in which 10 months are set aside for cultivation and the remaining two months for social and personal duties such as marriage, weaving and festivals. One of the unique traditions is the ear piercing ceremony. When babies are one month old, their ears are pierced to signify official acceptance of the child as a member of the village. The Ba Na has some of the lowest maternal health indicators, according to survey results. For example, only 7% attended four or more antenatal visits, 2% received standard content of ANC, and 26% had a trained attendant at delivery.

A traditional healer (usually an older woman) is commonly invited to a woman's home during labour to perform a ritual to promote a smooth and safe delivery. An animal is sacrificed and the traditional healer chants special prayers. This tradition can only be practiced at home – not at a health facility. Typically, the traditional healer is the first course of action during the onset of labour. There is a strong preference for the kneeling posture during childbirth, which is thought to facilitate an easier birth. During postpartum, women consume only very salty rice for three months, which is believed to produce breast milk and tighten the vaginal muscles.

Pregnancy and childbirth is perceived as a healthy and normal process and women interviewed saw little reason to visit health professionals when there was no perceived threat to their well-being. Women described normal labour as quick and uncomplicated, lasting only one or two hours. Seeking biomedical expertise is only considered if an emergency arises or labour is prolonged. As one woman explained when asked why she did not have facility-based delivery: “Giving birth is easy. We don't need help”. Women reported that they attend monthly village meetings led by Women's Union representatives where ANC and institutional delivery are promoted. Women described the education and information related to maternal health care as not persuasive. In particular, although they were told that they should deliver at a health facility, nobody explained why this is important; furthermore, women generally lacked awareness of what could potentially go wrong during a delivery at home.

Facility-based deliveries are a public event and cause a “buzz” in the community. Many people go to the health facility to greet the family and it is customary for the woman's family to invite them to their home and host a celebration with food and drink, placing an additional strain on limited family finances. In contrast, when delivery happens at home, it is a private event and only a few close family members are aware of the birth; there is not the same social obligation to host a large celebration. Women also shared that they were reluctant to access maternal health care services because they are shy by nature and “afraid” of not being able to communicate effectively with health professionals.

PANEL 5. H'MONG ETHNIC GROUP – “HIGH MOUNTAIN PEOPLE PREFER TO GIVE BIRTH AT HOME”

The H'Mong are one of the largest ethnic groups in Viet Nam and typically live at high altitudes in the northern provinces of Lai Châu and Sơn La. The remoteness of the communities contributes to a strong sense of cultural identity and independence. Several subgroups exist (Black H'Mong, Flower H'Mong) and can be distinguished by women's dress, as well as dialect and customs. The H'Mong have no written language. Legends, songs and folklore have been passed down orally from one generation to the other. The H'Mong have some of the lowest maternal health indicators, according to our survey results. For example, only 9% attended four or more antenatal visits and 26% had a trained attendant at delivery.

Geographic isolation and relatively basic transport networks present travel difficulties for H'Mong. Generally women have to travel to distant locations on foot for several hours to reach maternal health services, which many are unwilling or unable to do. Even in situations where women are prepared to make lengthy journeys to health facilities, the deterioration of roads during the rainy season has a detrimental effect on accessing health care. Barriers are not just nonexistent or expensive transportation, but also the fear of delivering a baby on the way to the health facility, especially on unsafe or dark roads, which outweighs perceived benefits of an institutional delivery.

Pregnancy and childbirth are viewed as healthy and normal life events, and therefore most women deliver their babies at home, except for difficult cases. As one woman told us, *“It is the natural job of women; everybody does it smoothly at home.”* The mother-in-law commonly delivers the baby at home, in the sitting position on a low chair or in a squat. Some women deliver with their husband or family members present, while others deliver in a dark room with only their mother-in-law or another female present. The mother and newborn are rinsed with warm herbal water after delivery and a fire is lit to keep them warm. The placenta is sometimes buried either under the main column of the house in the case of a boy, or under the bed in case of a girl; this is believed to enhance milk production. Mothers stay inside the house for one month after delivery for recovery and to avoid bringing bad luck to others. Mothers eat boiled chicken for one month postpartum (mostly wings and legs) and rice but not vegetables. If the baby has jaundice, they eat only rice. Protestant H'Mong have a baby naming ceremony conducted by the priest in the one month postpartum.

Husbands, mothers-in-law or senior family members often make the decision to engage with maternal health services rather than the women themselves. One woman explained the central role played by the mother-in-law when it came to making decisions about whether to go to the health facility: *“I know that when I am in labor, I should go to the CHC, but I can't because of the long road. Also my mother-in-law wouldn't let us go. They were accustomed to giving birth at home so I should be able to do the same.”* Women also shared that they are reluctant to access maternal health care services because they are afraid of episiotomies, have limited financial resources, have concerns about discrimination at health facilities, and have difficulties communicating with health care providers.

PANEL 6. CA DONG ETHNIC GROUP (SEDANG) - “WE FEEL IT’S NORMAL TO DELIVER AT HOME”

The Sedang live in the Central Highlands province of Kon Tum, and perform rituals to pray for a good harvest, for peace and to send away bad luck. The Sedang have some of the lowest maternal health indicators, according to survey results. For example, only 19% attended four or more antenatal visits and 35% had an institutional delivery. This section focuses on women belonging to the Ca Dong (a branch of Sedang).

A traditional healer (typically a male village elder) is commonly called during labour to perform specific rituals. The healer inspects the home during delivery for sources of tension; in some cases, furniture and other objects may be rearranged, the rope on bundled wood may be cut or loosened, or wooden fences knocked down to “release the tension”. Usually it is the husband who is instructed by the traditional healer to make these environmental adjustments; this is believed to be an important role/contribution of the husband during childbirth. It is believed that women embody their physical environment during labour and delivery. The traditional healer is the only person who knows how to minimize the tension in the environment in order for the baby to “come out smoothly”. The traditional healer also rubs the woman’s stomach and smears the blood of a slaughtered chicken on her forehead, abdomen and lower back, which is understood to promote a safe and smooth delivery. These ceremonies can only be done at home. A woman who delivers at a health facility must first have the ceremonies performed at home before going to the facility.

As a matrilineal society, the woman’s mother is the key influencer over maternal health service utilization, which differs from many other groups where the husband’s family is the key influencer. Early marriage is common and girls sometimes marry as young as age 14; after marriage, couples live in the matrilineal home. Mothers of pregnant women tend to insist on the birthing ceremony by a traditional healer. It is customary to have many village women present during labour and delivery. Women bathe immediately after giving birth, rest near a fire and are given boiled water with salt to drink, which is believed to help clotted/viscous blood go back to normal and to “clean and purify the insides of the body”.

There is little confidence in the competence and skills of CHC staff, according to the women interviewed. Women worry that babies may slip or be dropped during delivery and may hit their heads on the hard concrete floor. Traditional stilt houses have floors that are made out of bamboo; if babies slip at home it is believed they are less likely to be injured. Women also said that they are reluctant to access maternal health care services because the roads are poor, making it difficult to get to the facility.

6. CONCLUSIONS AND RECOMMENDA- TIONS



6.1. CONCLUSIONS

The key findings of this study are summarized as follows:

- Comparison of study findings to national estimates indicates large gaps in all indicators of maternal health care access and utilization; the only exception was coverage of modern contraceptive utilization. Most studied women had access to and attended at least one ANC visit, but relatively few had adequate access (four or more visits), and coverage for content of care was low. Regarding trends and disparities in maternal health care and FP service utilization among women in ethnic minority communities, within the study population, coverage for composite maternal health and reproductive indicators was lowest for the most disadvantaged groups: the poorest, the least educated, and those from the H'Mong and Ba Na subgroups. Coverage was better in Dak Nong and Bac Kan than in other provinces.
- There was a strong preference amongst women for private health services during pregnancy. In most regions, women's preference was for a home delivery. Bac Kan and Dak Nong were the only exceptions, where women preferred delivery at district hospitals. There was low demand for delivery services at CHCs across all regions and subgroups. Many women did not utilize health insurance for maternal health services due to a preference for private health services during pregnancy and limited demand for institutional deliveries. There was misunderstanding amongst community members regarding eligibility for and usage of health insurance, and lower coverage was found amongst the most disadvantaged families.
- Statistical analyses found the following demand-side factors were significantly associated with maternal health care coverage: maternal level of education, age, socioeconomic status, place of residence, and ethnicity. The following supply-side factors were significantly associated with maternal health care coverage: health insurance coverage, quality of CHCs, and distance to district hospitals (time).
- Low service uptake is often attributed to a range of demand-side socioeconomic and cultural factors, including poverty, geographic remoteness and long travel distance to a health facility, fear of examination by male health providers, fear of stigmatization by the Kinh health staff and birth attendants, and language barriers due to health workers' inability to speak ethnic minority languages [15]. Although Viet Nam's poorest populations are covered by social health insurance, co-payments and other indirect costs must be paid out-of-pocket, which may further discourage people from utilizing services [3]. Additionally, pregnancy and childbirth are imbued with strong cultural meaning and thus cultural factors play an important role in maternity care uptake [32]. Ethnic minority women and/or their family members may prefer traditional birth attendants or family members, particularly if childbirth is seen as a non-illness event that does not require professional medical care but should not happen without the appropriate rituals. Minority women may also experience constraints on care seeking if relatives such as husbands or mothers-in-law are heavily involved in the decision-making process [20, 21].
- Supply-side factors also play an important role in explaining inequalities in maternity care uptake. Supply-driven services that do not adapt to local contexts nor respond to specific needs of local people tend to result in low service utilization. For those who do attempt to access the formal health

system, healthcare providers may not be tolerant of, or sensitive to, cultural beliefs and traditional practices, and/or may treat poor and/or ethnic minority women with less consideration and respect than ethnic majority women. In some areas of Viet Nam, ethnic minority women deliver at home despite living in close proximity to maternity facilities. Yet evidence from other countries suggests that poorer women tend to stop using traditional maternity care when accessible, affordable and good-quality professional care becomes available [22]. Lack of availability, accessibility or affordability might explain the large ethnic gaps in professional delivery attendance. Furthermore, low quality ANC, shortage of equipment and/or staff, and delivery protocols in health centres (e.g., compulsory supine delivery, family members not allowed to attend to women in labour) may also influence women's service utilization patterns.

- The results of this study indicate that in most studied localities, advantaged women seem to benefit from the existing health system more than disadvantaged women. Consequently, even when maternal health services are technically available and accessible, underutilization of services may result if the services are deemed inappropriate or undesirable by patients [30]. The challenges associated with achieving equitable access to maternal health services are therefore twofold in that they relate to both supply-side (health system) and demand-side (patient or client health-seeking) deficiencies [31]. Each side of this equation tends to reinforce the other: if health systems do not offer adequate facilities, infrastructure, medicines, human resources, and culturally appropriate health services, then women and their families will be unlikely to utilize them. At the same time, low demand for high quality services results in limited mobilization

and political will to rectify existing health system limitations. For this reason, there is an ongoing need to better understand the specific determinants of health care utilization among disadvantaged populations in order to ensure equitable access for all [21].

- Culture and traditional practices shape the environment for service delivery. Respondents from all ethnic groups expressed the view that childbirth is a natural rite of passage, and home delivery is preferred to institutional deliveries unless complications occur. Qualitative and anecdotal evidence from Ba Na and Ca Dong indicate the importance, from the point of view of the families, of the role of culture-specific traditional healers and ritual in the residence of the household for a good and safe birth, and the impossibility of full and proper performance of such rituals in a health service facility may be a factor in the notable preference for birth at home. From the quantitative data, low quality of services, difficult access to services, and unaffordable costs (direct, indirect and opportunity) of attending health facilities in remote areas were amongst the major reasons for preferring home delivery and limiting access to ANC during pregnancy. For most women, institutional delivery was not perceived as the most rational, acceptable or appropriate solution. Women's preference was to be close to the family and home during labour and childbirth. They viewed local delivery services at the CHC as inadequate; and the perceived benefits of attending CHCs and other health facilities did not outweigh the potential harms and high costs of getting there.
- Although there was reluctance to have an institutional delivery, there was little to no reluctance to have a female trained birth attendant present during home deliveries. The real challenge,

however, is that CHC health personnel do not generally attend home deliveries unless there is an emergency. Although village ethnic minority birth attendants have been trained in some communes, they are perceived as young and inexperienced. Consequently, in the absence of skilled health personnel who are willing or able to support deliveries in the home environment, many women continue to deliver with the support of elderly women in the community.

6.2. RECOMMENDATIONS

Through this study, we explored opportunities for the health care system to provide improved maternal health services, adaptive to the local contexts and responsive to local needs. Based on the evidence presented, our recommendations are grouped into policy mechanisms that are within the remit of involved central ministries and organizations,

including the National Assembly, MoH and development partners.

The primary and overarching recommendation is to provide better quality maternal health services within existing CHCs. Health services in local communes are well positioned to provide safe, effective, timely, efficient and equitable maternal health care centred on the norms, values and preferences of diverse communities. Local health services have fewer barriers to access compared to district and provincial-level services, especially related to physical access and affordability. However, quality of care at the local level is a critical aspect of improving access and utilization of maternal health services for ethnic minority communities throughout the continuum of care, e.g., from pregnancy or preconception through to delivery and PNC. Current service utilization is fragmented across various public and private service providers at both commune and district levels. While



the majority of women access some ANC services, more coordinated and better quality care is needed around the time of childbirth and the early postnatal period. Good-quality maternal health care requires appropriate use of evidence-based clinical practices and non-clinical interventions, delivered in a humane, respectful and supportive environment.

There are various ways to approach improving quality of care. It is recommended that Viet Nam draw on the WHO “Standards for Improving Quality of Maternal and Newborn Care in Health Facilities” to further explore and identify gaps in the quality of care within the national context and improve the provision and experience of care, according to internationally recognized standards and quality statements adapted to local contexts.

The WHO framework focuses on quality improvements related to the “provision of care”, including use of evidence-based practices for routine and emergency care; information systems in which record-keeping allows review and auditing; and functioning systems for referral between different levels of care (Figure 6). An interrelated and equally important aspect of quality improvement efforts is the “experience of care”, including effective communication with women and their families about the care provided, their expectations and their rights; care with respect and preservation of dignity; and access to the social and emotional support of their choice. Crosscutting areas include the availability of competent, motivated human resources and of the physical resources that are prerequisites for good quality of care in health facilities. To improve effective communication and reduce language barriers, health care staff should receive in-service training to improve their ethnic minority language command, interpersonal communication and counselling skills, and cultural competence.

Improvements to the quality of maternal health services should focus on six strategic areas: clinical guidelines, standards of care, effective interventions, measures

of quality of care, relevant research, and capacity building. WHO has established standards for each area, with a number of input, output or process and outcome measures that explicitly define what is required in order to achieve high-quality maternal health care. These standards also set a benchmark against which improvements can be measured to drive and monitor quality of care improvement. In recognition of the differences between communes and the health workers who provide care, policy and planning improvements to the quality of care should be adapted to the local context to ensure applicability and to obtain desired outcomes, instead of adopting a one-size-fits-all model. There is also a need for health services to respond to the special maternal health and family planning needs of adolescents, including maternal health education for adolescents and developing health workers competencies to deal with the special informational, clinical and psychosocial needs of adolescents.

Facility-based quality improvements should be combined with outreach and community engagement strategies to increase service uptake by ethnic minority families. The results of this study highlight the critical role of communities and service users in identifying the needs and preferences of ethnic minority families and in helping them to manage their own health. The perspectives of women, their families and their communities on the quality of maternity care services influence their decision to seek care and are essential components in creating a demand for and access to high-quality maternal health services. Community engagement is therefore an important aspect to be considered and should be an integral component of improving the quality of care for women and newborns. In addition to delivering health services, CHC staff, ethnic minority midwives and other community facilitators can be involved in education and health promotion activities to empower communities with knowledge and mobilize them to improve maternal health and family

planning practices. One such mechanism for empowering and educating communities is the organization of women's groups, which gather around particular health issues such as appropriate care seeking and care practices for mothers and newborns. Community support groups might have a positive influence on a range of issues, such as greater women's empowerment, increased knowledge and awareness, and development of social capital affecting household and family decision-making practices and care seeking. In addition to the importance of health care for mothers and communication with community members, advocacy and media campaigns should address the benefits for children of maternal health services, which will help convince mothers and families to use these services. The involvement of local influencers – including mothers-in-law or mothers, husbands and traditional birth attendants – is also essential when planning and implementing communication and outreach strategies related to RMNCH interventions.

The government should ensure that disadvantaged ethnic minority women have access to health insurance coverage and understand how it works. There is a need to implement guidance on the utilization of health insurance and make it easier for women to obtain and use health insurance. Affordability of care (including both direct and indirect costs) is a major concern for many women, and improved access to affordable care is needed. The results indicate that many of the most disadvantaged women either do not have health insurance coverage or do not know how to take advantage of it. Additional strategies for reducing the financial burden of healthcare and increasing utilization, especially for the most marginalized and disadvantaged groups, include conditional cash transfers, voucher schemes, and transport support. Home delivery, whether assisted by health workers or ethnic minority midwives, should be covered by health insurance and there is a need for the MOH to develop a basic health insurance package to cover vital RMNCH services.

National policies and guidelines should be adapted to ensure access to and utilization of RMNCH services of vulnerable populations at the primary health care level. The variation in the socio-economic and cultural context and RMNCH situation in the six studied ethnic minority provinces may require specific responses to meet the local needs of ethnic minority communities. The results of the study suggest that one-size-fits-all policies do not work well in areas where the capacity of the local health care network is limited.

Monitoring and evaluation of local authorities on the performance of the local health care network in disadvantaged regions should be strengthened in order to track accountabilities and responsibilities. The National Assembly and MoH should closely monitor and evaluate the RMNCH situation in the remote ethnic minority regions to track accountabilities and responsibilities of local authorities as well as to discuss evidence-based interventions to improve the situation. Active participation of representatives of ethnic minority communities in these monitoring missions is highly recommended.

Effective evidence-based interventions should be created to achieve progressive improvements in the education programme and delivery systems for ethnic minority midwives. This should include improving the professional status of village ethnic minority midwives through improved professional development mechanisms, ongoing supportive supervision, stable incomes, and better integration into health systems and local facilities. Health care provided in communities, as opposed to health facilities, is an important component of providing a continuum of care for low-resource ethnic minority communities. The feasibility of creating and deploying teams of relatively younger, better educated, community-based ethnic minority midwives (or village health workers) matched with older, less educated, traditional birth attendants is worth exploring; this has been an effective strategy to improve

maternal health care and rates of skilled attendance at delivery. There could be greater attention paid to community-based care provided by ethnic minority midwives, village health workers or CHC health care providers, including enhanced focus on home visits to help ease some of the barriers discussed in this report. For both at-risk pregnancies and healthy pregnancies, home visits by midwives or village health workers in the pre- and postnatal period can be an effective community-based approach to improving maternal and child outcomes.

Monitoring of inequalities across the spectrum of health and by multiple dimensions of inequality is necessary to better tailor and target programmes to meet the diverse health needs of ethnic minority groups. The practice of data disaggregation is key for sustainable development and is at the heart of tracking improvements in access to maternal health care across various groups and levels of vulnerability. The practice of disaggregating data can reveal where inequalities exist, help to identify where action is needed, and determine how health-related policies, programmes and practices can best be implemented to benefit those who need them the most.

Randomized control trials or quasi-experimental research is needed on the effectiveness of CHC quality improvement interventions, the value of better quality services and integration (in terms of maternal health access and outcomes), and the potential costs and benefits of increasing the quality of CHCs. There are several communes in this study that were positive examples of good quality CHCs, with relatively high access and uptake of maternal health services. These communes could be the focus of future case studies to identify local innovations, lessons learned and ongoing challenges related to expanding access to maternal health services for ethnic minority women. Future qualitative research is needed to investigate challenges related to the

ethnic minority midwife programme and to explore ways to improve the quality of the programme, including recruitment and training methods, professional designation and remuneration mechanisms. Future studies should also investigate the extent to which ethnic minority midwives are integrated into local health services, as well as community perceptions regarding the value of various midwife cadres (e.g., trained vs. untrained, old vs. young, mothers vs. nulliparous midwives) during pregnancy and childbirth. There were a few communes in this study, especially in Kon Tum, where the utilization of ethnic minority midwives was higher than in other communes. An in-depth study of perceptions of the costs of foregoing ritual support in the process of the birth of a new member of the family in the community is recommended.



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SUPPLEMENTARY TABLES

Table 9. Ecological characteristics of 60 communes

	Distance to district hospital (km)	Distance to district hospital (time)	Men's literacy (%)	Women's literacy (%)	Main transport	Distance to national road (km)	Poverty rate (%)	Households with health insurance (%)
Ban Lam	35	60	90	85	5. Motorbike	17	55	100
Bang Thanh	15	40	-88. Don't know	-88. Don't know	5. Motorbike	60	26	100
Binh Trung	30	60	99	99	5. Motorbike	39	36	100
Can Co	95	240	80	60	5. Motorbike	120	40	98
Cao Tan	21	50	60	40	5. Motorbike	6	30	99
Cao Thuong	15	30	-88. Don't know	-88. Don't know	5. Motorbike	1	31	100
Chieng Khay	60	210	85	70	5. Motorbike	12	31	98
Chieng Khua	26	120	60	50	5. Motorbike	21	30	91
Chieng Lao	27	45	75	67	5. Motorbike	0	51	100
Chieng Sai	60	180	80	65	5. Motorbike	50	33	100
Co Linh	55	90	50	50	6. Walking	6	54	100
Co Ma	43	90	70	30	5. Motorbike	42	42	100
Co Tong	57	180	90	59	5. Motorbike	57	15	95
Dak Koi	24	50	63	58	5. Motorbike	25	47	96
Dak Long	11	30	70	67	6. Walking	0	30	99
Dak Na	50	80	70	60	5. Motorbike	0	41	100
Dak R'Tih	18	50	39	24	5. Motorbike	2	30	90
Dak Ring	58	90	60	70	6. Walking	58	39	90
Dak Roong	60	90	-88. Don't know	-88. Don't know	5. Motorbike	90	50	89

	Distance to district hospital (km)	Distance to district hospital (time)	Men's literacy (%)	Women's literacy (%)	Main transport	Distance to national road (km)	Poverty rate (%)	Households with health insurance (%)
Dak Sao	30	60	95	80	5. Motorbike	0	74	100
Dak Som	20	25	55	50	5. Motorbike	0	70	95
Dak Troi	50	90	60	57	5. Motorbike	15	61	30
Dua Mon	50	120	75	25	5. Motorbike	15	40	100
E Tong	60	180	90	70	5. Motorbike	60	61	90
Ha Dong	63	200	75	50	6. Walking	63	58	100
Ha Tay	35	55	45	55	6. Walking	16	-88	98
Hang Chu	53	150	75	50	6. Walking	53	46	96
Hang Dong	38	150	35	20	5. Motorbike	35	48	100
Huoi Luong	30	45	60	40	5. Motorbike	9	28	100
la HDReh	15	45	60	40	5. Motorbike	25	48	98
la Lau	45	80	93	95	5. Motorbike	45	10	96
la Tiem	25	40	85	80	5. Motorbike	7	21	70
Khoen On	32	60	30	25	5. Motorbike	32	34	100
Kon Chieng	47	75	80	60	5. Motorbike	43	51	95
Le Loi	35	40	45	43	5. Motorbike	6	11	92
Mo Si San	60	150	-88. Don't know	-88. Don't know	5. Motorbike	60	43	98
Muong Bam	68	180	80	70	5. Motorbike	68	57	100
Muong Te	34	60	80	60	5. Motorbike	0	19	85
Ma Li Chai	80	180	65	30	5. Motorbike	80	56	100
Mang Buk	45	75	90	91	5. Motorbike	45	43	100
Na Ot	60	120	90	70	5. Motorbike	0	61	100

	Distance to district hospital (km)	Distance to district hospital (time)	Men's literacy (%)	Women's literacy (%)	Main transport	Distance to national road (km)	Poverty rate (%)	Households with health insurance (%)
Nam Cha	62	180	-88. Don't know	-88. Don't know	5. Motorbike	80	40	95
Nam Gion	39	100	72	61	7. Other	40	50	100
Nam Ma	106	240	80	75	5. Motorbike	80	22	22
Ngoc Tem	56	120	97	93	5. Motorbike	47	42	99
Nung Nung	34	60	80	40	5. Motorbike	0	10	99
Pa Tan	30	61	95	75	5. Motorbike	11	42	100
Pha Mu	43	120	50	70	5. Motorbike	35	33	100
Po E	43	60	80	60	5. Motorbike	0	10	100
Quang Hoa	120	200	20	15	5. Motorbike	4	88	100
Quang Son	45	60	100	100	5. Motorbike	0	52	100
Sin Sui Ho	70	120	60	55	5. Motorbike	30	39	100
Son Lang	32	50	90	85	5. Motorbike	0	36	50
Suoi Bau	20	120	30	12	5. Motorbike	10	35	100
Suoi To	20	40	40	6	5. Motorbike	20	57	90
Ta Tong	50	210	80	40	5. Motorbike	170	60	95
Tan Thanh	18	30	90	90	5. Motorbike	10	30	70
Thu Lum	100	230	65	75	5. Motorbike	0	31	95
Tua Sin Chai	50	120	50	35	5. Motorbike	0	16	82
Xuan Lac	35	90	68	70	5. Motorbike	12	45	95

Table 10. Summary estimates for reproductive, maternal, newborn and child health indicators by economic status (percentage)

Key RMNCH indicators	1st Quintile (poorest) N=713	2nd Quintile N=1,288	3rd Quintile N=818	4th Quintile N=1,176	5th Quintile (richest) N=614
Antenatal care coverage – at least one visit	55.7	65.3	74.0	81.0	93.3
Antenatal care coverage – at least four visits	5.9	9.5	11.2	20.1	42.2
Antenatal care within 16 weeks gestation	25.4	35.6	39.2	48.7	66.0
Content of antenatal care (blood pressure, urine and blood testing)	7.6	13.1	18.0	20.2	33.6
Births attended by skilled health personnel	25.8	40.0	46.1	57.4	80.6
Institutional deliveries	20.8	33.5	39.2	48.7	70.8
PNC health checks for newborn within 48 hrs. of birth	21.7	33.5	36.9	45.2	67.9
Contraceptive prevalence – modern methods	54.5	56.0	56.4	58.1	57.8
Health insurance coverage	75.9	77.1	81.4	83.7	90.7
Average number of children	2.48	2.19	1.99	1.87	1.61

Table 11. Summary estimates for reproductive, maternal, newborn and child health indicators by level of education

Key RMNCH indicators	No education N=1,727	Primary education N=745	Middle school N=1,440	Secondary or higher education N=697
Antenatal care coverage – at least one visit	57.3	75.0	81.3	93.4
Antenatal care coverage – at least four visits	5.6	13.3	18.3	42.2
Antenatal care within 16 weeks gestation	29.2	39.1	47.0	66.7
Content of antenatal care (blood pressure, urine and blood testing)	11.9	17.3	18.8	29.8
Births attended by skilled health personnel	30.6	44.7	56.4	82.2
Institutional deliveries	25.0	39.2	46.0	74.7
PNC health checks for newborn within 48 hrs. of birth	25.0	36.9	45.1	69.3
Contraceptive prevalence – modern methods	52.2	56.4	60.0	60.6
Health insurance coverage	74.5	81.5	83.8	92.1
Average number of children	2.64	2.10	1.60	1.41

Table 12. Summary estimates for reproductive, maternal, newborn and child health indicators by ethnicity

Key RMNCH indicators	Tay N=155	Gia Rai N=176	Mnong N=168	Thai N=1,087	Ha Nhi N=171	Dao N=336	Sedang N=407	Ba Na N=447	H'Mong N=1,283
Antenatal care coverage – at least one visit	98.1	86.3	83.3	81.2	69.5	71.1	71.2	66.6	61.7
Antenatal care coverage – at least four visits	66.4	14.7	19.6	21.8	3.5	14.2	18.9	6.5	8.5
Antenatal care within 16 weeks gestation	78.0	44.3	59.5	49.2	48.5	42.5	35.6	25.7	32.6
Content of antenatal care (blood pressure, urine and blood testing)	40.6	3.4	21.4	24.6	14.0	31.2	7.8	1.5	15.5
Births attended by skilled health personnel	98.0	86.9	63.1	62.7	58.4	55.5	42.7	25.9	25.4
Institutional deliveries	98.7	83.5	54.1	48.8	57.8	50.6	35.1	20.3	22.3
PNC health checks for newborn within 48 hrs. of birth	81.2	56.8	60.1	51.7	29.2	45.8	43.0	20.8	21.6
Contraceptive prevalence – modern methods	70.9	42.1	61.0	54.9	50.0	63.4	73.7	41.1	50.3
Health insurance coverage	96.1	89.2	89.8	86.4	74.2	80.0	87.7	71.1	74.9
Average number of children	1.52	2.02	2.22	1.77	1.85	1.90	1.76	2.65	2.32

Table 13. Regression analysis of key predictors of RMNCH composite coverage (excludes health insurance in composite score)

	Predictor	Estimate	SE	t	P-value
Province	Bac Kạn	0.2530	0.0319	7.9	0.00
	Dak Nong	0.2054	0.0278	7.4	0.00
	Gia Lai	0.2025	0.0356	5.7	0.00
	Lai Chau	0.0826	0.0303	2.7	0.00
	Sơn La	0.1049	0.0307	3.4	0.00
Ethnicity	Tay	0.0448	0.0245	1.8	0.06
	Thai	0.0166	0.0156	1.1	0.28
	H'Mong	-0.0986	0.0156	-6.3	0.00
	Dao	0.0579	0.0191	3.0	0.00
	Gia Rai	-0.0098	0.0310	-0.3	0.75
	Ba-Na	-0.2489	0.0269	-9.3	0.00
	Sedang	0.0927	0.0294	3.1	0.00
	Mnong	0.0455	0.0260	1.8	0.07
	Ha Nhi	0.0401	0.0235	1.7	0.08
Education	Primary	0.0429	0.0106	4.0	0.00
	Middle	0.0869	0.0100	8.7	0.00
	Secondary or higher	0.1744	0.0128	13.6	0.00
Log (Age)		0.0530	0.0176	3.0	0.00
Health Insurance		0.1243	0.0088	14.1	0.00
Health Facility Checklist Score		0.0048	0.0005	10.3	0.00
SES	Q2	0.0443	0.0108	4.1	0.00
	Q3	0.0644	0.0121	5.3	0.00
	Q4	0.1017	0.0116	8.7	0.00
	Q5	0.1641	0.0150	11.0	0.00
Ecological	Distance to hospital (km)	-0.0002	0.0003	-0.5	0.62
	Distance to hospital (time)	-0.0003	0.0001	-2.4	0.01
	Distance to CHC (km)	-0.0144	0.0081	-1.8	0.07
	Distance to CHC (time)	-0.0090	0.0065	-1.4	0.16

Table 14. Summary of qualitative results

Approachability: People can actually identify that some form of services exist, can be reached, and have an impact on individuals' health (elements: transparency, outreach, information, screening).

Acceptability: Cultural/social factors that make it possible for people to accept services; The characteristics (sex, social group) of providers match with those of the clients (or are acceptable to them).

Availability/accommodation: Health services (either facilities or human resources for health) can be reached both physically and in a timely manner. Refers to distribution of facilities and healthcare providers, flexibility of working hours, qualifications of providers (elements: geographic location, accommodation, hours of opening, appointments).

Affordability: The prices of services fit the clients' income and ability to pay. (elements: direct prices of services, patient income, opportunity costs related to loss of income).

Appropriateness: Fit between services and client needs, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment and the technical and interpersonal quality of services provided.

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Phu Yen	Son La	<p>Women are generally aware of the CHC and services offered but many choose not to use it. Delivery is “normal”; preference for quiet home delivery</p> <p>“No problems” with delivery at home; this is a ‘custom’. Mothers have done this for generations and said it is ok to deliver at home</p> <p>Satisfied with current situation and have limited awareness of other options</p> <p>There is no drive/desire for change (low demand)</p>	<p>The ‘custom’ or preference is for mother (or mother in law) to deliver babies. Mothers-in-law and husbands make decisions; women know that they should deliver at CHC, but mother-in-law tells them to deliver at home</p> <p>They don’t want others to see their body, even their husbands (deliver in a dark room)</p> <p>Shyness and fear of strangers. Don’t want others to see them naked</p> <p>Community is quite insular and there is a fear of outsiders and especially male doctors</p>	<p>Geographic accessibility -CHC is located 10km from village, difficult to access with transport</p> <p>“I know that when I am in labor, I should go to CHC but because of the long road and also, sometimes, my parents-in-law wouldn’t let us go. They thought they were accustomed to giving birth at home so I should be able to follow that.”</p>	N/A	<p>The quality of the CHC is not sufficient to convince women to change their accepted birthing practice</p>
Thuan Chau	Son La	<p>Most deliver at home with trained attendant or mother-in-law. Complicated cases referred to facility</p> <p>Women know the services exist, but low demand for facility-based deliveries, only necessary for high-risk or complicated pregnancies (perception is that home delivery is low risk)</p> <p>Limited demand for facility services</p> <p>CHC midwife and/or CDTB supports home-based deliveries, but there is a lack of safe delivery kits</p>	<p>Custom – Thai women have to light a fire and keep warm after delivery, and bathe in herbal water. These practices are not possible at health facility</p> <p>A fire is lit after delivery (behind women’s back), left burning for 1 week to keep women warm. Postpartum women are deficient in Yin - predisposed to attacks by wind or cold</p> <p>Household decision-making favors home births; custom of past generations. Ultimately in-laws decide where a baby is delivered</p> <p>Language barriers at facilities</p>	<p>Hospital is 35km away; women are afraid they will deliver on the way. Harsh weather and terrain a major deterrent</p>	<p>High costs of transport and food at the hospital – for both the woman and her companion(s); most families do not have the financial means (only “well-financed” will request referral to hospital).</p> <p>Women request help to deliver at home</p>	<p>Hospitals are crowded and only allow one family member to be present</p> <p>Some women suggest that negative (“rude”) attitudes of hospital staff and language constraints are further barriers; they prefer local services</p> <p>No modern equipment at CHC</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Phong Tho	Lai Chau	<p>Aware of services, but it's easy and convenient to deliver at home. Do not want to "bother" CHC staff. Prolonged labor cases go to CHC</p> <p>Younger women more likely to have a facility-based delivery – they are afraid, don't know how to push</p> <p>Lack of awareness of the dangers of home delivery</p> <p>"Custom" for mother-in-law to assist with delivery</p> <p>Low demand for CHC services and CBTDs. During the last ANC visit, the midwife provided women with a safe delivery kit. This year, the CHC did not receive a sufficient number of kits</p>	<p>"Custom" – women like to do prayers in the 2-3 days after delivery and won't stay in the CHC (Dao naming ceremony)</p> <p>CHC staff not well integrated into the community</p> <p>Women not comfortable seeking care from CHC staff during delivery and the CBTDs in the community were not yet well established. CDTBs are called on only when delivery is prolonged (more than 2-3 days)</p> <p>Older (multiparous) women more likely to deliver at home. Primiparous women had higher perceived risk - "scared" and wanted to be "safe". Younger women less reliant on mothers-in-law</p> <p>Communication is a challenge: numerous ethnic languages are spoken in the community</p>	<p>Geographic accessibility was a secondary barrier. Roads are poor, especially during rainy season</p> <p>Most families do not have motorbikes</p> <p>Distance and geographical terrain (mountain roads -difficult to access)</p> <p>Afraid they cannot make it to health facility in time if labour is short (nighttime, poor roads, no transport, rainy season)</p>	<p>Cost – only those with adequate financial means go to the hospital</p>	<p>Low CHC quality/ limited equipment, limited demand for CHC services; preference for hospital over CHC. If facility delivery is desired, they bypass the CHC and request a referral to the district hospital for better quality care</p> <p>"Some people are more knowledgeable. Here (at the CHC) there is not enough modern equipment. They would feel worried."</p> <p>CHC staff characteristics and interpersonal skills – not well connected with patients, so women do not want to bother them)</p> <p>CHC is set apart from the local community and not well integrated into the community</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Phin Ho	Lai Chau	<p>For uncomplicated ("easy") pregnancies - identified during ANC - home delivery is OK in these cases</p> <p>No need to go to facility: a trained attendant will attend deliveries at home</p> <p>Women don't remember their due dates: they cannot read so when the date is written on a piece of paper, they can't interpret or remember</p> <p>Low demand for facility-based deliveries: deep fear of cutting/episiotomy</p>	<p>Women do not want to bother CHC staff; they are not from the same ethnic group, and do not speak their language; not comfortable</p> <p>Cold weather when travelling after delivery</p> <p>H'mong women are very shy and embarrassed, especially around male staff</p> <p>Language - staff do not speak their language and have to speak through an interpreter (CHC staff do not speak ethnic language)</p> <p>Mother - in - law insists on having first child at home to bury placenta/cord (especially if boy)</p> <p>Parents - in - law claim that if women deliver elsewhere, the breast milk remains at this location, so must deliver at home</p> <p>Must be home in time for naming ceremony on third day after delivery</p>	<p>Distance (labour comes on suddenly; easier to deliver at home)</p> <p>Travel and distance - women worry about the long walk home from the hospital (cold/wind)</p>	<p>High costs of travel to and from hospital</p> <p>Preference for family members to accompany them during delivery (this can make facility delivery quite costly)</p>	<p>CHC staff not integrated and women do not want to bother them</p> <p>Women do not eat proper food at hospital (only a packet of biscuits) and they get hungry/sore teeth</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Pac Nam	Bac Kan	<p>Most H'mong deliver at home, except for the difficult cases</p> <p>"It is the natural job of women, everybody does it smoothly at home and so do I."</p> <p>If pregnancy is labelled as "normal" during ANC, home delivery is fine</p> <p>Confusion re: insurance policy/procedures - not clear on how to fully utilize their health insurance for the referral process to upper levels</p> <p>Approachability differs by ethnic group - Tay women live closer to the commune center than H'Mong people. They know more about the procedures, campaigns, and information</p> <p>High mountain people: most women (H'Mong) prefer to give birth at home. Low mountain people: most women prefer to deliver their child at clinics in Pac Nam or Ba Be</p>	<p>Customs not conducive to facility delivery:</p> <ul style="list-style-type: none"> - H'mong women deliver in their bedroom, in a sitting position on a low chair or in a squat. One person holds her from the back, one person is at the front delivering the baby, and nylon is spread to prevent the baby from touching the floor After delivery, the baby is taken to have a shower with warm water near a fire while the mother is roused and her clothes changed before sleeping Vaginal tears are left for natural healing, sutures not necessary Placenta is buried either under the main column of the house in the case of a boy, or under the bed for a girl Women must stay inside the house for one month for health protection and to avoid bringing bad luck to others. Language barrier – Nobody at the clinic speaks H'mong language H'mong women - do not want their bodies to be seen 	<p>The CHC is far away, the road is difficult, especially on rainy days</p>	<p>Very expensive to go to the hospital</p> <p>Reportedly, there is discrimination in fees charged. Tay woman was charged less than H'Mong woman for a transfer to the district hospital - quoted as saying "they cheated us"</p>	<p>Though there is a village midwife (also a H'mong woman), women still prefer to have their relatives (mothers, husband) assist the delivery</p> <p>CDTB not well equipped or prepared; women do not trust in her abilities; women feel ashamed to seek her services</p> <p>CDTB claims that a doctor at the provincial hospital looks down on the H'Mong "because of their dirtiness"; even slapped one H'mong woman</p> <p>The CHC is currently not well equipped, only provides basic care, no doctor.</p> <p>Hospital overcrowded</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Cho Don	Bac Kan	<p>Choice of delivery location varies by ethnic group: Tay and Dao: considered more socially integrated and give birth at the clinic or the district level hospitals</p> <p>H'mong women: delivery is a normal event that women have to go through. Believe their children will grow up normally if delivered at home (low demand for facility services); consider a facility only in complicated cases</p> <p>Tay women: district hospital is preferred since they handle difficult situations in a timely manner (approachability not an issue)</p> <p>Outreach activities have worked well for some ethnic minority women (Tay, Nung, Dao): awareness has improved</p> <p>H'Mong: very low demand. H'Mong women are less autonomous, dependent on husbands</p>	<p>No discrimination for Tay people, but for H'Mong there are cultural differences</p> <p>Multiparous women less likely to deliver at a facility (lower perceived risk)</p> <p>Unwillingness to have "outsiders" present at delivery and to expose their bodies to strangers</p> <p>H'mong: traditional delivery position is sitting up – do not like to lie down.</p> <p>Language barriers: women need a translator (usually their husbands) for communicating with the staff (who mostly speak Kinh and Tay languages)</p>	<p>For Tay women, no problems. For H'Mong women, distance is an issue (15 km, 45-60 minutes of travelling) – they will not make it on time for their birth</p> <p>Poor roads, especially during rainy season</p>	<p>Tay women can afford to deliver at hospital</p> <p>H'mong women are poorer and are not willing/able to pay. Although delivery itself is free they worry about indirect costs</p>	<p>Nurses get easily annoyed with H'mong patients</p> <p>CHC equipment is insufficient but women claimed they were satisfied with the quality of care</p> <p>Doctors' attitudes at the district hospital are poor. They often shout at patients who ask questions, and do not provide clear explanations</p> <p>The new nurses/health workers are not respectful towards H'mong people; impatient and harsh</p> <p>"District hospital staff were not kind and attentive to the patient, easily got angry with patients. If you had something for them ahead of time then you would be taken care of"; "They act like that as a hint for you to understand and give them something"</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Dak Na	Kon Tum	<p>Women are generally aware of the CHC and services offered but many choose not to use them</p> <p>Feel it is not necessary to delivery at a facility (do not view pregnancy & delivery as illness requiring biomedical intervention)</p> <p>Inaccurate due date estimations (women do not keep track of cycle/LMP; do not have enough ANC checks to accurately estimate due date)</p> <p>Mothers-in-law and husbands: key decision makers</p>	<p>CHC had a number of ethnic minority staff members who speak the local language. Other factors were more important</p> <p>The CHC is not aligned with preferences of ethnic minority women (must be close to the fire following delivery, do not want to stay after delivery, must return to work quickly)</p> <p>Fear of being naked in front of clinicians</p> <p>Some exceptions: women who choose to deliver at the CHC do so because it's closer, labour escalates quickly, services are free, and women are given free baby clothes to take home</p>	<p>13 villages in this commune, but only 3 village birth attendants despite high demand for home birth assistance</p> <p>Hospital: long distance, rough terrain, unpaved roads</p> <p>Early/sudden onset of labour (due to consumption of local rice-based alcohol - causes premature delivery) - not enough time to get to facility</p>	<p>Cost of hospital transport is too high</p>	<p>CHC: no modern technology (e.g. doppler, ultrasound), poor infrastructure; women prefer hospital or home delivery (unmet demand for new technology and maternity services)</p>
Dak Ring	Kon Tum	<p>Women who are more educated will deliver at the health facility (outreach efforts may not reach those with lower education)</p> <p>Elder relatives (mothers, grandmothers and prominent males) make decisions about delivery location</p> <p>"We feel it's normal to deliver at home"</p> <p>Matrilineal society – women's mothers have the most influence on decisions</p>	<p>Influence of traditional birth practices (various rituals performed by traditional healer to encourage quick/smooth delivery)</p> <p>Must stay near fire following delivery; helps blood go back to normal</p> <p>Health facility only if labour is extremely prolonged</p> <p>Only one female MNCH specialist; women shy to be naked around male clinicians</p> <p>Preference to deliver in kneeling position</p> <p>Prefer to be surrounded by many family members following delivery</p> <p>At home: can bathe immediately after delivery ("after delivery you feel dirty"); can have boiled water with salt immediately after delivery (to help clotted blood return to normal consistency)</p> <p>Most CHC staff don't speak the local language or share ethnicity</p>	<p>Surrounding roads and infrastructure very poor</p> <p>Those who live far away very rarely deliver at the facility</p>	<p>Financial barriers are not a huge concern. All costs covered by health insurance (even transport)</p> <p>District provides 35,000/day to cover food during labour/delivery for ethnic minority women; home delivery still preferred</p> <p>Financial incentive (NGO) programme not working (500,000 Dong provided to women who deliver at a facility)</p>	<p>Women who do access facilities are willing to pay for private clinics (and travel further for them) to receive better quality services and shorter wait times</p> <p>Needs during delivery are not met (cannot conduct rituals at the facility)</p> <p>Women not confident in the ability/skills of CHC staff. They worry that at the facility, if the baby falls (slips after delivery), it will hit its head on the hard concrete floor; less dangerous to deliver at home</p> <p>CHC doesn't have enough blankets or beds; they have to bring their own blankets for family members</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Dak Troi	Kon Tum	<p>Home delivery viewed as "normal"</p> <p>Poor awareness of birth complications/danger signs (due to low ANC attendance)</p> <p>Problems with home delivery are not emphasized in outreach activities (told they should go to clinic, but nobody explains why, or gives examples of what could potentially go wrong at home)</p> <p>Only need to go to facility if labour continues for more than a day - biomedical intervention is Plan B</p>	<p>Shyness - women do not want to be seen naked by male clinicians</p> <p>Fear of episiotomy ("being cut"): Women believe this is caused by delivery in supine position; kneeling position preferred</p> <p>Conducts rituals during home delivery (not possible at the facility); sacrifices animals, prays for smooth delivery</p> <p>Most service providers are Kinh - few speak local language. At district level, all clinicians are Kinh</p>	<p>Midwife is not always available, so they can't be sure they will get a female clinician at the CHC</p> <p>If women come to the CHC, it's usually because they have a complication, so they're transferred to the district hospital; transportation costs very high, especially at night</p> <p>Distance from homes to CHC not a barrier. People typically have two homes. One is nearby (close to clinic); the other one is near the farm (further away); often they are working at farm right up until delivery so distance becomes an issue</p>	<p>Cost at CHC not a barrier</p> <p>Indirect cost of facility delivery: If women deliver at the CHC, the whole commune finds out; there is an expectation to celebrate at home afterwards (very expensive - family must provide food/drink for all guests who come to greet the baby)</p>	N/A

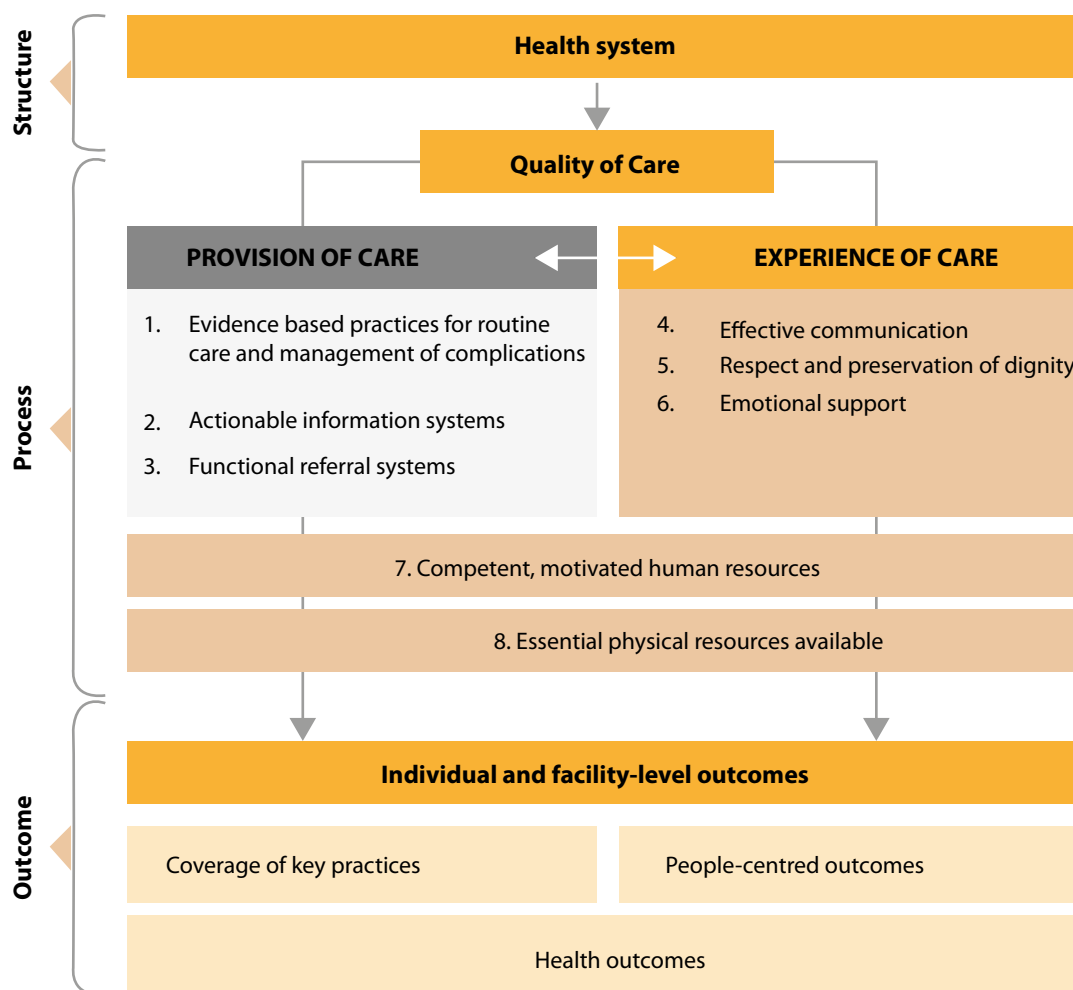
Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Ia Tiem	Kon Tum	<p>Almost all women deliver at the provincial hospital (bypass district hospital)</p> <p>Previously, they witnessed many complicated pregnancies/deliveries so they now see the importance in going to the facility</p>	N/A	<p>Distance not an issue</p> <p>For the (few) women who deliver at home, it's because they are too busy working (on farm) and go into labour in the field. By the time they get home, it's too late to travel</p>	<p>Nowadays people can afford to go to provincial hospital (higher education + improved socioeconomic status)</p> <p>Women are resourceful and plan ahead for service fees (save or borrow money to ensure hospital delivery). Willing to pay more for higher quality services</p> <p>At the provincial hospital, there's a special kitchen for ethnic minority women to cook, so they don't have to spend money on food while they stay</p>	<p>CHC conditions are poor (not enough equipment, no doctor, medicine supply is insufficient)</p> <p>Staff at provincial hospital viewed as more trustworthy (better training; more doctors)</p> <p>CHC staff viewed as incompetent; do not have the necessary equipment to handle emergencies</p>
Dak R'tit	Dak Nong	<p>Approachability is good. People learn from TV about the dangers of delivering at home (HHs are wealthier so they have both cell phones and TVs);</p> <p>CHC refers women to hospital (preferred delivery location)</p>	<p>No language or ethnicity barriers at the hospital. Women speak fairly well in Kinh language (FGD - this likely makes both information and services more accessible)</p>	<p>Women deliver at the wrong district hospital (different catchment area) - due to quality of the roads (difficult to access the hospital in their district)</p>	<p>N/A - cost is not a barrier</p>	<p>Women bypass CHC; ask for referral to the district hospital</p> <p>Not enough equipment and medicine to deal with complicated cases at CHC; if they need a C-section they can't have it here; clinical skills at CHC are not as strong as hospital staff</p> <p>Women are very satisfied with services at the district hospital (HCPs have good attitude, good equipment, better infrastructure, medicines available)</p>

Commune Name	Province	Approachability	Acceptability	Availability/ accommodation	Affordability	Appropriateness
Dak Som	Dak Nong	<p>Approachability varies by ethnic group. There are several ethnic groups in this commune (H'mong, Ma, Kinh). For the Ma, most deliver at home. They only go to CHC or district hospital if they are in labour for more than 1 day. Ma: view biomedical services as unnecessary</p> <p>Kinh people go straight to the facility as soon as they feel labour pains begin</p> <p>Ma women believe they are able to deliver quickly due to manual labour/exercise they do while farming. They're stronger and used to exercise so they can push harder, more quickly, and can persevere - "it's so easy"</p> <p>Low awareness of delivery complications</p>	<p>Ma women "believe in the TBA"; people trust the TBA because delivering with her is a tradition; have not witnessed any complications in her care</p> <p>Ma women: prefer to deliver in squat position; not an option at the facility (believe it takes too long in supine position)</p> <p>Ma women are shy to be naked (at home, they wear a skirt that covers them while squatting)</p> <p>Language barrier: Some women can't communicate very well in Kinh language so husbands have to accompany them and translate</p>	<p>When the midwife is working (at CHC), women come to deliver more often. If the midwife is not at the CHC then they are referred to the district hospital (Ma people cannot afford to go to hospital, while Kinh people can)</p> <p>Sometimes they seek services at the CHC and nobody is there to provide them, so people have lost faith in the system</p> <p>Distance is not a barrier for CHC access. The CHC is only about 11 km away, but... large distance between CHC and district hospital so waiting time to transfer is too long</p>	<p>For Ma ethnic group, cost is a barrier to facility delivery. The TBA receives 500,000 - 1,000,000 per delivery, so people are willing to pay for TBA services. The benefit of TBA is that families can pay in installments (small amounts at a time)</p> <p>For those who do use the CHC - they can save money (if they are referred from the CHC, they don't pay as much at the hospital. If they are referred, the transport is free (wait for ambulance - this is covered by insurance)</p> <p>Ambulance takes too long - if they have to call a taxi in emergency cases, it costs 1,000,000</p>	<p>At the CHC; they cannot deal with the complicated cases (lack of equipment, midwife is not very skilled compared to district hospital)</p>

Table 15. Description of participant population by province, women's survey (N=4,609)

Ethnicity	Bắc Kạn (n=394)	Lai Châu (n=1233)	Sơn La (n=1492)	Kon Tum (n=511)	Gia Lai (n=712)	Đắk Nông (n=267)
H'Mong	57.9	36.4	37.7	0	0	16.5
Thai	0.5	22.8	52.3	0	1.4	5.2
Ba Na	0	0	0	0.2	62.6	0
Sedang	0	0	0	79.3	0.3	0
Dao	10.2	20.7	0.7	0	0.3	10.9
Gia Rai	0	0	0	0	24.7	0
Ha Nhi	0	13.9	0	0	0	0
Mnong	0	0.5	2.9	13.5	4.5	37.1
Tay	28.9	0.3	0.3	0	2.4	6.0
Other	2.5	5.4	6.1	6.8	3.7	24.3
Average level of education (# years)	6.27	3.72	5.16	6.17	4.94	5.91
Economic status						
Poor	51.5	26.1	42.6	61.1	35.3	64.0
Near poor	13.5	11.3	11.9	12.1	4.9	9.7
Non-poor	35.0	62.6	45.4	26.8	59.8	26.2
Average age	24.51	24.33	24.32	24.10	26.22	25.98

Figure 6. WHO Framework for the quality of maternal and newborn care



APPENDIX

EXPLORING BARRIERS TO ACCESSING MATERNAL AND FAMILY PLANNING SERVICES IN ETHNIC MINORITY COMMUNITIES IN VIETNAM

Research Proposal

Revised:

December 28th 2015: revised – updated sampling, Vietnamese instruments

December 22nd 2015: revised - UNFPA and MoH feedback (plan for ecological analysis)

December 14th 2015: revised – data users' feedback (summary of study aims included)

November 26th 2015: revised - UNFPA feedback (sample size increased, survey reduced)

November 17th 2015: original proposal

BACKGROUND

Globally, efforts have been made to reduce health inequalities between advantaged and disadvantaged populations, and to ensure opportunities to all members of a society to achieve good health. Most health systems, however, continue to benefit advantaged groups more than disadvantaged groups, and underutilization of health care services are typically greater amongst populations where the need for access to quality healthcare is the highest. Therefore, there is an ongoing need to better understand determinants of health care utilization in order to improve access for disadvantaged groups.³

CONTEXT IN VIETNAM

Vietnam has 53 ethnic minority groups who mostly live in mountainous or remote areas with a low level of socioeconomic development and difficult access to transportation. To address the disparities in reproductive healthcare between regions and ethnic groups, the government of Vietnam has made significant investments over the past 10 years to improve the capacity of the health care system, particularly at the primary level, in ethnic minority and remote areas. Many health facilities based in ethnic minority or remote communes now have upgraded infrastructure, including essential facilities and equipment, and improved human resources capacity, capable of providing essential maternal health and family planning (FP) services for local residents.

Despite these investments, available data show that wide disparities persist in reproductive health (RH) outcomes and coverage indicators between regions, ethnicities, and income groups. For instance, while the national Maternal Mortality Ratio (MMR) has dramatically reduced in Vietnam from 165/100,000 live births in 2002 to 69/100,000 live births in 2010,⁴ the MMR in 225 of the most remote, ethnic minority and mountainous districts remains as high as 104/100,000 live births,⁵ with the MMR amongst ethnic minority groups being four times higher than that of the Kinh (majority) ethnic group.⁶

MATERNAL HEALTH CARE

Since maternal mortality is costly to measure and skilled birth attendance is a key intervention for reducing maternal mortality, the proportion of deliveries with a professional or trained attendant is commonly used as a progress indicator of maternal health in low and middle-income countries. Skilled birth attendance requires a trained attendant (registered nurse, midwife or doctor), an enabling environment (adequate medicines, equipment, referral system and policies), and community acceptance of biomedical obstetric services.

Home-based delivery rates are high among ethnic minority people within northern mountainous provinces, ranging from 40-60%, whereas most deliveries occur in a health facility in lowland

3 *Global Forum for Health Research (2009). World Health Organization: Perceived research priorities in sexual and reproductive health for low- and middle income countries: results from a survey. Geneva, Switzerland: Global Forum for Health Research*

4 *General Statistics Office (2011). The 2009 Vietnam population and housing census. Fertility and mortality in Vietnam: Patterns, trends and differentials.*

5 *WHO (2012). Estimates of MMR from the 225 difficult districts in Viet Nam using the HMIS data in 2010.*

6 *Health Strategy and Policy Institute (2010). National Maternal and Neonatal Mortality Survey in Vietnam 2006-2007.*

regions.⁷ A study based on the 2006 Multiple Indicator Cluster Survey (MICS) found ethnicity, household wealth and education were all significantly associated with antenatal care coverage and skilled birth attendance.⁸ These determinants of maternal health care utilization were closely related to each other; however, the effect of ethnicity was more significant than wealth and education. Ethnic minority mothers from poor households were at a three-fold risk of not attending any antenatal care, and six times more likely to deliver without assistance from a trained birth attendant. The results demonstrate that ethnicity is an important social determinant for maternal health care utilization in Vietnam, and that ethnic minority women form a clearly disadvantaged group. However, the data was collected nearly a decade ago, prior to widespread investments to improve the capacity of the health care system in ethnic minority and remote areas.

Barriers to maternal health care

Low service uptake is often attributed to a range of demand-side socioeconomic and cultural factors, including poverty, geographic remoteness and long travel distance to a health facility, fear of examination by male health providers, fear of stigmatization by the Kinh health staff and birth attendants, and language barriers due to health workers' inability to speak ethnic minority languages.⁹ Pregnancy and childbirth are imbued with strong cultural meaning¹⁰ and hence cultural factors may be more important determinants of maternity care uptake. Ethnic minority women may prefer traditional birth attendants or family members,¹¹ particularly if childbirth is seen as a non-illness event that does not require professional medical care. Professional healthcare workers may not be tolerant of cultural beliefs and practices. Sometimes, professional providers treat poor and/or ethnic minority women with less consideration, respect and/or care than ethnic majority women. Also, women may experience constraints on seeking care for themselves if relatives, particularly husbands or mothers-in-law, are heavily involved in the decision-making process. In contrast, ethnic majority women and their families may have greater identification with the modern health care system, greater confidence in dealing with officials, and greater ability and/or willingness to travel outside the community for maternity care. In some settings in Vietnam, ethnic women deliver at home despite living in close proximity to maternity facilities. Yet evidence from other countries suggests that poorer women tend to stop using traditional maternity care when accessible, affordable and good-quality professional care becomes available¹² – although this process can take some time. This suggests that supply factors play an important role in explaining inequalities in maternity care uptake.

Supply-driven services that do not adapt to local contexts or respond to specific needs of local people also produce limited impacts on improving service utilization. Lack of availability, accessibility or affordability might explain the large ethnic gaps in professional delivery attendance. Furthermore, low quality antenatal care, shortage of equipment and/or staff,¹³ and

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- 12 Houweling, T. A., Ronsmans, C., Campbell, O. M., & Kunst, A. E. (2007). *Huge poor-rich inequalities in maternity care: an international comparative study of maternity and child care in developing countries*. *Bulletin of the World Health Organization*, 85(10), 745-754.
- 13 Trinh, L.T., Dibley, M.J. & Byles, J. (2007). *Determinants of antenatal care utilization in three rural areas of Vietnam*. *Public Health Nurse*; 24:300-310.

delivery services in health centres (e.g., compulsory supine delivery, family members not allowed to attend in the labour) have been associated with women's decisions to deliver their babies at home.

Gaps in existing evidence

The most recent MICS (2014) revealed disparities in several key indicators (e.g. contraceptive prevalence rate, ANC coverage, institutional deliveries) between women in Northern Mountainous and Central Highlands regions and the overall population. Kinh and ethnic minorities are not disaggregated in the MICS report and commune-level data are unavailable.

The purpose of the present study is distinct from MICS. Whereas MICS data provide nationally representative data on key indicators, the present study will provide *baseline estimates* of key maternal health and FP indicators in 60 selected communes where Ministry of Health plans to implement future interventions to improve maternal health and FP services. The results will be disaggregated by commune-level, ethnicity, and socio-economic status. The Ministry of Health plans to implement an end-line survey after 5 years to track the results and document lessons learned and best practices for scale-up.

There is much more to be learned about the discrepancies between existing maternal health and FP services among ethnic minority women, and the ways in which existing health service provision may be failing to meet the needs and preferences of ethnic minority women. Such knowledge gaps highlight the need for more comprehensive and in-depth investigations of the barriers in accessing maternal health and FP services among women in ethnic minority and remote communities across Vietnam. More evidence is needed on what works to reach ethnic minority groups, and on how effective interventions can be scaled up.

STUDY OBJECTIVES

Under a contract with UNFPA Vietnam, the research team at the University of Toronto, together with **Mekong Development Research Institute** in Vietnam, will conduct a study to identify barriers to and social determinants of maternal health care and FP service utilization among ethnic minority women in various living conditions and multiple geographic areas in two regions selected by the Vietnam Ministry of Health and UNFPA.

The conceptual framework developed by the Commission on Social Determinants of Health (CSDH) set up by the WHO will be used to guide the potential factors that act as barriers to maternal health and FP service utilization. The quantitative component of the study will provide data on determinants of maternal health care and FP service uptake with respect to socioeconomic position (e.g., ethnicity, education, income), whereas the qualitative components will focus on the cultural and societal values that influence health care and FP service utilization. The quantitative and qualitative data sets will complement each other by addressing different but overlapping barriers to health care utilization.

This study will provide unique data on the coverage, scope and practice of maternal health care and FP service utilization in 60 remote regions. It will also highlight important gaps in services and practice that must be addressed, and contribute to a growing body of literature examining health care delivery to ethnic minority populations.

Specific aims

Specific aims of the study are as follows:

1. To measure maternal health care utilization and FP indicators of ethnic minority women in 60 communes selected from 6 provinces, including:
 - Antenatal care coverage
 - Content of antenatal care
 - Trained attendant at delivery
 - Institutional deliveries
 - Postnatal health checks
 - Contraceptive prevalence rate and unmet needs
2. To determine trends and disparities in maternal health care and FP service utilization among women in ethnic minority communities, and identify determinants of maternal health care and FP service utilization and non-utilization. Determinants that will be investigated are based on the CSDH framework, and include:
 - Maternal level of education
 - Maternal age at delivery
 - Socioeconomic status
 - Employment status/source of household income
 - Geographic area
 - Marital status
 - Ethnicity
 - Health insurance coverage
 - Distance to and quality of commune health centres
3. To explore traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women's health seeking behaviours, utilization and non-utilization of maternal health care and FP services;
4. To explore opportunities for the primary health care system to provide culturally appropriate services, adaptive to the local contexts and responsive to the needs of local people; and
5. To provide recommendations for programmes that support the provision of culturally appropriate maternal health and FP services for women in ethnic minority and remote communes.

The study findings will be used by UNFPA to support the Ministry of Health and other national and sub-national partners to develop evidence-based interventions that facilitate provision of culturally sensitive services in order to increase utilization and uptake of maternal health and FP

services among women in 60 ethnic minority and remote communes in Vietnam.

A comprehensive summary table outlining each study aim, with reference to specific indicators, methodologies, study instruments, and target informants can be found in A.

METHODOLOGY

The Review Ethics Board of the University of Toronto has approved the study design, instruments and data collection plan. Our proposed methodology will draw on a concurrent mixed methods design¹⁴ to gain a deeper understanding of the disparities and barriers in accessing maternal and family planning services in the Northern Mountainous and Central Highland regions of Vietnam. This research design is a common mixed methods design, whereby the researcher “converges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem”.¹⁵ In this design, investigators collect both qualitative and quantitative data at the same time during the study and then integrate the information in analysis and interpretation phases.

A field-based survey will be conducted between December 2015 and January 2016 to collect information on maternal health care and FP service utilization among ethnic minority women in 60 selected communes across three provinces in Northern Mountainous and three provinces in Central Highland regions. The provinces include: Sơn La, Lai Châu, Kon Tum, Đắk Nông, Gia Lai and Bắc Kan. The inclusion criteria will be ethnic minority women who had a live birth in the last two years.

SAMPLING METHODS

As defined by UNFPA in the RFP, a sample of approximately 6,000 women recruited from 60 difficult communes with the lowest levels of service utilization in 3 provinces in Northern Mountainous and 3 provinces in Central Highland regions will be recruited for the survey (approximately 100 women in each commune). UNFPA has noted that in some communes it may not be possible to interview 100 women due to the small size of the communes or difficult geographic locations, but more or less, a sample of 100 women per commune is desired. The contractors will implement the sampling strategy designed by the UNFPA.

A two-staged sampling method will be used, as follows:

A) Commune selection:

The Vietnam Ministry of Health provided a list of 163 purposively selected communes that have a high density of ethnic minorities and are considered by the Ministry of Health to be priority or “difficult” communes. The Ministry of Health plans to implement interventions to improve maternal health and FP services in the communes selected in this study. Inclusion criteria were identified by the Ministry of Health, but were not consistently applied by all provinces. The study is based on a non-probability sample and the results and programme recommendations will not be generalizable, but will be specific to the communes in the study.

We will use a two-stage proportionate stratified random sampling procedure. First, the number of communes in each province will be proportionate to the total number of communes in each

¹⁴ Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks: Sage Publications.

¹⁵ *Ibid.*

province identified by MoH. In each province, 30-50% of communes identified by MoH as difficult/vulnerable communes will be randomly selected from the master MoH list. Second, the number of women to participate in the survey will be proportionate to the total number of births in the last two years in each commune, using data provided by MoH. Approximately 60% of women who delivered in the past two years will be sampled in each commune.

The sampling strategy provides the following estimates:

- Son La (16 communes): approx. 1500 surveys
- Lia Chau (16 communes): approx. 1500 surveys
- Kon Tum (8 communes): approx. 550 surveys
- Gia Lai (9 communes): approx. 750 surveys
- Dac Nong (5 communes): approx. 300 surveys
- Bac Kan (6 communes): approx. 400 surveys

B) Household selection:

For each of the 60 communes, we will obtain a list of eligible households provided by commune leaders, village health workers and/or health centre staff. We will use computer software to generate a simple random sample of households for inclusion.

Eligibility criteria for household surveys. Potential participants will be women of reproductive age (15-49 years), with a live birth in the last two years. Respondents who are incapable of conducting the interviews for reasons of physical or mental health will be excluded.

Procedures. Data collectors will work closely with village health workers to locate households, however health staff will never be present during surveys. In cases where selected women are not present (e.g. traveling) or unreachable the day of the survey, we will randomly select another woman from the household list.

Participants will be approached for voluntary inclusion and informed of the nature and objectives of the study, and consent to participate freely and voluntarily. No monetary incentives will be given directly to participants, however, each woman will be given a small token of appreciation (e.g. toothbrush).

Interviews will be conducted one-on-one, in private, at the respondent's home. In some cases, several women may be invited to meet researchers at a central location. This will depend on commune geography/accessibility and may be necessary to ensure efficiency during the data collection phase.

HOUSEHOLD SURVEY (WOMEN'S QUESTIONNAIRE)

The interviewers will administer a short survey, which includes questions from internationally standardized instruments such as the Multiple Indicator Cluster Survey 6 (MICS 5/6, UNICEF)¹⁶. The survey will include information on women's reproductive health history, maternal health service utilization, and family planning methods (Appendix E).

16 UNICEF MICS Tools website <http://mics.unicef.org/tools#data-collection>

Key indicators to be measured include:

1. Proportion of women who attended at least 3 antenatal visits
2. Proportion of women who had their blood pressure measured and gave urine samples during their last pregnancy
3. Proportion of women who currently use a modern FP method
4. Proportion of women who had delivery in a health facility
5. Proportion of women who had postnatal visits
6. Average number of children of each couple
7. Unmet needs for maternal health and FP services
8. Health seeking behaviour of ethnic minority women

Demographic data to be collected:

1. Maternal age
2. Maternal education
3. Number of children
4. Marital status
5. HH assets (proxy for SES)
6. Ethnicity
7. Employment status/occupation
8. Main source of income
9. Health insurance coverage
10. Distance from nearest clinic/facility.

See Appendix D for the informed consent form and Appendix E for the household questionnaire for women.

Pre-testing and finalization of research instruments. Items drawn from UNICEF MICS have already been pre-tested and validated with women in 108 LMICs, including Vietnam. The women's questionnaire will be further pre-tested with individuals external to the study but with similar sociodemographic profiles, with attention to literacy levels, cultural meanings and interpretations, and language/dialects. All study tools will be modified to ensure cultural appropriateness and comprehensibility.

Data collector selection and training. One research team member from the University of Toronto and researchers from **Mekong Development Research Institute** will hire and train a team of 24 core data collectors from provinces in the North Mountainous and Central Highland regions. Ideally, data collectors will be recruited from universities in ethnic minority regions and will be ethnic minorities or familiar with these communes, speak local dialects/tones, and be able to establish a respectful rapport with women in the local communities. The research team will train the data collectors over a five-day period that will focus on administering the household surveys in a standardized format to ensure consistency and quality, and also procedures for ethical conduct. Training on the survey instrument, interviewing techniques, and research protocols on subject rights, confidentiality, and right of refusal will be carried out during this period. All interviewers will be asked to sign a confidentiality agreement (Appendix C). There will be one training conducted in Hanoi.

We will work with **Mekong Development Research Institute** and liaise with commune leaders to identify which communes/villages have low numbers of Vietnamese-speaking households.

We will also consult with village health workers to identify specific women/households requiring interpreters/translators. Where necessary, a local research assistant will be hired to interpret/translate as questionnaires are administered.

Quality assurance. To ensure that interviewers are well equipped to collect high quality data, training supervisors from UofT will observe several surveys each day during the early stages of data collection, and will provide feedback & coaching where necessary. Once data collectors are comfortable to conduct surveys independently, supervisors will perform random spot checks of the data by contacting a random sample of women by phone, to verify their answers. Close monitoring of the quantitative data as it is synced from tablets will allow us to detect any suspicious or fraudulent data. If necessary we will recruit and train new data collectors to replace those who do not meet expectations. Use of tablets will greatly improve the quality of quantitative data by minimizing data entry errors. We will hold regular team meetings to discuss/resolve challenges as they emerge, which will ensure team morale and motivation.

Risk management plan. We will obtain insurance for all data collectors, and will work closely with **Mekong Development Research Institute** to ensure that team safety is the first priority. For example, in very remote communes (Northern mountainous region in particular), interviewers will travel and work in pairs rather than alone.

To ensure anonymity of the participants, unique study ID codes will be used to identify participants and groups in all stages of this research. Participants' names and other personal information will never be linked to their responses or personal data. To protect confidentiality, data collectors will discuss issues of confidentiality with all participants and any research assistants will be asked to sign a confidentiality agreement. Additionally, all codes, notes, files, and recordings will be backed up regularly. Team members' computers and all research files will be password-protected. These files will only be accessible by research team members.

Hard copies of consent forms, written notes, and any other study materials will be locked in a filing cabinet in a secured office at OISE (University of Toronto). At the end of each research day, all tablets will be synced over wifi (depending on network availability) to a secure password-protected Google server then manually transferred to an encrypted/password-protected data file. Once the data is transferred to the server, it will be cleared from the tablet's storage folder. All identifying information will be modified in case studies cited in written reports and only aggregated data will be disseminated during focus groups or community dissemination meetings.

Collaboration with involved partners. **Mekong Development Research Institute** will be responsible for facilitating fieldwork logistics, assisting in the recruitment and training of data collectors, and will be the key point of contact with provincial and commune-level government and health system personnel.

Focused ethnographic study

The qualitative strand of the study will involve a focused ethnographic study comprised of in-depth interviews and focus group discussions with healthcare providers at health facilities (e.g. midwives, nurses, or traditional birth attendants), mothers and/or women of reproductive age, and women's group leaders, to provide nuanced and detailed explanations of findings generated by the quantitative data. The focus of the semi-structured interviews will be directed at exploring barriers to and factors associated with accessing maternal health services and identifying cultural practices (including local values, customs and traditions) that might contribute to service utilization patterns. See Appendix F for informed consent forms and Appendix G for interview guides.

The ethnographic phase will take place in approximately 12 communes in January 2016. Two researchers from the University of Toronto and two research members of Mekong Development Research Institute will conduct in-depth interviews and focus group discussions (FGD) with women of reproductive age, community health workers including traditional birth attendants, and women's group leaders.

In each of the 12 communes, we will complete the following:

- 1 FGD with 5-6 ethnic minority mothers
- 1 semi-structured interview with a doctor/nurse from a community clinic
- 1 semi-structured interview with a community health worker or traditional birth attendant
- 1 semi-structured interview with village leader or other male stakeholder

We have estimated the number of interviews and focus groups required based on previous experience conducting qualitative studies in maternal health, however the final number will depend on how quickly data/content saturation is reached. Within communes where service uptake is low, we will use this method to identify service utilizers (so-called 'positive deviants') to understand how and why some women access services while others do not. This phase of the research will be conducted as an iterative, collaborative process, with regular debriefing and feedback meetings to discuss emergent findings, identify unanswered questions and decide on target informants as a team.

Ecological Analysis

An ecological analysis will be conducted to collect data on commune-level characteristics. As per the RFP, analysis will use available data sources that provide information on commune characteristics and the use of maternal and FP services at the primary health care level (e.g. population change surveys, multiple indicator cluster surveys (MICS), household living standard surveys, demographic health surveys, and Ministry of Health (MOH)'s health statistics year books, and commune, district, and provincial reports). Since existing data sources are unavailable, the research team will develop appropriate tools and a checklist (English version) to share with UNFPA for translation. During the data collection, the data collection team will deliver the checklist to the commune health centre for completion and the enumerator will pick it up two days later. Commune health centres will not receive remuneration or compensation for completing the forms. The enumerators will verify and confirm a subset of five questions on the checklist for reliability and validity purposes.

- Socioeconomic characteristics: average household income, education, occupational structure, percentage of poor households, illiteracy rate, main modes of transport, health insurance coverage.
- Geographical characteristics: roads/highways, distance to the main road, distance from the most remote village to the commune health centre, distance from the health centre to the nearest district hospital, travel time from village to the health centre, and from health centre to hospital.
- Primary health care facilities, human resources, and infrastructure: number of doctors, midwives/assistant doctors, population collaborators, FP and maternal services available at the CHS, performance of midwives/assistant doctors in providing emergency obstetric care services, and how the health centre is organized to meet needs of ethnic minority women.

- Information on the quality of commune health centres: will be collected using a basic checklist that has been used in previous research. This information will be used to determine to what extent, if any, quality of healthcare centres pose a barrier to service use (Appendix H). This checklist has been adapted from relevant items on The Rapid Health Facility Assessment (R-HFA) tool; an “instrument for measuring a small set of key indicators to give a “balanced scorecard” for MNCH services at the primary health care level”, and modified to reflect Vietnam MoH guidelines for health facilities.

Implementation timeline

Key dates	Activities	Team members
Present – Dec 24 th	Ethics, MoH permissions, pretesting, logistics	UofT team, with support from local research partner (to be confirmed) and in consultation with UNFPA, MoH
Jan 4-8 th 2016	Fieldwork training	Dr. Stephen Lye
Dec 24-Jan 18 th 2016	Quantitative fieldwork	Dr. Kerrie Proulx
Jan 11-22 nd 2016	Qualitative fieldwork	Kristy Hackett
Feb 2016	Data analysis	UofT Team
Mar 31 st 2016	Draft report and recommendations	UofT Team
May 31 st 2016	Final Report	UofT Team

Analysis

To ensure anonymity of the participants, unique study ID codes will be used to identify participants and groups in all stages of this research. Participants’ names and other personal information will never be linked to their responses or personal data. Non-identifiable data will be analysed with IBM SPSS. We will use SPSS software to investigate the structural determinants and barriers to maternal health and FP service utilization. The analysis will use descriptive statistics to describe the participant population, antenatal coverage among women, content of antenatal care, trained attendant at delivery, postnatal health checks, healthy behaviours, contraceptive prevalence and unmet needs. Regression models will be used to identify the main predictors of maternal health and FP service utilization including: maternal level of education, maternal age at delivery, socioeconomic status, geographic area, marital status, and distance to and quality of community health centres. Outcomes will include antenatal care coverage, trained attendant at delivery, postnatal health checks, healthy behaviours, contraceptive prevalence and unmet needs. Qualitative data will be analysed using Nvivo software, with a focus on emergent themes and hypotheses on potential barriers to maternal health and FP planning services. As with most qualitative studies, the qualitative findings are not intended to be generalizable; rather, the intention is to use the qualitative results to help interpret and explain the quantitative results, and to generate new theoretical insights that could form the basis for hypothesis testing in the future.

Study Aims Summary

Specific aims (as outlined in TOR)	Indicators measured	Supply or demand side?	Methodology/data collection tool	Target informants
<p>1. To document the commune-level (e.g., geographic, demographic, and socio-economic) and health facility-level characteristics, and maternal health and FP service use indicators in all provinces in Northern Mountainous and Central Highland regions, using existing data sources.</p> <p>NB: There are currently no existing databases or reports containing this information. The research team will provide UNFPA with the English version of the tools to distribute to commune health centre staff. The research team will conduct the data analysis.</p>	<ol style="list-style-type: none"> 1. Socioeconomic characteristics: average household income, education, occupational structure, percentage of poor households, illiteracy rate, main modes of transport, health insurance coverage. 2. Geographical characteristics: roads/highways, distance to the main road, distance from the most remote village to the commune health centre, distance from the health centre to the nearest district hospital, travel time from village to the health centre, and from health centre to hospital. 3. Primary health care facilities, human resources, and infrastructure: number of doctors, midwives/assistant doctors, population collaborators, FP and maternal services available at the CHS, performance of midwives/assistant doctors in providing emergency obstetric care services, and how the health centre is organized to meet needs of ethnic minority women. 	Supply and demand	Structured form; HF assessment checklist	To be filled out by commune health centre staff
<p>2. To identify ethnic minority and remote communes with the lowest levels of maternal health and FP service utilisation and associated factors.</p>	<p>This has already been done by the MoH. A list of 163 “difficult” communes has been shared with us. As agreed, we will randomly select communes from this list for inclusion in the study.</p>			

Specific aims (as outlined in TOR)	Indicators measured	Supply or demand side?	Methodology/data collection tool	Target informants
3. To measure maternal health care utilization and FP indicators of ethnic minority women in 60 communes selected from 6 provinces	<ol style="list-style-type: none"> 1. Proportion of women who attended at least 3 antenatal visits 2. Proportion of women who had their blood pressure measured and gave urine samples during their last pregnancy 3. Proportion of women who currently use a modern FP method 4. Proportion of women who had delivery in a health facility 5. Proportion of women who had postnatal visits 6. Average number of children of each couple 7. Unmet needs for maternal health and FP services 8. Health seeking behaviour of ethnic minority women 	<p>Demand: #1-6, 8 Supply: #7</p>	Quantitative household questionnaire (Appendix E)	Women of reproductive age (15-49 y), who have delivered in the last 24 months
4. To determine trends and disparities in maternal health care and FP service utilization among women in ethnic minority communities, and identify determinants of maternal health care and FP service utilization and non-utilization.	<ol style="list-style-type: none"> 1. Maternal level of education 2. Maternal age at delivery 3. Socioeconomic status 4. Employment status/source of household income 5. Geographic area 6. Marital status 7. Ethnicity 8. Health insurance coverage 9. Distance to commune health centre 10. Quality of commune health centre <ol style="list-style-type: none"> a. women's satisfaction with healthcare services (questionnaire) b. health facility checklist score 	Mostly demand, but indicator #10 has to do with the supply side	<p>Quantitative household questionnaire (Appendix E) Health centre Assessment Checklist (Appendix H)</p>	<p>Women of reproductive age (15-49 y), who have delivered in the last 24 months Health centre staff</p>

Specific aims (as outlined in TOR)	Indicators measured	Supply or demand side?	Methodology/data collection tool	Target informants
<p>5. To explore traditional customs, cultural beliefs and practices that shape the environment for service delivery and influence women's health seeking behaviours, utilization and non-utilization of maternal health care and FP services.</p>	Qualitative narratives	Demand	Interviews and focus group discussions (Appendix G)	Women of reproductive age (utilisers and non-utilisers); healthcare providers (facility and community levels); village leaders
<p>6. To explore opportunities for the primary health care system to provide culturally appropriate services, adaptive to the local contexts and responsive to the needs of local people.</p>				
<p>7. To provide recommendations for programmes that support the provision of culturally appropriate maternal health and FP services for women in these specific communes.</p>				

Aims 4 & 5 will follow analysis of data from all sources. Following a concurrent mix methods design, qualitative and quantitative data will be integrated during the analysis and interpretation phases. Data sets will be converged to develop an overall interpretation. Qualitative findings are expected to provide more nuanced contextual information to compliment quantitative results.

CONFIDENTIAL: For research purposes only**RESEARCH CONSENT FORM**

Household Survey/ Questionnaire for Women

Study Title: EXPLORING BARRIERS TO ACCESSING MATERNAL AND FAMILY PLANNING SERVICES IN ETHNIC MINORITY COMMUNITIES IN VIETNAM Good morning/afternoon,

My name is _____. I am working to carry out a study by the University of Toronto, in Canada, and Mekong Development Research Institute in Vietnam.

The study is commissioned by the Ministry of Health.

Introduction:

In this study, we want to learn about your use of health services during pregnancy, childbirth and after your baby is born. We also want to learn more about family planning and contraception in your area. We want to know how you feel about the health services in your community. This information will help to improve the health system in the future.

Conditions for participating:

It is completely up to you to decide whether or not to participate. Your decision will not affect any current or future participation in research or programmes. You should not feel pressured to participate in the research. Deciding not to participate will not impact your healthcare in any way.

Today's survey will take about 10 minutes to complete. We will be using a tablet device to ask you questions and record your answers.

Risks and Benefits:

The risk of this research affecting your privacy and confidentiality is low. Some questions in the survey might make you feel shy, embarrassed or uncomfortable. You do not have to answer questions that make you feel uncomfortable. We will keep the information you share with us private.

There is no direct personal benefit for joining this study. But information you share may help improve community health services.

Access to information, confidentiality, and publication of results:

Only members of the research team will see the information you share. All data will be kept private. Your participation means that you allow the information to be used for research purposes. Your name, and any other identifying information, will not be included in reports or presentations. Researchers will share results of final analysis with UNFPA and the Ministry of Health.

We will publish our findings in research articles and discuss them at conference meetings.

If you have questions about your rights as a participant, you can contact (name of point of contact)

at the Ministry of Health at (phone number). You may keep a signed copy of this form if you wish.

Do you have any questions about the research study?

Signatures:

1) Data Collector:

I certify that the volunteer named _____ has been:

- given all the above information about the research project.
- told the purpose of the research.
- told what will happen in the research.
- told the risks involved in being in the research
- told that she can take a signed copy of this consent form if she wishes.
- given time to ask questions about the research project.
- and that I have answered her questions to the best of my ability.

I further certify that I have read this letter to the person named above.

Data Collector's Signature _____

Date _____

2) Research Participant:

To be read aloud by interviewer:

By signing this form, you agree that:

- 1) The researcher has explained the study and answered all of your questions.
- 2) The researcher has explained the possible risks and benefits of this study.
- 3) You understand that you have the right not to take part in the study and to stop at any time.
- 4) You are free now, and in the future, to ask questions about the study.
- 5) Your answers will be kept private.
- 6) You understand that no information about who you are will be published or shared with others.

Participant's ID Number (Printed by researcher): _____

Do you wish to participate in a survey today?

Yes No

Signature or Thumb Print of Participant: _____

Household Questionnaire for Women¹

Interviewer's Name	DD.MM.YYYY	Start time: End time:	Participant Code:
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COMMUNE CHARACTERISTICS (CC)

CC1. Province Code	CC2. District Code	CC3. Com- mune Code	CC4. Village name
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FAMILY/HOUSEHOLD CHARACTERISTICS (FC)

FC1. How old are you? <i>Probe: How old were you at your last birthday?</i>	Yrs.
FC2. Which ethnicity are you?	
FC3. Have you ever been married? If yes, which year did you get married? <i>(Only consider the most recent marriage)</i>	Year _____ Have not married..... 0
FC4. How many people are there in your household?people
FC5. Have you ever attended school?	Yes..... 1 No..... 0

¹ Women who gave birth during the last two years.

	Grade 1 1 Grade 2 2 Grade 3 3 Grade 4 4 Grade 5 5 Grade 6 6 Grade 7 7 Grade 8 8 Grade 9 9 Grade 10 10 Grade 11 11 Grade 12 12 Technical secondary school/College.... 13 University 14 Post-graduate 15
FC7. What is your main occupation?	Farmer 1 Worker 2 Civil servant 3 Business 4 Housewife 5 Day laborer 6 Retired 7 Unemployed 8 Other (specify:.....) 9
FC8. What is your husband's main occupation?	Do not have a husband (divorced, widow, single-mum) 1 Farmer... 2 Worker 3 Servant civil 4 Business 5 Housewife 6 Day laborer 7 Retired 8 Unemployed 9 Other (specify:.....) 10
FC9. Does your household have: <i>(only count working assets and of household's ownership, do not count assets borrowed/rented)</i>	
[A] Electricity	Yes 1 No 0
[B] A radio?	Yes 1 No 0
[C] A television	Yes 1 No 0
[D] Fridge?	Yes 1 No 0
[E] Internet?	Yes 1 No 0

[F] A mobile phone?	Yes..... 1 No..... 0
If yes, which type of mobile phone?	Basic mobile phone 1 Smart phone, connected to Internet ..2
[G] A bicycle?	Yes..... 1 No..... 0
[H] A motorcycle or scooter?	Yes..... 1 No..... 0
[I] Bed?	Yes..... 1 No..... 0
[J] Cabinet?	Yes..... 1 No..... 0
[K] Buffalo/Cow/Horse?	Yes..... 1 No..... 0
[L] A latrine	Yes..... 1 No..... 0
FC10. Please tell me what is your family's main water source for drinking/cooking purposes? 1 Drilled well water 2 Dug well water 3 Filtered water piped from mountainous ponds..... 4 Rain water 5 Jar water (xitec, bottle or jug..... 6 River/stream/pond/lake water 7 Other (specify.....). 8
FC11. What is your household's economic status?	Poor 1 Near-poor..... 2 Non-poor..... 3
FC12. How many children do you have? (not counting adopted, dead)	_____ children
FC13. What date is your youngest child born on?	DD.MM.YYYY_____
FC14. What is her/his name?	_____

ANTENATAL CARE COVERAGE AND CONTENT (AC)	
AC1. Did you go for antenatal care during your last pregnancy?	Yes..... 1 No.....0>>AC7
AC2. If yes, who conducted your ANC during the last pregnancy? Probe: anyone else?	Professional health workers (<i>Doctor, female midwife, nurse, assistant doctor</i>) ... 1 Village birth attendant 2 Village health worker 3 Traditional birth attendant 4
AC3. Where did you go for ANC? Probe: Anywhere else? (Select 2 most frequent/important places)	Home 1 Public sector Hospital at district level and upper level 2 District health facility/clinic..... 3 Commune health facility/clinic 4 Private sector Private hospital..... 5 Private clinic 6 Private maternity home 7 Other (specify) 8
AC4. After how many weeks or months of pregnancy did you go to your first ANC? <i>Record the answer as respondent provided</i>	_____ weeks _____ months Do not know 88
AC5. How many times did you receive antenatal care (ANC) during your most recent pregnancy?(<i>Probe to identify the number of times antenatal care was received. If a range is given, record the minimum number of times antenatal care received</i>) In which,	Number of times _____ Don't Know 88
[A] How many times in the first 3 months?times Don't Know88
[B] How many times in the middle 3 months?times Don't Know88
[C] How many times in the last 3 months?times Don't Know88
AC6.As part of your antenatal care during your last pregnancy, were any of the following done?	
[A] Did you have a general clinical examination?	Yes..... 1 No..... 0 DK.....88
[B] Did you receive advice on dangerous signals during pregnancy, signals to prepare for labor, referral to upper level health centers in cases of complications during pregnancy, delivery and postnatal?	Yes..... 1 No..... 0 DK.....88
[C] Did you receive advice on nutrition and hygiene during pregnancy?	Yes..... 1 No..... 0 DK.....88
[D] Did you give a blood sample?	Yes..... 1 No..... 0 DK.....88

[E] Was your baby's due date estimated?	Yes 1 No..... 0 DK..... 88
[F] Was your blood pressure measured?	Yes 1 No..... 0 DK..... 88
[G] Was your weight/height measured?	Yes 1 No..... 0 DK..... 88
[H] Did you give a urine sample?	Yes 1 No..... 0 DK..... 88
AC7. Did you get a tetanus injection during your last pregnancy? (Probe: did you receive any injection in the arm or shoulder to prevent the baby from getting tetanus, that is convulsions after birth?) If yes, how many injections did you receive?	Yes 1 No..... 0 DK..... 88 1 time 1 2 times 2 3 or more 3
AC8. Did you take iron/folic acid supplementation during your last pregnancy?	Yes 1 No..... 0 DK..... 88
AC9. Did you take any medicine in order to prevent you from getting malaria during your last pregnancy?	Yes 1 No..... 0 DK..... 88
AC10. If you did not go for antenatal care during pregnancy, what were the reasons? If AC1=0 or If AC1=1 and AC2=4 ask AC10 (Please select only 1 main reason)	Not necessary 1 Health facility too far away 2 Could not afford to go to health facilities 3 Husband/partner insisted not to go.... 4 Mother-in-law insisted not to go..... 5 No transportation to go to health facility..... 6 Fear of inability to communicate with health staff 7 Bad attitude of health staff 8 Traditional practices/customs (please specify) 9 Others (please specify) 10
AC11. Overall, on a scale of 1 to 10, please rate your satisfaction with the antenatal care you received during your last pregnancy? (In which, 10 is highest and 1 is lowest) (Select 1 option only) Don't ask if they did not receive antenatal care (AC1=0)	

TRAINED ATTENDANT AT DELIVERY (SA)	
SA1. Where did you deliver your last baby?	Home Respondent's home.....1 Other home.....2 Field/forest/tent.....3 Public sector Hospital at district level or upper level.....4 District health facility/clinic.....5 Commune health facility/clinic...6 Private sector Private hospital.....7 Private clinic.....8 Private maternity home.....9 Transit/on way to health centre.....10>>SA3 Other (specify).....11
SA2. If you did not give birth at health facility, what were the reasons? If SA1 = 1, 2, 3 – ask this question (Please select only 1 main reason)	I preferred to deliver at home.....1 Health facility too far away.....2 Could not afford to go to health facilities3 Husband/partner insisted not to go.....4 Mother-in-law insisted not to go.....5 No transportation to go to health facility....6 Fear of inability to communicate with health staff.....7 Bad attitude of health staff.....8 Village health worker/village midwife came to my house to assist.....9 Commune health staff came to my house to assist.....10 Traditional practices/customs (please specify)11 Others (please specify)...12
SA3. Who assisted with your last delivery? Probe: Anyone else? Circle all.	Nobody..... 1 Professional health workers (Doctor, midwife, nurse, assistant doctor)...2 Village birth attendant.....3 Village health worker.....4 Traditional birth attendant.....5 Husband/Partner.....6 Mother or mother-in-law.....7 Relatives/Friends.....8 Other (specify):.....9
SA4. How much did you actual pay for the last delivery? (Including hospitalization, travelling to health centers, medicine cost, meals, accompanied family members, thank-you money to doctors/nurses/etc, not including costs covered by health insurance)	

SA5. Overall, on a scale of 1 to 10, please rate your satisfaction with the care you received during your last delivery at [places at SA1]? (10 is highest and 1 is lowest) (Select 1 option only) If SA3=1, don't ask SA5 If SA3=2-9 ask SA5	1 2 3 4 5 6 7 8 9 10
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POSTNATAL HEALTH CHECKS (PH)	
PH1. Now I would like to ask a question about what happened in the hours and days after you gave birth. Did your baby(ies) receive postnatal care (PNC) from a health professional after birth? (For example, someone checked the baby's cord, feed vitamin K)	Yes 1 No..... 0 DK..... 88
PH2. If PH1=1, who conducted postnatal check? Probe: Anyone else? Circle all.	Professional health workers (Doctor, female midwife, nurse, assistant doctor)..... 1 Village birth attendant.....2 Village health worker.....3 Traditional birth attendant.....4
PH3. Did postnatal check happen during your stay in health facility or at home?	At home.....1 Public sector Hospital at district level or upper level.....2 District health facility/clinic.....3 Commune health facility/clinic...4 Private sector Private hospital.....5 Private clinic.....6 Private maternity home.....7 Other (specify).....8
PH4. How long after delivery did that check happen? (If less than one day, record hours. If less than one week, record days. Otherwise, record weeks)	Hours1 _____ Days.....2 _____ Weeks.....3 _____ DK.....88
PH5. Did postnatal health check happen only once or more times?	Once.....1 More than one.....2
PH6. Did you have health insurance at the time of the last pregnancy?	Yes 1 No..... 0
[A] If yes, did you use it for ANC?	
[B] If yes, did you use it for delivery?	Yes1 No.....0 DK..... 88
[C] If yes, did you use it for postnatal health check?	Yes1 No.....0 DK..... 88

CONTRACEPTIVE USE (CA)	
CA1. Are you planning to get pregnant currently?	Yes 1 No 0
CA2. If CA1=0, What do you and your partner do to delay or avoid getting pregnant? (select only one response).	Female sterilization..... 1 Male sterilization 2 IUD 3 Injectables..... 4 Implants..... 5 Daily pill 6 Morning - after pill 7 Male condom..... 8 Female condom 9 Diaphragm..... 10 Foam / Jelly..... 11 Lactational amenorrhoea method..... 12 Periodic abstinence /Rhythm..... 13 Withdrawal..... 14 Nothing..... 15 Other (specify) 16
CA3. When you got pregnant the last time, did you want to get pregnant at that time?	Yes 1 No..... 0
CA4. Have you ever aborted? If yes, how many times?	Yes 1 No..... 0 Number of times.....
CA5. If you don't use any modern contraceptive method, what are the reasons? If CA3=1-11, don't ask CA6 If CA3=12-15, ask CA6	Not necessary 1 Do not have information on the family planning/ contraceptive method..... 2 Could not come to health facility as house is too far away from health facility..... 3 Fear side effects from contraceptive method 4 Fear of inability to communicate with health staff..... 5 Unavailability of CA 6 Religious reasons..... 7 Traditional customs 8 Others (please specify) 9
CA6. Overall, how satisfied are you with your current contraceptive method on a scale from 1 to 10? (In which, 10 is highest and 1 is lowest) (Select 1 option only) Ask if CA1 = 0 Don't ask if CA1=1	1 2 3 4 5 6 7 8 9 10

CA7. In the future, would you like to have a/another child or not?	Have a/another child..... 1 No more/none..... 2 Says she can not get pregnant 3 Not decided/DK 4
CA8. In the future, would your family like to have a/ another child or not?	Have a/another child..... 1 No more/none..... 2 Says she can not get pregnant 3 Not decided/DK..... 4

Thank you very much for your time!

Health Facility Assessment Checklist

Administrative Information:

Name:.....		Health Facility Name:
Role:		
Date: ____ / ____ / ____ (day) (month) (year)	Commune Name:	Checked by (Name of enumerator:

HEALTH FACILITY CHECKLIST	
For each question, write the code number for the appropriate answer in the far right column.	
1. Does this facility have overnight or in-patient beds?	Yes 1 No 2
b) If yes, how many?	
2. Is there 24-hour staff coverage at this facility?	Yes 1 No 2
3. Does this facility have a working phone or shortwave radio that is available at all times client services are offered?	Yes, landline 1 Yes, HW cell phone only 2 No 3
4. Does this facility have a functional ambulance or other vehicle on site for emergency transport of clients?	Yes, with fuel 1 Vehicle, but no fuel 2 No vehicle 3
5. Does this facility have electricity functioning now? COUNT AS "YES, OBSERVED" IF ELECTRICITY IS OBVIOUSLY RUNNING OR IF YOU CAN TURN ON AN ELECTRICAL SWITCH AND GET ELECTRICITY.	Yes, observed 1 No 2
6. Does this facility have a back-up or standby generator for electricity?	Yes 1 No 2
7. Is there a toilet or latrine that is available for clients to use? THIS TOILET/LATRINE MUST BE FOR THE USE OF CLIENTS, NOT JUST HEALTH FACILITY STAFF	Yes 1 No 2
1. ASK TO SEE THE TOILET OR LATRINE AND INDICATE THE TYPE.	VIP latrine or Flush toilet ----- 1 Traditional or open pit latrine ----- 2 Bucket ----- 3 No facilities, use bush or field ----- 4 Other _____ (specify)

9. Does the health facility have water available today?	Yes 1 No 2
10. Does this health facility have running water? CHECK TAPS.	Yes 1 No 2
11. What is the source of water in this health facility? IF THERE ARE MULTIPLE WATER SOURCES, PLEASE SELECT THE ONE RESPONSE THAT CORRESPONDS TO THE MOST COMMONLY USED WATER SOURCE.	Piped into facility 1 Piped onto facility grounds 2 Public standpipe 3 Tube well/bore hole on grounds 4 Protected dug well on grounds 5 Bottled water 6 Rain water or surface water 7 Other 8
12. Does this facility have a refrigerator for storing vac- cines?	Yes 1 No 2
13. Is the refrigerator functioning?	Yes 1 No 2
14. Does this facility have oxytocin in stock today?	Yes 1 No 2
15. Does this facility have misoprostol in stock today?	Yes 1 No 2
16. Does the facility have tetanus toxoid vaccines in stock today?	Yes 1 No 2
17. Does the facility have BCG vaccines in stock today?	Yes 1 No 2
18. Does the facility have OPV (Polio) vaccines in stock today?	Yes 1 No 2
19. Does the facility have Measles or MMR vaccines in stock today?	Yes 1 No 2
20. Does the facility have the DPT or Pentavalent vaccines in stock today?	Yes 1 No 2
21. Does the facility have the Hepatitis B vaccines in stock today?	Yes 1 No 2
22. Does the facility have Vitamin K1 in stock today?	Yes 1 No 2
23. Does the facility have latex gloves available today?	Yes 1 No 2
24. Does the facility have syringes in sterile packets in stock today?	Yes 1 No 2
25. Does the facility have any 19- or 21-gauge needles in sterile packets in stock today? (may be with syringe)	Yes 1 No 2
26. Does the facility have eclampsia (MgSO4) medication in stock today?	Yes 1 No 2
27. Does the facility have therapeutic antibiotics in stock today? (beta-lactamin, macrolide or polypeptide)	Yes 1 No 2

28. Does this facility have a functioning neonatal resuscitation device (tube and mask or bag and mask)?	Yes 1 No 2
29. Does this facility have a functioning infant scale? IF THERE IS A SCALE PRESENT BUT IT IS NOT FUNCTIONAL, SELECT "NO".	Yes 1 No 2
30. Does this facility have a functioning adult scale? IF THERE IS A SCALE PRESENT BUT IT IS NOT FUNCTIONAL, SELECT "NO".	Yes 1 No 2
31. Does this facility have delivery kits in stock? Components: - Straight-toothed forceps - Straight scissors - Metal box with cover - Long sterilization forceps	Yes 1 No 2
32. How many delivery kits are in stock? COUNT THE NUMBER OF DELIVERY KITS.	_____ delivery kits
33. How many clean delivery kits are in stock? COUNT THE NUMBER OF DELIVERY KITS.	_____ clean delivery kits
34. Does the delivery room have a heater or a lamp of at least 150W to keep the baby warm?	Yes 1 No 2
35. Does the facility have malaria-testing kits in stock today?	Yes 1 No 2
36. Does the facility have HIV-testing kits in stock today?	Yes 1 No 2
37. Does the facility have syphilis testing kits in stock today?	Yes 1 No 2
38. Does this facility have ARVs in stock today?	Yes 1 No 2
39. Does the facility have malaria prophylaxis in stock today?	Yes 1 No 2
40. Does the facility have Iron/folic acid supplements in stock today?	Yes 1 No 2
41. Does the facility have vouchers for insecticide-treated bed nets (ITNs) in stock today?	Yes 1 No 2
42. Does the facility have a functioning blood pressure machine?	Yes 1 No 2
43. Does the facility have chlorine-based disinfectant (cleaning solution) available for use in the delivery/surgical room?	Yes 1 No 2
44. Does the facility have a functioning autoclave?	Yes 1 No 2
45. Does the facility have a functioning heating sterilizer?	Yes 1 No 2

46. Does the facility have a private delivery room (must be separate from other clinic areas)?	Yes 1 No 2
If not, which room is combined with delivery room?	Gynecological exam room 1 Family planning techniques 2 Other (specify) 3
47. How many beds are present in the delivery area/room? beds
48. Does this facility have a separate post-delivery room where mothers and infants can rest following delivery?	Yes 1 No 2
49. ASK FACILITY STAFF: On average, how long are mothers permitted to stay at the facility following delivery?	_____ hours / day(s) (circle one)
50. Does the facility have the following contraceptives in stock today: (circle yes/no for each)	IUD Y / N Combined oral contraceptive pills.....Y / N Progestin only contraceptive pillsY / N Injectable contraceptive (DMPA)..... Y / N Other _____
STAFFING OF HEALTH FACILITY	
51. Total number of staff members at this facility?	
52. Number of physicians among staff?	
53. How many days per week does each physician work in the health facility? a) _____ days b) _____ days	
54. Number of clinical officers among staff?	
55. How many days per week does each clinical officer work in the health facility? a) _____ days b) _____ days	
56. Number of midwives or assistant doctors among staff?	
57. How many days per week does each midwife or assistant doctor work in the health facility? All week. No need this question a) _____ days b) _____ days	
58. Number of MCH heads among staff?	
59. How many days per week does each MCH head work in the health facility? a) _____ days b) _____ days	
60. Number of nurses among staff?	
61. How many days per week does each nurse work in the health facility? a) _____ days b) _____ days c) _____ days d) _____ days	
62. Number of midwives among staff?	

63. How many days per week does each midwife work in the health facility? a) _____ days b) _____ days c) _____ days d) _____ days	
64. Are staff trained in providing emergency obstetric care services? If yes, how many staff are trained?	Yes No 2 Number
65. Are staff trained in "Trained birth attendant" and "Early essential newborn care"? If yes, how many staff are trained?	Yes No 2 Number
66. Do staff members speak a local ethnic minority language? If yes, how many staff speak a local language?	
67. Is the health centre organized to meet the needs of ethnic minority women? If yes, please explain:	Yes 1 No 2
68. What is the literacy rate for adult men in this commune?	____ % Don't Know--88 ____ Number
69. What is the literacy rate for adult women in this commune?	____ % Don't Know--88
70. What is the main mode of transport (check only one) in this commune?	Bike _____ 1 Local taxi ____ 2 Car _____ 3 Bus _____ 4
71. How far is the health centre from the nearest district hospital?	____ km
72. How long does it take from the health centre to the hospital?	____ minutes ____ hours
73. What is the distance from the most remote village to the commune health centre?	____ km
74. How long does it take to get from the most remote village to the commune health centre?	____ minutes ____ hours
75. What is the distance from the commune to the main road?	____ km
76. What is the average level of education in the commune?	Preschool 0 Primary 1 Secondary 2 Higher 3
77. What is the main type of employment?	
78. What percentage of the population are poor households?	
79. What percentage of households have health insurance coverage?	

WOMEN'S GROUPS FGDs

ADMINISTRATIVE INFORMATION:

Name of FGD facilitator:	Province ID: -----
FGD facilitator signature:	
Date of survey: ----- / ----- / ----- (day / month / year)	Participant ID: -----

FGD start time:

____ : ____

(hour) (min)

Before we start, I would like to remind you that there are no right or wrong answers in this discussion. We are interested in knowing what each of you think, so please feel free to share your point of view, regardless of whether you agree or disagree with what you hear. It is very important that we hear all your opinions.

You probably prefer that your comments not be repeated to people outside of this group. Please treat others in the group as you want to be treated by not telling anyone about what you hear in this discussion today.

Let's start by going around the circle and having each person introduce herself. (Members of the discussion group should also introduce themselves, their age, level of education, main occupation, how many children they have, when was their last delivery).

Now let's recall the time when you carried your most recent baby. Imagine there are 3 stages: Antenatal care, delivery, postnatal health care. We want you to discuss the factors for each stage of your maternity.

Guide: Asking all questions for each stage before moving on to the next. Facilitator writes down in each column the corresponding answer of participants and makes a mind-map when necessary.

Factors	Antenatal care	Delivery	Postnatal health care
Question 1-5, ask in vertical direction			
1. Places that women go to for...? • Reasons that you chose that place? • Is that place your place of choice? If not, what are the reasons you cannot go to the place of choice?			
2. Who made the decision to go to this place? • Are you happy with that? If not, why? • If you did not make the decision, please tell us why?			
3. What are some reasons women in your commune deliver at home? NOT deliver at home?			
4. How many times did you and/or your baby receive care? If yes, who provided it? • Please describe your experience with the service provider? Did they treat you kindly? Why or why not? • If someone receives the care from a health facility and someone does not, what are the reasons? What are the difficulties?			
5. Please evaluate the quality of service you receive?			
Question 6-11 ask in horizontal direction			
6. Do you have and use a health insurance card? If not, what are the reasons?			
7. What were the costs you paid for each stage or you think you would have to pay for each stage (if not using service)? Do you think this is reasonable?			
Is it a constraint for you to use health care services?			

<p>8. What % of the cost was covered by health insurance? Why were you not covered at the maximum level? (referred to upper level of health system, private health facility, VIP service, practices/medicines not in the insured list)?</p> <p>Did you have to pay extra to get a higher quality of service? How many?</p>	List out all answers, circle the mix and max values.	List out all answers, circle the mix and max values.	List out all answers, circle the mix and max values.
<p>9. From which source did you and women in the commune receive information on health care for each stage? (Population collaborators, TV, internet, etc.)</p> <p>• Do you feel information provided was enough? What type of information would you prefer to have more of?</p>			
<p>10. Please share any customs that your community have? How do you think it impacts on the mother and the babies' health?</p>			
<p>11. Please list your difficulties in each stage of your maternity?(Hint: List out all barriers/difficulties of respondents. Ask each of them to select the top 3 difficulties.</p>	<p>Probe:</p> <ul style="list-style-type: none"> • Awareness • Information constraint • Financial status • Family (husband, mother in law) • Community (customs, religion) • Health centers (facility, staff qualification, service quality) • Others (specify) <p>Circle the top 3 difficulties selected by the group</p>	<p>Probe:</p> <ul style="list-style-type: none"> • Awareness • Information constraint • Financial status • Family (husband, mother in law) • Community (customs, religion) • Health centers (facility, staff qualification, service quality) • Others (specify) <p>Circle the top 3 difficulties selected by the group</p>	<p>Probe:</p> <ul style="list-style-type: none"> • Awareness • Information constraint • Financial status • Family (husband, mother in law) • Community (customs, religion) • Health centers (facility, staff qualification, service quality) • Others (specify) <p>Circle the top 3 difficulties selected by the group</p>
<p>12. If you are pregnant again, would you continue to use the service at [place in question 1] or not? Why?</p>			
<p>13. What are your wishes/expectations from each stage? Your suggestions to overcome these barriers/difficulties?</p>	Probing based upon difficulties listed.	Probing based upon difficulties listed.	Probing based upon difficulties listed.

Main Questions	Probes	Key responses
1. In this community, which family member makes the decisions about the number of children in the family? 2. What are the factors that enable this member to make decisions about the number of children in the family?		
3. According to you, what are the reasons for: having a lot of children? Having few children?		
4. According to you, who should take the responsibility for having children, not having children, and child spacing (Men? Women? Etc.)? Please explain.		
5. What family planning/contraceptive methods are women in the community using mostly? Why?		
6. What methods do they prefer to use? Are the preferred methods available here? What are the barriers/difficulties in accessing these methods (cost, availability, instruction)?		
8. Where/from whom do they obtain information about these methods?		
9. What are advantages of the methods that we have discussed (cost, availability, effectiveness, ease of use,etc) ? What are disadvantages of the methods (unexpected pregnancy, side effects, attitude of husband/partner,...)? Why? How did you solve the bad side effects of contraceptive methods?		
10. Please share your desires to improve women's access to contraceptives.	Probe: availability, consultation, etc	

Stephen Lye (PhD) is the Executive Director of the Fraser Mustard Institute for Human Development at the University of Toronto and Professor of Obstetrics and Gynecology, Physiology and Medicine. Dr. Lye is a recognized leader in the field of women and infants' health, and he has pioneered research into the mechanisms underlying preterm birth. He has published over 180 research papers on pregnancy and maternal-child health and has led numerous large-scale, peer-review funded, research programs at the local, national and international levels. Dr. Lye has established international research consortia focused on identifying interactions between an individual's genetic make-up and their environment during the first 2000 days of life. Dr. Lye recently conducted a review of interventions in low- and middle-income countries (LMICs) relevant to the vision of an integrated model of service delivery; the review included a very broad range of published research and policy studies, spanning health; nutrition; water, sanitation and hygiene (WASH); social protection; and education.

Kerrie Proulx (PhD) is an early childhood development specialist, with more than 8 years of experience in research design and implementation in international development settings. Dr. Proulx is currently a consultant currently working at the Global Partnership for Education, and has recently served as the technical leader on several research studies, including but not limited to the impact evaluation of the child-to-child school readiness program in Ethiopia (UNICEF), an evaluation to assess the effectiveness of a disaster risk reduction program on child outcomes in Indonesia (ChildFund International), and a study to assess parental caregiving attitudes and practices in Vanuatu and Solomon Islands (UNICEF). Prior to that, she worked at the Aga Khan Foundation where she managed research programs in Bangladesh and provided technical support and coaching to in-country researchers. She received a doctorate in education from the University of Warwick, England.

Kristy Hackett is a Research Associate at the Centre for Global Child Health at the Hospital for Sick Children in Toronto, where she provides technical expertise and conducts monitoring and evaluation research on numerous Canadian-funded maternal, newborn, and child health (MNCH) projects across Sub-Saharan Africa and South Asia. Her recent doctoral work investigated whether low-cost mobile health (mHealth) technologies can strengthen health system support for community health workers, and whether prenatal smartphone-assisted registration, counselling, and clinical referral of pregnant women improves uptake of maternal healthcare services. Kristy's previous research explored infant feeding and care practices amongst adolescent women in rural Bangladesh. She has led or contributed in various capacities to MNCH projects based in sub-Saharan Africa, South Asia, and North America on topics such as infant feeding and nutrition, adolescent health, access to reproductive health services, health systems strengthening, and human resources for health.

Craig Burkett is a Lecturer in the Department of Statistical Sciences at the University of Toronto. His interests include applied data analysis, data science, visualization and statistical consulting. Craig also runs his own consulting business where he specializes in data analysis and statistics consulting.

DISCLAIMER: The views and opinions expressed in this report are those of the researchers and do not necessarily reflect the views and policies of the Ministry of Health and UNFPA.



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