



End-line Survey Report

Maternal and Child Health Project in Binh Dinh Province

2004 – 2008

EXECUTIVE SUMMARY

This report documents and analyses the results of an end-line survey of the Maternal and Child Health (MCH) project in Binh Dinh province (VIE/03/P20) for the period of 2004-2008. The project was implemented by the Binh Dinh People's Committee, under support of the UNFPA and financial support of the NZAID for a total of US\$3 millions. The project aims to contribute to the attainment of a higher quality of life for women and children in Binh Dinh, especially those who live in mountainous and remote areas, adolescents and ethnic minority with a special focus on improving the quality and utilization of MCH services provided by health care networks.

A baseline survey was conducted in 2003 as a need assessment to inform the project design. By 2006 the project was reviewed that enabled the adjustment of project plan. This end-line survey was conducted in August 2008 to measure changes during the project implementation, assessing the achievement of goal, objective and output indicators over the period 2004-2008. The end-line survey was designed conducted by the Research and Training Center for Community Development (RTCCD) with support of health staff and teachers at the provincial Medical College.

The end-line survey included two sub-surveys: service provider sub-survey and end-user sub-survey. In the *service provider sub-survey*, about 90 health workers at provincial hospital, 4 district hospitals (2 in delta and 2 in mountainous area) and 30 communes were interviewed face to faced, observed behaviours and performance using structured questionnaires and checklists. They were health workers of obstetrics department, MCH/family planning unit and midwives at commune health clinics. In addition, inventory of equipment and infrastructure of health facilities was also collected. In *the end-user sub-survey*, in total 595 women having children less than 24 months aged 15-49, 272 husbands of those women and 592 adolescents aged 15-19 were interviewed face to faced using structured questionnaires. Half of those were living in mountainous communes. Those informants were randomly selected from eligible population at 30 communes (15 delta and 15 mountainous) which was also randomly selected.

Instruments were questionnaires which were applied at the baseline survey in 2003 to enable comparison. Some additional questions were added. Data from the service provider sub-survey was analysed against the National Standards and Guidelines for Reproductive Health Care Services (NS) to obtain percentage of HWs meeting 100% requirement of NS. Then those figures were compared with the baseline proxy. Data from the end-user sub-survey was directly compared with baseline data, matching group of informants. The end-line survey came to the following findings.

Health Outcomes

- Health outcomes of population improved. Children's mortality ratio decreased. Women's abortion rate decreased between the period 2003 and 2007.

	Baseline	End-line
Infant mortality ratio in the Binh Dinh province	40‰	14‰
Child mortality ratio in the Binh Dinh province	39.6‰	20‰
Neonatal mortality ratio at provincial hospital	33.4‰	16.8‰
Abortion rate among married women aged 15 - 49	10.3%	6.6%

Behaviours and Knowledge of Women and Men

- Pregnant women had more protective behaviours to ensure safe maternity and delivery. Figures in 2008 improved statistically significant in comparison to 2003.
- However, achievement in mountainous area is still far behind the delta area.

	Baseline Combined	End-line Combined	End-line Delta	End-line Mountainous
Got at least 3 ANC check-ups	74.8%	93.1%	94%	92%
No ANC at all	2.9%	0.8%	0.3%	1.37%
Got full tetanus vaccination	97%	99%	99%	99%
Delivered at public health facilities	59.5%	89.7	97%	82%
Deliveries helped by trained HWs	86.7%	92.3%	99%	85%
Get counselling on contraceptives after deliveries by HWs	49%	77%	79%	74.6%
Visited by HWs in 42 days after birth	N/A	82.3%	86.1%	78.4%

- Women belonging to ethnic minority groups did not access to public health facilities for safe maternity and delivery as much as most of Vietnamese Kinh people.

	End-line Kinh	End-line Ethnic minority
Got at least 3 ANC check-ups	94%	89%
No ANC at all	0.2%	3.9%
Got full tetanus vaccination	98%	95%
Delivered at public health facilities	97.4%	53.9%
Home deliveries	0.8%	46.2%
Deliveries helped by trained HWs	100%	57.8%
Get counselling on contraceptives after deliveries by HWs	77%	77%
Visited by HWs in 42 days after birth	84%	74%

- Both men and women had increased understandings of danger symptoms during pregnancy, labour and post-partum delivery. They had better understandings of where to seek for safe abortion, of correct treatment for sexual transmitted diseases and contraceptives to use after delivery.
- The rate of men prepared things for his wife's delivery (72.9% baseline vs. 85.7% end-line) and escorted wives to health facilities for delivery increased (62.9% vs 94.4%).

Adolescent Reproductive Health

There has been changes in adolescents' knowledge on some indicators, but not consistent for all. There is no evidence of adolescent's behaviour changed as there is no baseline data comparison.

- There was no change in the adolescent abortion rate, consistently staying at around 2% (2 abortions per 100 live births).
- It appears that adolescents at end-line had more understanding about condoms (70% baseline vs. 90.7% end-line) and emergency pills (0% vs. 17.4%).
- Eight out of every ten adolescents would advise their friends to go to public health facilities for abortion services. No baseline data of this figure available.
- 14% of adolescents in the community knew about the existing of Youth Friendly Corner (YFC) and 19% knew about the Youth Counselling Centre (YCC). 3.7% adolescents in the communities (3% delta and 5% mountainous) ever called to or visited YCC for services. 11.5% adolescents (13% delta and 10% mountainous area) were officially introduced of YFC by their school teachers, Youth Union, peers and health counsellors
- There was no consistent trend of increases or decreases in adolescents' knowledge between the baseline and end-line surveys about RTIs and STDs. So far 8 out of 10 adolescents know that having sex with multi partners without using condoms would lead to STDs or HIV/AIDS infection which was similar to baseline survey.

- The percentage of adolescents who had correct understanding of treatment following detection of RTIs/STDs was much higher in the end-line survey (26.4% baseline vs. 62.4% end-line and 64% delta end-line vs. 60% in mountainous end-line)
- 95% interviewed adolescents in mountainous and 100% in delta districts reported that they have heard of HIV/AIDS. Their knowledge of transmission routes did not statistically change in comparison to the baseline

Health Service Infrastructure and Structure

- There have been significant changes in infrastructure and structure of health services from the provincial to commune level.

	Baseline	End-line
Commune Health Clinic (CHC) had 6 function rooms	3%	27%
Had working hour board to inform clients	0%	91%
Had 10 client rights hanging on the wall	3%	100%
Had clean toilets for client use	50%	89%
Had waste bins at client waiting area	25%	89%
Had water for hand wash after toilet at client area	47%	94%
Had IEC materials at the waiting area	42%	91%

- Clients reported health facilities to be leaner. Anti-infection control protocols were applied and performance is supervised.
- All CHCs had 7 essential sets for reproductive health care. However, only 53% CHCs had deliveries in 2007. The rate of CHCs having deliveries increased annually.
- Number of MCH client admission increased quickly annually at provincial hospital, district hospitals and CHCs.

Health Workers' Knowledge and Behaviours

- There have been significant changes in HWs' knowledge of obstetric care. More HWs had correct knowledge, meeting 100% NS.
- There is significant disparity in knowledge of HWs in delta in comparison to those in mountainous area.

<i>Knowledge meeting 100% NS</i>	Baseline	End-line	End-line	End-line
	Combine d	Combine d	Delta	Mountainous
General examination in ANC	8.4%	35%	50%	12.5%
Obstetrics examination in ANC	69.5%	98.6%	98%	100%
Counselling at ANC	15.8%	39.5%	49%	25%
Normal neonatal care	1.1%	25.9%	37%	9%
Mother care within 24 hours	68%	80%	92%	63%
Newborn care within 24 hours	3.2%	40.7%	49%	28%
Emergency to mother	4.2%	90.5%	94%	85%
Emergency to newborn	16.8%	51.2%	59%	39%
Emergency to post-partum mother dangers	1%	28.4%	37%	16%
Counselling – Right after birth	3.2%	44.1%	57%	24%
Counselling – within the first week after delivery	0%	23.8%	37%	3%

- There has been great improvement in HWs' behaviours in obstetrics care and counselling. Again HWs in delta had better practice than those in mountainous area (against the NS).

- Although all being trained of NS on obstetric care and family planning by the project, the proportion of HWs had knowledge and behaviours meeting NS still low. HWs' increase in knowledge did not reflect their behaviours sometimes.

<i>Practice meeting 100% NS</i>	Baseline Combined	End-line Combined	End-line Delta	End-line Mountainous
Neonatal care	0%	48.7%	55.2%	25%
1 st ANC check-up	0%	6.3%	10%	0%
2 nd ANC check-up onwards	N/A	40%	48.5%	23.5%
Counselling post-partum mother	48%	58%	67%	25%

Conclusions

- Due to differences in sample selection technique (baseline survey applied convenience sampling and appeared to target people with average and high social economic status, easy to approach and majority Kinh people. End-line survey applied random sampling stratified for delta and mountainous region). As such it is likely that the knowledge and behaviours of the true underlying population in Binh Dinh in the year 2003 might be lower than the achieved figures of the baseline survey on the targeted groups. It means that the improvement in knowledge and behaviours of the population might be greater than the figures pointed out by the comparison between the baseline and the end-line surveys.
- Knowledge and practices of women and men toward safe motherhood were significantly improved during the project implementation.
- Population in mountainous are is still behind the delta in terms of knowledge and behaviours.
- The project training and equipment provision actually contributed to the increase of knowledge and practice of HWs in MCH care.
- Quality of MCH service in mountainous area is still low and users appears to transfer to district hospital rather than use the CHC for delivery.
- There should be some actions taken to ensure HWs following NS in practice. That requires the inspiration and commitment of DoH and supervision as well.
- Adolescents seemed to have some improvement in understandings of RH, however, the change was at a slight level. It requires a specific program to approach adolescent at an intensive and friendly manner and at provincial-wide scale.

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1. INTRODUCTION

Binh Dinh Province is located on the coast of Central Vietnam, divided into four distinct regions: highlands, midlands, plains and coast, with a total population of 1,537,890 of which the Kinh comprises 98% of the population with the Ba Na, Lo, Cham and Hre ethnic groups making up the other 2%. There are 11 districts making up 159 communes, of which 39 are in remote and mountainous areas, which face difficulties of access to health services and transportation.

According to the baseline survey in 2003 (Annex 3: Brief of the baseline survey), the health situation of women and children in Binh Dinh remained relatively poor compared to other provinces in the region. There were also disparities between areas within the province. Statistics in 2003 showed that in the mountainous areas, only 40% of pregnant women received 3 antenatal check-ups and 10% of deliveries were assisted by trained health workers (the provincial average rates were 78% and 50% respectively). In addition, infant mortality was higher than the national average at 39.6 per 1000 live births¹. The under-5 malnutrition rate was 40‰ (country average 28‰).

In terms of health services, skills of health staff at district and commune levels in 2003 was very basic, particularly in the areas of maternal and child health (MCH). Significant gaps existed in the knowledge of service providers in comparison to the expectations of the National Standards. Management capacity was weak, especially in planning, monitoring, evaluation and supervision of MCH activities. Almost all health services at commune level did not have sufficient instruments for reproductive health (RH) services and most did not meet the national standards for sanitation.

In terms of service end-users, the baseline survey found that knowledge among the community regarding MCH was very poor. Over 50% of end-users did not know any of the health danger signs during pregnancy and a similar number did not know any danger signs after delivery. Adolescent health services were also limited and knowledge of RH and MCH was very poor among young respondents.

With the financial support of NZAID, the international aid and development agency of New Zealand, the United Nations Population Fund (UNFPA), in collaboration with the Binh Dinh People's Committee, implemented a US\$3 million project on MCH in the period 2004-2007. The project aimed to contribute to the attainment of a higher quality of life for women and children in Binh Dinh, especially for those who live in mountainous and remote areas, adolescents and ethnic minority groups, with a special focus on improving the quality and utilization of MCH services provided by health care networks in Binh Dinh Province. The project has four objectives:

- 1 To strengthen capacity of the Department of Health (DOH) and involved organizations in provision of quality maternal and child health services.
- 2 To strengthen capacity of the DOH, Provincial Committee for Population,

¹ National Human Development Report 2001.

Family and Children (PCPFC)² and involved organizations in provision of education and access to RH information and services for adolescents and young people.

- 3 To increase the support of leaders at all levels for and the participation of the community in implementing maternal and child health activities by improving the capacity of the DOH, PCPFC, mass organizations, and mass media in advocacy and behaviour change communication (BCC).
- 4 To strengthen capacity of the DOH and involved organizations in supervision, monitoring and evaluation, and provision of technical backstopping on maternal and child health related activities including gender.

A baseline survey was conducted in 2003 (Annex 3) in order to establish a foundation for identifying maternal and child health priorities and scale of outputs and activities to be implemented by local partners. The survey also provided baseline data and information for monitoring and evaluation of the project's progress.

By August 2006, a mid-term review (MTR) of the project was conducted to review progress of the project implementation. The MTR found considerable disparity in health service use and quality between delta and mountainous regions, limitation of adolescent RH services to communities and poor supervision. Based on the findings of the mid-term review, some revision and adjustment of project activities were made to meet specific maternal and child health needs of the province with a high priority given to ethnic minority and mountainous areas. NZAID also approved a no-cost extension of the project until December 2008.

During August-September 2008, an end-line survey of the project was conducted to assess the achievement of goal, objective and output indicators over the period 2004-2008. The end-line survey was conducted by the Research and Training Center for Community Development (RTCCD). The report presents findings of the end-line survey.

2. METHODOLOGY

2.1. Objectives

The end-line survey aims to assess the following changes in comparison with the situation of the baseline survey conducted in 2003:

- 1) The actual situation of RH service delivery in terms of equipment, facilities, staffing and quality of RH services (Safe Motherhood, Family Planning, RTI, Adolescent RH and Integrated Counselling) at provincial, district and commune levels.
- 2) The knowledge, attitude and practice of RH service providers at provincial, district and commune levels compared to the National Standards on RH services.
- 3) The knowledge, attitude and behaviours about RH care in different target groups and utilization of RH services at the community.
- 4) The situation of maternal and child health outcomes by impact of the project intervention.

² By the end of 2007, the PCPFC were merged to Department of Health

2.2. Survey Population

This end-line survey applied a quantitative research method, using questionnaires for structured interviews and observation checklists. In addition, provincial statistics was collected. The end-line survey focused on service providers and end-users.

Service providers

Surveyed the Provincial hospital and RH centres (provincial level); four district hospitals (An Nhon, Hoai An districts – delta region and Van Canh, An Lao districts – mountainous region) and 30 communes (15 in the delta region and 15 in the mountainous region). These four districts and 30 communes were randomly selected. In total, around 102 health staff were interviewed and observed - doctors, midwives and hospital/CHC head. At provincial and district hospitals, doctors and midwives of the Obstetric Department were the targets of the evaluation. Health worker (HW) respondents in the end-line survey were recruited based on the name of the staff member on duty written on the white board.

- Provincial level: 10 HWs at the Provincial Hospital
5 HWs at MCH/FP Centre
Inventory of equipment and infrastructure
- District level: 5 HWs x 4 districts = 20 at District Hospital (Obs. Dept.)
3 HWs x 4 districts = 12 at MCH/FP Unit
Inventory of equipment and infrastructure
- Commune level: 2 HWs x 30 communes = 60 HWs at CHCs
(1 Head of CHC and 1 midwife)
Inventory of equipment and infrastructure

Service end-users

The end-line survey was conducted in the 30 randomly selected communes mentioned. In each commune, fathers and mothers of 20 children aged less than 24 months were interviewed separately and 20 unmarried adolescents aged 15-19 were interviewed. In total, 1800 respondents were randomly selected (Table 1).

Table 1: Respondents of the end-line survey, by region and targets

Respondents	15 mountainous communes	15 coastal/delta communes
Mothers	300 mothers with children <=24 months (20 mothers/commune)	300 mothers with children <=24 months (20 mothers/commune)
Fathers	300 husbands of the index mothers in mother sub-survey (20 men/commune)	300 husbands of the index mothers in mother sub-survey (20 men/commune)
Adolescents	300 unmarried young people aged 15-19 (20 young/commune)	300 unmarried young people aged 15-19 (20 young/commune.)
Total	900 interviews	900 interviews

2.3. Instruments

The end-line survey used 7 structured questionnaires to collect information. Six questionnaires (except for Q2B) were applied in the baseline survey. For a

comparison with the baseline, almost all questions used in the original survey were repeated in the end-line interviews. Meanwhile, a number of additional questions were added into Q2, Q2B, Q3, Q4 and Q5 for impact measurement. Those are about assessment on project training quality, its effectiveness to daily work, effectiveness of project equipment provision, contribution of supportive supervision (service providers) and end-users behaviour changes

Table 2: Summary of questionnaires applied in the end-line survey

Survey	Form	Placed to applied
Service providers	Q1A - Inventory of equipment and infrastructure	CHCs
	Q1B - Inventory of equipment and infrastructure	Provincial/district hospital & RH centre
	Q2 – KABP of service providers against the National Standards quality	Provincial/district hospitals, RH centre, CHCs
	Q2B – Interviews with Health Managers	Provincial/district hospitals, RH centre
End-users	Q3 – Interviews with mothers of children <24 months	30 Communes
	Q4 – Interviews with fathers of children < 24 months	30 Communes
	Q5 – Interviews with adolescents aged 15-19	30 communes

2.4. Survey Team and Fieldwork Schedule

The data collection was conducted by four teams: Team 1 (11 district health managers) selected households for the user survey. Team 2 (2 national expert) interviewed and observed health workers at provincial and district health facilities. Team 3 (17 local staff and 3 RTCCD staff) interviewed households (fathers, mothers and adolescents) at 30 communes. Team 4 (1 RTCCD and 1 PMB representative) conducted supervision.

The training for sample selection team was organized on 10 August 2008. The training for field workers (FWs or data collectors) was held on 12 August and the data collection was implemented consecutively from 13 to 20 August.

2.5. Statistical Analysis

After the data collection, all forms were cleaned, coded and entered into an Epi-Data database designed for the survey. The data were analysed in Stata version 9 where basic frequencies were calculated. Differences between the proportion of the baseline and end-line respondents for each question were determined using chi-squared test and a p value of less than 0.05 was considered statistically significant. The mean number of responses to certain questions was compared between the two groups using the t-test and again a p value of less than 0.05 was considered statistically significant. Tables and graphs were developed in Excel.

3. RESULTS

This section is divided into 4 parts. Part 3.1 briefly describes the health outcomes of the whole province Binh Dinh across time, measuring achievement of project goal. Part 3.2 explains changes in provision of MCH services. Part 3.3 provides changes in knowledge, attitudes and behaviours of communities on reproductive health. Part 3.4 highlighted health facility leader's perceptions of project impacts on the health system in Binh Dinh.

3.1. Health outcomes

The health outcomes were calculated based on provincial statistics, provided by the Department of Health (DoH).

The statistics demonstrated that the Infant Mortality Ratio³ (IMR) in the whole province reduced statistically from 39.6‰ in 2002 to 20‰ in 2007 (country average 23.6‰ in 2007) and this ratio is commonly included as a part of standard of living evaluation in economics. The Child Mortality Ratio⁴ (CMR) reduced significantly from 40‰ to 14‰ in 2007 (country average 17‰ in 2007) (Figure 1). The figures in 2007 were a little bit higher than those in 2006. Introducing Health Information Management System to provincial and district hospitals might make hospital statistics more reliable or sick newborns were more likely hospitalized due to family had better understandings of MCH care. Those were two reasons lead to the increase of the ratio. It is estimated that the true proportion of IMR and CMR in the Binh Dinh population might be slightly higher than the presented figures due to unreported cases or misclassification, however, a decrease in IMR and CMR indicates that the quality of MCH/RH in Binh Dinh is improving, and the Maternal and Child Health project did partly contribute to that improvement.

Figure 1: Infant and Child Mortality ratio of the province, over years

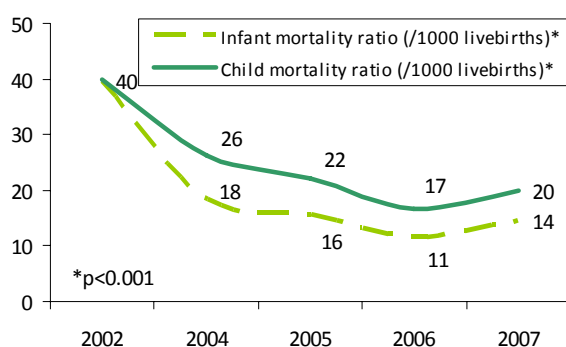
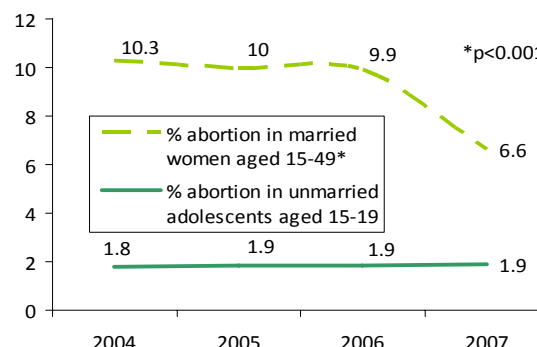


Figure 2: Abortion rate of the province, over years (per 100 live births)



Neonatal mortality⁵ ratio at the provincial hospital sharply reduced from 33.4‰ at the baseline to 16.8‰ at the end-line (Figure 3). According to the World Health Organization, neonatal mortality is affected by the quality of in-hospital care for the neonate. The decrease suggested that there might have been better health

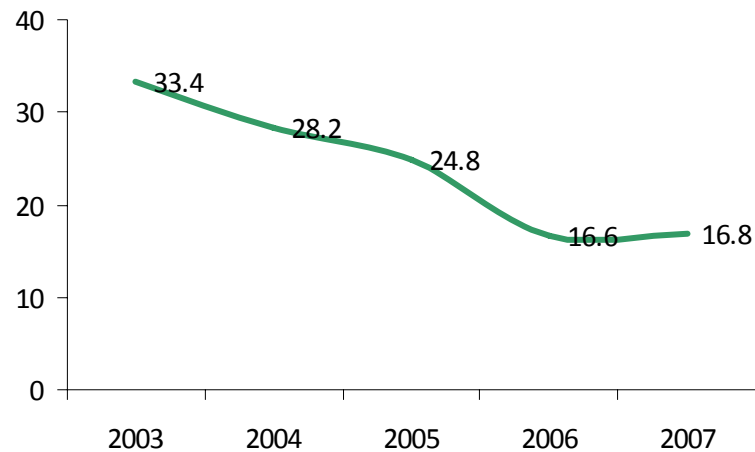
³ Infant mortality ratio is the number of newborns dying under a year of age per 1,000 live births.

⁴ Child mortality refers to the death of infants and children under the age of five.

⁵ Neonatal mortality refers to death of a life-born baby within the first 28 days of life.

status of foetus and mother during pregnancy or the maternity and newborn care in the obstetrics department has been improved over years in which improved service providers' knowledge and skills, and improvement in medical equipment might be attributed.

Figure 3: Neonatal mortality ratio (death of baby <28 days after birth per 1000 live births), statistics of the Provincial Hospital



The abortion rate per 100 live births among married women aged 15-49 (Figure 2) statistically reduced from 10.3% in 2004 to 6.6% in 2007 ($p=0.000$). However, there was no change in the adolescent abortion rate ($p=0.939$), consistently staying at around 2% (2 abortion per 100 live births). Although Binh Dinh was located in region where abortion was at the lowest rate in Vietnam⁶ these figure were believed to be much lower than the fact as abortions in private clinics, at traditional healers and self-abortion using traditional leaves were not recorded in the health system.

This report did not include the maternal mortality ratio⁷ (MMR) out of concerns regarding the validity of statistics. The provided figures by the provincial statistics were exceptionally low for a developing country and it might be recorded in the hospital settings only. The definition of MMR covers all deaths cases related to pregnancy, including indirect reasons. Therefore, it tends to be under-reported because people are often dying outside the health system, which makes accurate registration of deaths difficult. Maternal mortality is also misclassified in many cases because health workers may not know why a woman died or whether she was or had recently been pregnant. Deaths are sometimes intentionally misclassified as well, especially if they are associated with clandestine abortions. In Vietnam the estimate of MMR is often based on maternal mortality surveillance rather than relying on routine statistics.

3.2. Status of Reproductive Health Service Provision

⁶ UNFPA 2007, Research on Reproductive Health in Vietnam: A Review for the Period 2000 - 2005

⁷ WHO 2000, Maternal Mortality is defined as the death of a woman while pregnant and/or within 42 days of termination of pregnancy, irrespective of duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental cause.

3.2.1. Changes in Infrastructure, Equipment and Essential Drugs for RH Services

Infrastructure at CHCs

The reproductive health (RH) health care facility at the commune level is assessed against the National Standards and Guidelines for Reproductive Health Care Services (NS). According to the NS, ideally each CHC should have six rooms for RH care and have at least four rooms⁸ in cases with unfavourable conditions/settings. That the rate of CHCs with all 6 functioning rooms as set out by the NS has increased 9 times in comparison with the baseline (from 3% in baseline to 27% in the end-line, $p=0.026$). Meanwhile none of CHCs in neighbourhood province Dak Lak, Kon Tum and Gia Lai had 6 separate functioning rooms according to the 2005 survey⁹. The improvement in CHC infrastructure was from the considerable effort of the DoH and the Provincial People's Committee. The project did not invest in building CHCs but advocate People's Committee to upgrade CHCs.

Information, Hygiene and Waiting areas

Health facilities at the three levels (province, district and commune) were observed for information boards, hygiene status and waiting areas following the NS checklist. There has been a big improvement in terms of information provision, hygiene and client waiting environment. There improvement was seen at all three levels and there was not much difference between the levels.

At the baseline, 0% of health facilities had a working hour board but it increased to 91% at the end-line (Figure 3). Prior to the project implementation, only 3% of health facilities had posters of the 10 client rights hanging on the wall. The end-line survey found that now all health facilities had. This has never been seen in any other provinces. Those changes were made based on the tangible efforts and investment of the project including training and material production. Almost all interviewed respondents in the delta community confirmed that they had seen the poster of 10 client rights on the wall of health facilities in the province.

Hygiene status has also been improved. 89% facilities now have clean toilets compared to the rate of 50% at the baseline. 89% had bins compared to only 25% at the baseline. The rate of having available water for hand washing in bathrooms/toilets doubled since 2003 (before the project commenced).

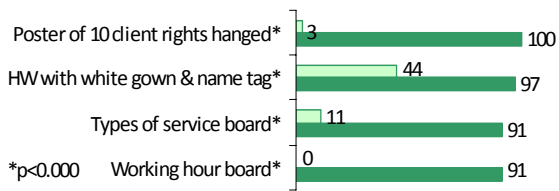
In the waiting areas, the most impressive visual impact for visitors is the 'information box' with a variety of IEC materials that clients are able to take free of charge. The project invested a lot of money to revise IEC materials to fit with the Binh Dinh context, printing the materials in the province and distributing to every health facility and village meeting halls. These efforts had many positive impacts. The knowledge of local people in communities, both in the delta and mountainous regions, was improved largely in comparison to the baseline (details in section 3.3).

⁸ Four rooms include Gynaecological examination, family planning, delivery and patient room.

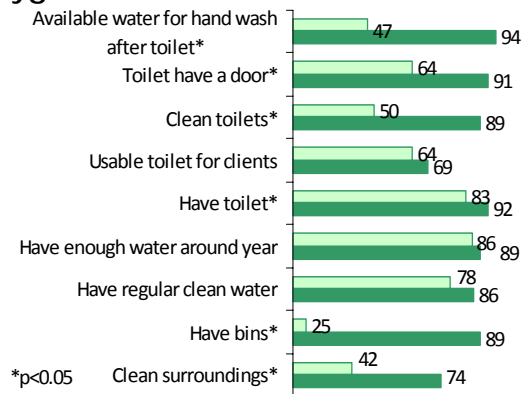
⁹ Nguyen Thanh Ha 2005, Situation Analysis of MCH service provision in CHCs in three provinces of the Central Highland, MOH.

Figure 3: % health facilities met NS on hygiene, information and waiting area (n=36)

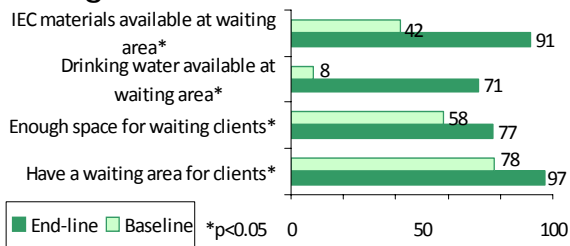
Information



Hygiene



Waiting area



Essential equipment for RH care

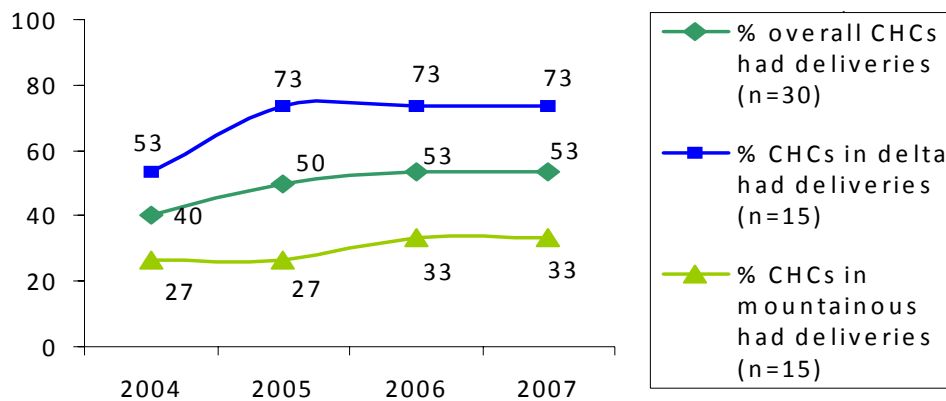
The Binh Dinh health system benefited greatly from the project in terms of equipment provision. Provincial and district health facilities received a lot of medical machinery, especially the Obstetrics Department and Family Planning Unit.

According to NS, each CHCs should have 7 essential sets for RH service provision¹⁰. At baseline, only 22% CHCs had delivery sets, 4% had neonatal resuscitation set and 17% had Gynaecological Examination set. With the project support, 100% CHCs in both the delta and mountainous regions had the 7 sets.

However, the question does remain regarding how these sets have been used. Although there was an increase in CHC service use for delivery in both delta and mountainous regions since the project commence, on average only 53% communes had deliveries in the CHCs in 2007 (Figure 4). In other 47% communes, women either had home delivery or travel to district hospital or provincial hospital for delivery. While 100% of CHCs had 7 sets of equipment for RH care, 67% CHCs in mountainous and 23% CHCs in delta region would never have a chance to use those equipment for delivery performance. This indicated that the equipment provision to CHCs has not well taken into account the population needs and practice of health workers.

¹⁰ Seven sets include delivery, episiotomy and suturing the perineum, cervix check, IUD insertion and removal, neonatal resuscitation, gynaecological examination sets and a single valve Karman.

Figure 4: % CHCs had deliveries over years (n=30)



Protocol and equipment for infection control

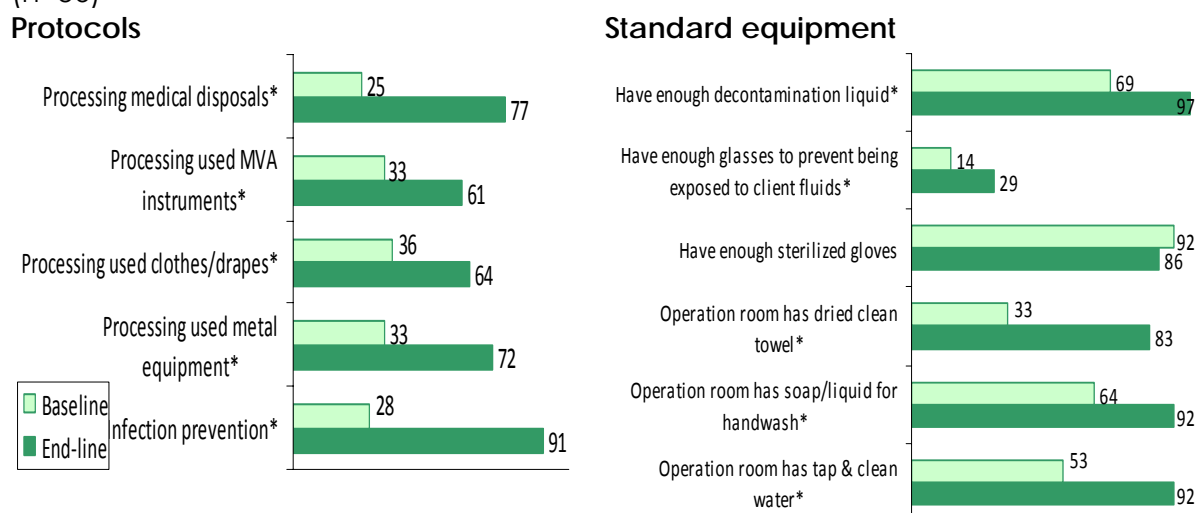
For infection control the NS required five protocols and six types of equipment. The assessment was based on evaluator observations on protocol hanging in the health facilities. Those that had a written protocol but were not hanging on the wall were considered to 'have no such specific protocol'.

In the baseline only 27.8% of health facilities had a protocol for infection prevention; at the end-line 91% of facilities had it hanging on the wall for every health provider to observe and follow. The number of health facilities in the end-line that had protocols had doubled that in the baseline (Figure 5). All provincial and district health facilities had 5 protocols hanging. The project did not have a focus on this issue but the positive change indicates that DoH wishes to upgrade health service quality of the whole province and they have growing capacity to do so.

Hand washing had been an issue of importance for the health system. Tap and clean water and soap/liquid were available at 92% operation rooms at 3 levels (53% and 64% respectively at the baseline). 97% health facilities had enough decontamination liquid for hand washing. At each client bed in the provincial and some district hospitals, there was a small bottle of instant liquid for hand wash. It seemed that health workers did take it to clean hands before examining clients.

Provincial and district leaders on the project highly appreciated the support of project in technical and management training, and equipment provision.

Figure 5: % facilities had protocols and standard equipment for infection control (n=36)



3.2.2. Training on RH for Service Providers

While the baseline survey found that 40% to 80% of health workers at provincial health facilities (depending on topics), 10% to 65% at district hospitals and 13% to 70% at CHCs have never been re-trained in RH since graduating from medical school, the end-line survey had reverse findings. Eighty four percent of health providers confirmed that they had attended more training courses in the last five years than ever before and 96% attended the project's courses in RH (Table 3).

Most of the respondents assessed the quality of the project's training courses to be very good, giving a score of 9 out of scale 1 to 10. Respondents in the delta ranked higher scores (9.2 scores) in comparison to those in mountainous region (8.6 scores) with $p=0.0019$.

Respondents in the delta region also perceived the project's courses as having higher effectiveness (8.8 scores; 95% CI: 8.17; 8.99) to their daily work than those in mountainous regions (8 scores; 95% CI: 7.5; 8.55) and this difference was statistically significant ($p=0.0029$). It seemed that HWs in mountainous area were less likely to perform what they have learned in daily work in comparison to those in delta areas. Lacking of medical equipment at department, training to be in quick pace, not having enough staff to perform as NS (not having anaesthesia to perform operation) or not being able to perform the service in the facilities might be reasons that the mountainous health workers gave low scores. The final evaluation would provide context to explain this difference.

Table 3: % respondents attended project courses and their assessment of training effectiveness

	Delta	Mountainous	Total (n=90)
% received more training in the last 5 y than ever	81	88	84
% attended project training courses	96	97	96
Mean score given to project course quality	9.2	8.6	9.0
Mean score to project course effectiveness to their daily work	8.8	8.0	8.5

3.2.3. Changes in Health Care Service Provider's Knowledge

The below analysis will focus on knowledge of health providers that exactly met the National Standards and Guidelines for Reproductive Health Care Services (attaining 100% NS). For saving a life of a newborn or pregnant mother at obstetric emergency, every step counts. As such lacking a step is considered not meeting NS.

Safe Motherhood

General examination: The proportion of service providers who knew all 7 steps of ANC according to NS was 8.4% at baseline, but increased four times to 35% by the end-line survey (Figure 6). However, there is some disparity in the capacity of health providers in the delta region compared to those at mountainous region (12.5% in mountainous vs. 50% in delta). Out of seven steps to perform, breast examination were ignored mostly by health service providers, as only 45% health providers remembered to mention this step. For other steps, about 75% to 99% health providers mentioned.

Obstetric examination: At the end-line, almost all respondents could list three steps (100% attaining NS) of obstetric examination (98.6%) while the rate reached only 69.5% at the baseline ($p=0.000$). There were no statistical difference between delta and mountainous region.

Counselling: only 39.5% respondents at the end-line knew four issues to counsel to pregnant women at the last trimester. Although this figure was higher than that in the baseline (15.8%), it was still low, meaning that counselling has not been concerned and cared much by service providers. District (29%) and commune (37%) had less knowledge about counselling than the provincial health providers (62%).

Danger signs during normal delivery: 60.5% health providers at the end-line could list all eight danger signs during normal delivery (attaining 100% NS) and there is no significant difference between two regions. There has been a tangible improvement at all three levels, especially at the provincial level. The rate at provincial level was 0% at baseline but increased to 77% at end-line. Respectively the rate was 40% vs. 88.2% at district and 18.8% vs. 47.1% at commune level. As the project has invested huge amount of fund to update health providers in Obstetric and Gynaecological fields of NS, these low figure indicated that there is

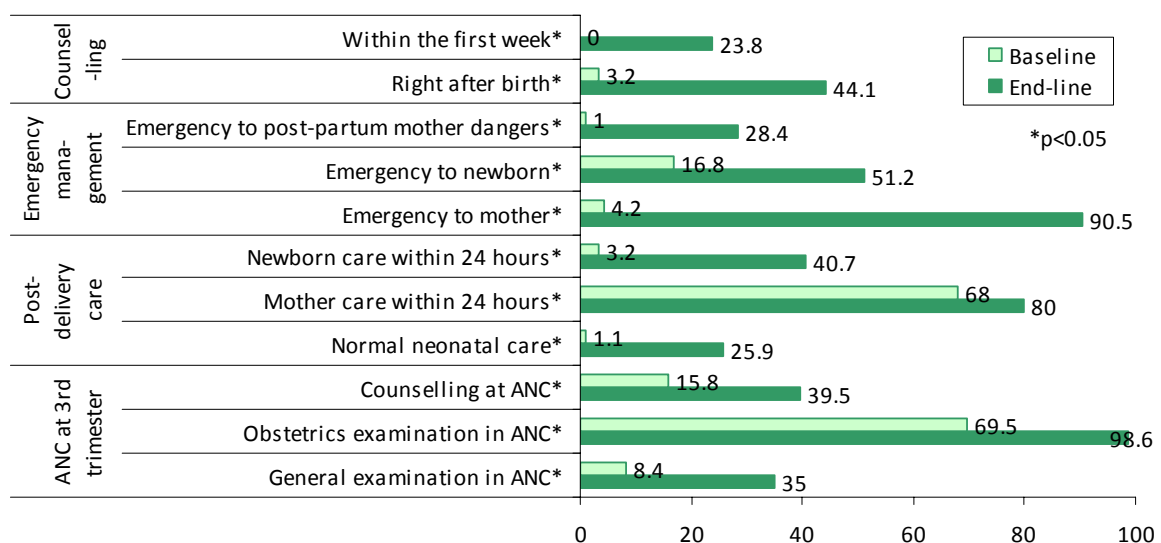
still a lot of work to be done to ensure all emergency indicators being early identified and timely managed. Supportive supervision would help to remind health workers of all steps.

Normal neonatal care right after delivery: respondents were asked to list actions they needed to do, according to NS, to care for newborn right after delivery. The NS clearly mentioned a total of 7 basic steps that must be conducted to every newborn. Only 25.9% respondents at the end-line could identify all 7 steps (provincial 46%, district 23.5% and commune 21.6%). Although this rate is much more improved than that at the baseline (1.1%), it is still low as only one in every four health providers could recall 7 basic steps in newborn care. Action "clean eyes with sterilized water or saline and drop Argyrol in eyes to prevent infection due to gonococcus" was mentioned by only 42% respondents. "Inject vitamin K1, 1mg unique dose" was mentioned by 70% respondents. The other actions were remembered by over 95% respondents. However, there was large disparity between mountainous and delta region. 37% respondents in delta region attained NS, only 9% in mountainous region attained. Having no delivery at CHCs for long time might be a cause of the poor performance.

Mother care within 24 hours after delivery: Eight out of ten respondents (80%) at the end-line knew all four issues to monitor mother health within the first 24 hours as described by the NS. This is a slight improvement in comparison to the baseline (68%). Provincial respondents had better knowledge than district and commune ones. Respondents in delta region (92%) have higher understandings than that in the mountainous region (63%).

Newborn care within 24 hours after delivery: Each respondent was expected to list 5 basic issues to monitor newborn. However only 40.7% respondents at end-line could, although, this has been much better than the results of the baseline (3.2%). Monitoring "respiration" was mentioned by only 57% and monitoring "umbilical bleeding" by 70%. There is still disparity between delta (49%) and mountainous region (28%).

Figure 6: % health workers had knowledge meeting NS in ANC, counselling and emergency care to mothers and newborns (n=81).



Obstetric emergency management: through the project training, health providers have had better understandings of emergency management in obstetric care in comparison to the baseline. So far, almost all health providers (90.5%) could recall NS actions to control complications in mothers after delivery (attaining 100% NS) while the rate was 4.2% at the baseline and the understanding is similar in the 2 regions.

However the percentage of health providers knowing all post-partum danger signs in mother after delivery, as expected by the NS, reached only 28.4% at end line (1% at baseline). It means that only one in every three health providers knew all 5 danger signs. They focused more on increasing bleeding, smelly discharge and fever but mentioned less about increasing abdomen pain (50%) and convulsion (70%). Health providers in mountainous region were at lower awareness than those in delta region.

In terms of newborn emergency management, 16.8% health providers at the baseline knew all the right actions (attaining 100% NS) to manage newborn emergency while it was 51.2% at the end-line. Health providers in delta region were significant better than those in mountainous region in newborn emergency management where there was very little improvement.

Counselling to post-partum mothers: Health providers at three levels now have higher knowledge of counselling to post-partum mothers than those in the baseline. However, there is still room for improvement. So far only 44% respondents knew four main topics to counsel mothers right after birth (attaining 100% NS); the rate was 3.2% at the baseline. However there was big disparity between delta and mountainous region. Health providers at both baseline and end-line were less likely to “counsel family members to monitor and care of mother and newborn”, this topic was the fourth in the NS criteria of counselling.

Only 23.8% health providers mastered all nine issues to counsel mothers within the first week of delivery and those in delta region were far more advance than those in mountainous region in counselling knowledge (37.3% in delta vs. 3% in mountainous attained 100% NS in counselling within the first week). In health provider awareness, they were less likely to think of topics 'vaccination', 'contraceptives' and 'light work/movement' to counsel post-partum mothers.

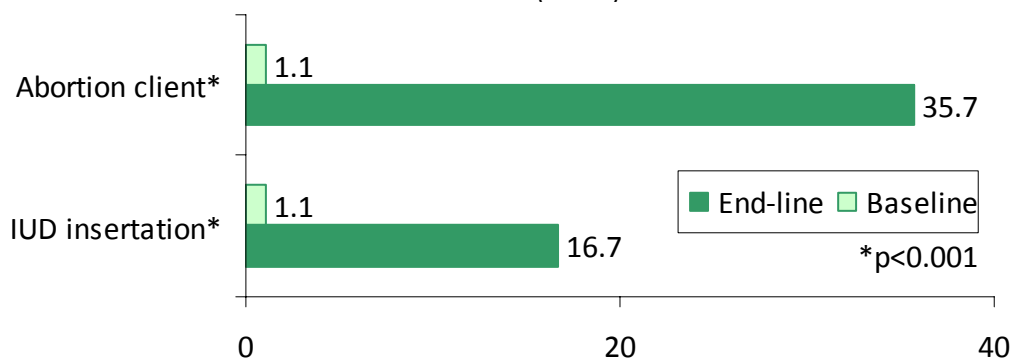
Family Planning and Abortion

Knowledge on counselling with IUD insertation: Although having improvement in family planning counselling, the current status is far away from expectation of the health managers (Figure 7). So far only 16.7% health providers had correctly knowledge on counselling to clients using service of IUD, as expected by NS (it was 1.1% in the baseline). Health providers in delta region attaining 100% NS were four times higher than that in mountainous region (23.5% in delta and 6.1% in mountainous area). Health providers seemed to pay less attention to 'Inform clients that IUD can be removed if she wants' (25%).

Knowledge on counselling with client using abortion service: At the baseline one in every 100 health providers had correct knowledge on abortion counselling as mentioned in the NS (attaining 100% NS), at the end-line survey the ratio increased 35 times to 3 in every ten health providers. Those in delta region had

correct knowledge 3.5 times higher than those in mountainous region (49% vs. 15.2%)

Figure 7: % health workers had knowledge of counselling (meeting NS) to clients using IUD insertion and abortion services (n=80).



STIs and RTIs

Knowledge on treatment of the vaginal discharge: Two treatment protocols were given and 'Combined treatment of STIs due to Tricomonas, bacteria and candidas' is the correct answer. There is no statistically significant change between baseline and end-line surveys. Overall about 62% health providers at the end-line answered correctly while it was 60% in the baseline.

Counselling on gonorrhoea treatment: In the baseline 0% respondents could list all six counselling topics to client seeking for gonorrhoea treatment. At the end-line survey, one in every five health providers (19.1%) could. 29.4% in delta but only 3% in mountainous region knew standard counselling to a client as described by the NS ($p=0.000$). Issues on possibility of HIV acquirement and consequences of gonorrhoea are less likely to be mentioned to clients.

3.2.4. Changes in Health Care Service Provider's Behaviours

Safe motherhood

Practice on neonatal care: evaluators observed 37 cases of neonatal care. At the baseline none of health providers performed correctly, attaining 100% NS at three levels. At the end-line, on average 48.7% health provider could (delta/coastal 55.2% vs. mountainous 25%). CHC staff seemed to describe NS steps by words poorer than district and provincial health providers but they performed better in reality. This sounded very weird as provincial health providers had more chances to practice on neonatal care. Having an overload of work at provincial hospital or CHC staff having reviewed NS of neonatal care prior to the evaluation interview could be reasons (Figure 8).

Practice on counselling: Results of 38 observations of counselling to post-partum mother right after birth indicated that 58% observations were counselled in full steps as mentioned by the NS (attaining 100% NS). However, there is big difference between delta region (reached 67%) and mountainous region (only achieved 25%).

Performance on ANC: sixty six ANC performances by health providers at 3 levels province, district and commune were observed by evaluators. According to NS,

in the first ANC if health providers conducted 30 out of total 39 detailed steps, the performance is considered attaining 100% NS. In the second ANC onwards, performing 20 out of 27 detailed steps were considered attaining 100% NS. These 39 details were categorized into nine big steps. For every ANC regardless the first or the second visits, each step must be performed, only some details would be or not be conducted.

At the baseline, 0% of the first ANC met 100% NS while at the end-line it was 6.3%. For the second ANC onwards, 40% performance at the end-line met NS. There was a little improvement but it is still very low. Health providers in delta region performed better than those in mountainous region. Steps which were ignored most included 'informing the results to clients, make the next appointment and instruction' and 'breast examination/skin check for anaemia and oedema in the general examination' (Figure 9). Having an over load of work or not having a habit of exploring information with clients could be reasons why clients receive less attention and detailed counselling from health providers when using RH service.

Figure 8: % health workers had practice meeting 100% NS in neonatal care and ANC.

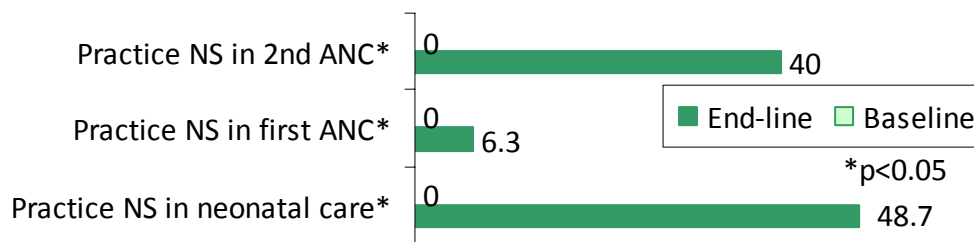
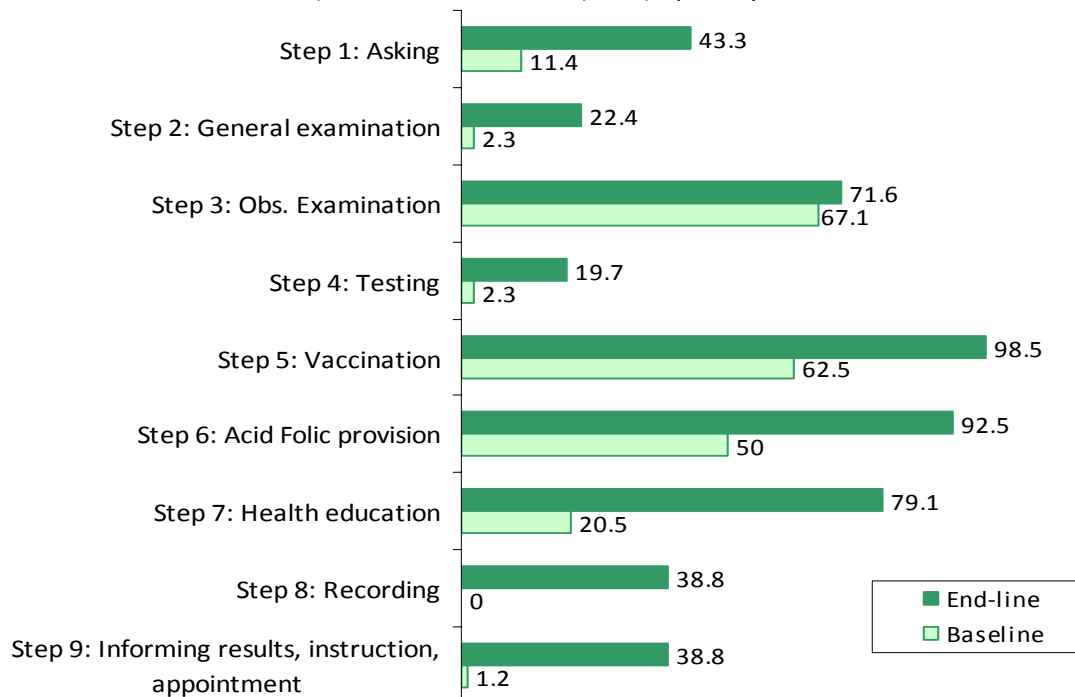
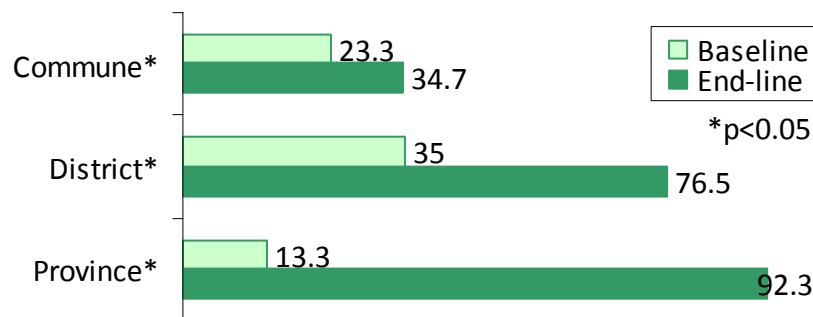


Figure 9: % health workers performed ANC, by step (n=66)



Interpretation of partograph: Health providers were given assessment of their knowledge on partograph use through observing a sampled partograph which was used at the baseline. Health providers must select one out of four options *normal, alert, action, and don't know*. The correct answer was *alert*. Overall, 53.1% health providers in the province read correctly and 14% did not know how to read it (11% in delta and 19% in mountainous region) (Figure 10). There has been a big improvement in provincial and district levels. 92.3% health providers at provincial level in the end-line read correctly while the rate was 23.3% at the baseline ($p<0.05$). At districts, the correction was 35% in baseline but increased to 76.5% at the end-line. At commune level, there is a little bit improvement. This effort was attributed to the VSA volunteers who spent most of their times at provincial and district hospitals.

Figure 10: % health workers read partograph correctly (n=79)



Family Planning

Performance on IUD insertation: Evaluators did observe 20 cases of IUD insertation, both on clients and models, at province and district health facilities. 35% cases were conducted with full 28 steps exactly as the NS (it was 0% at the baseline). There was no statistical difference between delta and mountainous region; provincial and district level. Two performances with the lowest rate of correction were 'inform client that procedure ended' (75%) and 'tell client to have a rest for at least 30 minutes' (70%). At the baseline none of respondents (0%) wore clean gloves for the performance. At the end-line, 90% of them wore clean gloves.

Hand wash

Evaluators have observed 80 health providers washing their hands. One thirds of those were unannounced observations. Hand wash was decided to include in the end-line questionnaire as it is an indicator to assess health providers' knowledge and skills in infection control and hospital quality of care. The results indicated that 80% health providers washed their hands with full 7 steps as described by the NS protocol. 7.5% conducted 5 steps and 12.5% conducted 6 steps.

When being asked to list circumstances when a hand wash is needed, all of health providers could answer at least four out of eight circumstances. Health providers in delta region have better understandings of hand wash in comparison to those in mountainous region. Health providers were less concerned of hand wash at the start of the working day, before going home and before touching sterilized tools/equipment.

3.3. Knowledge, Attitudes and Behaviours of Communities on RH Care

3.3.1 Community Survey Samples – Baseline and End line Comparison

Table 4: Distribution of respondents in communities, by region

Region	End-line survey			Baseline survey		
	Women	Men	Adolescents	Women	Men	Adolescents
Delta/coastal	302	143	305	196	196	196
Mountainous	292	129	287	14	14	14
Total	594	272	592	210	210	210

3.3.2 Population Sample

At the end-line survey, there were more ethnic minority respondents than the baseline survey (17% at end-line vs. 6% at baseline, $p=0.000$). Of the total 30 communes surveyed in the end-line survey, 15 were mountainous communes and 15 were coastal/delta communes. At the baseline survey, only two communes were mountainous, the remaining 28 were coastal/delta communes.

In the baseline survey, 100% respondents could speak Vietnamese well while only 95% respondents at end-line survey could and this difference is statistically significant ($p=0.000$). Up to 5% of respondents (made up of 69 people) found it difficult to understand the content of the interview or struggled to maintain normal conversation with the interviewers. Almost all of these respondents were from ethnic minority groups. In the mountainous communes, those who could communicate with interviewers without translators (even if it still took time for rephrasing questions or slowing the pace of the interview) were considered to be in the “fluent” group. The data collection team used translators in case the respondents could not understand any sentence of the interview and avoided to use translators as much as we could as the translator would tell respondents what to say when translating the question.

In terms of education, the proportion of respondents who had no schooling, primary and college or higher level of education was similar between the baseline and end-line surveys ($p>0.05$). However, the baseline survey statistically had more respondents who had attended secondary schools than the end-line survey (55% vs. 45%, $p<0.000$) and end-line survey had more respondents attending high school than the baseline survey.

Distribution of age of respondents at the baseline and end-line surveys was similar for all three groups of respondents; women, men and adolescents.

With significant differences in the language ability of respondents and the study site between the baseline and end-line surveys, the findings of the baseline provided a picture of the delta/coastal communes rather than being representative of the whole province, including of mountainous communes. In addition, the baseline survey applied convenient sampling (for example, the house next-door was selected to be surveyed after the first household), therefore interviewers seemed to select areas that had easy access to a number of households. Those households may have been similar in terms of better economic

and/or other characteristics which might be different from the representative population. It is estimated that the true proportion of concerned parameters in the underlying population in the mountainous region might be much lower than the proportion obtained by the baseline survey.

As the baseline survey examined only two mountainous communes, it was impossible to calculate percentage of concerned parameters specifically for mountainous populations at baseline (n=14 for each target group). Therefore, the analysis of knowledge and behaviours of communities below will compare end-line results with baseline results in general, and then compare end-line results in mountainous region with end-line results in delta region. This type of analysis will reduce the changes in mountainous region and give an impression that the mountainous region is always behind the delta region. However, it provides an insight into the situation of MCH health system and community knowledge and behaviours in mountainous region in 2008, leading to a more focus to Binh Dinh's mountainous region in the future. The researchers strongly believe that the true changes in the mountainous communes would be significantly more than the changed identified through this analysis.

3.3.3 Behaviours of Women in MCH Care

Access to provincial and district hospitals for maternity care and assessment of services

Client admission numbers for obstetrics care at district and provincial hospitals has increased annually since the project commenced (Figure 11). Clients reported positive changes in availability of free-of-charge health information, modern equipment, availability of separate area for unmarried person and HWs spending time to talk with clients of their health (Table 5). Clients believed that HW at both CHCs and district hospital were having higher medical capacity.

Figure 11: Mean value of MCH admission (in-patient and out-patient services) numbers at Obstetric Departments in province and district hospitals

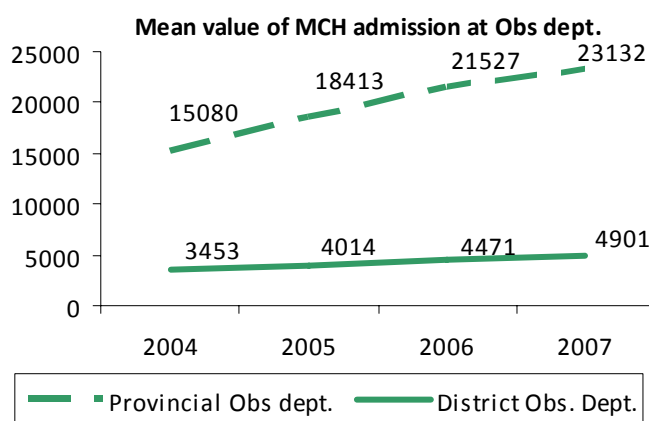


Table 5: Women agreed with statements on services provided by CHCs & district hospital

Statement	CHC		District hospital	
	Baseline	End line	Baseline	End line
	%	%	%	%
HWs always available	91.4	93.9	95.4	96.5
HWs are always helpful & considerate	91.9	90.1	88.1	90.7
Clients don't have to wait long	82.9	68.7	68.9	59.2
CHC is clean and organized	92.9	94.2	92.7	95.9
CHC has separate area for unmarried person	18.1	34.2	21.2	30.9
HWs have higher capacity	80.0	85.2	81.5	90.3
HWs spent time to talk with clients of their health	79.1	89.8	71.5	81.2
Client information is kept confidential	72.9	84.5	70.9	87.4
Equipment is sufficient and clean	76.7	90.0	82.8	97.3
Material on contraceptive available	94.8	96.6	94.7	96.1
Leaflets are available for free pick-up	59.1	89.4	45.7	86.2
Essential drugs are available	81.0	96.3	87.4	98.0

Antenatal care

Women at the end-line (93%) were more likely to have at least 3 ANC check-ups during pregnancy than women at the baseline (74.8%) and this difference is statistically significant ($p=0.000$). 94% women in delta and 92% those in mountainous communes at the end-line had at least 3 ANC check-ups during the last pregnancy (Figure 12).

It is interesting to note that women now seek ANC at CHCs (85.6% in the province, at 89% in delta and 81% in mountainous region) more than in baseline (50%) (Figure 13). They visited CHCs more and district/province health facilities less for ANC check-ups ($p=0.000$). It may be inferred that they now have more trust in the CHCs health workers and facilities and it is not necessary for them to travel to provincial/district health facilities for services that can be provided well by CHC health workers or they were more aware of the ANC service availability at CHCs. All respondents, both women and men, stated that ANC was necessary and is a must during pregnancy. 99% women reported that they had a full tetanus vaccination during the last pregnancy and this rate was similar to baseline rate (97%). All pregnant women who get ANC were shot with tetanus vaccination.

Figure 12: % women had at least 3 ANC, delivered by trained health workers and got post-partum check-up

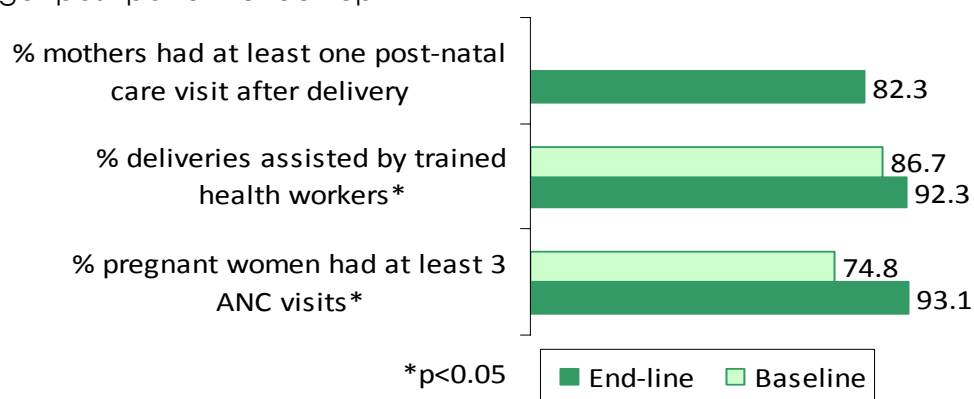
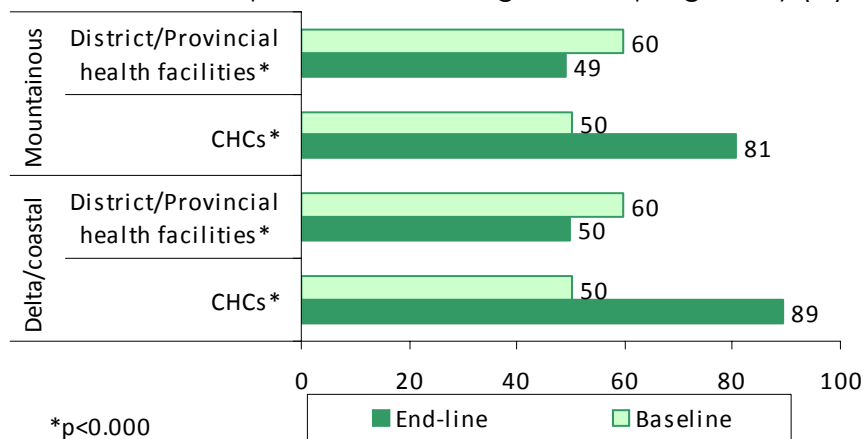


Figure 13: Place of ANC check-up admission during the last pregnancy (%)



Delivery care

Overall, 92.3% of deliveries in the province were assisted by trained health workers in the health facilities at the end-line (99% in delta and 82% in mountainous region) while the rate was 86.7% at the baseline (Figure 12). The achievement in Binh Dinh is higher than the country average. Studies in Vietnam consistently found that about 80% Vietnamese women delivered in health facilities or at home with trained birth attendants. In Binh Dinh, home deliveries in the delta region reduced almost 27 times resulting in 1% of deliveries at end-line survey while in the mountainous region it only reduced from 27% at baseline to 17% at end-line survey. Home delivery rate in Vietnam varied from 2% to 16.7% in lowland area and from 50% to 58% in mountainous area¹¹. However the fact that one in every seven children in the mountainous region born at home with support of untrained relatives or traditional birth attendances in Binh Dinh indicates that there is still a lot of work for the Department of Health (DoH) to do to improve the home deliveries at mountainous districts and especially at the ethnic minority villages.

The end-line survey found that women belonging to ethnic minority groups did not access to public health facilities for safe maternity and delivery as much as most of Vietnamese Kinh people (Table 6). Although a number of health facility staff readily acknowledged that ethnic minority women have specific cultural needs regarding RH and maternity care, particularly with regards to privacy, these needs are not considered in addressing the poor utilisation of services by these population groups. In addition, DoH should provide training to all CHCs staff in the most remote communes or commune with high home delivery of maternity delivery practice to make sure that qualified maternity service is available 24 hours a day. This would overcome villager's fear that there is no person who can assist the delivery when the pregnant woman comes as it is not the shift of the midwife.

¹¹ UNFPA 2007, Research on Reproductive Health in Vietnam: A Review for the Period 2000 – 2005.

Table 6: Access to health services for maternity care, comparison between Kinh and the ethnic minority women

	End-line	End-line
	Kinh	Ethnic minority
Got at least 3 ANC check-ups	94%	89%
No ANC at all	0.2%	3.9%
Got full tetanus vaccination	98%	95%
Delivered at public health facilities	97.4%	53.9%
Home deliveries	0.8%	46.2%
Deliveries helped by trained HWs	100%	57.8%
Get counselling on contraceptives after deliveries by HWs	77%	77%
Visited by HWs in 42 days after birth	84%	74%

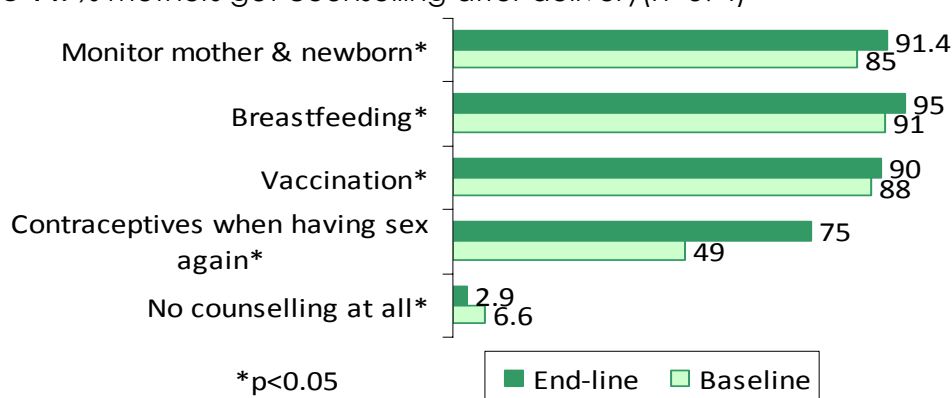
The percentage of women who were escorted by their husbands to health facilities (94.4% at end-line and 62.9% at baseline) for delivery and were helped by their husbands to prepare for the delivery (85.7% at end-line and 72.9% at baseline) increased significantly between the baseline and end-line surveys.

When asked to list the things that are needed to prepare for women's delivery¹², over 90% of men could list three out of five items suggested by the World Health Organization. Men thought more of preparing money, mother and newborn clothing. Interestingly 4% of men in the delta region and 6% in the mountainous region raised the issue of seeking advance medical help in the neighbourhood prior to arriving health facility (the rate was 0% in a Northern Uplands survey). This may be a good indicator to measure men's understanding of obstetric emergency management.

Counselling after delivery

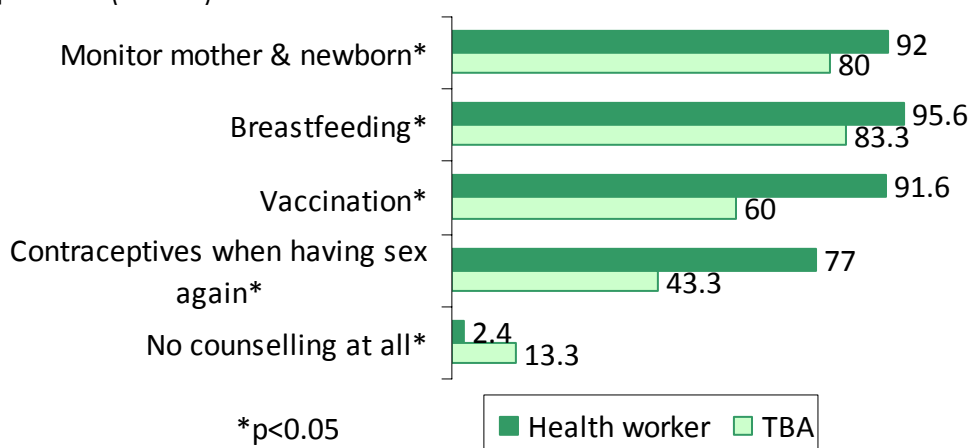
After delivery, 97% of women in the end-line (99% in delta and 95% in mountainous districts) but 93% in the baseline were counselled. More women in the end-line statistically receive advice for contraceptives, breastfeeding, monitoring mother and newborn health status and vaccinations for the newborn than in the baseline, and the significant changes applied for all types of advice (Figure 14). Mothers who delivered at health facilities were more likely to receive counselling than those delivered at home with assistance of TBA or relatives, especially with contraceptive use after delivery (Figure 15).

Figure 14: % mothers get counselling after delivery(n=594)



¹² Data collectors read loud the question. No prompt or leading question was given.

Figure 15: % mothers get counselling after delivery, Health workers & TBAs comparison (n=594)



Post-partum care

Figure 12 indicated that by the end-line survey 82.3% of mothers had at least one post-partum care visit within 42 days following the birth (87% at the delta and 84% at the mountainous districts). It is impossible to see the progress over the period 2003 – 2008 as the baseline did not ask about this issue. However, in comparison with other province, Binh Dinh is more advanced. The rate of post-partum care after delivery varied from 23.8% to 70% depending on province¹³.

3.3.4 Knowledge of Women and Men in MCH Care, Family Planning & HIV/AIDS

Identification and management of abnormal signs during pregnancy

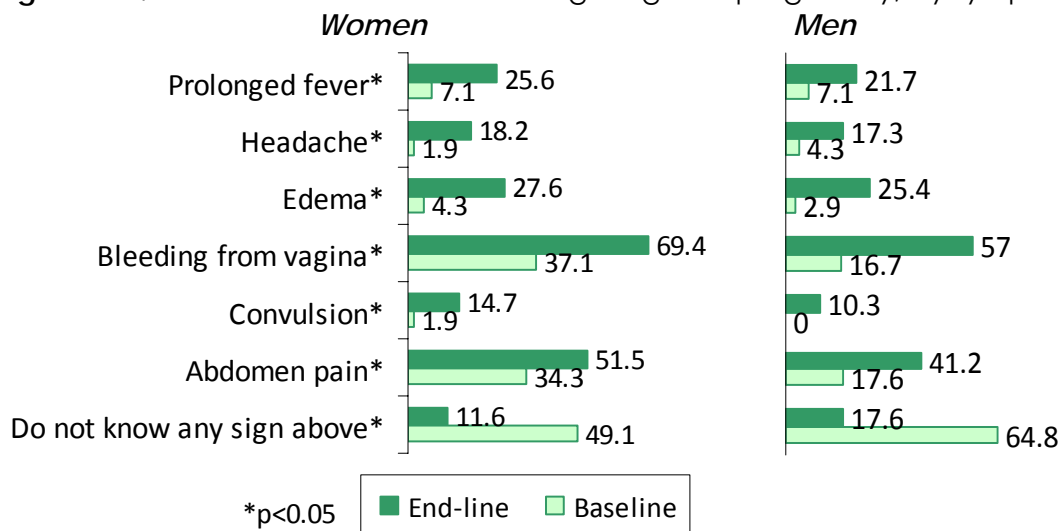
There are six major signs associated with pregnancy that may endanger the lives of pregnant women and their foetuses, which need to be recognized not only by women but also by men for timely management. At end-line survey¹⁴ more women had knowledge of the danger signs in pregnancy in comparison to the baseline and the increase was seen in both delta and mountainous regions (Figure 16). The percentage of women who did not know about any danger signs significantly reduced from 49% at baseline to 11.6% at end-line (7% in delta and 16% in mountainous). Up to one third of women in the two regions knew the two main danger signs and 7% could list out all six signs (0% in baseline).

Changes in knowledge about danger signs during pregnancy were also seen in men. The percentage of men who did not know about any danger signs reduced significantly from 64.8% at baseline to 17.9% at end-line.

¹³ Nguyen Van Man 2005, Situation Analysis of MCH service provision in CHCs in three provinces of the Central Highland, MOH.

¹⁴ Data collectors read loud the question. Interviewees listed out any ideas that they knew. No prompt or leading question was given.

Figure 16: % women and men know danger signs of pregnancy, by symptom

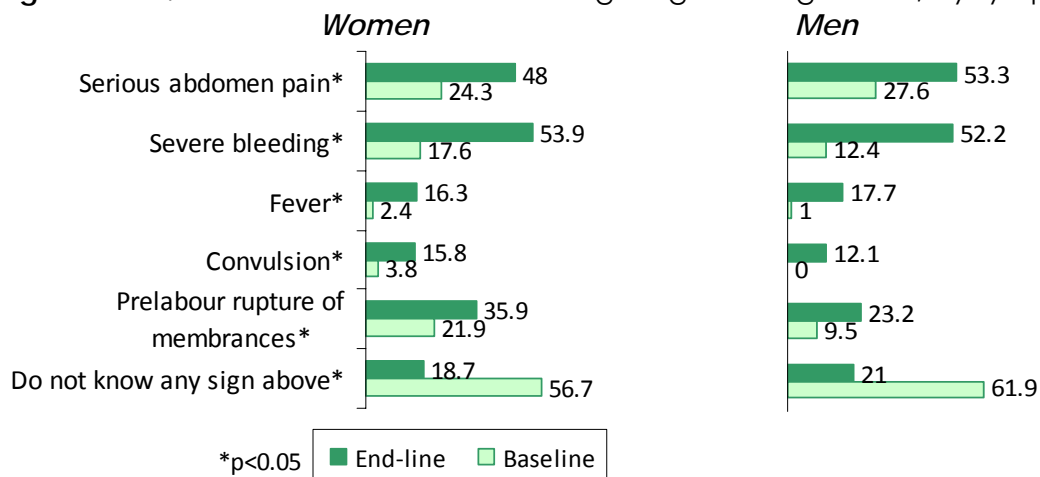


At the end-line survey, 97% of women (baseline at 97% also) and 98% men (baseline at 93%, $p<0.05$) region knew that the family should seek public health facility support to manage obstetric emergencies during pregnancy.

Identification of abnormal signs during labour

Figure 17.1 suggested that there has been a significant improvement in the knowledge of both men and women of danger signs during labour. The percentage of women who did not know any of the danger signs reduced sharply from 57% in baseline to 18.5% in end-line (15% in the delta and to 22% in the mountainous). Six percent of women in both regions could spontaneously list all five danger signs during labour compared to 0% in the baseline ($p=0.000$). There were also significant changes in the level of men's knowledge. In the baseline six out of ten men did not know any danger signs during labour. By the end-line survey, only one out of five male respondents in the delta region and one out of four in the mountainous region could not list any danger signs ($p=0.000$). 11% men in the delta region and 4% in the mountainous region could list all five main danger signs while the rate was 0% at the baseline. These danger signs were technical for the population group and not easy to remember. With such an improvement between the baseline and the end-line surveys in the knowledge of men and women with relation to obstetric emergencies during labour, it appears that the project may have had an impact through providing information to villagers via conversation with community educators (VHWs, FP collaborators, Women's Union) and provision of leaflets for reading.

Figure 17.1: % women and men know danger signs during labour, by symptom



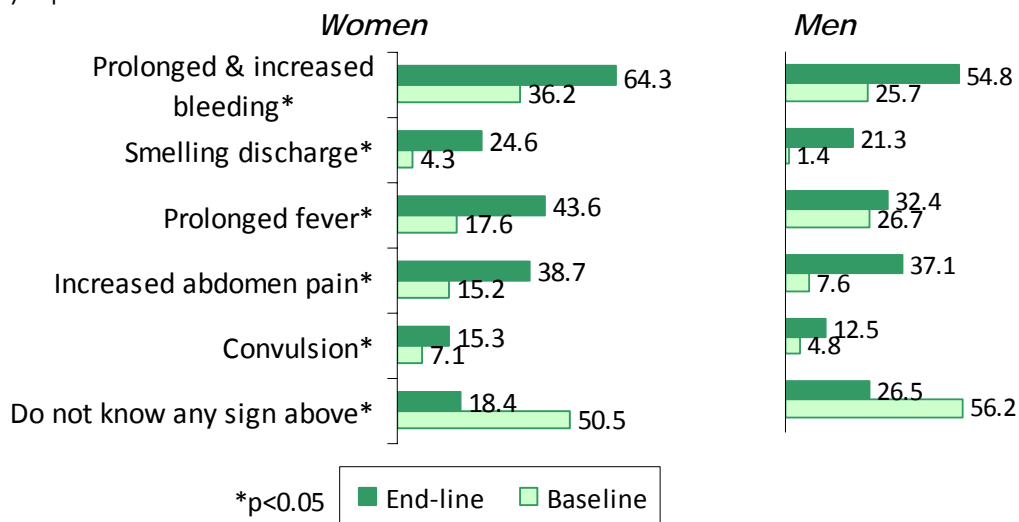
Identification of danger signs for mothers after delivery

There was an enormous improvement in the knowledge of both women and men on danger signs after delivery (Figure 17.2). Overall, one in every two women at the baseline did not know any danger signs of post-partum mothers. At the end-line, only one in every six women did not. The proportion of women who did not know any danger signs after delivery reduced four times in the delta region (baseline 51% and end-line 12%, $p=0.001$) and two times in mountainous region (baseline 51% and end-line 25%, $p=0.001$). The proportion of women who knew that smelly discharge was an indicator of a problem after delivery increased significantly from 4% in the baseline to 33% (delta region) and 16% (mountainous region) at the end-line survey.

Men in both the delta and mountainous regions have an improved understanding of danger signs after delivery in comparison to the baseline survey. At the 2003, one in every two men did not know any danger signs of post-partum mothers. At the 2008, only one in every four men did not know.

When asked “what should women do when faced with such problems”, 94.4% women and 95% men responded to go to public health facilities. This was a little improvement in comparison to the baseline 84% women and 94% men at the baseline suggested to seek public facilities).

Figure 17.2: % women and men know danger signs of post-partum mothers, by symptom



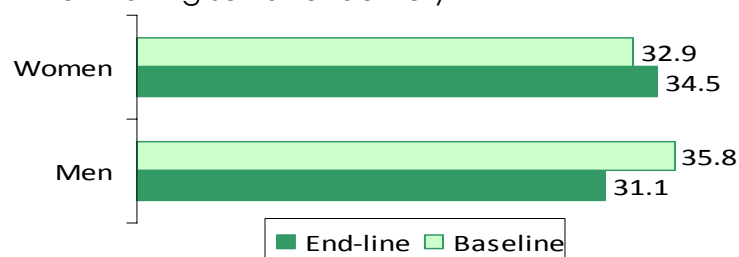
Family Planning

91% of women in the delta region and 90% of women in the mountainous region know at least 3 contraceptive methods (baseline 70%). Among men, 83% of men in the delta and 73% in the mountainous region know at least 3 methods (baseline 70%).

Currently 89.4% women at the end-line confirmed that they were using at least one contraceptive method to avoid pregnancy (it was 80.5% in the baseline). Those who were not using any contraceptive methods indicated that they intended to have a baby or that the wife was breastfeeding for the first 6 months after birth.

When being asked about the time of using contraceptive method after delivery¹⁵, only one third of the respondents correctly responded. This rate was similar to that at the baseline of 2003 (Figure 18). Respondents in the mountainous districts appeared to have higher correct understanding than those in delta districts. It is interesting to note that the percentage of couples in mountainous districts who chose contraceptive under the VHWs/FP collaborator advice (38%) was higher than that in the delta district (27%). Free availability of pills and condoms at mountainous districts might be a reason as well.

Figure 18: % women and men had correct understanding that contraceptive should be used when having sex after delivery

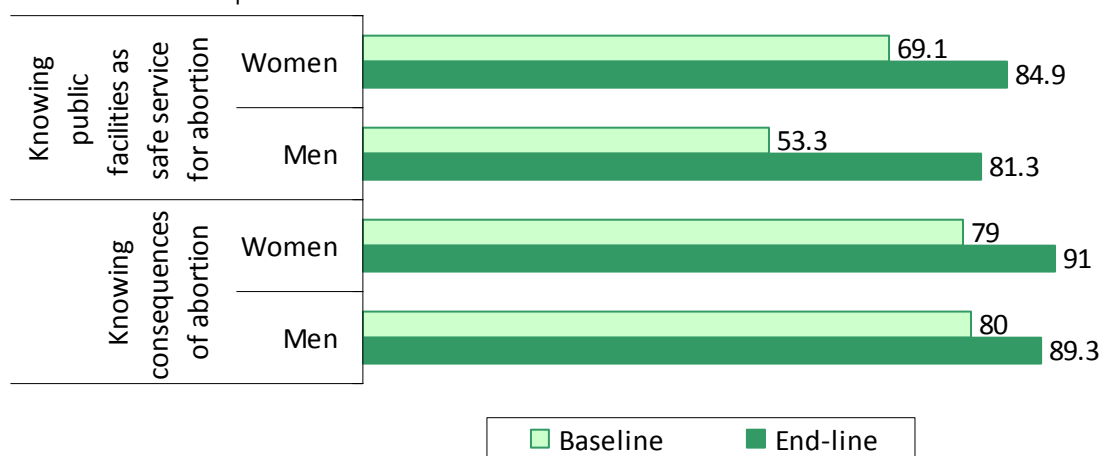


¹⁵ Data collectors read out four options of the answer and respondent was expected to select the most correct one according to their understanding.

Abortion

The percentage of respondents who know the safe place for abortion (public health facilities) has increased significantly in comparison to the baseline results, for both men and women. 85% women at the end-line (87% in the delta and 83% in mountainous) know they should seek medical services at public health facilities for abortion while the rate was 69% at baseline. At baseline five out of ten respondents suggested seeking services at public health facilities for abortion - at the end-line survey the ratio was eight out of ten ($p=0.004$). The results at the end-line were similar for delta and mountainous men (Figure 19). Both women and men also had higher understandings of abortion consequences.

Figure 19: % women and men know public facilities as a safe service for abortion and know consequences of abortion



It is still a worry that one in every ten women in the delta region and one in every six women in the mountainous region currently do not know where to seek safe abortion services. The rate in men for the same topic was one in six in the delta region and one in five men in the mountainous region.

When asked “In your opinion, what are the consequences of abortion to women”, about 70% of women in two regions at end-line survey could list infertility (baseline 31%) and one third listed death (baseline 17%). Psychological issues as a result of abortion were raised by less than 10% of women in the mountainous region and by 20% women in the delta region. There was no significant change for the option ‘it is easy to acquire RTIs’ between the baseline and end line in both regions.

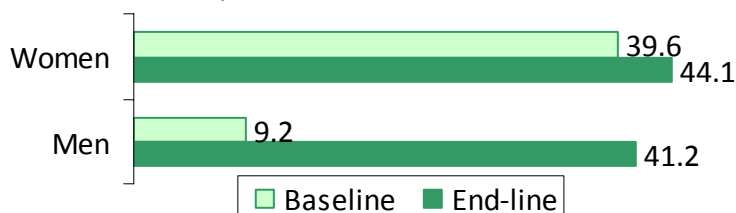
RTIs, STIs and HIV/AIDS

More than 90% of women in the delta and 85% of women in the mountainous region at the end-line survey can list three main ways to contract RTIs/STDs in comparison to 82% at baseline. At the end-line, only 1% women in the delta region ($p=0.001$) and 3.3% in the mountainous region ($p=0.04$) did not know how RTIs/STDs are contracted while the rate was 8% in baseline survey.

For men, there was no significant change in their knowledge of how a person might contract RTIs/STDs, except in relation to lack of hygiene of the lower tract.

The percentage of respondents who have an understanding of the need for treatment following detection of RTIs/STDs was much higher in the end-line survey for men and adolescents ($p < 0.05$). For women, there was been no statistically significant changes for this knowledge between two surveys (Figure 20).

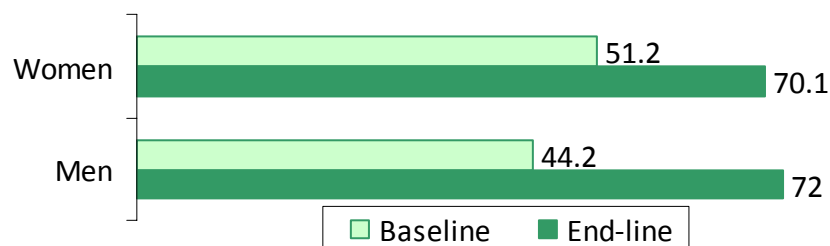
Figure 20: % women and men know that treatment should be given to infected person and all his/her sex partners for RTIs and STDs



Almost all respondents (95% in mountainous and 100% in delta districts) reported that they have heard of HIV/AIDS. Their knowledge of transmission routes did not statistically change in comparison to the baseline. Almost all of the respondents knew that a blood test was the most accurate method to identify persons infected with HIV/AIDS.

There was no consistent trend of increases or decreases in knowledge between the baseline and end-line surveys about actions to prevent HIV/AIDS infection. Difference in sample selection methodology between baseline and end-line was attributed to this problem. However, it was consistent that both men and women were aware of their rights in HIV/AIDS testing nowadays more than at baseline (Figure 21).

Figure 21: % women and men know HIV/AIDS test without client consent is wrong



3.3.5 Adolescent Reproductive Health

Project coverage of ARH activities in Binh Dinh

The ARH activities were implemented at both community and schools. In 2005-2006, extra class on ARH and contests were organized at 60 secondary and high schools at 11 districts. Campaigns on HIV/AIDS were implemented at 36 secondary and high schools, college and vocational schools in the province. Since 2007, all school-based ARH activities were focused for three mountainous districts with participation of 8 schools. 252 teachers attended two workshops and 32 were trained on how to conduct ARH extra class for students.

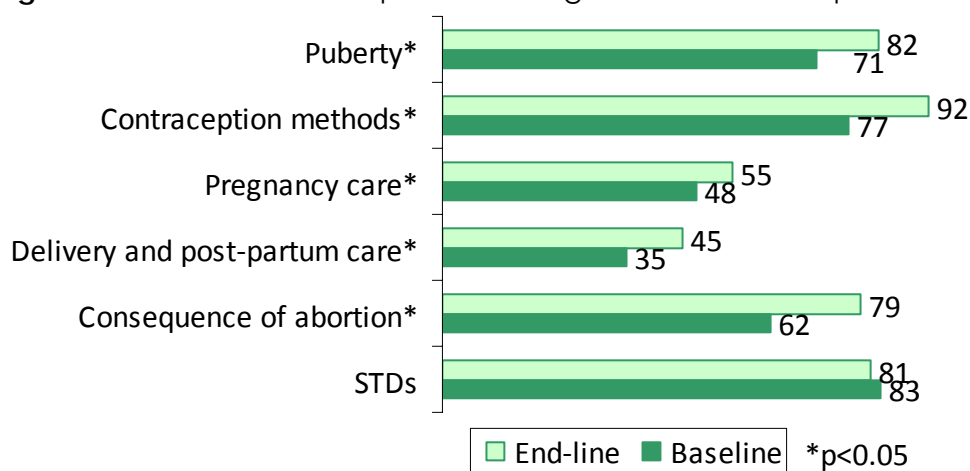
At community level, two Youth Friendly Corners (delta commune-based) and one Youth Counselling Centre (Quy Nhon based) were set up in 2005 with the operation of face-to-face counselling and hotline. Library and internet were also

provided at YFC and YCC. YFC and YCC not only provided ARH access to adolescents in the area but also provided outreach talks to factories, enterprises, schools and surrounding communities. The project did support to train adolescent peer educators and health counsellors.

Adolescent access to ARH

It seemed that adolescents interviewed in the baseline were more likely to access to ARH information than those in the end-line (Figure 22). Difference in sample selection methodology might attribute to this problem. While the end-line survey applied random sampling, the baseline applied convenience sampling. Thus it was more likely that active and well-understanding adolescents were selected for the baseline.

Figure 22: % adolescents reported having access to ARH topics

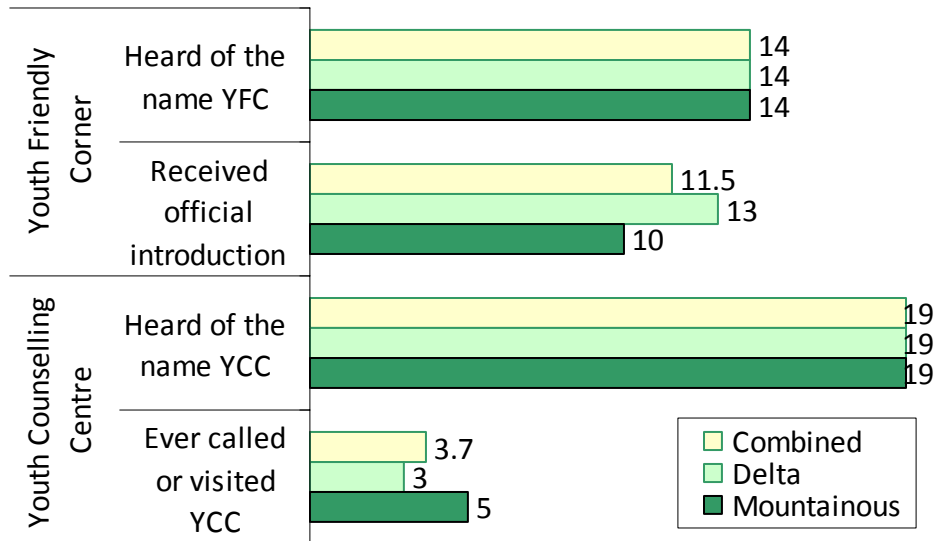


Fourteen percent of adolescents in the community knew about the existing of Youth Friendly Corner (YFC) and 19% knew about the Youth Counselling Centre (YCC). The proportion was similar between the mountainous and delta regions. Most of the adolescent respondents informed the interviewers that they know about these two models from advertisements and shows on the television, and radio, leaflets in schools and Youth Union meetings. Of those sources, television and leaflets were the two most mentioned sources. These results are interesting as the project piloted just two YFCs in two communes out of total 159 communes in the province and none of the surveyed communes had YFC.

Exploring further to see whether adolescents have understood about YFC and YCC services or have ever called or visited those for services, it is found that 3.7% adolescents in the communities (3% in delta and 5% in mountainous area) ever called to or visited YCC. Those in delta visited YCC more but those in mountainous were more likely to be curious of it and decided to make a call. Adolescents appeared to know more about YFC. 11.5% adolescents (13% in delta and 10% in mountainous area) were officially introduced of YFC by their school teachers, Youth Union, peers and health counsellors¹⁶ (Figure 23).

¹⁶ Findings from the informal chats with adolescents after the structured interviews

Figure 23: % adolescents in communities ever accessed to youth-centred models



Knowledge of contraceptive methods

It seemed that adolescents at the end-line had more understanding about condoms and emergency pills than those at the baseline (Figure 24). These two kinds of methods were mostly used by adolescents and young people when having sex. In the mountainous region, there was still one in every 14 adolescents (7%) who did not know of any contraceptive methods. The ratio was one in every sixteen in the delta region (6%).

Figure 25 indicated that adolescents had better knowledge of where to get condoms in the commune when they need to. However, one in every five adolescents in the province still did not know where to get condoms.

Figure 24: % adolescents in communities know 3 kinds of contraceptives

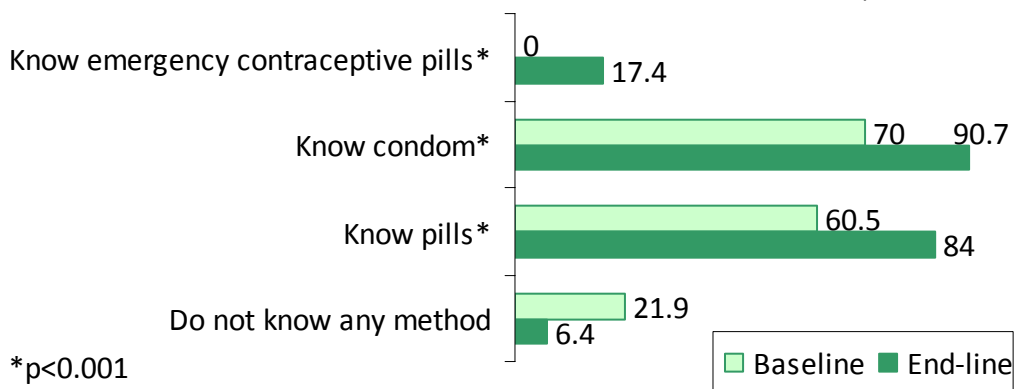
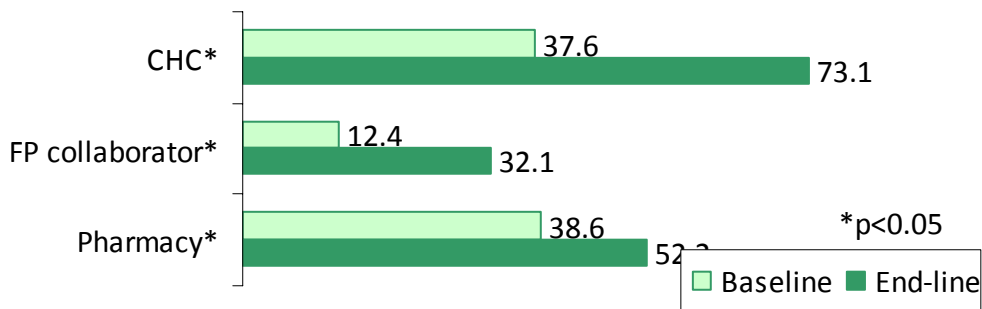


Figure 25: % adolescents in communities know places they can access to get condoms



Knowledge of abortion

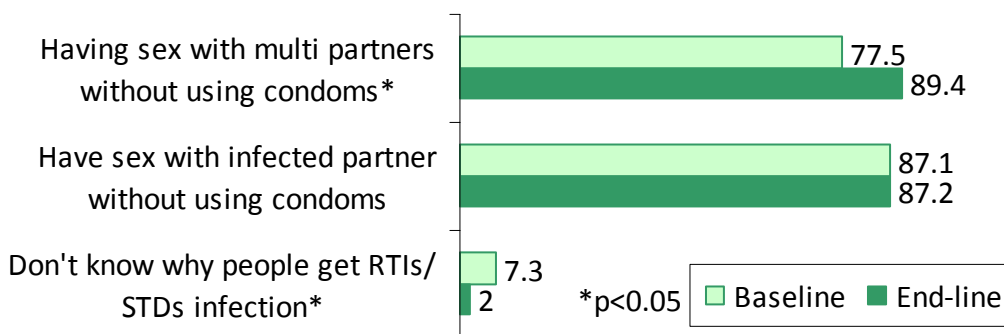
There was no data at the baseline for a comparison regarding adolescent responses regarding safe places for abortion; however, results of the end-line survey found that eight out of every ten adolescents would advise their friends to go to public health facilities for abortion services. The percentage of men and adolescents who preferred private health clinics for abortion accounted for 2%-3%.

RTIs, STDs and HIV/AIDS

There was no consistent trend of increases or decreases in adolescents' knowledge between the baseline and end-line surveys about RTIs and STDs (Figure 26). Around 87% adolescents understood that having sex with infected partner without using condom would be infected with STDs/HIV/AIDS and this rate was not changed between two surveys.

The percentage of adolescents who know of the need for treatment following detection of RTIs/STDs was much higher in the end-line survey. 62.4% adolescents at the end-line (64% in delta and 60% in mountainous districts) knew that infected person and all his/her sexual partners should seek for treatment together. At the baseline only 26.4% adolescent had such correct thoughts.

Figure 26: % adolescents in communities know 2 main reasons leading to STDs infections



Almost all respondents (95% in mountainous and 100% in delta districts) reported that they have heard of HIV/AIDS. Their knowledge of transmission routes did not statistically change in comparison to the baseline (Figure 27). Almost all of the respondents knew that a blood test was the most accurate method to identify persons infected with HIV/AIDS and the rate at baseline seemed to be higher than that at end-line survey (Figure 28).

Figure 27: % adolescents in communities know HIV/AIDS transmission routes

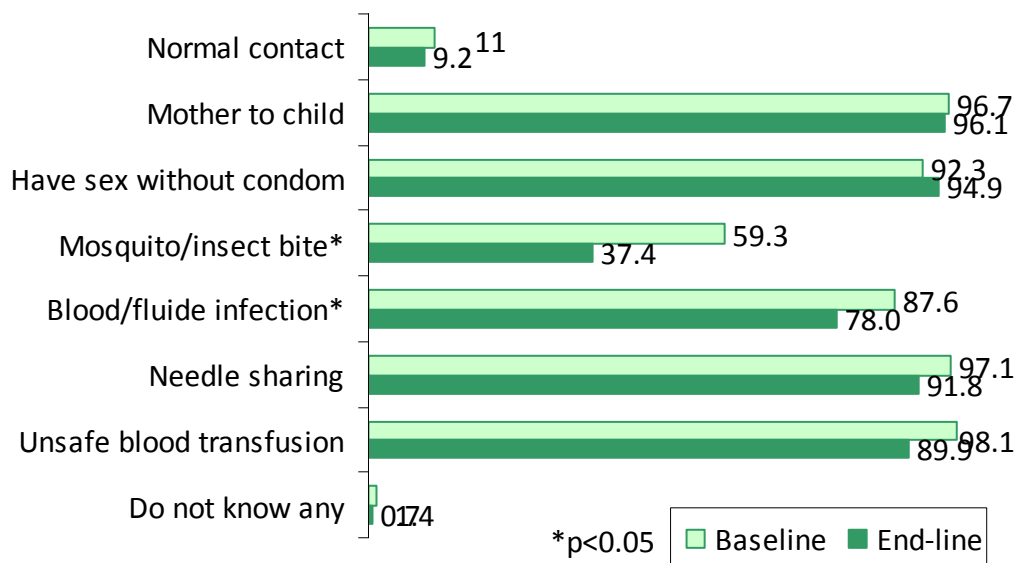
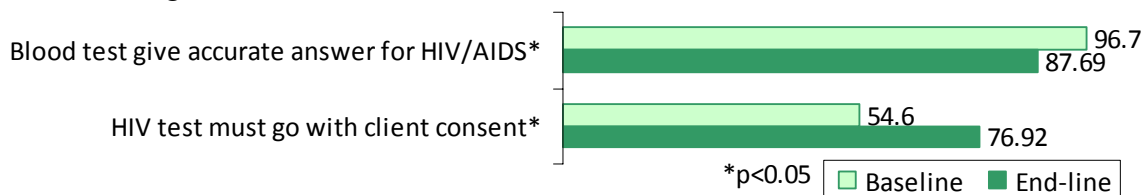


Figure 28: % adolescents in communities know the correct way to test HIV/AIDS and client rights to be consented of the test



As the baseline did not measure adolescents' behaviours, it is beyond the capacity of this end-line survey to make a comparison and see how far adolescents in the communities have changed their behaviours. There was no change in the adolescent abortion rate, consistently staying at around 2% (2 abortions per 100 live births).

Adolescent's Comments of Health Service Quality on Reproductive Health

Adolescents were asked to rank their answer under four categories true, not always true, false and don't know for twelve statements regarding health service provision at commune and district hospital.

It appears that adolescents and young people have had more positive thoughts on health services provided by both CHC and district hospital (Table 6). The percentages of those who thought that HWs have higher capacity, client information is kept confidential, medical equipment is sufficient and clean, and leaflets are available for free pick-up have increased double in comparison to the baseline. More adolescents believed that there was separate area for unmarried person when using health services at CHC and district hospital.

Table 6: % adolescents agreed with statements on health services provided by commune health clinic and district hospital

Statement	CHC		District hospital	
	Baseline	End line	Baseline	End line
	%	%	%	%
HWs always available	69	84	94	94
HWs are always helpful & considerate	71	79	76	84
Clients don't have to wait long	59	55	55	50
CHC is clean and organized	73	84	84	88
CHC has separate area for unmarried person	8	25	13	30
HWs have higher capacity	33	71	48	86
HWs spent time to talk with clients of their health	45	73	43	72
Client information is kept confidential	35	76	45	83
Equipment is sufficient and clean	34	81	54	93
Material on contraceptive available	73	89	83	92
Leaflets are available for free pick-up	35	72	33	79
Essential drugs are available	65	90	69	95

3.4. Health Worker Perception on Project Implementation and Impacts

The evaluators distributed a short questionnaire with some structured and some open-ended questions to six directors or deputies of the provincial and district health facilities, who were asked to self-administer the form. The interviews aimed to measure their perspectives on how the project contributed to the change in health service quality and human resource capacity, and to explore their viewpoints about strengths and weaknesses of the project implementation. This was an exploration for the final evaluation design.

- 100% of health managers commented that the capacity of their facility in RH care had improved significantly in comparison to 5 years ago.
- The following factors were identified as contributing factors for the improvement in service quality :
 - Almost all health providers in the obstetrics and FP unit were re-trained, following the NS.
 - Leaders were trained in hospital management and health management.
 - Medical equipment and infrastructure were greatly improved, meeting the technical needs of service providers.
 - The Department of Health was stricter in service quality supervision and standardization. Supportive supervision is now actively in place and has never before been taken as seriously.
 - Service user's awareness was higher, therefore they required better service.

- Areas for improvement:
 - The only issue which was mentioned by all health leaders about project weakness was equipment provision. Health workers in delta areas seemed to give a high score on the effectiveness of project equipment support (mean of 9 scores) while the mountainous groups gave a mean of 7 scores. There was disparity of scores given by health managers on how usefulness of the equipment provision. Some gave the highest score (10), while others marked only 6 or 7. This suggested that project equipment had positive impacts on a certain region only, not to all areas in Binh Dinh. They also mentioned that the poor maintenance and training on equipment use and not based on specific needs of each CHCs as areas which could be improved. This is a point for the final evaluation to explore
 - Most leaders expected to have more supportive supervision trips from national experts to their facilities to improve the health management and behaviour of service providers. Definitely this issue should be further explored by the final evaluation.

4. CONCLUSIONS

The end-line survey focused on measuring changes during the project implementation. Therefore most of indicators in the baseline were repeatedly measured in the end-line survey. Due to difference in sampling method between baseline and end-line surveys, the improvement in knowledge and behaviours of the underlying population is believed that would be more than those attained between the two surveys. Below are main findings of the end-line survey.

Population Health

It appears from this survey that three important indicators Neonatal Mortality Ratio, Infant Mortality Ratio and Child Mortality Ratio, which measure quality of health services for maternity and newborns, showed improvement across years. Neonatal mortality ratio at provincial hospital gradually reduced from 33‰ in 2003 to 17‰ in 2007. Infant mortality ratio at the whole province reduced consecutively from 39.5‰ in 2003 to 14‰ in 2007 and Child mortality ratio from 40‰ to 20‰ respectively. The project goal was achieved. Abortion rate among married women aged 15-49 also reduced from 10.3% in 2004 to 6.6% in 2007.

Community Behaviour Changes

There have been tangible changes in both women and men's behaviours towards MCH protection, however, population in delta districts were still more advanced than the population in the mountainous districts. The rate of women having at least 3 ANC visits during pregnancy increased from 74.8% in baseline to 93.1% in the end-line (94% in delta and 92% in mountainous area). 99% women in the community received full tetanus vaccination in the last pregnancy. Deliveries had assistance of trained health workers increased from 86.7% in the baseline to 92.3% in the end-line (99% in the delta and 85% in the mountainous districts). Home deliveries in the delta region reduced almost 27 times resulting in 1% of deliveries at end-line survey while in the mountainous region it only reduced from 27% at baseline to 17% at end-line survey. 62.9% pregnant women were escorted by their husband to health facilities for deliveries in the baseline while it increased to 94.4% in the end-line. 72.9% husbands helped to prepare things for their wives' deliveries at the baseline while it was 85.7% in the end-line. The challenges ahead for the Binh Dinh health sector are to reduce the home delivery rate in the mountainous districts by promoting population to use health facilities or trained health workers during delivery and to increase the access of ethnic minority to public health services with considerations of culture and language approach.

Community Knowledge Changes

Summary

It appears that health education on pregnancy, delivery and post-partum care, including danger signs have been disseminated well to adult population. There have been increasing changes in knowledge about danger signs with regards to pregnancy and delivery for not only women but also men. Changes in delta population were more visible than those in mountainous population (although baseline sampling might be the reason to this small change identified).

Correct understandings of both husbands and wives on contraceptive use after birth was still at low rate. Women and men had better awareness of where to seek safe abortion but were not well aware of abortion consequences. Literature¹⁷ also indicated that Binh Dinh is at the region of lowest abortion in the country and the new Population Solution in 2007 was not sharp in words which created misunderstanding in population that family would have the third or more children if they wished. This might be inferred that population growth in Binh Dinh is very potential as most of women appear to deliver baby once they got pregnancy. It is an urgent need for the new Administration of Population¹⁸ to increase understandings of couples on contraceptives after delivery and when it is necessary to use.

The results of the end-line survey indicated that there was not consistent increase or decrease in understandings of men and women on HIV/AIDS and STDs/RTIs transmission routes and preventive behaviours. It seemed that population were heard of these issues but their understanding was at hollow aspect. Taken into account that many men in Binh Dinh increasingly travel across provinces for work¹⁹, it is necessary to equip both men and women with HIV/AIDS and STDs/RTIs

Danger signs in pregnancy

At end-line survey more women had knowledge of the danger signs in pregnancy in comparison to the baseline and the increase was seen in both delta and mountainous regions. The percentage of women who did not know about any danger signs significantly reduced from 49% at baseline to 11.6% at end-line (7% in delta and 16% in mountainous). Up to one third of women in the two regions knew the two main danger signs and 7% could list out all six signs (0% in baseline). Changes in knowledge about danger signs during pregnancy were also seen in men. The percentage of men who did not know about any danger signs reduced significantly from 64.8% at baseline to 17.9% at end-line.

At the end-line survey, 97% of women (baseline at 97% also) and 98% men (baseline at 93%, $p < 0.05$) region knew that the family should seek public health facility support to manage obstetric emergencies during pregnancy.

Danger signs during labour

There has been a significant improvement in the knowledge of both men and women of danger signs during labour. The percentage of women who did not know any of the danger signs reduced sharply from 57% in baseline to 18.5% in end-line (15% in the delta and to 22% in the mountainous). Six percent of women in both regions could spontaneously list all five danger signs during labour compared to 0% in the baseline ($p = 0.000$). There were also significant changes in the level of men's knowledge. In the baseline six out of ten men did not know any danger signs during labour. By the end-line survey, only one out of five male respondents in the delta region and one out of four in the mountainous region could not list any danger signs ($p = 0.000$). 11% men in the delta region and 4% in the mountainous region could list all five main danger signs while the rate was 0% at the baseline.

¹⁷ UNFPA 2007, Research on Reproductive Health in Vietnam: A Review for the Period 2000 - 2005

¹⁸ Administration of Population was established in mid 2008 after the Vietnam Commission of Population, Family and Children was dismissed.

¹⁹ Binh Dinh newspaper online, 2008, the People's Committee of Binh Dinh province.

Danger signs after delivery

The proportion of women who did not know any danger signs after delivery reduced four times in the delta region (baseline 51% and end-line 12%) and two times in mountainous region (baseline 51% and end-line 25%). The proportion of women who knew that smelly discharge was an indicator of a problem after delivery increased significantly from 4% in the baseline to 33% (delta region) and 16% (mountainous region) at the end-line survey. Men in both the delta and mountainous regions have an improved understanding of danger signs after delivery in comparison to the baseline survey. At the 2003, one in every two men did not know any danger signs of post-partum mothers. At the 2008, only one in every four men did not know.

94.4% women and 95% men responded to go to public health facilities if women had post-partum problems. This was a little improvement in comparison to the baseline (84% women and 94% men at the baseline suggested to seek public facilities).

Family Planning

91% of women in the delta region and 90% of women in the mountainous region know at least 3 contraceptive methods (baseline 70%). Among men, 83% of men in the delta and 73% in the mountainous region know at least 3 methods (baseline 70%).

Currently 89.4% women at the end-line confirmed that they were using at least one contraceptive method to avoid pregnancy (it was 80.5% in the baseline). Only one thirds of the respondents correctly responded that they should use contraceptive when having sex after birth. This rate was similar to that at the baseline of 2003. Respondents in the mountainous districts appeared to have higher correct understanding than those in delta districts.

Abortion

The percentage of respondents who know the safe place for abortion (public health facilities) has increased significantly in comparison to the baseline results, for both men and women. 85% women at the end-line (87% in the delta and 83% in mountainous) know they should seek medical services at public health facilities for abortion while the rate was 69% at baseline.

As consequence of abortions, 70% of women at end-line survey could list infertility (baseline 31%) and one third listed death (baseline 17%). Psychological issues as a result of abortion were raised by less than 10% of women in the mountainous region and by 20% women in the delta region.

RTIs/ STDs

More than 90% of women in the delta and 85% of women in the mountainous region at the end-line survey can list three main ways to contract RTIs/STDs in comparison to 82% at baseline. At the end-line, only 1% women in the delta region and 3.3% in the mountainous region did not know how RTIs/STDs are contracted (8% in baseline). For men, there was no significant change in their knowledge of how a person might contract RTIs/STDs, except in relation to lack of hygiene of the lower tract.

The percentage of respondents who have correct understanding of who should get treatment following detection of RTIs/STDs was much higher in the end-line survey for men (9.2% at baseline and 41.2% at end-line). For women, there was been no statistically significant changes for this knowledge between two surveys (39.6% at baseline and 44% at end-line).

HIV/AIDS

Almost all respondents (95% in mountainous and 100% in delta districts) reported that they have heard of HIV/AIDS. Their knowledge of transmission routes did not statistically change in comparison to the baseline. Almost all of the respondents knew that a blood test was the most accurate method to identify persons infected with HIV/AIDS.

There was no consistent trend of increases or decreases in knowledge between the baseline and end-line surveys about actions to prevent HIV/AIDS infection. Difference in sample selection methodology between baseline and end-line was attributed to this problem. However, it was consistent that both men and women were aware of their rights of being consented in HIV/AIDS testing nowadays (77% at end-line) more than at baseline (54.6%).

Adolescent Reproductive Health Changes

There has been changes in adolescents' knowledge on some indicators, but not consistent for all. There is no evidence of adolescent's behaviour changed as there is no baseline data comparison.

- There was no change in the adolescent abortion rate, consistently staying at around 2% (2 abortions per 100 live births).
- It appears that adolescents at end-line had more understanding about condoms (70% baseline vs. 90.7% end-line) and emergency pills (0% vs. 17.4%).
- Eight out of every ten adolescents would advise their friends to go to public health facilities for abortion services. No baseline data of this figure available.
- 14% of adolescents in the community knew about the existing of Youth Friendly Corner (YFC) and 19% knew about the Youth Counselling Centre (YCC). 3.7% adolescents in the communities (3% delta and 5% mountainous) ever called to or visited YCC for services. 11.5% adolescents (13% delta and 10% mountainous area) were officially introduced of YFC by their school teachers, Youth Union, peers and health counsellors
- There was no consistent trend of increases or decreases in adolescents' knowledge between the baseline and end-line surveys about RTIs and STDs. So far 8 out of 10 adolescents know that having sex with multi partners without using condoms would lead to STDs or HIV/AIDS infection.
- The percentage of adolescents who had correct understanding of treatment following detection of RTIs/STDs was much higher in the end-line survey (26.4% baseline vs. 62.4% end-line and 64% delta end-line vs. 60% in mountainous end-line)

- 95% in mountainous and 100% in delta districts reported that they have heard of HIV/AIDS. Their knowledge of transmission routes did not statistically change in comparison to the baseline

Structure, Knowledge and Behaviour Changes of Health Sector

- There have been significant changes in infrastructure and structure of health services from the provincial to commune level. The rate of CHCs had 6 functioning rooms increased from 3% to 27%. All health facilities had 10 client rights (3% at baseline). 91% health facilities had IEC materials available at waiting area and 100% had pamphlet display box. The index indicators of cleanness also increased during the project period. Anti-infection control protocols were applied and performance is supervised.
- All CHCs had 7 essential sets for reproductive health care. However, only 53% CHCs had deliveries in 2007. The rate of CHCs having deliveries increased annually.
- Number of MCH client admission increased quickly annually at provincial hospital, district hospitals and CHCs.
- There have been significant changes in HWs' knowledge of obstetric care. More HWs had correct knowledge, meeting 100% NS. There is significant disparity in knowledge of HWs in delta in comparison to those in mountainous area.
- There has been great improvement in HWs' behaviours in obstetrics care and counselling. Again HWs in delta had better practice than those in mountainous area (against the NS). Now half of HWs could practice neonatal care meeting 100% NS while none was able at the baseline. The proportion of HWs followed NS in ANC is very low, staying at 6.3%. As much as half of counselling to post partum mothers were standard of NS. This requires DoH's action and supervision to improve situations.

Issues to be explored by the final evaluation

- Knowledge and behaviours of health service providers were enhanced, but counselling is still at not conducted at a level and quality as it should be. The final evaluation should explore underlying reason that might impede HWs from following NS practice although they have learned knowledge.
- More supportive supervisions had been made and should be further conducted to strengthen service quality and behaviour standardization for service providers. It is necessary for the final evaluation to identify which to be the best supervision approach to Binh Dinh health sector and IEC-implemented partners to ensure quality of activity.
- The capacity of health providers in the mountainous region was still much lower than those in the delta region. Having less chance to practice might be a cause of the disparity as only 33% of CHCs in mountainous communes had deliveries at the CHCs. The low delivery rate at CHCs also means the degrading capacity and confidence of health providers and that equipment

is rarely used. It would be suitable for the final evaluation to explore reasons that many CHCs in mountainous communes did not have obstetric clients and how project equipment were used in those CHCs.

- Adolescent reproductive health activities are target of exploration in the final evaluation. There is a need to answer question of why adolescent's knowledge were not much changed.
- Given that the provincial statistics might not be accurate; the final evaluation should have a glance at the Health Management Information System (HMIS) in the province. How it was implemented and its effectiveness in improving provincial-wide statistics in Binh Dinh.

5. APPENDICES

5.1. Abbreviations

ANC	Antenatal Care
ARH	Adolescent Reproductive Health
BCC	Behaviour Change Communication
CHC	Commune Health Clinic
DOCI	Department of Culture and Information (provincial level)
DOET	Department of Education and Training (provincial level)
DOH	Department of Health (provincial level)
HMIS	Health Management Information System
HW	Health Worker
IEC	Information, Education and Communication
MCH/FP	Maternal and Child Health and Family Planning
MOH	Ministry of Health
MTR	Mid-Term Review
NCPFC	National Commission for Population, Family and Children
NZAID	New Zealand Government's International Aid & Development Agency
PCPFC	Provincial Committee for Population, Family and Children
PM	Project Manager
PMB	Project Management Board
PPC	Provincial People's Committee
RH	Reproductive Health
RTCCD	the Research and Training Centre for Community Development
TBA	Traditional Birth Attendant
UNFPA	The United Nations Population Fund
VHW	Village Health Worker
VSA	Volunteer Service Abroad
YFC	Youth Friendly Corner

5.2. Acknowledgement

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Thanks you all for your valuable supports and collaborative attitudes.

On behalf of the team
Dr. Tran Tuan, RTCCD
December 2008

5.3. List of Surveyed Communes at the End-line Survey

District code	District name	Commune code	Commune name
1	Quy Nhon city	1	Bui Thi Xuan
		2	Ngo May
		3	Nhon Binh
		4	Tran Quang Dieu
2	Tuy Phuoc	5	Dieu Tri
		6	Phuoc Thanh
3	An Nhon	7	Dap Da
		8	Nhon Phuc
4	Phu Cat	9	Cat Tien
		10	Cat Lam
		11	Cat Trinh
5	Phu My	12	My Duc
		13	My Thang
6	Hoai Nhon	14	Hoai Duc
		15	Hoai Huong
		16	Hoai Tan
		17	Hoai Thanh
7	Tay Son	18	Binh Tan
		19	Vinh An
8	Hoai An	20	An Huu
		21	Bok Toi
9	Van Canh	22	Canh Vinh
		23	Van Canh town
10	Vinh Thanh	24	Vinh Hiep
		25	Vinh Thinh
		26	Vinh Thuan
		27	Vinh Son
11	An Lao	28	An Hoa
		29	An Quang
		30	An Tan

5.4. Brief of Baseline Survey

Under the guidance of Ministry of Health, with the collaboration of the Vietnam Committee for Population, Family and Children and receiving the technical-financial assistance by the United Nations Population Fund (UNFPA) in Vietnam, the Research Center for Rural Population and Health (RCRPH) - Thai Binh Medical College has conducted the baseline survey to assess the *"Current status of the provision and utilization of Reproductive Health Care Services in Binh Dinh province"*. Findings of this survey can be used to identify the format and level of interventions needed to be implemented in the 6th Country Program and at the same time to establish a baseline for end-of-program evaluation.

During June, 2003, investigators conducted the survey at RH provision facilities at 3 different levels: 2 HFs at provincial level (Ob department of PGH and provincial MCH/FP center); 4 HFs at district level (district hospitals and MCH/FP brigades) and 30 CHCs. HFs at district level and CHCs have been selected randomly. In this survey, the availability and quality of the provision of RH services were assessed against the National Standards (NS) on RH care services, promulgated by MOH with the Decision 3367/QD-BYT, dated September 12, 2002, and against other national professional guidance and technical regulations of RH regulated at all health settings following the Decision 385/2001/QD-BYT dated 13th February, 2001. For the community side, the baseline survey was conducted among 3 target groups who have the need of service utilisation (210 women aged 15-49 having children under 24 months, 210 men whose wives were in the 15-49 age group having children under 24 month, and 210 unmarried adolescents aged 15-19 years). Utilisation of 5 questionnaires have been made to assess the quality and availability of RH care services, and concurrently to assess knowledge, attitudes, behaviours of groups that need to use the service at the community. Investigators have visited 36 HFs, interviewed 95 health staff and observed practice of many SPs at 3 levels.

Findings of this baseline survey are presented in two parts - the service providers and the service users, and the relationship between the SPs and SUs. Service provider group was described at 3 levels of the health system: provincial, district and commune levels. The community group was described by comparison of the 3 target groups of the survey.

Quality assessment for RH care service provision was mainly based on NS on RH care issued by MOH for the first time in 2002. Generally, analysis of available data in different aspects of RH care service at different levels showed that the level of NS attainment was very low. Thus in this survey, NS attainment rates in different aspects were analysed thoroughly. As many as 4 levels which have been analysed was number or proportion attaining NS, including: (i) $\leq 50\%$; (ii) from 51% -75%; (iii) from 76% - 99%; and (vi) achieving 100% of NS. The purpose of ranking those levels is to help provinces to have more details of their current state of quality and to create favourable conditions for comparison with end-of-program evaluation. In the current status, the fact that many HFs and aspects at different levels have not achieved NS has indirectly indicated that many contents of NS on RH care service are high and inappropriate to the local situation. Such regulations on infrastructure, number of rooms, number of medical equipment sets, ect. are not appropriate to the reality in communes; instead, they should focus on the utilisation value of those rooms and medical equipment. Followings are the main findings of different aspects in the survey.

STATUS OF RH SERVICE PROVISION

Infrastructure, equipment and essential drugs for RH services

Separate delivery and patient rooms accounted for the highest proportion among 30 surveyed CHCs (66.7% and 50% respectively). The rest of the rooms available at less than 50% of CHCs. The lowest proportion was found with CHC having FP procedure room (23.3%). Generally, only 1/30 CHCs possessed adequate number of 6 rooms as stipulated in NS; 10 CHCs with 4-5 separate rooms, the rest of 19 CHCs having 1-3 separate rooms. Only 3 patient rooms were found to have items and quantity achieving 100% of NS. As many as 62 rooms achieving 51-99% of NS, and 14 room with $\leq 50\%$ of NS. Items and quantity in separate technical room were found in serious shortage in Gyn. examination room and FP procedure room.

None of HFs achieved 100% of NS in terms of information board. On the contrary, all (100%) HFs achieved $\leq 50\%$ of NS. Only 50% of HFs at provincial level and 3.3% CHCs achieved 100% of NS in hygiene. Only 3.3% CHCs attained 100% of NS for having waiting areas. On the contrary, 100% HFs at provincial, district and 46.7% CHCs achieved $\leq 50\%$ of NS.

Complete instrument sets were in short in many CHCs. Of the 30 surveyed CHCs, only 2 CHCs got 7 complete sets, 8 CHCs got 4-6 complete sets, and 17 CHCs had 1-3 complete sets. Three out of 30 CHCs did not have any complete instrument sets. None of CHCs achieved 100% of NS in terms of other equipment and instruments. A majority of CHCs achieved 51-75% of NS, while 4/30 CHCs achieved $\leq 50\%$ of NS.

At provincial level, the minimum average number of complete sets of instruments was 1 set/HF. At district level, the insufficiency of complete instrument sets was more serious than that of the provincial level. Even though most complete sets were available for more than one set/HF on the average, complete surgical instrument sets were in short at all levels.

All 5 protocols for infection control were found available in HFs at provincial and district levels, while at commune level about 20% of CHCs possessed each type of the protocol. As many as 6 types of equipment for infection control were found available in most of HFs at provincial and district levels, but were in short at many CHCs.

It was found that the number of HFs with sufficient and unexpired drugs was very small. The highest proportion was found (53.3%) with CHCs having sufficient intravenous transfusion. Four out of 10 drug groups were found in insufficient and expired condition. Most CHCs did not have sufficient drugs listed in 10 drug group as stipulated, especially antibiotics, vitamins and minerals, septics and antiseptics, and analgesics, anaesthetics.

At provincial level, 50% HFs attained 8/8 standards and 50% HFs attained basic and comprehensive EOC. At district level, 50% HFs attained 8/8 standards and 50% attained 7 standards. The commune level was found to have the lowest proportion with 20% CHCs attaining 4 standards and 36.7%, which was the highest proportion of CHCs, attained 1 standard.

Information on RH service providers

Interviews were conducted in the survey with doctors specialised in obstetrics and gynaecology, secondary midwives and higher qualifications, and Ob/Pe assistant doctors. They have been working in RH area and have had over 15 years of working experience at the most. Most of them had the right professional qualifications and work experience.

The proportions of service providers who were never retrained on any RH service for past 4 years are as follows: at provincial level - 13.3%, at district level - 5% and at commune level - 1.7%.

Two opinions relating RH care and receiving agreement from many SPs at 3 levels were "Health workers are service providers and service users are clients" (987.9%), and "Counselling is a must for health provider to provide to any client" (92.6%). Very few SPs at all levels agreed with the opinion that "Health providers don't feel comfortable to provide information/counselling on sexuality to clients" (9.5%). For commune level, the proportion of SPs who thought "Professional skills of providers in this facility meet people's needs for examination and treatment" was low (41.7%).

a) Knowledge on safe motherhood

Only 13.3% of SPs at CHCs attained 100% of NS in giving responses on general examination. Over 50% of SPs at all levels attained 51-75% of NS, while 29.5% of respondents achieved $\leq 50\%$ of NS. Regarding obstetric examination, the majority of SPs at all levels attained 100% of NS in giving responses, while the proportion of those SPs who attained $\leq 50\%$ of NS was low (13.3%) at commune level. Only 15.8% of SPs at all levels attained 100% of NS in terms of counselling given to clients. On the contrary, the proportion of SPs achieving $\leq 50\%$ of NS was still high (46.3%).

The proportions of SPs with knowledge on abnormal signs which need immediate management during normal labour attaining 100% of NS was only 40% at district level and 18.3% at commune level. Most SPs recorded 51-99% of NS. Only 6.7% at provincial level and 20% at commune level achieved $\leq 50\%$ of NS.

Regarding knowledge on normal neonatal care immediately after delivery, only 5% of SPs at district level attained 100% NS in giving responses to this matter. Most SPs at all levels achieved 51-99% of NS. The proportion of respondents achieving $\leq 50\%$ of NS was 26.3%. Regarding the issues of postpartum mother care within 24 hours after delivery, the proportion of SPs at all levels achieved 100% of NS was 68.4%, while the proportion of those who scored $\leq 50\%$ of NS was still high at commune level (23.3%). For the issue of neonatal care within 24 hours after delivery, the proportion of SPs attained 100% of NS was 10% at district level, and 1.7% at commune level. Most SPs attained 51-99% of NS (61.1%). However, the proportion of SPs achieving $\leq 50\%$ of NS was still high at commune level (53.3%).

The proportion of SPs at commune level attaining 100% of NS on knowledge danger signs for postpartum mothers was very low (1.7%). The proportion of respondents achieving 51-99% of NS was 54.7%, and the proportion achieving $\leq 50\%$ of NS was still high (40% at district level and 56.7% at commune level)

With regards to abnormal signs of postpartum mothers, the proportion of SPs at all levels attaining 100% of NS on right management in such situations was only 20% at provincial level and 1.7% at commune level. Over 50% of SPs achieved 51-99% of NS, while the proportion of SPs attaining $\leq 50\%$ of NS was still high (37.9%). The proportion of SPs at all levels attaining 100% of NS on abnormal signs management for the newborn was only 16.8%. The rest of respondents mainly achieved 51-99% of NS (69.4%), and those who achieved $\leq 50\%$ of NS were found only at commune level (21.7%).

For knowledge on postpartum mother care right after delivery, only 13.3% SPs at provincial level and 5% at district level achieved 100% of NS. The rest of SPs achieved $\leq 50\%$ of NS (66.3%). For knowledge on postpartum mother care within the first week after delivery, no SP at all levels achieved 100% of NS. Most of the rest SPs achieved $\leq 50\%$ of NS (70.5%).

b) Knowledge on FP and abortion

The proportion of SPs who had knowledge on counselling for IUD insertion attaining 100% of NS was very low (only 6.7% at provincial level), while the rest SPs mainly achieved $\leq 50\%$ of NS (60%). For knowledge on counselling at abortion, the proportion of SPs at all levels attaining 100% of NS was very low (only 5% at district level). The proportions of SPs attaining $\leq 50\%$ of NS were 20% at district level and 71.7% at commune level.

SPs at all levels reported that IUDs have become one of the most popular contraceptive methods because it is "efficient" (71.6%), "comfortable, IUD lasts for a long time" (74.7%), And "safe" (62.4%). On the contrary, condom is unpopularly used because it "reduces sensation" (76.8%), while "clients are afraid of side-effects" with contraceptive pills (77.9%), and "clients are easy to forget taking it" (50.5%).

c) Knowledge on adolescent reproductive health

The most two concerned issues out of 10 issues expressed by SPs at different levels were "Lack of knowledge on puberty and pregnancy signals" (48.4%) and "menstrual disorder" (47.4%).

The statement that could be used to respond to adolescent RH needs and responded by most SPs - namely "regular counselling" (92.6%). It should be noted that 1.7% of SPs at commune level did not know any needs of adolescents in terms of RH care.

Almost SPs at all levels agreed that condom is the most appropriate contraceptive method for adolescents (95.8%). Emergency oral pills and combined oral pills were also considered as appropriate to adolescents (76.8% and 68.4% respectively).

d) Knowledge on RTIs and STDs

A majority of SPs at all levels responded in line with NS on treatment of vaginal discharge syndrome (60%). No SPs achieved 100% of NS on counselling gonorrhoea patients. On the contrary, most of them attained $\leq 50\%$ of NS only (93.7%).

SPs' practice on RH care

In general, as many as 5/9 steps in ANC were practised by over 50% of SPs. It was noted that the obstetric, regardless how important it is, was practised by only 54% of SPs. With 12-27 week gestation, 1/9 steps was practised by the 50% of SPs attaining 100% of NS. With >27-week gestation, only 2/9 steps were practised by over 50% of SPs achieving 100% of NS.

In observing a partograph in *Alert* situation, about 53.3% SPs at commune level, 15% at district level, and 13.3% at provincial level reported that they did not know what was happening. The proportion of SPs giving correct responses was only 24.2%, while the rest gave incorrect responses.

Case record for normal delivery has not been properly done at commune and provincial levels. However, it was found through collected data that 100% of records at provincial and district levels, 33.3% at commune level achieved 100% of NS on recording of 7 signs/symptoms that need to be followed-up. None of records found to attain $\leq 50\%$ of NS in recording practice.

HFs at all levels were not seen to be in compliance with regulations for partograph recording. However, it was found through collected data that 100% of partographs examined at HFs at provincial level, 83.3% partographs at district level, and 80%

partographs at commune level achieved standards of recording the start of labour. Regarding recording of progress of labour, 75% of partographs recorded at district level and 40% partographs found at commune level attained standards. Regarding the recording of fetal status, only 33.3% partographs found at provincial level and 66.7% at district level attained standards. With regards to woman's status recording, only 25% partographs found at provincial level achieved standards. Referring to management based on the representation of partographs at all levels, only 8.3% partographs found at district level achieved standards.

No SP at provincial and district levels practised care for normal newborn after delivery attaining 100% and <50% of NS. On the contrary, all SPs have practised scoring 51-99% of NS.

The proportion of SPs practised counselling postpartum mother right after delivery attaining 100% of NS was 33.3% at provincial level and 7.1% at district level. The rest of SPs mainly achieved $\leq 50\%$ of NS (52.2%).

At provincial and district levels, as many as 15-18/28 IUD insertion manipulations were practised by all SPs. However, 1-3 manipulations were not done by any SPs. The rest of the manipulations were practised by very few SPs. Those manipulations were related, to large extent, to preparation and sterilisation process. Among 6 observed IUD insertion cases conducted at district level and 6 similar cases at provincial level, no SP performed the job attaining 100% and $\leq 50\%$ of NS. Most SPs at all levels attained 51-75% of NS (66.7%).

KNOWLEDGE, ATTITUDE AND BEHAVIOR OF THE COMMUNITY ON RH CARE

Demographical features of respondents

In reality, the target groups of married women aged 15-49 with children < 24 months who were randomly selected for the survey consisted of most members between 20-34 years of age (82.9%). Men who have wife with children < 24 months old were most found in age group between 25-39 (82.9%). Most respondents were the Kinh ethnicity (93.3%), and most respondents did not follow any religion (95.7%). The majority of respondents were at primary school level of education (54.8%), followed by high school (27.6%), secondary school (12.2%), college and university level (3.2%), and no schooling (2.2%). Female respondents who had 1-2 pregnancies accounted for 3/4 (73.3%) and almost (81.4%) of them had 1-2 children.

Access to information

Such an issue as "Contraceptive methods" was heard by the highest proportion of respondents (91.1%), and the least heard issue was "Psycho-physiological matter of puberty" (57.1%). Other issues were heard by most of the respondents.

Sources of information on RH are mainly from the mass media (TV, radio, newspapers, books). Apart from the mass media, adult received information from commune health workers, population collaborators/village health workers, and union staff. Apart from getting RH information from the mass media, adolescents got information mainly from their teachers.

Attitude towards opinions of RH

The proportions of respondents showing their consensus with the right perceptions such as "One should not get married before 19 years of age", and "One can be pregnant if having sex without any contraceptives" were higher than those who agreed with some incorrect statements such as "Unmarried people should not know about RH issues" or "Contraceptive methods are for married people only".

Knowledge and practice on safe motherhood

Knowledge of men and women on danger signs during pregnancy periods for women was poor. About 56.9% of respondents did not have knowledge on any sign that causes danger to pregnant women; 23.6% could name 1 sign; 17.1% could name 2 signs; 2.1% could name 3-5 signs and no respondent could name all 6 danger signs.

Most respondents reported that if those danger signs were detected they would visit public HFs for services (94.7%); over 1/3 stated that they would visit private clinics (34.1%); nearly 1/5 said that they would invite HWs for home treatment (18.6%). The proportion of respondents who stated that they could treat by themselves was 4%, while those who would do nothing accounted for 0.9% or who go to the herbalist accounted for 0.4%, and no one reported that they would do worshipping instead of treatment.

The majority of women having children <24 months of age paid ANC visits during the last pregnancy. However, the proportion of those who had fewer than 3 visits was 21.4%, and those who did not have any visit accounted for 2.9%. Among those who attended the interview or wives of the interviewed men having ANC visits, 48.7% visited CHCs for ANC, 62.5% paid ANC visits at higher level HFs and 36.7% had ANC at private clinics.

Most women had tetanus vaccination and the proportion of those who got full vaccination accounted for 75.7%. The proportion of women who had fewer required injections was 8.1% and those who had no tetanus injection accounted for 2.9%.

Knowledge of men and even women on risks occurring during labour was still poor proved by the fact that 56.7% of women and 61.9% of men could not tell any danger signs for women during labour. Women only considered the following signs as dangerous during labour: "Severe abdomen pain" (24.3%), "prelabour rupture of membranes" (21.9%), and "serious bleeding" (17.6%). Other signs were known by a very low proportion of respondents, even though they are reflected by clear symptoms such as fever (2.4%) and convulsion (3.8%).

A proportion of 59.8% of interviewed women and men reported that place of their last delivery was at public HFs while 14.3% respondents reported that their last delivery was at private HFs. There were substantial proportions of respondents reported that the last delivery was at home (27.1% women and 24.8% men).

The proportion of male and female respondents who did not know any danger sign for postpartum mothers was still high (50.5% women and 56.2% men), while 24.4% respondents could name 1 sign; 15.5% could name 2 signs; 3.6% could name 3 signs and 1.2% could name 4-5 signs.

Respondents proposed management if they encountered danger signs for postpartum mother by visiting public HFs (83.9% for women and 93.5% for men); inviting HWs for home treatment (24.6% for women and 25.9% for men), or visiting private clinics (15.3% for women and 8.3% for men). Except a very small proportion of respondents reporting of their self-treatment (3.5%) and did nothing (0.4%), all interviewed men and women did not agree with the management of doing nothing or worshipping.

Knowledge and behaviours on Family Planning

The proportion of respondents who did not know any contraceptive methods accounted for 7.9% of all those who attended interviews, of whom adolescents accounted for 21.9% and some women (0.5%) and men (1.4%). The proportion respondents who named 3-4 contraceptive methods ranked the highest (41.8%), followed by those who knew 5-7

methods (25.7%), then by those who knew 1-2 methods (22.1%), and the lowest proportion was found among those who knew 8-9 methods (2.5%).

Over half of interviewed people were aware that condom and oral pills supply/sale source was at CHCs and pharmacies. On the contrary, over 1/3 to almost half of adolescents did not know where condom and oral pill supply/sale were.

A proportion of 82.1% respondents were utilising one of the currently existing contraceptive methods. Of all commonly used contraceptive methods, men and women reached a consensus for 3 most commonly used contraceptive methods: IUDs (29.8%), condom (20.7%), and withdrawal (16.4%). Two leading reasons in selecting contraceptive methods that were currently used by women and men were "It is convenient" and "High effectiveness".

Upon being asked about the time for application of contraceptive methods after delivery, only 34.3% of the respondents gave correct responses as "When resuming sex".

Knowledge on RTIs/STDs and HIV/AIDS

Among 3 types of RTI/STD, the proportion of respondents telling the name of gonorrhea ranked the highest (77.1%), followed by syphilis (74.1%), and the lowest proportion was found with gynecological diseases (60.6%). A proportion of 15.6 respondents never heard of those 3 diseases. On the contrary, 51.9% respondents have ever heard of those 3 diseases; 23.7 knew 2 diseases, and 8.9% knew 1 disease. Of those who knew about 3 diseases, women accounted the highest proportion (62.9%), then men (58.6%) and adolescents had the lowest proportion (34.3%). The number of female adolescents who knew all those 3 diseases was also higher than that of male adolescents (38.1% vs 28.6%).

Of those who ever heard of RTIs and STDs mentioned above, most respondents were aware of the causes in contracting those diseases. The reason "having sex with infected persons without condom use" was most agreed by all 3 groups - women, men and adolescents (85.2%, 92.4% and 87.1% respectively). The next two reasons were stated by a relatively high proportion of respondents across 3 groups were "having sex with multiple partners without condom use" (82.3%) and "Unhygienic genitals" (77.8%).

Only 23.5% of respondents correctly and fully understood that it was necessary to "treat the patient and all those who had sex with the patient" when a person acquired RTIs/STDs. The proportion of women who had correct understanding (36.9%) was higher than that of adolescents (26.4%) and men (9.2%).

Almost respondents ever heard of AIDS and stated correctly the HIV transmission routes such as "Unsafe blood transfusion", "Having sex without condoms", "Sharing syringe", "From mothers to newborns", and "Direct contact with blood, fluid of the infected". However, 49.8% of the respondents misunderstood that HIV is transmitted through "Mosquitos/Insect bites", and 8.1% believed that "individual contacts" could also transmit the virus. The proportion of respondents having misunderstanding was found the highest among adolescents, then women, and the lowest among men.

Almost all respondents reported that blood testing could help identify exactly who is infected with HIV. However, 28.9% respondents misunderstood that an HIV-infected person could be identified through his/her appearance and/or life-style. It is interesting to note that the proportion of adolescents misunderstanding this point was higher than that of adults. The proportion of respondents who did not know any of identifying ways mentioned above accounted for 8.9%, of whom women had a bigger proportion than other respondent groups.

The proportion of respondents who knew all HIV/AIDS prevention measures was not correspondently as high as that of those who knew about HIV transmission routes. Measures to be used for prevention of HIV infection stated by respondents were "No sex with multiple partners" (56.3%), "Use condom when having sex" (54.8%), "Avoid sharing syringe or use sterile syringe only" (48.1%), and "No drug injection" (30.2%). The other remaining measures were mentioned by a smaller proportion of respondents (less than 25% of respondents). A proportion of 9.7% respondents, including 12.9% adolescents, 9.9% women and 6.3% men who got involved in interviews did not know what the HIV prevention measures were.

Knowledge and behaviour on abortion

Safe abortion locations as in public HF were known by 69.1% women and 53.3% men, while private HF were considered as abortion locations by 28.1% women and 23.4% men. The proportion of respondents who did not know where safe abortion could be done was relatively high (29.1% women and 39.5% men).

There was a low proportion of those who could talk about specific consequences of abortion for women - 20.5% respondents could not tell any specific consequence. About 45.7% women and 31% men reported that abortion could make "STI diseases to be easily acquired"; 31% women and 30% men believed that abortion could cause "infertility"; while 17.1% women and 8.6% men were afraid that abortion can cause "death".

Among the interviewed women, only 1% (2 women) have got abortion and that was the first abortion ever in their life. One woman had abortion at public HF and the other woman at private HF. Both women did not have any complications during and after abortion.

PROVIDERS AND COMMUNITY PERCEPTION ON RH SERVICE QUALITY

Frequency of performing RH care services

At provincial and district levels, most SPs had clients for performing RH care services daily, while a few of them did it on weekly, monthly and quarterly basis (except some RH care service requiring high technology). At commune level, proportions of SPs having clients to perform the allowed RH services did not change much with frequencies as daily, weekly, monthly and quarterly.

Status of clients' visits to health facilities

Retrospective examination of records on clients' visits to HF for services, on the average in 2002 there were 2,347 clients' visits to a CHCs, that is, 6.3 clients/day on the average. The average number of clients per 1 health worker in 2002 was 521, that is to say, there was 1.4 clients/1 health worker/day on the average. The retrospective findings show a big disparity in terms of clients number seeking services at CHCs. In some CHCs, services were given to a very small number of clients - Maybe those CHCs locations are close to DHCs or provincial hospitals.

RH care quality at health facilities

Attitudes, qualifications of health staff as well as equipment at DHCs were assessed with higher values than those at CHCs by clients even though they had to wait for a longer time and health workers spent less time to talk with clients on health issues.

Generally, through opinions expressed by women, men and adolescents, it is possible to see the relationship between the service provider (including infrastructure, equipment, drugs and staff) and the community has been improved.

Contents of counseling from the birth attendants

Most health workers have provided counselling to postpartum mothers. Only 6.6% women confirmed that they did not received counselling from HWs after delivery. The counselling contents covered matters which were ranked from high to low proportion of respondents as follows: "breast feeding" (87.5%), "newborn vaccination" (86.3%), "postpartum mother and newborn care" (84%) and "utilisation of contraceptive method when resuming sex" (46.1%).

Community's awareness of clients' rights on RH care

Awareness of 10 client's rights in RH care of both SPs and the community was not satisfactorily achieved, despite that SPs had a better understanding. The proportion of 3 target groups who did not know any client's right accounted for 59.2%, which was higher than SPs side (5.3% had no awareness). Of the 10 client's rights, proportion of SPs who knew about client's rights was higher than that of the community.

RECOMMENDATIONS

It is necessary to conduct retraining for all SPs at all levels on RH care with an aim to improve knowledge and basic practical skills such as safe motherhood, FP, ARH, RTIs/STDs in compliant with NS. Particularly, retraining on counselling skills and behavioural change in some areas of RH care services should be taken into consideration

SPs at all levels should be given retraining in order to have better skills in using the partograph and recognising signs/symptoms which should be recorded in the normal delivery records. Health staff at district level should provide professional support to health workers at commune level.

Training to improve knowledge on calculating HMIS indicators, especially for SPs at commune level should be conducted. Review and redesign of registration recording system, forms, report statistics and record should be done at all level to be free from the state of formularisation. Enhancing the supervision work and providing additional guidance in order to get accurate information.

CHCs should have at least 4 technical rooms meeting the NS for all technical items for RH service provision. Delivery room should not be shared with gynaecological examination room and FP procedure room in order to avoid cross infection.

Health facilities at all levels should attain the standardized regulations on information board, waiting areas for clients, especially ensuring hygiene status and clean environment.

CHCs must have full sets of instruments for episiotomy, newborn resuscitation, single -valve Karman vacuum syringe, cervical examination set, delivery set, sets for IUD insertion and removal, and gynaecological examination set. Those incomplete sets of instrument should be supplemented, and more importantly, it is necessary to improve the quality of medical equipment management so as to prolong the utilisation.

Health facilities at all levels should ensure to have all essential equipment for infection prevention and control. Protocols for infection prevention and control should be made available at every HF. At the same time, monitoring and supervision work should be strengthened on adherence to regulations on infection control at HFs, especially the procedure for cleaning and sterilising instruments after use.

Each CHC should have a drug cabinet in accordance with all specifications for a good drug storage. Essential drugs should be adequately available and have 1 month of shelf-

life prior to the expiry as stipulated. However, essential drug list should be more regularly updated to be appropriate with the current state of drugs of each locality.

Essential obstetric care (EOC) services must be fully performed at basic level (5 different types of services) at CHCs where delivery service is available, and comprehensive EOC at district and provincial level (7 services at provincial MVH/FP center and 8 services at DHCs and provincial hospital).

Additionally providing and supervising 4 tools for pregnancy management, namely appointment box, pregnancy management chart, ANC book and pregnancy registration book.

Utilising different formats for IEC activities; taking advantages of communication means such as TV, radio, books, newspapers, ect, or HWs, PCs and mass organisations to disseminate information on danger signs for pregnant women, intrapartum and postpartum as well as managements.

Launching propaganda campaigns for child-bearing age women and their husbands/partners with an aim to reduce the proportion of pregnant women who are unable to attend full ANC or anti-tetanus vaccination. At the same time, focus should be given to the target of reducing and gradually eliminating the self-treatment, or doing nothing for automatic healing, or inviting herbalists/ traditional healers when encountering post-partum danger signs.

Health education and promotion should be given to male groups so as to encourage them to be involved actively in the program and be more responsible for RH care and utilisation of contraceptive methods.

Strengthening IEC activities to adolescent group (both in school and out of school) on RH, especially contraceptive methods and HIV/AIDS prevention. RH care services for adolescents should be made available, convenient, and responsive.

Promoting available FP services in the community, diversification of contraceptive methods, IEC activities for a better understanding of different contraceptive methods as well as contraceptive instrument supply/sale points. Clear explanations should be given to community, especially adolescents about the low effectiveness of traditional contraceptive methods in order to reduce the utilisation of those contraceptive methods, and concurrently to help the public understand correctly and select modern contraceptive methods.

Propagandising community for correct understanding of treatment of RTIs/STDs, identification of HIV infected patients, and prevention measures for HIV/AIDS transmission.

Education and propaganda should focus on community, especially male group and adolescent group on the availability of abortion service, consequences of abortion and prevention of unexpected pregnancy.

The distance from provincial HFs to the furthest points within the province is relatively substantial, therefore measures should be designed to improve professional knowledge of SPs at district and commune levels so as to avoid the overload of patients at higher levels while fewer patients attend services at lower levels.

At CHCs and DHCs, there should be separated area for medical service provision for unmarried clients.

Information on client' rights should be given to SPs and community in order to improve the health care, benefits of the service and relationship between SPs and clients.

5.5. Terms of References

BACKGROUND

Binh Dinh Province is located on the coast of Central Vietnam with a total population of 1,537,890. It is divided into four regions: highlands, midlands, plains and coast. Each of these regions is quite different in geography, land yield, and in the health needs of the people. There are 11 districts making up 152 communes, of which 45 are in remote and mountainous areas, with difficulties of access to health services, and transportation.

Under the financial support of the New Zealand government, UNFPA in collaboration with Binh Dinh People Committee have implemented a US\$3 million project on maternal and child health in for the period 2004-2007. The project aims to contribute to the attainment of a higher quality of life for women and children in Binh Dinh, especially for those who live in mountainous and remote areas, adolescents and minor ethnic groups, with a special focus on the improvement of quality and utilization of maternal and child health service provided by health care networks in Binh Dinh Province

The project has been implementing since March, 2004 and will compete on December 31, 2008. In 2005, in order to review the achievement as well as find lesson learns to necessary adjustment for running the project forward. A mid term review (MTR) was conducted, following recommendations of this MTR, a commandment of the project document was made. The key changes in this amendment focused on more support in rural areas where living ethnic minority people and the extension of project live without financial add till the end of 2008.

After about 5 year's implementation, Binh Dinh people committee, NZAID and UNPFA plan to conduct the end line survey to assess the project achievement compared with the base line data. The survey will focus on the assessment of impact, objective and output indicators. Activity indicators will not be included in this survey. It is expected that the end line survey will provide inputs for the final evaluation of the project that will be conducted by mid September 2008.

OBJECTIVES

Overall objective: To assess the achievement of the project over the period 2004-2008

a) To assess to which extent impact indicators of the project are achieved. The indicators to be measured are as follows:

- o Maternal mortality ratio
- o Under 5 year children mortality rate
- o Infant mortality rate

It notes that indicators' comparison between the provincial average and mountainous/difficult-to-reach areas will be made whenever it is appropriate.

b) To assess to which extent objective and output indicators are achieved.

Objective 1. Strengthen capacity of the DOH and involved organisation in provision of MCH services

- o % of deliveries assisted by trained health workers

- o % of pregnant women to have at least three antenatal care visits
- o % of mothers have at least one post-natal care visit after delivery

Other output indicators to be measured:

- o % service delivery points provide reproductive health services following the National Standards and Guideline for reproductive health care services
- o % service delivery point have sterilized medical equipment ready for clients

Objective 2. Strengthen capacity of the DOH, PCPFC and involved organizations in provision of education and access to RH information and services for adolescents and young people

- o % adolescents knowing at least 4 modern contraceptive methods;
- o Reduced number of abortions amongst youth (if possible to measure)
- o Enhanced capacity of those who are delivery of Adolescent Reproductive Health (ARH) information and counselling for youth

Other output indicators to be measured:

- o % RH providers, including peer educators, Youth Union cadre and teachers in vocational training centres, are able to provide information and offer counselling on ARH issues (provincial average vs. mountainous areas)
- o Models of the counselling centre and youth friendly corners operated in accordance with the ARH toolkit by UNFPA

Objective 3. Increase the support of leaders at all levels for, and the participation of the community in implementing maternal and child health activities by improving the capacity of the Department of Health (DOH), Provincial Committee for Population, Family and Children (PCPFC), mass organizations, and mass media in advocacy and Behaviour Change Communication (BCC) activities.

- o % interviewees express their preference for having skilled health personnel at delivery and frequency of such deliveries has increased.
- o % men and woman discuss reproductive health issues, including the prevention of domestic and reproductive health – related violence, with their spouses and partners
- o % people can describe at least three modern contraceptive methods and usage of contraceptives has increased
- o % women can recognize 3 of 6 danger signs during pregnancy and go to health facility for examination and/or delivery
- o % people can describe forms of transmission of HIV/AIDS;

Other output indicators to be measured:

- o % households visited regularly by trained communicators and have received (and understood) MCH-related BCC material
- o reduction in reported cases of domestic violence and in child injuries and accidents

Objective 4. Strengthen capacity of the DOH and involved organizations in supervision, monitoring and evaluation, and provision technical backstopping on maternal and child health related activities

- o % service delivery points are supervised monthly and found to be improving.

- HMIS is stably operated and provides a good basis for monitoring and for planning.
- % of health facilities comply with MOH's guideline on M/E

It notes that indicators' comparison between the provincial average and mountainous/difficult-to-reach areas will be made whenever it is appropriate.

3. Expected outputs

- A proposal that outlines how the team responds to the requirements of the TOR including data collection, analytical methods and proposed budget.
- First draft of the report presented to UNFPA and NZAID for comments and inputs.
- The final report (in both English and Vietnamese) following the required format agreed by NZAID and UNFPA by Mid September, 2008.
- A workshop organized in Binh Dinh province to have comments and inputs of local partners.
- A key note presentation to be presented in the final project review meeting organized in Binh Dinh in November 2008.

4. METHODOLOGIES

To assess impact and output indicators of the project over the period 2004-2008, it is recommended that the end-line survey will be conducted amongst the target populations (including women in reproductive age, adolescents, health workers, etc). In addition to the end-line survey, critically review data and information from General Statistic Office, Ministry of Health, Binh Dinh People Committee and Binh Dinh Department of Health, UNFPA as well as from other sources are highly recommended. The research team is requested to carefully review the baseline report (UNFPA, 2003) in order to determine the most appropriate research methods to be applied in the end-line survey.

COMPOSITION OF THE TEAM

The team will comprise expertise in capacity building and institutional strengthening, reproductive health including maternal and child health and adolescent reproductive health, behaviour change communication, and review/evaluation methods and approaches with the ability to manage such exercises. Key stakeholders will be invited to contribute personnel to the survey, in particular the DOH, the MCH project office, the former PCPFC staff and involved organisations, with a view to achieving gender balance and participation of ethnic minority peoples²⁰.

Team leader: He/she should hold at least a masters degree in public health or related disciplines. He/she should have at least 10 year's experience in capacity building and institutional strengthening or in research/training in reproductive health, especially in MCH care, and have experience in conducting baseline and end-line surveys. He/she should also have experience in both qualitative and quantitative research methods and possess superior analytic skills. He/she should be fluent in English and Vietnamese.

Team member(s):

Epidemiologist(s): He/she should have a master degree on epidemiology or research methods. Have at least five year experiences in design quantitative studies as well as data analyse using appropriate statistical package such as STATA or SPSS. Have strong analytical and data interpretation skills. Have good experience in supervising a complex data collection team in the field. He/she should be fluent in English and Vietnamese.

²⁰ NZAID may consider inviting an international expert to help the team during design, data analysis and report writing.

MCH expert(s): He/she should be a senior reproductive health/maternal health expert, and have at least 5 years of clinical experience. He/she should have experience in assessment of health facilities and performance of health workers. He/she should be fluent in English and Vietnamese.

Health promotion or community development expert(s): He/she should have at least a master degree in health promotion/health education or related disciplines. He/she should have updated knowledge and experience in health education/promotion on maternal and child health issues. He/she should have experience in assessment of changing behaviour in the community. Have at least five year working experiences in health related field. He/she should be fluent in English and Vietnamese.

6. OTHERS CONDITIONS

UNFPA will sign a contract with the selected institution following UNFPA financial and procedural regulations and guidelines for subcontracting.

The following documents should be considered as reference for the end line survey.

- Mid Term Review report.
- Project documents (the original and revised version)
- Base line survey
- Annual reports by UNFPA and by PMU