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FINAL EVALUATION

NORTHEAST CAMBODIA CHILD SURVIVAL PROGRAM

CHHLONG OPERATIONAL DISTRICT
KRATIE PROVINCE
CAMBODIA
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ACRONYMS

ARI	Acute Respiratory Infection
BF	Breastfeeding
BL	Baseline
CASD	Community Action for Social Development
CBD	Community Based Distribution
CDD	Control of Diarrheal Disease
CHH	Chhlong
CO	Community Officers
COPE	Client Oriented
CPA	Comprehensive Package of Activities
CS	Child Survival
CSCC	Child Survival Coordinating Committee
DIP	Detailed Implementation Plan
EPI	Expanded Program of Immunization
FE	Final Evaluation
GMP	Growth Monitoring
HC	Health Center
HKI	Helen Keller International
IDD	Iodine Deficiency Disorder
IEC	Information, Education, and Communication
IMCI	Integrated Management of Childhood Illness
KAP	Knowledge, Attitudes, and Practices
KPC	Knowledge, Practice, and Coverage
LQAS	Lot Quality Assurance Sampling
MCH	Maternal and Child Health
MOH	Ministry of Health
MPA	Minimum Package of Activities
MTE	Mid-Term Evaluation
NCCDP	Northeast Cambodia Community Development Program
NCCSP	Northeast Cambodia Child Survival Program
NCRHP	Northeast Cambodia Reproductive Health Program
NERP	Nutrition Education and Rehabilitation Program
NNT	Neonatal Tetanus
OD	Operational District
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PFD	Partners For Development
PHD	Provincial Health Department
PRA	Participatory Rural Appraisal
PROCOCOM	Provincial Coordinating Committee
PVO	Private Voluntary Organization
TBA	Traditional Birth Attendant
TOT	Training of Trainers
TT	Tetanus Toxoid
USAID	United States Agency for International Development
VDC	Village Development Committee
VHSG	Village Health Support Groups
VHV	Village Health Volunteer
VSO	Voluntary Services Overseas

Acknowledgement

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A. Executive Summary

Partners For Development (PFD) was awarded a 42-month USAID Child Survival Program Grant from October 2000 to March 2004. Subsequently a no-cost extension was approved for the same program till September 2004. The goal of the Northeast Cambodia Child Survival Program (NCCSP) aimed to improve the health and reduce mortality of approximately 17,000 children under five years of age in the Chhlong Operational District (OD) of Kratie Province, in Cambodia through the promotion of breastfeeding, immunization, improved nutrition and micronutrient intake and improved case management of diarrheal diseases. Approximately 130,000 people live in 101 villages located near the Mekong River and in sparsely populated forested areas.

The program's primary strategy was to increase caretakers' case management abilities and promote improved health behaviors through community health education managed by a large network of Village Health Volunteers (VHVs). VHVs were selected by the community through a participatory process; each was responsible for 50 households within the community and formed the backbone of the program. The NCCSP addressed community needs at three levels: i) at community level by promoting healthy demands ii) among local health providers by support and training iii) at the Provincial and Operational District level by advocating a client-oriented health management approach.

The extensive network of VHVs and Traditional Birth Attendants (TBAs) formed the basis of a strategy that empowered women with young infants to improve their health behaviors through health education and community mobilization. During implementation of the Child Survival Program there was a continuous process of developing and testing suitable community centered Behavior Change and Communication (BCC) models has led to a wealth of experience.

Health Center staffs are supervising the VHV's and this has proven to be a good practice for several reasons. In the first place, the credibility of the messages of the VHV increases when she gets full support from a recognized health worker. Furthermore, the link between community and health services becomes institutionalized. Finally, the improved links between people and health centers has built trust between the community and health services, which can not be taken for granted in a country afflicted by decades of turmoil. The health system had to be rebuilt from scratch and the conflict of interest between the private-for-profit sector and the public health services entangled the same health staff. Trust-building is a core component of all interventions.

The program has been successful in changing the health behaviors of mothers of young children. This is accomplished by effective and appropriate community mobilization strategies, which aim to transfer knowledge and empower mothers of young children through a network of motivated change agents: Village Health Volunteers (VHV) and Traditional Birth Attendants (TBA).

The motivation of the VHVs and TBAs, rather then their level of knowledge, appears to be the crux in the achievement of improved health practices of mothers with young infants. Village Health Volunteers who had seen the impact of improved health behaviors on their own children or in their direct environment, were highly motivated to pass this knowledge on to their peers. Early initiation of breastfeeding after delivery was particularly promoted by VHV's who had seen the effects of colostrum on young infants. Characteristics of successful

Volunteers were investigated and it appeared that Volunteers who had some additional income could concentrate more on the community mobilization. At the same time a number of very poor VHV's could be very motivated due to their newly gained status, which liberated them from the every day routine of survival. The fact that immunization coverage increased dramatically before the Health System Support Program strengthened outreach activities to the villages surrounding Health Centers, underlines the importance of successful community mobilization. At the time of the Midterm Evaluation the majority of the targets were met due to household visits and group sessions conducted by VHV's.

The program has respected the role of the community leaders and the endorsement of their advice and facilitation has contributed to improved health behaviors of mothers of young children through successful community mobilization. The fact that the key role players in the community have been consulted before the program was designed through Participatory Rural Appraisal in more then half of the villages, is an essential part in the success of the program. This increased the sense of ownership in the communities.

The structure whereby VHV's conduct community level interventions and are supervised by Health Center staff is a strategy that has a strong potential for sustainability and replication. The program is very well positioned for sustainability because it has focused on behavior change and enabling the community to determine its own needs and solutions through capacity building. Behavior change is intrinsically self-sustaining. Linking the community to health systems has proven to be effective and contributes to a noticeable increase in utilization of services. The integrated approach of capacity building at all levels and institutionalizing of community organizations contributed to sustainable interventions.

The Child Survival grant contributed to institutional development within PFD. Human Resource Management and Financial Management has been professionalized.

Priority conclusions on improved child survival in the Chhlong Operational District:

- Participatory Rural Appraisal is indispensable for community activities and has been one of the keys to success
- Establishing a Village Health Volunteer network has proven to be an appropriate strategy that has sustainability potential. The two-pronged approach whereby the VHV is supervised by the Health Center staff has improved the involvement of Health Center staff in community needs and resulted in increased utilization of services and improvement in quality care delivery
- Capacity building is an essential element in the empowerment of communities
- Motivation and trust at all levels are indispensable for community mobilization and linking community and public health services
- A lean organizational structure contributed to cost-effectiveness. Scaling-up of this program is feasible and desirable
- Through implementing the four interventions with appropriate strategies, the Child Survival Program succeeded to meet the majority of the objectives

B. Assessment of Results and Impact of the Program

B. 1. Results: Summary Charts

In June/July 2004, PFD recruited an independent consultant to conduct the Final Evaluation of NCCSP. Quantitative data were collected through a KPC survey, by analyzing Child Death Reports and training results of the VHV's to measure impact of the program on child survival. To obtain qualitative data stakeholders at the Provincial Health Department, the Operational District health officials, Health Center Chiefs, VHV Supervisors, PFD staff, village chiefs, VHV's, TBA's, mothers and drug sellers were consulted to assess the process indicators. The core evaluation team was composed of an External Team Leader, the Child Survival Program coordinator and the Child Survival Team Leader.

A summary of demographic data and the number of direct beneficiaries is given below. The specific objectives as outlined serve the overall goal to improve the health of young children and reduce the mortality. The inputs needed to implement the Child Survival activities designed to modify the health practices of mothers and caretakers of young children are also presented.

Table 1: Summary Program overview Northeast Cambodia Child Survival Program				
Beneficiaries:	17,200 children of less then 5 years			
	27,000 women in reproductive age			
Total catchment area:	130,150 people			
Villages / communes	101 villages in 17 communes			
Overall Objective:	To improve health and reduce mortality in under five children			
Specific Objectives 1:	Improve the nutritional and health status of children < 5y			
Specific Objectives 2	Reduce morbidity and mortality from EPI-preventable diseases			
Specific Objectives 3	Improve the nutritional and health status of children < 2 y			
Specific Objectives 4	Reduce morbidity and mortality from diarrheal diseases < 5 y			
Interventions 1	Nutrient education, growth monitoring, cooking demonstrations and rehabilitation			
Interventions 2	Community mobilization to create demand for EPI services			
Interventions 3	Promotion of proper breastfeeding			
Interventions 4	Control of diarrheal diseases, prevention and management			
Human Resources:				
National Staff	FY 1	FY 2	FY 3	FY 4
	12 people	20 people	15 people	11 people
Technical Assistance	1 Child Survival Program Coordinator and 1 Program Manager Health			
Strategies:	Communication and Behavior Change			
	Community mobilization			
	Health Systems Strengthening			
	Capacity building & Sustainability			
Outputs:	410 VHV's trained in 6 rounds (Diarrhea, EPI, BF, Nutrition and 2 refreshers)			
	20 VHV Supervisors trained			
	62,739 Household visits conducted since 2002			
	19,403 Group sessions conducted since 2002			

Total Grant	1,000,000.00 US $			
Annual Budget	FY 1	FY 2	FY 3	FY 4
Spent	327,138.98	229,331.60	253,668.57	187,088.91

The above provided information will assist to put the achievements of the Child Survival program as highlighted in the following table in perspective.

The results of the program are impressive. Breastfeeding practices improved considerably. At the baseline only 2% of newborns received colostrum while four years later 73% of the children were breastfed within an hour after delivery. Exclusive breastfeeding improved, especially in the group of children aged 0-4 months. The impact of change in breastfeeding practices is reflected in the fact that the prevalence of diarrhea decreased 2.2 times. Given the low baseline of 17% one of the most remarkable results is the expanding immunization coverage to 79%. Among the 87% of children who have an immunization card, 89% are fully immunized. The DPT dropout rate decreased from 44% to 5%. The knowledge mothers gained about healthy food through health education was translated in a more balanced and diverse diet for young children. This conclusion was drawn on the 24-hour recall survey. Another remarkable outcome is the increase of iodized salt present at the homes from less then 1% to 41%. In a country where goiter rates and mental and physical impairment due to iodine deficiency is enormous, this can be called a major achievement. Knowledge and practices on Vitamin A also improved. Short supplies and poor recording lead to low scores in the growth charts. The results of the interventions on diarrhea were multiple: not only decreased the incidence of diarrheal diseases from 13 to six episodes on average per year in children under five years, also home management practices and referral practices improved. Children received more home fluids and more children than at the baseline were referred to a trained health worker.

The above results suggest an improvement in child health and a decrease in morbidity in young children. Furthermore the Child Deaths reports based on a community-based information collection system indicate a decrease in under-five mortality. Therefore, the conclusion that the Northeast Cambodia Child Survival program in Chhlong reached its goal seems to be justified.

Table 2: Key Child Survival Indicators		Baseline* N=300	Final** Evaluation N=300
1	% of mothers who initiated breastfeeding within 1 hour after delivery	2%	73%
	% of children exclusively breastfed the first 6 months of life	12%	78%
2	% of children of 12-23 months whose immunization cards indicate they are fully immunized	44%	89%
	% of all children ages 12 – 23 months fully immunized	17%	79%
	% of mothers with a card who received the correct number of TT during her last pregnancy according to self report	15%	67%
3	% of mothers who know in which month to start complementary feeding	34%	78%
	% of mothers who know what kind of additional foods the child needs	9%	58%

	Table 2: Key Child Survival Indicators	Baseline* N=300	Final** Evaluation N=300
	% of mothers who know which food contains Vitamin A	9%	91%
	% of households where iodine is present in the salt used at home	1%	41%
4	% of children who were given the same amount or more fluids during diarrhea	34%	62%
	% of children with a diarrhea in the last 2 weeks who were given ORT (including ORS, salt-sugar solution, rice soup, or home fluids)	15%	81%
	% of mothers who recognize danger signs of in diarrhea	45%	91%
	% of mothers who know to feed their child more often when recovering from diarrhea	17%	85%

**KPC survey 1999; ** KPC 2004*

Given the inputs as outlined in table 1, the achievements are impressive and therefore feasible for scaling-up. The community mobilization strategies prove to be effective and result in improved health practices. Community centered activities increase coverage of EPI services by creating a healthy demand.

Detailed information on the results of the Child Survival program can be found in the chapter B2 and in the KPC Survey report. The majority of the targets were already met by the time of the Mid Term Evaluation and higher goals were set. All interventions have been successful.

B.2 Results: Technical Approach

B.2.a Brief overview of the Program and Initial design

Community activities by Partners for Development in the Operational District of Chhlong date back to 1992. The OD was supported with a Community Development Program with water and sanitation interventions. Technical areas of expertise expanded to Child Survival, Maternal and Child Health, Reproductive Health, HIV/AIDS, Malaria control, Dengue control and agriculture/food security. All interventions were preceded by and built upon Participatory Rural Appraisal. Extensive consultation of the community created a basis for participation and the selection of the Village Health Volunteers originated from the PRA exercise.

Chhlong is located in Kratie Province in the Northeast of Cambodia. The estimated 130,154 people of Chhlong OD live in 101villages and 2 satellite villages. Since the Census of 1998, which is the source of these figures, the population growth has slowed down by one third. Although the population figures are probably overestimated, the Census 1998 is nationally still accepted as the most reliable source of population figures.

Table 3: Total population	**130,154**
Infants (0 – 11 months) 2.1 %	2,750
12 – 23 months old children 2.5 %	3,250
24 – 59 months old children 8.6 %	11,200
Total under 5	17,200

Source: Census 1998

Chhlong district, which consists of 17 communes, is inhabited by a community living along the banks of the Mekong River and an inland located community, living in forest areas. The population is very divers. Due to differences in lifestyle and living standards in the four ethnic groups described below, health needs vary. Accessibility to health services is not equal among the different groups, due to remoteness, language barriers and discrimination.

The floating villages of the Vietnamese can be found on the banks of the Mekong river. The Cham (Muslim) people tended to live on the river banks, but a recent migration wave occurred due to land shortages and collapsing river banks. The riverine communities are less poor and more exposed to development than the inland communities. The river is a continuous source of food and trade. The inland communities tend to be small and poor and are located in malaria endemic areas. The majority of the Chhlong inhabitants are subsistence farmers. Ethnic minorities like the Steang, originate from the Ratanakiri and Mondulkiri provinces and speak Steang. Numbers of inhabitants per village vary considerably. PFD priority intervention areas are the small inland villages, which are worse off in terms of health and economics.

In 1999 PFD was awarded a 42-month grant from USAID to implement a Child Survival Program from October 2000 to March 2004. The Child Survival Program is in its no- cost-extension phase, which will end in September 2004. The overall goal of the Northeast Cambodia Child Survival Program (NCCSP) is to reduce morbidity and mortality of children under five years of age in Chhlong OD, through control of diarrheal disease, immunization, nutrition and micronutrients, and promotion of breastfeeding.

The strategy is to improve healthy behaviors of mothers with young children and to increase caretakers' case-management abilities. Community health education through individual household visits and group sessions are conducted by Village Health Volunteers. The Village Health Volunteers are the core change agents. The selection procedure is done in a participatory way to enable community mobilization efforts to be effective. The VHV transfers knowledge to the community, motivates mothers to change behavior and is the link between the health services and the community. Outreach activities by the Health Facilities are communicated by the VHV and she stimulates mothers to come for EPI.

Linking health systems and communities is done from the community perspective. The philosophy is that community participation will lead to a demand-driven and client-oriented approach to health care and that understanding community needs will improve quality of services and care. The objective of strengthening health systems is to create a sustainable organizational structure whereby linkage between community and health services is institutionalized through supervision and feedback mechanisms. PFD continues to represents the community or the demand side of the health services.

The NCCSP is complemented by integrated projects, which include:

- Reproductive Health/HIV/AIDS: Implemented primarily through Community-based Distribution agents (CBD) who provide education and access to birth spacing and STI/HIV/AIDS prevention products;
- Health Systems Strengthening: Provides formal and in-service trainings to OD and Health Center Staff in order to ensure quality care at health center level;
- Malaria Prevention: Provides insecticide treated bednets and community prevention education to residents of Chhlong OD;
- School Health Education: Trains teachers who instruct children on basic health messages, sanitation and hygiene; and
- Dengue Operations Research: Operated out of two of Chhlong's villages, for the biological control of dengue by breeding the natural predators of the *Aedes Aegypti* mosquito (the dengue vector).

Behavior change models used for the four interventions are specific for the type of intervention and will be discussed extensively in the following chapters. Community mobilization is primarily through the activities of the Village Health Volunteers and the formal instructions given by Health Center staff during consultation.

The first year of the grant was used to build up the program through Child Survival Participatory Appraisal, which was the base for the Village health Volunteers selection the same year. Relationships with the local health authorities were established and the Village Health Volunteer's supervisors were selected among the Health Center staff. PFD local staffs were attracted and capacity building began. Capacity-building was the priority for the second year when major training activities started. The Health Center staffs were trained to be trainers for the Village Health Volunteers which contributed to firm links between the communities and the health system. In the third year the Hearth Nutrition program was established after extensive training and the Nutrition Education and Rehabilitation Program started in remote villages, totaling to 15 in 2004. Refresher trainings on the four interventions were conducted and new Village Health Volunteers were selected to replace the non-active VHV's. Health Center staffs were trained in Integrated Management of Childhood Illness (IMCI) and Client Oriented Provider Efficient (COPE-- client-oriented methodology for quality improvement at health center management level). The fourth year of the program the

second rounds of refresher training took place and the third LQAS survey was conducted. Village Health Volunteers were trained in other program areas. Integration of Village Health Volunteers activities in the Health Systems Support activities intensified to guarantee continuation of activities.

External factors enhanced future program achievements: Health Net International started to support the Referral Hospital in Chhlong in 2004. At the Referral Hospital, a Health Equity Fund (HEF) is being established with URC funding to pay fees of people who are pre-identified as being too poor to pay for themselves. The fund will be managed by Action for Health (AFH), a local NGO. In Snoul URC supports a transport referral system. Partners for Health and Development, a local NGO, implements a tuberculosis program funded by the Global Fund. Lycso, a local NGO funded by Save the Children Australia, has a peer-to-peer reproductive health education program in three Health Centers. All these joint effort can boost further development of the Health Systems in Chhlong OD.

B.2.b Progress report by intervention area

In this chapter the results and outcomes of the four program interventions will be compared to the baseline data. Factors that affected achievement as well as objectives that were not met will be discussed. Main successes as well as unexpected outcomes will be explored in order to apply lessons learned to future activities and discover approaches and strategies with a potential for scaling-up or expanding.

B.2.b.i Breastfeeding Promotion

Approaches to breastfeeding education are targeted at age-specific practices and include early initiation of breastfeeding, exclusive breastfeeding and weaning practices. Promotion of breastfeeding is one of the successes of the program and all objectives concerning breastfeeding were met.

Table 4: Breastfeeding objectives versus accomplishments	Achieved
Increase the proportion of mothers exclusively breastfeeding children less then 6 months old	Yes
Increase the proportion of mothers who initiate breastfeeding immediately after delivery (within 1- 8 hours)	Yes
Increase the proportion of mothers who provide introduce appropriate complementary food to children at 6 months of age.	Yes
	Yes

Early initiation of breastfeeding

While at the baseline 2% of the mothers were feeding their newborns colostrum, the final evaluation revealed that in a period of four years this amount increased to 73% of the mothers acknowledging the importance of colostrum and starting breastfeeding within 1 hour after delivery.

All mothers, Village Health Volunteers and TBA's interviewed during the Final Evaluation mentioned early onset of breastfeeding as one of the primary successes of the program. The main motivation of a young mother to start breastfeeding within one hour after delivery was the positive effects of colostrum observed in other infants. Mothers who had changed behavior and started to give colostrum appeared to have healthy babies that suffered less from diarrhea. Culturally, colostrum is seen as bad and mothers fear it is contaminated. The yellowish colostrum is expressed until the 'proper white milk' appears. Babies who are left

thirsty give the mothers bad Karma. Babies cannot ask for water when they are thirsty, so many newborns will be given water, to prevent bad Karma. Given the fact that the cultural barrier to colostrum feeding has been overcome is evidence of a culturally sensitive approach by PFD. Radio broadcasting and Health Center staff delivering the same message contributed to enhanced behavior change.

Figure 1: Percentage of mothers who start breastfeeding within 1 hour after delivery

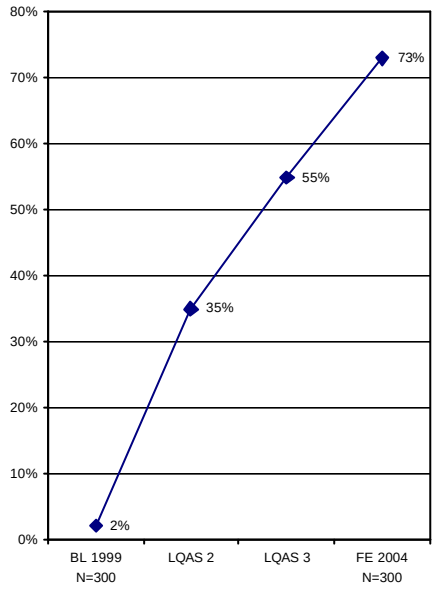
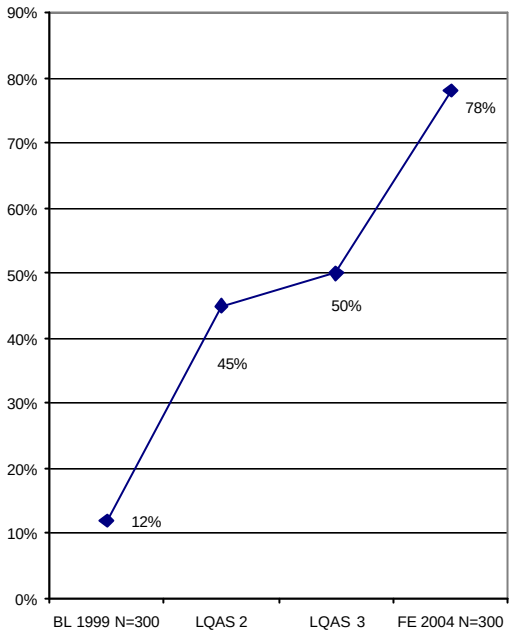


Figure 2: Percentage of mothers who exclusively breastfed their children aged less then 6 months



The high impact of messages on early breastfeeding and appropriate breastfeeding techniques can be attributed to the choice of Traditional Birth Attendants and Village Health Volunteers as change agents. TBA's are respected by the community and a TBA who is convinced about the importance of colostrum feeding has high success scores. Health Center staffs were trained on the technical aspects of breastfeeding, and the mutual support between the VHV, TBA's and HC staff contributed to increased credibility of the message. Messages about colostrum broadcasted on radio and television boosted early initiation of breastfeeding.

Exclusive breastfeeding

Community centered interventions on behavior change of key family practices on breastfeeding achieved the aimed results and all objectives were met. Significant impact was achieved for exclusive breastfeeding in the first 6 months of life. Exclusive breastfeeding of children under 4 months of age scored even better. Exclusive breastfeeding increased from 12% to 78% in a period of 4 years. TBA's who were trained as change agents, signed a contract after their training where they committed themselves to promote exclusive breastfeeding in the community. Supported by qualified and motivated health center staff who supervised TBA's and Village Health Volunteers in their own villages and by using 'real live examples' motivated mothers to change behavior.

Table 5: Results of promotion of breastfeeding	BL	MTE	Final Target	FE
% of mothers who initiated breastfeeding within 1hour after delivery	2%	35%	40%	73%

Table 5: Results of promotion of breastfeeding	BL	MTE	Final Target	FE
% of children exclusively breastfed the first 6 months of life	12%	45%	40%	78%
% of children still being breastfed at 20-23 months	87%	NA	NA	33%

In the 24-hour recall it became evident that only 16% of mothers of infants less then 4 months old gave water to their child. Thirty percent of children between 4 and 5 months old received water from their mothers. Many mothers reported to leaving their child at home with the grandmother or another caretaker during planting and harvesting season. When the mother is not around and the child gets thirsty, water would be given.

Weaning practices

Introduction of semi-solid foods after 6 months will be covered in the nutrition chapter. A remarkable outcome of the KPC survey is that the continuation of breastfeeding is declining. Breastfeeding is still considered as a practice for 'the poor'. The improved educational status of women as reported in the KPC survey might contribute to the decrease in children still being breastfed at 20-23 months.

Main lessons learned:

- Traditional Birth Attendants can be highly effective as change agents for early initiation of breastfeeding. Training of TBA's is an essential element when breastfeeding practices are being addressed.
- Consistent messages empower the position of the Village Health Volunteers and increase credibility of the message. Timing interventions and streamlining with national initiatives proved to boost behavior change.
- Real live examples of healthy babies without diarrhea motivate young mothers to adapt their practices and follow the example.
- Support from the Health Center Supervisors is essential.

B.2.b.ii Immunization

Young infants and pregnant mothers are targets for the immunization interventions of the Child Survival Program. Full immunization is achieved when at the age of 12 – 23 months a child has received BCG, DPT 1 - 3, OPV 1 – 3 and measles. Recording is done on a yellow card. A pregnant mother is sufficiently protected against tetanus when she has received at least 2 times a TT injection.

Table 6: Immunization objectives versus accomplishments	Achieved
Increase the proportion of children who are fully immunized at 12 – 23 months	Yes
Increase the proportion of women in reproductive age whose pregnancies are protected by TT coverage	Yes

At the start of the Child Survival Program EPI was only provided during outreach. EPI services were not available in the Health Centers. Only 1 Health Center provided TT to pregnant mothers. The inland villages had extremely low coverage (2-5%). Campaigns did not reach them or the people were not informed prior to the outreach.

In the first 2 years of the Child Survival program community mobilization strategies were used to motivate mothers to bring their children for vaccination. As can be seen from the graph (figure 3, page 16) this strategy contributed to a considerable increase in EPI coverage. Only in 2002 did the Health Strengthening and Support Program start to support outreach activities.

Immunization of children under 2 years

The target of 60% of children aged 12 – 23 months being fully immunized was very ambitious given the low baseline of 17% but was amply met with 79% of the children aged 12 – 23 months being fully immunized. Among children with a yellow card the percentage is even higher: 89% of the children are fully immunized. Taking in account that these are the mother's verbal reports, immunization coverage is probably higher. Ninety-two percent of the mothers reported that the child has ever received immunization, indicating that EPI coverage increased from 38% to 92%.

At the time of the baseline the Chhlong OD was far under the national average of 39% for rural areas for children of 12 - 23 months being fully immunized[1]. The DPT drop out rate decreased dramatically, from 44% to 5%. Despite remoteness and areas with difficult accessibility results of immunization interventions are highly satisfactory and core objectives on immunization of children aged 12 – 23 months are met.

Table 7: Results of Immunization	**BL**	**MTE**	**Final Target**	**FE**
% of children with a yellow immunization card	32%	85%	NA	87%
% of children of 12-23 months whose immunization cards indicate they are fully immunized	44%	75%	NA	89%
% of all children ages 12 – 23 months fully immunized (with and without card)	17%	NA	60%	79%
% of children of 12-23 months whose immunization cards indicate they received DPT 1	100%	NA	NA	99%
% of children of 12-23 months whose immunization cards show they received OPV 3	58%	NA	NA	94%
% of children of 12-23 months whose immunization cards indicate they received measles vaccine	56%	NA	NA	92%
Drop out rate (DPT1-DPT3)/DPT1	44%	NA	NA	5%
% of children whose card indicate they received Vit A capsules in the last 6 months (children aged 6 – 23 months)	NA	50%	NA	27%
% of mothers reporting the child received Vitamin A capsules in the last 6 months (children aged 12 – 23 months)	NA	90%	NA	81%
% of mothers who know when the child should receive measles vaccine	10%	40%	NA	74%

The table shows that the knowledge of mothers on immunization has increased considerably. That 74% of the mothers know when a child should receive measles vaccine is quite remarkable, because it is specific and detailed information.

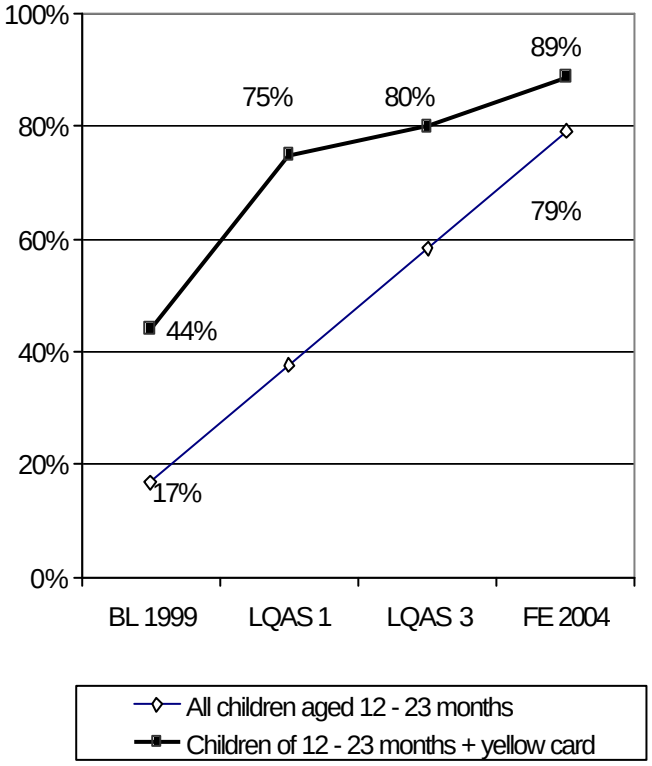
[1] Cambodia Demographic and Health Survey 2000

For the Village Health Volunteers the EPI interventions have been highly satisfactory and they eagerly revealed how they visited mothers at home to convince them to bring their children for immunization. All Village Health Volunteers found the training on EPI the most interesting. Later the need to convince mothers became less, because they would bring their children spontaneously. Some VHV's requested to be released from the community mobilization for immunization and move on to other health activities because they strongly believed they fulfilled their duty and all mothers were attending immunization sessions.

The need for a community platform on immunization is still needed for the following reasons:

- The newly adapted behavior change does not yet have a solid basis. One story of a child being disabled after a vaccination can destroy the trust of other young mothers. The belief that vaccinations cause disability is widespread and should be continuously addressed.
- Not only children but pregnant mothers should attend the immunization outreach
- The newly established links between community and health systems need a pragmatic approach. To guarantee a stable flow of information between health systems and community the VHV is needed as intermediary. She needs to build her reputation on the success of the past.

Figure 3: Percentage of children of 12 - 23 months who are fully immunized



TT vaccination of pregnant mothers

Objectives for the TT vaccination in mothers of under 2 children were also met. Reported coverage was very low at the baseline: 15% of the mothers were sufficiently protected against

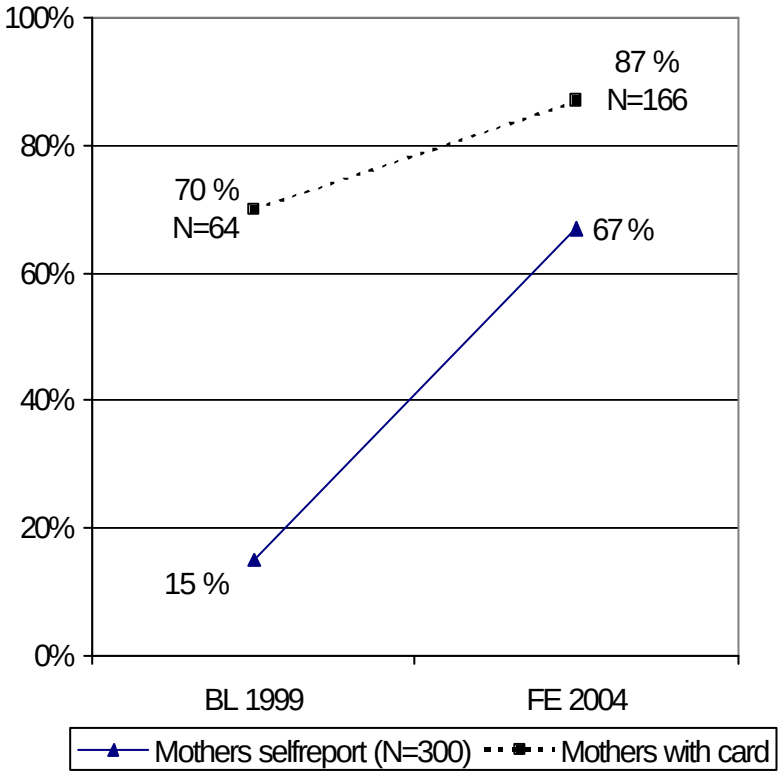
tetanus whereas 67% of the mothers reported to have received at least two TT's during the Final Evaluation.

In the baseline survey 21% of the mothers were checked for their pregnancy. Antenatal Care (not necessarily at a Health Center) coverage increased to 57%. The survey showed an internal consistence for self reported TT coverage and the reported ANC visits.

Table 8:Results of TT vaccination	**BL**	**MTE**	**Final Target**	**FE**
% of mothers who know the purpose of TT vaccine	25%	50%	NA	65%
% of mothers who have a maternal health card	21%	75%	NA	55%
% of mothers who received the correct number of TT during her last pregnancy (self report N=300)	15%	NA	NA	67%
% of mothers with a card who received the correct number of TT during her last pregnancy	70 % N=64	65%	NA	87% N=166

Differences with OD figures are mainly due to the fact that the denominator for OD calculations is Women in Reproductive Age (15 – 49 years) while the denominator in the KPC survey was the mothers of children aged 0 – 23 years.

Figure 4: Percentage of mothers of children 0 - 23 month old who received 2 or more doses of Tetanus Toxoid in the last pregnancy



The increase in coverage of TT immunization contributes to better child survival. Neonatal mortality due to Neonatal Tetanus reduced from 9 % in 2001 to 2.6 % in 2003. However, interpretation of clinical signs like fits as tetanus might have caused an over-estimation of neonatal tetanus (see section on Child Death Reports for further details).

Strategy

The main achievements on immunization can be attributed to the combination of the good and productive collaboration with the community on one side and on the other hand clear and transparent planning efforts of the OD and Health Centers. The OD director clearly stated that this high coverage levels can not yet be sustained without support from PFD, mainly because the remoteness of Health Centers like Domrey Pong.

As became apparent during field visits these results have not been passed unnoticed by the community. All village chiefs reported they had not seen 1 case of measles over the last years and no more blind children were seen in the villages. The communities expressed pride towards the achieved results and clearly stated that the good collaboration and participation between Health Centers and communities was the key to success. Community-based EPI promotion has proven to be highly effective. Improved links between community and Health facilities are approaches appropriate for up scaling and replicating within a broader context.

Discrepancy outcomes of the KPC survey and the OD data on EPI

EPI figures obtained through KPC community survey and through the Health Information System of the Operational District are not consistent. Probable explanations for these discrepancies are:

- The OD record children under 1 year of age being fully immunized while the KPC survey measures coverage among children ages 12 – 23 months
- Population figures (denominator used for HIS statistics) based on the Census data of 1998, which might be inaccurate. The OD of Chhlong is known for migration workers in the rubber plantation, for casual labor in the forest areas and settlements along the logging roads. Unofficial reports show that population growth has slowed down by one third.
- Assuming that sampling and reporting of the KPC is accurate, design bias can not be completely excluded: Vietnamese inhabitants of the floating villages in the Mekong river are an example of a difficult to approach community mainly due to language barriers. Separate surveys among minority groups are planned
- Underreporting by Health Centers is another possible explanation.

Coherent collection of data consistent with national statistics is recommended to be able to compare data. Discrepancy in data can be disturbing and do not contribute to the trustworthiness of the program.

The main lessons learned:

- Community-based EPI promotion has proven to be highly effective. Even without support to EPI outreach activities, coverage of immunization increased considerably by motivating mothers.
- Community mobilization strategies for EPI have been effective and are a medium for other integrated health interventions.
- Improved links between community and Health facilities are approaches appropriate for up scaling and replicating within a broader context.

- The motivation of the Village Health Volunteer supervisors correlates with the coverage of interventions
- Rumours need to be addressed by the VHV's to prevent undermining the newly built trust
- Data collection should be done according to national policies.

B.2.b.iii Nutrition and Micronutrients

Nutrition remains a major problem in Cambodia with complex underlying mechanisms leading to malnutrition. Mental and physical development of children is comprised and the children become more vulnerable for diseases and recurrent infections leading to a vicious cycle of diarrhea, infections and further malnourishment. Because of the magnitude of the nutrition problems, nutrition has been one of the priority interventions of the Child Survival in Chhlong. The nutrition interventions are subdivided into three components:

1. Appropriate complementary feeding of the child aged 6 – 23 months
2. Malnutrition and the Nutrition Intervention Pilot Projects: Hearth
3. Micronutrient interventions

The objectives for the nutrition interventions are outlined in the following table. All objectives were met. The sources of data to measure impact of the nutrition interventions are the results of the Hearth program for quantitative anthropometric data, the KPC survey on knowledge and practices and the focus group discussions to obtain qualitative information. The reduction in the proportion with 22% of malnourished children is achieved in the villages where Hearth is implemented. Due to time limits anthropometric could not be collected and analyzed in the areas where other nutrition interventions are implemented.
Reduction in micronutrient deficiencies is measured in the KPC survey: the increase in the amount of children receiving vitamin A capsules and the percentage of households using iodized salt. All objectives were met.

Table 9: Nutrition objectives versus accomplishments	Achieved
Increase the proportion of mothers who provide appropriate complementary feeding to children 6 – 23 months	Yes
Reduce the proportion of children < 3 years of age who are severely or moderately malnourished	Yes*
Reduce the proportion of micronutrient deficiencies in children 6 – 59 month	Yes**

**Hearth villages; ** Results from the KPC Survey*

The nutrition component of the Child Survival program utilizes the two-prong approach by working at community level with Village Health Volunteers and at health system level. Village Health Volunteers educate mothers of young children during community mobilization sessions. In the Health Centers the Integrated Management of Childhood Illness (IMCI) approach is adopted to promote a holistic approach to child nutrition and health status.

1. Complementary feeding

The effectiveness of interventions on appropriate complementary feeding of young children is measured by investigating the knowledge and practices. The reliability of the reports and understanding of the interviewers is a prerequisite for accurate information on the impact of program interventions on the nutritional status of the children.

Knowledge of mothers on complementary feeding increased. At the baseline 33% of the mothers knew to start adding semi-solid foods to breastfeeding at six months and at the Final Evaluation 67% of the mothers responded in the correct way.

Practices of the mothers measured during a 24 hour recall in the KPC study are consistent with the knowledge scores. Ninety-four percent% of the mothers gave semi-solid food to children 6 –9 months old. Eighty-four percent of the mothers fed their child 3 or more times a day. The main difference between the baseline survey and the final evaluation is the improvement in micronutrient-rich, energy-rich and calorie-dense food to children in the age group of 6 – 11 months. At the time of the survey Vitamin A rich food were not sufficiently represented on the menu, mainly because the season for yellow fruits was over. On the contrary green leaves could be found in abundance and mothers added them to the rice-soup.

Management of nutrition at health center level has been assessed through the IMCI trainings conducted under the HSS program. An evaluation of the IMCI program will commence as soon as the MoH agrees on appropriate indicators and checklist criteria.

Table 10: Complementary Feeding Results	BL	MTE	Final Target	FE
% of mothers who know when to start complementary feeding	34%	65%	NA	78%
% of mothers who know what kind of additional foods the child needs	9%	25%	NA	58%
% of children of 6 - 9 months which received enriched semi solid foods in the last 24 hours	NA	85%	NA	75%
% of children of 6 - 23 months which received enriched semi solid foods in the last 24 hours	NA	95%	NA	90%

Lessons learned

- Impact of improved complementary feeding practices is difficult to interpret. Direct observation and monitoring of impact on micronutrients through small surveys could be conducted to monitor progress.
- The holistic approach to nutrition such as in IMCI could be added
- Anthropometric data should be collected during the next LQAS round.

2. A pilot of the Hearth Model: Krusaa Kumru La'a

Villages where malnutrition is most prevalent are targeted by the Hearth initiative. These villages tend to be more remote with lower household incomes. The underlying concept is that malnutrition is not uniquely due to food insecurity but rather due to poor food practices caused by misconceptions, taboos and myths. Solutions for malnutrition can be found in the households of poor families who have well-nourished children. Participatory Learning and Action (PLA) is applied to find "positive deviant" practices (see next chapter on BCC). This will enable the community to design their own nutrition intervention. Currently the Nutrition Education and Rehabilitation Programs (NERP's) are implemented in 15 villages. Villages which are included from the beginning are in their 10^{th} round of NERP which lasts for 10 days

The monitoring is done through:

1. Growth Monitoring activities (GMP) which are conducted to identify the malnourished children
2. Weighing of children during NERP's

The results of the Hearth Programs can be summarized as follows:

- An overall decrease in malnourished children in the Hearth villages based on the proxy indicator of weight for age
- In 15 villages a total of 39 rounds of NERP's are conducted
- 488 times a child attended a NERP 349 times a child gained weight (72%)
- 21 times a severely malnourished child graduated to moderate malnourished and 90 times a moderate malnourished child graduated to normal weight
- High standard nutrition education material is developed under the Hearth program

The main lessons learned concern the integrated approach nutrition requires:

- Adequate and accessible public health system should respond to the need of the malnourished child. Children trapped in the vicious cycle of disease and malnourishment should be traced and treated. Therapeutic measures are critical in addressing the need of the malnourished child. During the Final Evaluation a Hearth village was visited. Several children were found to be with worms simply by asking the mothers if the child did pass worms at times. Another child brought to the feeding session was too sick to eat. The advice for referral by the Village Health Volunteer is often not followed due to cost constraints. Furthermore the integrated outreach activities which includes worm treatment, are not yet taking place from the Health Center, regardless of advocacy from PFD.
- Complementary activities such as homestead food production and including gardens, fish farming and poultry or pig raising are critical to the success of dietary diversification. This is particularly true for the inland villages in forest areas with low access to protein rich foods.

Other lessons learned

- Education material is of high standard
- The program is very intense. Motivation of the PFD staff was high as well as the eagerness of the mothers to take care of their children under such close supervision. This approach has a lot of potential for further program interventions and community development.
- Data are very difficult to interpret. This is mainly due to how the data are collected. The impact of the Hearth program should be monitored and evaluated by performing a research with systematic data collection. The group of children should be followed over time, (cohort study). Trends and critical issues can be identified.

3. Micronutrient interventions

Strategies for micronutrient deficiencies were two-fold: dietary diversification and supplementation. The emphasis has been mainly on dietary measures for Vitamin A, iron and iodine.

Vitamin A

Strategies to address the problem of Vitamin A Deficiencies focused on promotion of dietary diversification and improvement of coverage of Vitamin A capsule distribution. Consumption

of micronutrients rich foods has been promoted extensively through nutrition education material at community level by the Village Health Volunteers. Strengthening the health care system by support of outreach activities facilitated the distribution of Vitamin A capsules.
The strategies to improve knowledge on Vitamin A have been effective. Compared to a baseline whereby 6% of the mothers could name the Vitamin that helps to prevent night blindness, 83% of mothers could mention the name of the Vitamin during the Final Evaluation KPC survey.

During the baseline, coverage for Vitamin A was not measured. During the Final Evaluation 63% of the children aged 6-23 month received Vitamin A, and 81 % of the children aged 12 – 23 months received Vitamin A, a slight decrease compared to previous monitoring rounds. Supply and recording seem to be the main bottlenecks and could be a priority for next program phases. On average it can be stated that the Vitamin A coverage is high and that the approach has been effective. Many mothers also picked up the messages from radio and television.

Table 11: Micronutrient Results*	BL	MTE	Final Target	FE
% of mothers who know which vitamin helps to prevent night blindness	19%	75%	NA	83%
% of mothers who know which foods contain Vitamin A	9%	75%	NA	91%
% of children whose card indicate they received Vitamin A capsules in the last 6 months (children aged 6 – 23 months)	NA	50%	NA	27%
% of mothers reporting the child received Vitamin A capsules in the last 6 months (children aged 12 – 23 months)	NA	90%	NA	81%
% of households where iodine is present in salt used at home	1%	25%	NA	41%

*Indicators regarding night blindness and iron-deficiency anemia are still awaiting surveys from HKI, UNICEF and WFP surveys as proposed.

Iron
Interventions to address Iron Deficiency Anemia in children included dietary diversification, control of parasitic diseases and supplementation of pregnant mothers through the existing Health facilities. Nutrition Education material on foods rich in iron like meat and green leafy vegetables has been prepared with great care to give culturally appropriate messages.

The baseline showed that 35% of mothers knew what kind of food-rich-in-iron needs to be added to children's food, compared to 58% at the FE. The food would be mainly given as enriched *borbor*, rice soup.

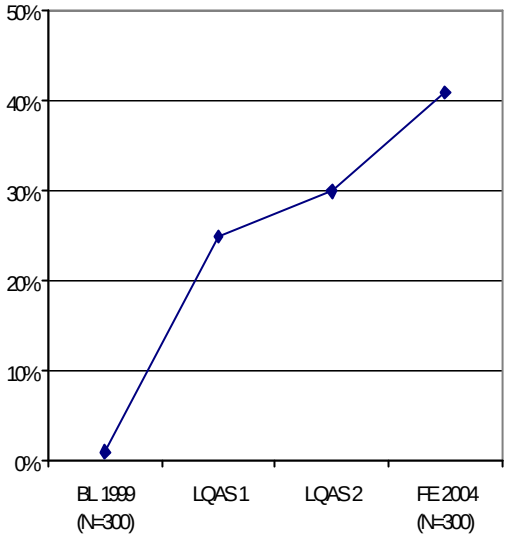
Control of parasitic disease contributes to decrease the prevalence of hookworm and malaria, which cause of anemia in both mothers and children. The Malaria Program, complementary to the Child Survival Program, promotes insecticide-treated bed nets in malaria endemic areas. The program operates on the same principles as the Child Survival Program with the two-pronged approach of community activities linked to the existing Health Services.

The strong relationship between communities and Health Services, established over the last 5 years, contributed to the increase of use of Antenatal services by pregnant mothers from 21% at the baseline to 57% at the Final Evaluation. At the Health Centers MoH policies regarding iron supplementation of pregnant women are followed. Integrated EPI and ANC outreach is planned and create opportunities for iron supplementation in both women and children.

Iodine

Strategies on Iodine have been very effective. All mothers and Village Health Volunteers consulted during the FE were aware that lack of iodine causes goiter and growth disorder in children and Iodine Deficiency Disorders were mentioned during the FE as major problems effecting health of communities.

Figure 5: Percentage of households where salt proved to be iodized as tested during the surveys



At a baseline of 0.7% mothers giving iodized salt to their children, an increase to 41% is a major achievement. In 1997 Kratie was identified as a Province with moderate Iodine Deficiency Disorder problems. With in increase of 40% in consumption of iodized salt, IDD will decline. As can be concluded from the 24 hour recall of the KPC, 26% of the mothers are aware their salt is iodized, while 15% uses iodized salt without noticing it. Availability of iodized salt remains a problem for remote villages, where non iodized salt is still used as exchange medium for example for scrap metal.

Lessons learned:

- Increased knowledge of mothers on micronutrients can be achieved with intense community mobilization strategies.
- The emphasis should continue to be on dietary diversification rather than supplementation.
- Iron supplementation should be treated with caution in the case of malnourished children. In children with Kwashiorkor mortality increases with iron supplementation in the edema phase.
- Supply and availability are often the limiting factor: Vitamin A, iron and iodine
- Recording should improve.
- An integrated approach can contribute to improved micronutrient status. This applies to iron distribution during ANC (outreach), vitamin A capsule distribution during EPI (outreach), de-worming during EPI (outreach), iron supplementation during Malaria (outreach) activities etc.
- Lobby at central level for fortification of salt with iron has its effects and should continue

B.2.b.iv Management of Diarrheal Diseases

The aim of the intervention on diarrhea is to prevent diarrhea and to achieve a better management of diarrheal diseases. All objectives for management of diarrhea were achieved. Provision of ORS by private providers has been partially achieved.

Table 12: Objectives versus accomplishments of management of Diarrheal Diseases	Achieved
Increase the proportion of diarrhea episodes among children under 5 years of age that are appropriately managed at household level	Yes
Increase the proportion of caretakers practicing hygiene behaviors that prevent diarrhea	Yes
Increase access to ORS packets in the village through the private sector	No

The following issues will be highlighted in this chapter:

1. The prevention of diarrhea, effects on prevalence and incidence
2. Home management of diarrhea
3. Recognition of danger signs during an episode of diarrhea
4. Case management of diarrhea at health facilities
5. Private providers and ORS

The prevention of diarrhea, effects on prevalence and incidence

The prevalence of diarrhea has decreased from 49% during the baseline survey to 23% of children suffering from diarrhea is the two week preceding the survey during the FE. During the baseline children under 2 years were reported to have 13 episodes of diarrhea annually. During the Final Evaluation the incidence decreased to 6 episodes of diarrhea per child per year. This is a major achievement. It contributes to a better nutritional status of the child and less consumption of antibiotics.

Although this figure has to be treated with caution due to seasonal fluctuations in prevalence of diarrhea and recall bias, the overall response of mothers and Village Health Volunteers confirmed the results of the surveys. Mothers mainly saw the difference in young siblings and, according to their opinion, early onset of breastfeeding and exclusive breastfeeding contributed to a better health. The decrease in prevalence of diarrhea is also attributed to the increased preventive hygienic measures at home. Self-reports on hand washing scored 100%. The presence of complete hand washing stations was physically checked during the Final Evaluation and the results were satisfactory.

Table 13: Prevention of Diarrhea	MTE	Final Target	FE
% of households with a complete hand washing station	30%	NA	67%

Mortality due to diarrhea is low in Cambodia and remained stable during the period of the intervention. In the first studies of 2001 diarrhea was responsible for 4% of the deaths. In 2003 diarrhea counted for 5% of the recorded deaths. Two to three percent of the death was directly attributed to malnutrition (see more in detail the Child Death reports). Indirectly diarrhea contributes considerably to mortality.

After intensive training and continuous coaching, the Village Health Volunteers reported the messages on diarrhea were simple and easy to implement. The knowledge after initial training scored the highest of the 3 basic courses the Village Health Volunteers underwent (see next chapter). According to the Village Health Volunteers the message was delivered most effectively during household visits. Repetition of messages and consistency of messages contributed to the effectiveness.

One major contributing factor in general improvement of management and prevention of diarrheal diseases has been the activities of PFD under the Community Development program whereby the majority of the villages had been supplied with hand pumps.

Home management of diarrhea

Mothers showed an increased capability to deal with diarrhea at home. Whereas only 15% of the mothers would give any type of oral rehydration at the baseline, 81% of the mothers would do so during the FE. Knowledge on ORS increased from 3% to 88%. The majority of the mothers stimulate their child to eat more after an episode of diarrhea.

Table 14: Home management of Diarrheal Disease	BL	MTE	Final Target	FE
% of mothers who provide more frequently breastfeeding during diarrhea	21%	45%	NA	57%
% of children with diarrhea in the last week who were given the same amount or more fluids	34%	70%	60%	62%
% of mothers of children with diarrhea in the past two weeks who continued to provide food during diarrhea of their child	47%	78%	NA	72%
% of mothers who have heard of ORS ("Oralit")	3%	90%	NA	88%
% of children with a diarrhea in the last 2 weeks who were given ORT (including ORS, salt-sugar solution, rice soup, or home available fluids)	15%	40%	60%	81%
% of mothers who describes correct management of diarrhea (fluids, feeding, referral)	42%	80%	NA	97%
% of mothers who know to feed their child more often when recovering from diarrhea	17%	70%	40%	85%

Whereas the baseline revealed that 3% of the mothers would give ORS to a child with diarrhea, 32% of the mothers did so during the Final Evaluation. ORS is not available in the remote villages. The idea to stimulate VHV's as social marketing agents selling ORS in the villages did not materialize due to lack of capacity to train the VHV's in effective business techniques. VHV's reported that ORS is free at the Health Centers and the villagers will not accept it to be sold by a VHV.

Recognition of danger signs during an episode of diarrhea

Knowledge of mothers on recognition of danger signs increased considerably. Eighty-four percent of the mothers could mention one or more signs of dehydration and an amazing amount of mothers mentioned the loss of skin elasticity of the abdomen, indicating that they remembered the picture on the flipchart. Recognition of high risk symptoms is still very difficult. This is a semantic problem as well as a lack of exposure. People tend to remember the things that relate to their daily life reality. Probably video tapes or drama about the topic can improve the knowledge on high risk symptoms. Analyzing why a mother knows when to refer to a health center, while not able to point out high risk symptoms, will help in designing proper messages on ARI, which proves to be even more complicated.

Table 15: Recognition of danger signs of diarrhea	BL	MTE	Final Target	FE
% of mothers who recognize danger signs of in diarrhea when to take a child to the health center	45%	80%	NA	91%

% of mothers who recognize high risk symptoms*				
• dehydration	2%		60%	26%
• prolonged diarrhea	10%		70%	*31%**
• blood in stool	2%		60%	10%

*This question is difficult to ascertain through survey as it requires the mother to suggest rather then identify danger signs. ** At the baseline prolonged defined as 2 weeks, at the FE defined as more than 4 days

Case management of diarrhea at health facilities

Practices on the management of diarrheal diseases improved considerably. A higher percentage of mothers sought care from a qualified health care provider. Especially case management in the Health Centers improved whereby only 5 out of 23 children were given antibiotics and/or anti-diarrheal, according to the mothers. Highest percentages of antibiotics for diarrhea are still given in the profit sector of the private health care providers.

Use of anti-diarrheals and antibiotics is still high. Half of the children compared to a baseline of 2/3 of children under 2 years of age are given antibiotics. With an average of 6 episodes of diarrhea per year, a child of less then 2 years receives on average 3 times a year antibiotics and/or anti-diarrheal for diarrhea. Due to a decrease in prevalence, as well as a decrease in administering, overall antibiotic use for simple diarrhea has gone down. Over consumption of medicine is a supply as well as a demand side problem. PFD attempts to address the complex underlying causes. Expectations from both patient and health care provider need to be addressed. Health Center staffs are trained in proper management of diarrhea, as are drug sellers. On the other hand, mothers are taught not to provide antibiotics for a simple diarrhea.

Table 16: Case Management of Diarrheal Diseases	BL	FE
% of Health Center Staff who demonstrate competence in diarrhea case management	NA	NA*
% of Health Centers with ORT corners	0%	70%

**This indicator will be measured by the HSS program during the IMCI evaluation*

Private Providers

Drug sellers were trained on the use of ORS during the implementation of the Child Survival program. The drug sellers start to promote ORS more and more. Relations with the private providers, especially drug sellers at marketplaces, have been problematic. There is no network or platform functioning as a soundboard for the private providers. The lack of legislation and control mechanisms result in lack of protection of the right of proper treatment of children. This problem lies outside the area of influence of PFD.

Table 17: Drug sellers selling ORS		FE
% of trained drug sellers who promote ORT to manage children's diarrhea	0%	39% N=19

Lessons learned:

- The integrated approach to child health has contributed to a decrease in the prevalence of diarrhea
- Home management of diarrhea improved considerably
- Danger signs of diarrhea need more attention

- More mothers are going to Health Centers, even more mothers are going to private providers. Prescription patterns in the private sector tend to over prescription of antibiotics.
- The underlying pattern in the over consumption of drugs needs to be addressed. Discussion about cultural aspects and expectations of both clients and providers is difficult and needs attention.
- Although the relation with the private providers has constraints, sales on ORS increased

B.3 Results: Cross-cutting approaches

The impact of the activities described in the previous chapter depends on how to get people interested, which strategy is used to achieve the aim. The question how to mobilize a critical mass of people who are going to make the difference is question will be elaborated in this section. Approaches to community mobilization and models used in communication for behavior change are critical issues and effectiveness of the program will depend on the program design. Under capacity building and sustainability strategies the question whether the change in behavior that leads to better health outcomes will be reproduced after the end of the program interventions.

B.3.a Community mobilization

Building up a relationship with influential community members and people directly related to the care for children is the first step in community mobilization. Identifying the community needs is the next step. Anticipation on the actual problem is only possible when there is a deep understanding of the people and their beliefs, knowledge and practices. The process of identification and selection of 'change agents' is seen as crucial in the effectiveness of the community mobilization strategies. They are the ones who will transfer of knowledge and will play and an important role in the empowerment of the young mothers. Impact of capacity and motivation of the Volunteers on program interventions is considered as a major contributing factor to effectiveness of community mobilization. By appointing Health Center staff as VHV- Supervisor links with the Health Services are established. The VHV will present the health demands and the VHV Supervisor will anticipate the needs of the community. Institutionalization of this design is through the support of the Village Health Support Groups.

Community mobilization objectives are listed down in the following table.

Table 18: Objectives Community Mobilization	Achieved
Conduct PRA with involvement of staff from line Ministries	Yes
Train 410 Village Health Volunteers	Yes
Set up Feed Back Committee's	Yes
Support Village Health Support Groups	Yes

Establishing relationships with the community has been the basis of the PFD activities from the beginning. A deep understanding of community mechanisms has been gained over the years. The collaboration with the people stems from 1992, when PFD supported the Community Development program in the Operational District of Chhlong. Through PRA, the relationship with the community was established and deepened. The Participatory Rural Appraisal (PRA) gave insight in health related issues. PRA's were conducted in more then 50 villages in Chhlong OD right at the start of the program. Through the PRA approach the community has been given the opportunity to formulate problems encountered and to express

the needs of the people. Furthermore the PRA approach resulted in a profound knowledge and understanding of the community. The staffs who were involved from the beginning of the program have visited repeatedly all of the 101 villages in which PFD is active. This has been especially appreciated by inhabitants of remote and poor villages.

To anticipate community needs, understanding of the people is of special importance in Chhlong OD because of its diversity, not only geographical but also ethnic. Roughly, the area of Chhlong can be characterized by a riverine area and forested area. In general the villages along the Mekong are rich and the inland remote communities are poorer. The Cham people live along the Mekong, although recent land shortages have made them migrate inland. Floating villages of people with a Vietnamese background are found in the Mekong River. Inland live the Steang people with there own language, which relates to languages from the Hill tribes of Ratanakiri and Mondulkiri.

The approach for community mobilization was to equip the Village Health Volunteers with several tools to increase knowledge and change behavior of mothers with children under five and to establish links with existing health structures.

The procedure for VHV selection has been a crucial element for the effectiveness. Democratic election of the VHV's and support from key role players in the community and Health Centers is the prerequisite for the acceptance by the community and the subsequent credibility of the messages delivered[2]. During the Final Evaluation it was obvious that the impact of the VHV's in areas were the community leaders and Health Center Chiefs supported the VHV's was much higher. Community mobilization proved to be highly dependent from the activity of the VHV's. During the Final Evaluation it was observed that a VHV in a small village could be very dedicated because she realized the importance of the health messages. Effectiveness is more related to motivation than to knowledge level. Neither is performance necessarily related to the level of knowledge. To maintain enthusiasm Volunteers need moral support PFD has anticipated on the need to invest in motivation of Village Health Volunteers through:

- Training on motivation with discussion on respect and status versus per diems
- Continuous training and supervision on technical aspects with elements of on the job training
- Continuously introducing new topics
- Development and adjustment of several theoretical tools (see next chapter)
- Reflection of achievements through clear reporting systems with a feedback element
- Growing self esteem of the Volunteers
- Respect and recognition of the community
- The effect of radio messages broadcasting health messages corresponding with the messages of PFD enhanced recognition of the volunteers. This not only increased the credibility of the VHV's in the community but also motivated them that they were doing the right thing.

All the Volunteers who were asked during the Final Evaluation what keeps them going responded that respect from family and community members in particularly village chiefs and TBA's and Health Center staff are the main motivators. Motivation of a Village Health Volunteer is much lower in areas where support from Health Center staff is minimal like in Snoul.

[2] See annex on Selection Criteria VHV

A very strong motivator is proven effectiveness of the behavior change. When a VHV sees change in her own children, she is very motivated to pass the message on to others. There were several reports from VHV's who had four or more children that the last two children did much better then the first ones. The main reported changes in behavior were breastfeeding and complementary feeding practices. It was observed that Village Health Volunteers with a high self esteem could address victim behavior and motivate mothers to actively influence their own lives rather then feeling trapped in the circle of poverty and ill health. Volunteers with additional income were dependant and could be very motivated for community mobilization. For some very poor Volunteers in remote areas their status as Volunteers improved their quality of life. The program meant exposure to the outside world with other ideas. Reports from other areas where the husbands felt threatened by the new status of their wives were not heard in the Chhlong area. The husbands were rather happy with the status of the wives and during the FE many husbands were also committed and involved and joined the focus group discussion.

The program is designed with its entry point in the community. Links with Health System are also community centered. The design, whereby problems are approached from the community needs contribute to effective and sustainable interventions. The VHV supervisors, who are Health Center staff, appeared to be more aware of the community needs. In general the VHV supervisors were positive about the VHV's and appreciated their work as indispensable to the booked achievements though their links with the community. One Health Center chief reported to assign VHV's also to other duties. An example is that he had seen an increase in TB cases and trained the Volunteers during supervision to be alert during HH visits. The result was that 2 volunteers detected 3 cases of TB. A deep sense of mutual respect between VHVs and chiefs of Health Centers was observed during the Final Evaluation.

The Village Health Support Group, established by the Ministry of Health, serves as a platform for feedback, monitoring of VHV's and planning of community activities. During the Final Evaluation the functionality of the VHSG has not be assessed due to time constraints.

A summary of motivating factors for the Health Center staff who are supervising the VHV's is given below:

- Better understanding of the Community
- Support of PFD staff to Health Center staff when problems with community are faced
- Understanding that the Health System in Chhlong is newly established and construction work only finished in 2002
- During the Final Evaluation Health Staff reported that their reputation in the community had improved. People spoke with respect about HC staff (except the referral hospital)
- Good outcome of the activities is a strong motivator
- Positive feedback rather than controlling feedback
- Through the PFD program the understanding of community needs improved. HC staff expressed the wish that PFD would assist them in the future to better anticipate the community needs and on health demand side.

Lessons learned:

- Community mobilization with Village Health Volunteers being supervised by Health Center staff has been an effective approach. It is feasible to use the same sequence of building a relationship with the community for scaling-up.

- The community development approach is sustainable in itself because is focuses on change of behavior in a mother with young children. This empowerment might need more time than the 4 years allocated by the Child Survival grant.
- Focusing on community needs is an approach with a positive effect on Health Service delivery. Creating a demand increases utilization of quality services.

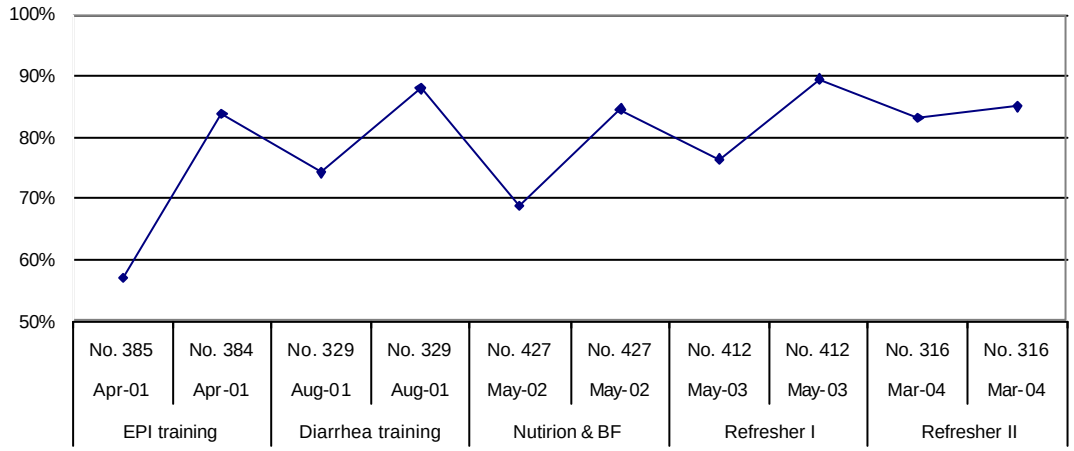
B.3.b Communication for Behavior Change

During the long experience of PFD in community work, the Child Survival component has had an excellent opportunity to develop models on behavior change. This ongoing process of formulating theories on behavior change reflected the maturating of the PFD staff as well as the Volunteers. The development and application of different models has not only been chronologic sequence but also the insight that the 4 interventions require different and specific behavior change models. The ability to analyze community organization creates an opportunity to bring models to a higher theoretical level.

Table 19: Objectives Communication for Behavior Change	Achieved
Increase in the knowledge of VHV's after each training on BCC	Yes
Increase in the counseling skills of the VHV's	Yes
Increase in prevention education sessions, household visits, group sessions	Yes

PFD invested though formal training and on the job training through the continuous support of the PFD Community Officers (CO's). The following table shows the result of the investment. The total number of VHV's trained is shown. For every training a pre- and post test was performed. In the Annexes the results are split up per Health Centre area. Domrey Pong, a poor, remote and difficult accessible area, scored as the lowest on the pre-test, but scored remarkably higher on the post-tests. Non-effective Volunteers were replaced and included during the refresher training. The aim was to have a continuous pool of 410 trained Volunteers available for activities.

Figure 6: Average Score on Knowledge of the Village Health Volunteer before and after training on Diarrhea, EPI and Nutrition/Breastfeeding



Capacity building was not just seen as transfer of technical skills like IMCI, training on EPI and Nutrition. Capacity building means for PFD the ability to translate knowledge into practice.

Different models used by PFD during the program period:

1. Interactive Group Education

The primary method of education used by VHVs is interactive group education sessions using adult learning techniques and prepared flipcharts for visual aides. VHVs were all trained in adult learning techniques, which include questioning, listening, demonstrating, role plays, games, song, ice breakers, visual aides and so on. Each VHV is then presented with a flipchart board containing pictures and relevant behavior change information for each topic. VHVs go through the flipchart ensuring that each participant is clear on the message. These sessions mostly address lack of knowledge barriers to behavior change. In most of the Child Survival issues, changes in knowledge have been enough to change behavior for this particular project. The flipcharts helped participants remember the information, mainly on diarrheal diseases and hygiene. Although it is common knowledge that informing people about what is best for them does not change their behavior, the effectiveness of the 'simple' flipchart model increases when additional activities are undertaken. According to the VHVs, the group education sessions worked because they were just one in a wide range of activities all repeating the same message: formal Health Center health education, positive reports from other mothers and radio messages.

2. Participatory Learning and Action

The Positive Deviant model is used for the nutrition education intervention in the Hearth Villages. Characteristics and current behaviors of poor families, selected through wealth ranking exercises with well nourished children, are investigated and used by the community to discover positive deviant foods and feeding, hygiene and health seeking behaviors. The Hearth model highlights healthy existing indigenous practices, identified through positive deviant inquiry. The model is built around the idea that people are more likely to identify themselves with a situation that could have been their own and are more likely to change their behavior. Only available resources are used, which increases the confidence of mothers that they can play a major role in the well-being of their child.

In Hearth Villages the contact with the community is intense, labor intensive and continuous participation of the mothers depends on the capability of a Volunteer to use different approaches. PFD is continuously filling and feeding the tool box of the volunteers.

3. Ecological Model

In 2004, PFD began training on and employing drama and storytelling using the Ecological Model, to spark increased changes in behavior. The Ecological Model is based on the idea that external influences (such as family and community) drive behaviors and that behaviors have consequences on these external influences. Family, community and culture are very significant behavior influencing factors in small rural communities such as those found in the Chhlong OD. VHVs are now being trained to prepare and present stories based on the ecological model. Examples of these stories could be where the hero is a mother who rejects tradition and gives her child colustrum or the father who brings his child to the immunization session regardless of mocking by his friends. These stories are meant to bring a new way of thinking to the participants to change harmful cultural practices.

4. The Experimental Learning Cycle

The Experimental Learning Cycle (ELC) is based on assumptions that behavior with a positive outcome will be repeated and actions with a negative response will not be repeated. PFD staff now also use the ***ELC*** with all of their "discussions" following dramas, case studies,

role plays, or other experiences. The ELC is an analysis tool which leads people through a thought procedure which 1) processes the experience (recount the story), 2) Generalize the learning (creates a hypothesis) and 3) makes plans for the future. The facilitators question the participants through this process in order for them to get to the point, and say out loud, that they *will* change their behavior.
It is known that the most powerful message comes from a Volunteer in which the behavior change already took place. Currently the experimental learning cycle is used to assist the Village Health Volunteer in transition to behavior change.

The BEHAVE model was not implemented for the Child Survival program at this time. The BEHAVE model conducts a more in depth analysis into the different kinds of community members and why they do or do not change behavior (doers, non-doers), and barriers and benefits that effect behavior change. BEHAVE combines many known BCC theories such as the Health Belief Model and Theory of Reasoned Action. At the stage that BEHAVE was introduced in Cambodia, PFD had already completed major community assessments using PRA and PLA. It was thought that further assessments to define subtle differences in individuals, who would all be attending the same education session, was less valuable than developing educational sessions that addressed all participants (doers and non-doers) at all stages and with a variety of barriers and benefits. Aspects of BEHAVE will be considered in assessments conducted by PFD in future health programs.

Based on the models the following BCC tools currently being employed by VHVs to communities/caretakers are:

- Flipcharts
- IEC (Information, Education, Communication) posters and leaflets
- Demonstrations (cooking food, washing hands, etc)
- Role plays (during NERP, for example)
- Setting up and monitoring hand washing stations.

The BCC models are used in 2 settings:

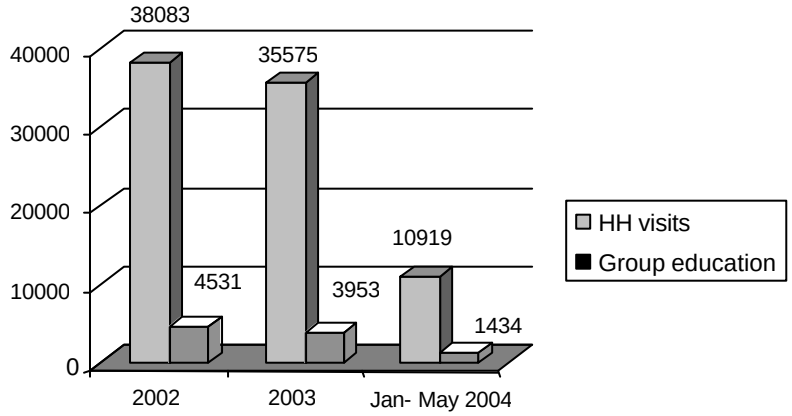
1. Household visits
2. Group education sessions

Household visits, although time consuming, are effective for different target groups: mothers with sick children, mothers with handicapped children, specific health messages which could cause embarrassment when openly discussed. VHV's coach mothers during household visits. In the Buddhist religion disease and disability are associated with mistakes in a previous life and with bad karma. In case of a sick child, the previous mother might be calling the child back. Mothers are told to accept their fate. During household visits the mothers are motivated to improve the health status of their child without contradicting the beliefs.

Group education proved to be effective due to its 'peer to peer' education component. Mothers exchange ideas. Group education sessions serve several purposes: exchanging experiences, sharing information, informing about the planned activities and outreaches, feedback and addressing rumors which might effect health beliefs. A persistent rumor is children being paralyzed after immunization. The source of this rumor could not be identified but probably goes back to the Pol Pot period. Group discussions serve to exchange success stories and empower mothers to resist the pressure from the health beliefs among the elderly people.

As can be concluded from following table the set target of 12,000 mothers being counseled on prevention and proper management of diarrhea, EPI, nutrition and breastfeeding has been amply met. According to the Village Health Volunteers during the Final Evaluation messages are most effective when they are repeated continuously and when they address the problem the mother currently faces.

Figure 7: Household visits and group education by VHV's



Lessons learned:

- Different educational background of the Village Health Volunteers defines the ability to conceptualize and convey information. Developing and adjusting the conceptual framework in a participatory way kept the morale of the Volunteers high. Whereas Volunteers from the poor and remote inland areas were mainly helped by the 'Flipchart model' which helped them to remember the information, the volunteers living along the Mekong river banks are more exposed to the outside world, continued to be motivated by development of diverse tools.
- Every intervention has its specific characteristics, which requires different behavior change models. Applying different models increases the effectiveness of the behavior change approaches
- Knowledge does not necessarily imply behavior change. A good example was the LQAS where knowledge on hand-washing scored 100%, while only in 55% of the households hand-washing stations were present.
- The behavior change that took place in the Village Health Volunteers is believed to be sustainable. Even if they cease to be active in implementing the PFD activities, they continue to promote the healthy behaviors among friends and relatives. A former VHV convincing 10 other mothers to change behavior can have an effect on more than 50 community members.

B.3.c Capacity Building Approach

B.3.c.i Capacity Building of PFD

The way the Child Survival program in Chhlong has strengthened the capacity of PFD, has been two-fold. On one hand the NCCSP has contributed to a thorough understanding of the best program design and approach to child survival. On the other had the NCCSP has resulted in institutional strengthening.

In summary the Child Survival Program contributed to capacity building at program design level:

- The high standard of knowledge and expertise gained during the Child Survival is applied to other programs. Up-scaling is feasible
- The importance of the PRA process prior to the design of the DIP and extensive community consultation is used as a model for other programs. PFD developed profound expertise in preparing and designing a Detailed Implementation Plan (DIP). Successful models like PRA are being sophisticated and replicated
- Capacity building resulted in the ability of designing proposals complementary to the Child Survival program and streamlining the different Programs supported by different donors with specific programmatic requirements
- Different projects are integrated at all levels, from community based implementation to designing new proposals to community based implementation
- Report writing to the USAID and other donors contributed in an increased capacity of continuous monitoring and institutionalizing the monitoring tools for community assessments such as the LQAS and the KPC surveys
- Tools and models have been developed and are used by other programs

PFD is a lean organization with a small overhead. The philosophy of PFD is that field teams should be involved at all phases of the program, from design and implementation to the monitoring and evaluation process to achieve best results. As a consequence the pressure at all levels has increased during up-scaling and diversification of activities. The need for efficiency and development of policies became more urgent. Program funding for the Child Survival program contributed to the efficiency and the professionalization of the management of the organization. PFD evolved into a learning organization with high standards of technical knowledge and knowledge management.

B.3.c.ii Strengthening local partner organization

During the Final Evaluation all Health Center staff underlined that the Child Survival program in particular contributed to an increased anticipation of community needs. According to Health Center and OD staff their capacity to anticipate community needs was mainly built by increased communication skills, technical knowledge and the institutionalizing of VHV's.

The trainings on EPI, management of diarrheal diseases and nutrition provided by the project resulted in high standard training provided by the HC staff to the Village Health Volunteers. Training in IMCI has been particularly appreciated and has to be adapted to Community IMCI training for the Village Health Volunteers. The Health Centre staff has been able to translate their knowledge in such a way that Volunteers, many of whom have no official education, also increased their knowledge. Not only did the transfer of knowledge and skills to the community improve health practices, it also increased their own capacity.

PFD became invested though formal and on-the-job training, and through the continuous support of the PFD Community Officers (CO's). Managerial skills of Health Center staff increased to such extent that communication with the community improved. During the final evaluation all Village Health Volunteers commented that planning of outreach and supervision by the Health Centers was clear, transparent and timely. The main achievement of improved management of the Health Centers according to the community was the possibility of discussion of problems like planning with the Health Center staff in monthly meetings. The mutual respect between community and Health Center staff was seen as a prerequisite for a positive relationship that resulted in better planning from both sides. Health Center staff

skills to conduct regular meetings with community representatives improved and problems are solved independently.

Best practices and lessons learned:

- Profound knowledge was gained from development of training manuals and lesson plans
- On implementation level, PFD has learned the importance of strengthening the capacity at the 3 intervention levels: at community level, at Health Center level by supporting the supervision and feedback system through the Health Center staff, and at OD level by setting up the Child Survival Coordinating Committee.
- Linking the 3 levels has been a continuous learning process. Different approaches are required for each level and being a community based organization, PFD Chhlong had to get accustomed to Ministry of Health procedures and policies. Building bridges between the community organizations and MoH structures in society is an ongoing challenging experience.
- The *Spien Sokhapheap* (SSP or "Bridges for Health") Program which opened in 3 other ODs (Kratie, Sre Ambel and Smach Meanchey) and is modeled on Child Survival.

B.3.c.iii Health Facilities Strengthening

The following approaches to Health Facilities strengthening have been used by the Child Survival Program:

1. Establishing links between the Health Facilities and the community
2. Increasing awareness of community needs
3. Trust-building
4. Promotion of referral to health services
5. Creating an environment where feedback has an important role, information from the communities reaches the Health Center and vice versa through strengthening the Village Health Support Groups (previously referred to as Feedback Committees)
5. Supporting and strengthening the outreach capabilities of the Health Center staff

The improved links between community and health systems has led to an improved anticipation on community needs, as stated in the previous chapter. As a consequence trust between the community and the health care professionals is growing. Confidence and respect of both community and Health Center staff start to develop. One Health Center chief reported that during the supervisory visits he had to go to remote villages that he had never been before and that his eyes were opened for the problems of the people.

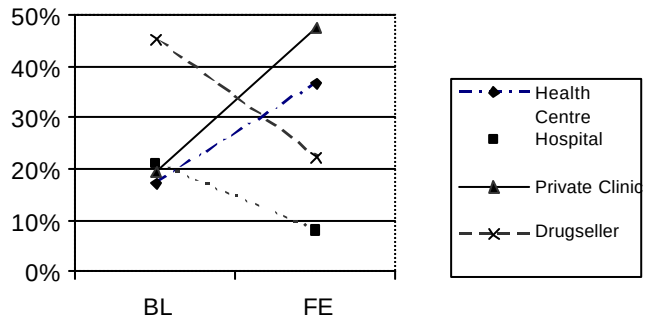
As reported in the chapter 'the management of diarrheal diseases', the amount of children referred to a health care provider increased considerably. Although the majority of the children consult a private provider, the percentage of children with a diarrhea visiting the public health services also increased. Health Centers in Chhlong are operational. Opening hours are known to the people in the catchment area. People are confident to visit the Health Centers. The result of the increased utilization is improved case management and better quality treatment. Several reports were given that while previously patients were sent away or insulted, the present attitude towards the people was more respectful. The VHSG serves as a forum to deal with complaints from the community. This leads to improved quality.

The Village Health Support Group (VHSG, the former Feedback Committees) acts as a sounding board for community concerns and contributes to a more client oriented approach of Health Center staff. Complaints from the community about accessibility of services and attitude of Health Center staff are being addressed. Furthermore the VHSG is the forum where information about Health Care services is spread to the community. This ranges from opening times of the Health Centers and availability of services to schedules for outreach activities.

All objectives for the community outreach activities by Health Center staff have been met and have been a major success. Outreach schedules were provided by the Health Center staff to the community, the Village Health Volunteers mobilized the community and PFD provided per diems and transport to teams. Health Center chiefs were proud of the EPI coverage results, but at the same time concluded the high coverage will not be sustained when PFD support ends. Outreaches to remote and difficult accessible villages during rainy season when whole areas are flooded result in high transport costs. The Government is not yet able to support EPI activities in those areas.

Since other designated NGO assistance for Health Systems Strengthening was pending for 4 years, the Child Survival program could not further develop unless the Health System would also be further supported. Preventive and curative activities are interdependent in child survival and the request for quality health care delivery became stronger. A good example that prevention cannot be disconnected from the curative services is management of Acute Respiratory Infections. At first, PFD decided on ethical grounds not to include Acute Respiratory Infections, which is the major killer in under five children, unless referral to Health Centers was feasible and effective. It would be unacceptable to promote referral while quality care could not be guaranteed. Therefore the support to Health Centers expanded beyond its original design to train Health Center staff only on preventive services like diarrhea, nutrition and immunization and Health System Strengthening program started under SSP.

Figure 8. Advice or treatment during child's diarrhea



The new Health Systems Support (HSS) Program meant a shift in orientation from community based to government structures. Being primarily a community based organization, the different approach required collaboration with the MoH staff, which has been a challenge for PFD staff and their partners. The growing pains of the expanding range of activities included a lack of thorough consultation of OD staff during program design. The aim of the Health System Strengthening component is not well understood by Health Center and OD

staff. PFD Chhlong worked hard to continue the good collaboration with the OD and respects the OD as being the primarily responsible for Health Services delivery. It has to be stress that PFD remains primarily a community centered organization advocating the community needs at health facility level.

The following tools are used by the Child Survival and Health Systems Support Program to assess health facilities:

1 Utilization figures: attendance and re-attendance are effective to measure change in utilization of services (under HSSP)
2 IMCI evaluation will be used to measure the impact of the training on quality of services and the integrated approach (under HSS) the tools f which are currently being developed.
3 PFD staff coaching the VHV supervisors: Qualitative reports about the performance of the Supervisors in relation to planning of outreaches, feedback mechanisms, amount of community visits (discussed in the next chapter)

Lessons learned:

- The approach of PFD to advocate community needs at Health Facility level has been effective. Health Services are not yet fully utilized, but compared to other areas in Cambodia the Health Centers in Chhlong are operational, referral for ARI and diarrhea increases and quality of services is improving. The approach of PFD to Health Facility Strengthening is one of the most effective ones in Cambodia. Creating a healthy demand from the community and increase understanding of community needs is the way forward in a situation where the conflict of interest between the public and private health services jeopardizes many good initiatives.
- Motivation of Health Center staff and ownership are crucial in improvement of health service delivery
- Capacity-building within the VHSGs by training VHV's is sustainable because this is an institutionalized structure

B.3.c.iv Strengthening Health Worker Performance

Strengthening health worker's skills has improved performance due to the following approaches:

- Establishing links with the community to understand community needs through regular meeting
- Institutionalizing feedback meetings
- Feedback from the community is used to improve quality care
- Development of tools to assist Health Center staff in supervising the Village Health Volunteers
- Upgrading technical skills creates a learning environment
- Continuous coaching from PFD staff in positive way to keep moral high

During the Final Evaluation it was found that the Health Centers are functioning beyond expectation. Some structures were built only in the last 2 years and operational. Time of the final evaluation was too short to observe health worker performance in a systematical way through clinical observations, exit interviews and record reviews. Reports from the community were taken as the main measure for client satisfaction.

The relationship between the health workers and the community centers was good with the exception of Snoul. Opening hours were known. Some Health Centers are operational 24 hours a day and attendance is above national average. The attitude of the health center staff towards the poor was respectful. This was spontaneously confirmed by Health Center staff. Initially the Village Health Support Group meetings were used to address behavior of health workers. Nowadays this is no longer an issue. PFD stands for building a society from the grass-roots and believes in the power of people. Even the poorest of the poor have knowledge and only ignorant people would judge them.

Table 20: Targets for Health Center capacity building	Achieved
% of Health Centers that set-up and use ORT corners appropriately	70%
% of EPI outreach and Health Center supervision developed by the OD every 6 months and implemented according to integrated checklist (EPI, MCH, pharmacy, consultation and outreach)	100%
% of problems at Health Centers or with Health Center staff performance identified through COPE	90%
% of semesters without stock shortages of ORS, Vaccine, Vitamin A and iron tablets	100%

Positive attitudes of PHD staff towards health workers and understanding of the difficulties met by Health Center staff were reported during the Final Evaluation. It also became evident that training on management and tools to improve management like COPE were effective when the staff is motivated to build up the health system and feel ownership towards the institutions. It cannot be underlined enough how impressive the achievements of Health Center staff were as observed during the Final Evaluation.

Training of the drug sellers on management of diarrheal diseases has been less effective. Although a lot has been invested in the private-for-profit sector, no clear results were observed during the Final Evaluation. A small scale survey was conducted where 19 drug sellers were interviewed in 6 different Health Center catchment areas. ORS was only sold in 39% of the cases of diarrhea in under five children and in 61% of the cases the advice was correct. However, 94% of the drug sellers were selling antibiotics and ORS to children under five years of age with diarrhea and only 56% would give an advice on rehydration. The relationship with the drug sellers has been problematic. It was impossible to establish some kind of formal structure or feedback mechanism. Just training drug sellers has not been effective and a new strategy needs to be developed. As long as no legal frame work set by the Royal Government of Cambodia addressing the private for profit sector is not in place, drug sales will be a continuous threat to young children.

B.3.c.v Training and Education

PFD has invested extensively in educating people to build capacity. A tremendous amount of effort has been put in training more then 410 volunteers in 5 training rounds of 1 week. All training objectives were met.

Training has been conducted at different levels:

1. PHD and OD staff
2. PFD staff
3. Health Center staff
4. Community level: Volunteers, Traditional Birth Attendant, Drug sellers

First trainers were trained. The trainers conducted further training to the VHV's and TBA's. To achieve higher impact the training has been designed to be interactive. High standard training curriculums have been designed.

At the start of the program the VHV supervisors were trained extensively in the 4 intervention areas. Training included both technical issues as well as supervision skills. During the FE it Health Staff reported that the training on supervision of the Volunteers has been the useful but at the same time the most difficult part to bring theory to practice.

The majority of the 410 Village Health Volunteers received 5 trainings: 3 trainings on the 4 interventions EPI, diarrhea, nutrition and breastfeeding and 2 refresher trainings. Most of all the training on EPI was perceived as the most fascinating and the most instructive. In the annexes the results of the pre- and post tests for each training round can be found, divided by Zone. The knowledge of VHV's depends on the background and the geographical area. The VHV's were also trained in performing the community surveys (LQAS and KPC). Only the Village Health Volunteers from the villages were the Hearth is implemented were trained in the NERP.

Table 21: Training	**FY 2001**				**FY 2002**				**FY 2003**				**FY 2004**			
Semester	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
OP/PHD staff																
Computer			■													
COPE			■													
PHD staff																
Hearth					■				■		■					
LQAS					■							■		■		
NERP							■									
BCC & Drama								■		■	■					
Breastfeeding								■								
Finance								■								
Focus Group									■							
Home birth kit									■							
Health Center Staff																
TOT's: EPI, diarrhea, nutrition & BF		■		■			■									
VHV supervision		■									■					
TOT TBA									■							
VHV motivation														■		
Village Health Volunteers																
Training on EPI, diarrhea, nutrition and BF		■	■	■			■	■								
NERP & GMP								■	■							
LQAS														■		
Refresher training						■	■							■	■	
Traditional Birth Attendants																
Colostrum and nutrition in pregnancy										■						
Drug seller																
Drug seller training on ORS					■	■	■									

Training of drug sellers focused on the use of ORT as the appropriate case management of uncomplicated diarrhea.181 drug sellers were trained.

The PFD staff has been trained through formal training and ongoing on-the-job training. A wide range of topics were covered. During interviews with the staff during the final evaluation the staff learned most about community participation and mobilization and the different approaches to behavior change.

B.3.d Sustainability Strategies

Sustainable development for PFD means development which meets the needs of the present without compromising the ability of future generations to meet their own needs. [3] To incorporate sustainability strategies in activities targeted at behavior change means that the interventions must not only meet the peoples own needs, but also enable them to participate at every stage. Enabling the community to determine its own needs and solutions and take responsibility for their own welfare in future is the most important sustainability strategy in the Child Survival Program.

Sustainability objectives of the Child Survival program to transfer knowledge, skills and capacities in ways that enable the communities to undertake activities and reproduce behaviors that lead to better outcomes for child survival have been successful. As described in the KPC survey report (see attached), all objectives for behavior change have been amply met and results are beyond expectation. As behavior change is intrinsically self sustaining, the strategy can be called very successful.

In the DIP the concept of sustainability has been carried beyond assumptions of continuation of service delivery or retaining Village Health Volunteers after the withdrawal of the program incentives. This was prestigious, but even those objectives have been met as laid out in the table presented in the chapter Summary Sheets:

Table 22: Sustainability Objectives	Achieved
Community	
Reproduce behaviors and key family practices that lead to better outcomes for child health and survival	Yes
Community Mobilization	
Participation of communities in selection of community health workers like Village Health Volunteers	Yes
Institutionalizing and continuation of PRA process in local problem solving	Yes
Institutionalizing of Village Health Support Groups to maintain addressing child survival demands from the community and guarantee delivery of quality care	Yes
Institutionalizing feedback mechanisms from community to Health systems and vice versa	
Health Centers	
Increased technical capacity to sustain supervisory role of community health workers like Village Health Volunteers, Traditional Births Attendant and CBD's	Yes
Increased organizational capacity to continue outreach activities for EPI and ANC	Yes

[3] Source: World Commission on Environment and Development 1987

Health Center staff continues to make use of the efforts of Village Health Volunteers during outreaches	Yes
Sustain improved planning and management by Health Center staff that enables outreach activities	Yes
OD / PHD	
Increased capacity to design, manage and implement child health activities in decentralized manner	Yes
Integrate the child health objectives in the annual operational plan of the district	Yes
Increased organizational capacity to sustain outreach activities to the remote and difficult accessible areas	No
Private Providers	
Improve case management of diarrheal diseases in children under 5 years of age	No

The sustainability strategy focuses on 3 levels:

1. Transfer of knowledge and skills to the individuals
2. Creation and strengthening of community groups
3 Setting in place policies and procedures

During the final evaluation sustainability was identified in the following areas:

- Information and knowledge management on community mobilization and participatory tools usable beyond child survival activities
- Experience in approaches to nutrition invaluable
- Increased capacity of national PFD staff in particular on community mobilization
- Integrated approach of the different program components
- Institutional development of PFD

One of the strongest programmatic sustainability strategies is the integration of all complementary PFD programs. There are no boundaries between the activities funded by different donors. Village Health Volunteers can be active as Malaria volunteer or function as Community Based Distributor. The advantage is that the motivation of the Volunteers remains high and the understanding of health and behavior increases. This approach requires more complex general management, financial management and time management and as stated before, resulted in professional and efficient management, which in return is also sustainable to the organization. Altogether, PFD managed to turn the rejection of the second phase into a positive learning experience and the fruits are visible. The continuation of the Health Systems Support Program enables the Volunteers to continue activities. Although more emphasis will be placed on the different health topics, the Child Survival issues will continue to be addressed.

The Child Survival Program will phase out. However financial sustainability can be achieved because funding for the Health Systems Support Program and other complementary programs to Child Survival will continue to work with the same Village Health Volunteers.

C. Program Management

C.1 Planning

Participatory Rural Appraisal has been the basis of all planning activities for the Child Survival program. This approach obviously contributed to ownership. Achievements were

reported with pride and all persons interviewed clearly saw their own role in the program results.

During a pre-implementation workshop in 1999 held with the PHD and the OD qualitative data obtained through focus group discussions with TBA, mothers and drug sellers as well as the quantitative data obtained through the baseline KPC were presented. The OD has been involved in data collection as well as the presentation of the data. This participatory approach has been so successful that it is replicated and useful for up scaling.

PFD's strategy is to involve field staff in proposals writing. The Detailed Implementation Plan originated from this decentralized approach. That the DIP has been a guide throughout the whole project implementation period proves it appropriates and righteousness of the approach. The DIP was evidence of great understanding of the local situation. The expectations of what could be achieved were realistic. With expanding program activities pressure on the field staff increased and the decentralized approach turned out to be very time consuming. Enough time should be allocated to planning activities.

There were no major gaps identified in the DIP. The proposed inclusion of the Referral Hospital did not materialize due to commitments by other donors. If it would have been known in advance that this would take 5 years, the Referral Hospital would also have been an integral part.

C.2 Staff Training of the PFD

Staff training has been an ongoing activity during the Child Survival program. Table 19 (page 30) gives a summary of trainings provided to PFD staff.

Training has been focused on:

1. Technical training on knowledge and skills on program interventions
2. Training in BCC and IEC
3. The training in monitoring and supervision activities, including community surveys like KPC and LQAS
4. Skills like computer and English
5. Training in management

The staff received several trainings on the basics of Child Health and factors contributing to a healthy development of under five children. The training, formal and on the job, on BCC and IEC have been effective. At the end of the program the staff was able to develop their own IEC materials and proposal writing is the next focus of training. The staff has been extensively trained on monitoring methodology and tool development. Formal training of staff has been on the LQAS surveys.

C.3 Supervision of Program Staff

The supervisory system of the Child Survival program is as follows: the Village Health Volunteers are supervised by the Health Center Supervisors, who are supervised by the PFD staff who are supervised by the coordinators.

Supervision of program staff is based on the following 2 principles:

- Coaching
- Individual responsibility

Initially quality checklists were used to monitor supervisory activities, mainly from the Supervisors to the Village Health Volunteers, but those tools fell into disuse. The lists were long and felt as controlling rather than supporting and encouraging. The list did not reflect the relationship between the VHV and the supervisor. Results from the quality checklists did not feed into management decisions. Supervision of supervisory staff is currently not recorded. PFD staff conducts spot checks and if the VHV Supervisors do not conduct the supervisory visits to the villages as agreed in the monthly work plan, the per diems are cut. The PFD staff has a supportive rather than a supervisory relationship with the Health Center VHV supervisors, and supervision is more casual than formal.

Supervision of program staff is institutionalized in monthly meetings at the PFD office in Chhlong were the supervisory plans are produced. Supervision of the program officers by the program managers is mainly hampered by time restrictions and not much time is left for field visits. Supervision relationship is built on individual responsibility.

During the Final Evaluation it was found that:

- Supervisory tools and quality checklists of the VHV supervisors need to be revised based on the 2 principles of coaching and individual responsibility
- The supervision of the Village Health Volunteers is done during bi-monthly meetings and is used for monitoring, planning and feedback
- The supervisory system is running but needs to be evaluated to whether the supervision is sufficiently institutionalized
- Supervision is difficult and is sometimes a lonely exercise when it implies traveling to remote areas by bad roads. Female supervisors do not always feel comfortable traveling in the forest or in under populated areas
- The OD has a clear vision that the clinical and technical management supervision is the responsibility of the OD staff and PFD is there to monitor community activities. Unfortunately the
- Supervision and on the spot training are going hand in hand. The Community IMCI guide can further contribute to on the spot training of the VHV's
- The monthly meeting at the OD with all HC staff and PFD PO's will improve supervision, planning and will contribute to a sustainable supervision system with appropriate supervisory tools

C.4 Human Resources and Staff Management

At the start of the Child Survival program 12 national staff members were employed. The staff expanded to a maximum of 20 in 2002 for Child Survival. When several complementary programs were being implemented staff numbers raised to 25, but the staff employed through the Child Survival decreased to the actual number of 11.

Staff expansion created the need for clear policies and during the implementation of the Child Survival grant the human resource policy development gained momentum and can be summarized as follows:

- Upgrading of national staff to field management level. The expatriates' play a role as Technical Advisor rather than as implementer is the main underlying concept (applies to field offices).

- A Performance Appraisal System has been developed whereby each individual staff member is evaluated. Strengths are translated in annual salary increments and weaknesses are identified to formulate the training needs
- A clear training policy has been formulated whereby the results of the Performance Appraisal System is linked the requirements in the job description and for each individual staff member a training route is mapped out
- Strategy in Human Resource Management is coaching and individual responsibility whereby ownership is a priority

Staff morale is high. Many staff members live in the same house and consider each other as friends. Minor issues are resolved and the good atmosphere has a positive contribution to the program implementation.

(a) National Staff

Year	CHH Staff	Turnover Rate from 2000	CS Staff	Turnover Rate from 2000
2000	12	---	12	---
2001	18	150%	18	150%
2002	20	167%	20	167%
2003	22	183%	15	125%
2004	25	208%	11	109%

(b) All Staff (Expatriate and national)

Year	CHH Staff	Turnover Rate from 2000	CS Staff	Turnover Rate from 2000
2000	13	---	13	---
2001	21	162%	21	162%
2002	23	177%	23	177%
2003	26	200%	18	138%
2004	27	208%	12	92%

N.B. the turnover percentages are based on the original number of staff that were in the Child Survival program in Chhlong when it commenced in 2000.

Staff turnover is within the normal range. Chhlong is considered as a remote area and for some local people employment serves as a springboard to more developed areas. The attitude of PFD towards this phenomenon has been positive. The knowledge gained on community participation is not wasted and can be applied in other programs. Due to its excellent reputation and high quality training, staff will not have problems finding employment at the end of program activities in Chhlong

C.5 Financial Management

The Child Survival grant has helped PFD to establish a solid basis for financial management and procedures. Over 4 years the financial management has matured. The field finance officers are able to deal with complex financial procedures. PFD's financial management and accountability for NCCSP finances and budgeting are adequate.

The initial budget proved to be adequate over the whole program implementation period, mainly because the costs were estimated accurately, the managers planned activities very cost-effectively, and the budgeting was prepared in detail. The budget was not complicated and therefore easy to implement. Budget adjustments mainly resulted from different interpretation and analysis of budget lines in the initial stages of the program rather then from insufficient budgeting. For example: transport for training was charged under general transport and not under training. No major budget adjustments had to be made over the project period.

4 factors contributed to under spending which made a 6 month no-cost extension feasible:

1. Severe flooding in 2002 made implementation of project activities impossible
2. At the start of the *Spien Sokhapheap* program in October 2002 activities for the Child Survival Program were low. The complementary SSP activities would facilitate further implementation of the Child Survival program
3. Change of Program Coordinator in Chhlong took longer than foreseen
4. During change of Country Program Director in Phnom Penh, spending was lower

The extensive investment in capacity building of its field financial staff is bearing fruits: program implementers have adequate budgeting skills, are able to accurately estimate costs and elaborate on budgets for future programming. Through internal on the spot training and weekly coaching from the Phnom Penh financial department, the skills of the local staff improved. Due to this continuous support the field finance officers are able to deal with complex financial procedures. The field staff is able to prepare budgets for future programs.

C.6 Logistics

Logistical support for VHVs consisted of IEC materials and stationary. For the Village Health Volunteers involved in the Hearth program bicycles were made available.

The motorbikes for supervision of the Village Health Volunteers are provided by the project. The everyday reality for Cambodian health staff is that they use their own motorbikes and sometimes even have to pay out of pocket for the fuel for supervision or outreach. Therefore the motorbikes were provided by the project. Without logistical support from PFD implementation of the immunization activities of the Child Survival Program would not have been feasible. The motorbikes were indispensable for the outreach and supervision activities especially to the remote and difficult to access areas. The motorbikes were donated to the Health Centers. Helmets and lifejackets were used to guarantee staff safety. Transport by boat could always be done by the ferry. Propane refrigerators and other equipment were donated by the Japanese Embassy from a matching complimentary project to support maintenance of the cold chain.

Outreach activities will be sustained when the MoH will provide sufficient funds for the transport and maintenance of the motorbikes. Based on the MoH budget, the OD director was not convinced this could be realized yet.

C.7 Information Management

The Chhlong Child Survival Program established a sound Management Information System. Data collection served several purposes:

1. To measure progress towards objectives.
   The monthly activity reports to measure implementation of program activities and process measures. The continuous effort to reflect on the activities enabled the

management to monitor the progress towards the objectives and provide feedback to the implementers. Several levels of the management require different type of information.

2. To measure outcome of the interventions.
   LQAS and KPC surveys measure outcome data

3. To measure impact of the program.
   Data base of information on behavior patterns, outbreaks, healthcare seeking and community needs

The design of NCCSP emphasizes the routine of information management in strengthening the linkages between communities, health service providers and the OD management team. The program has been successful to lift monitoring and evaluation beyond tracking own program achievements towards a system whereby the information collected at community level feeds back into the health planning at OD level.

Collection of data at all system levels is an ongoing process. Advanced Knowledge Management is required to file and analyze data. Feedback into the design and decision making level requires proper interpretation of epidemiological and statistical data. For the future it might be necessary to invest in Knowledge Management to guarantee continuity and maintain the high level of evidence based decision-making.

The following reports will be discussed further:

1. Village Health Volunteers reports: Data are collected at community level and consist of program activities and utilization, births and deaths. The information is collected monthly by the PFD staff and disseminated to the OD.
2. The Child Death reports. When a child has died, the PFD Midwife Officer will perform a Verbal Autopsy. The information is collected by the PFD staff. Formal analysis and dissemination is not yet done.
3. Monthly activity reports and Annual Reports are compiled based on the VHV report. The information is used as management tool mainly to measure process indicator.
4. LQAS surveys are performed bi-annually to measure outcome and impact indicators. The information is analyzed by the program staff and used as management tool to measure progress towards objectives. Furthermore, the information is disseminated to the donors.

C.7.i Village Health Volunteer reports

The VHV reports are at the heart of the Child Survival program. The VHV reports have proven to be an effective tool to:

- Measure progress towards the NCCSP objectives
- A tool for the individual VHV to measure her own performance
- Feed back into management cycle
- Identify active and non active Village Health Volunteers
- Identify problems that need attention (like outbreaks, increasing child mortality or maternal mortality in a particular area)

During their activities the Volunteers report monthly about the following, whereby the average indicates the average per month:

Table 23: Summary Sheet VHV reports	Totals	Averages	Totals	Averages	Totals	Averages
INDICATORS	**2002**	**2002**	**2003**	**2003**	**2004**	**2004**
# of VHVs reporting	NA	402	4,280	389	1,538	385
New mother with child< 5	9,879	NA	9,526	1,466	14,295	2,859
Children< 5 yrs	12,981	NA	12,273	1,888	17,228	3,446
New pregnant mothers	NA	NA	3,326	512	1,351	270
Delivered	2,210	NA	2,331	359	872	174
Delivered by midwife	420	NA	498	77	221	44
Children< 5 yrs died	188	NA	104	16	29	6
Pregnant mother died	15	NA	3	0	1	0
Women died during and after delivery (3d)	NA	NA	23	4	5	1
HH visits	38,083	NA	35,575	5,473	10,919	2,184
Group education	4,531	NA	3,953	608	1,434	287
Hand-washing station	1,363	NA	1,315	202	301	60
Child referral	182	NA	295	45	112	22
Mother referral	89	NA	207	32	101	20
Compl. food training		NA	943	145	263	53

The VHV reports are used to assist and supplement the Health Management Information System. A community based data collection system gives different information than the information gathered at service delivery point and can therefore is not comparable but is complementary information. For example: estimated deliveries in the HIS[4] are much higher. As stated before, the population figures might not be accurate anymore and there might be underreporting from the VHV reports.

The 26 reported maternal deaths in 2003 would stand for maternal mortality rate of 600 per 100,000 live birth is very high if compared to the national estimate of 400 death per 100,000 live births. However, some deaths might be double counted. On the other hand the child death is at the low side. This could be underreporting.

C.7.ii Child Death Reports

As a response on the Mid-Term evaluation, the community-based death and disease surveillance system was complemented with an improved questionnaire for Verbal and Social Autopsy to give specific information on the mortality amongst under 5 children. This impressive database which is compiled with the efforts of PFD and Health Center staff visiting the family of a deceased child is used to monitor trends and impact of the Child Survival program.

If from the maternal death reports might be concluded that deaths are reported with some accuracy, the conclusions from the Child death reports might be that child deaths are decreasing. This is said with caution and is a preliminary conclusion. Underreporting might be a reason for lower than estimated death rates, but some optimism might be justifiable.

2001: 196 child deaths reported

[4] Estimated deliveries = population census data 1998 X 2.49 % (6X) X 4.3%

2002: 188 child deaths reported
2003: 104 child deaths reported
2004 Jan – May: 29 child deaths till date reported
Only a new census would give more definite answers. On the other hand, immuno-preventable death like Neonatal Tetanus are likely to drop taken into consideration the increasing amount of tetanus protected pregnant women and better hygienic conditions during delivery. Under five mortality in 2002: 85.1 per 1000 live births. In 2003: 44.6 per 1,000 live births. In 2004: 26.4 per 1,000 live births.

The percentage of births attended by a qualified midwife increased. While in 2002 19% of the women delivered when a midwife was present, the next years the percentage increased to 21% in 2003 and 25% in 2004. According to the Cambodian Demographic and Health Survey 2000 Kratie 39% of the births were recorded as being attended by a midwife, Chhlong area even far below National and Provincial statistics. An increase of 6% contributes to a better neonatal survival.

Preliminary analysis of mortality data reveals the declining trend towards total under five mortality. It is hard to detect a trend in the percentage of death in the neonatal period (death occurred within the first month of life) but an increase is not excluded. Increase in reported births in 2003 will be probably due to an underreporting of birth in 2002. Due to the increase in use of contraceptives, a decline in deliveries would be expected. The decline in mortality is mainly due to better child survival having survived the first month. Reliability of data depends on accuracy of reported births and reported deaths.

The Neonatal mortality is still 22 – 31% of the total under 5 mortality. This is coherent with other reports on under 5 mortality trends. Assuming that data of the Village Health Volunteers are correct, the program has reached its overall goal to reduce under five mortality.

The Cambodia Demographic and Health Survey 2000 is still considered as the most reliable source of data on under-five mortality.

Table 24: Neonatal Mortality and Under 5 mortality in Cambodia per 1,000 live births

	Demographic and Health Survey 2000*	Child Death reports 2002**	Child Death reports 2003**	Child Death reports 2004 Jan – May**
Neonatal Mortality	37.3 (30%)		10 (22%)	8 (31%)
Under – 5 mortality	124.4	85	45	26

**Source: Cambodia Demographic and Health Survey 2000*
*** Source: VHV reports*

The 2004 data are the less reliable. Death reports are not immediately performed after death and reports are always some weeks behind. A survey has to be done to check specifically on under-five mortality. This is of major importance, because if these data are true, the decline in mortality is spectacular. If not, then the value of the data collection needs to be reconsidered.

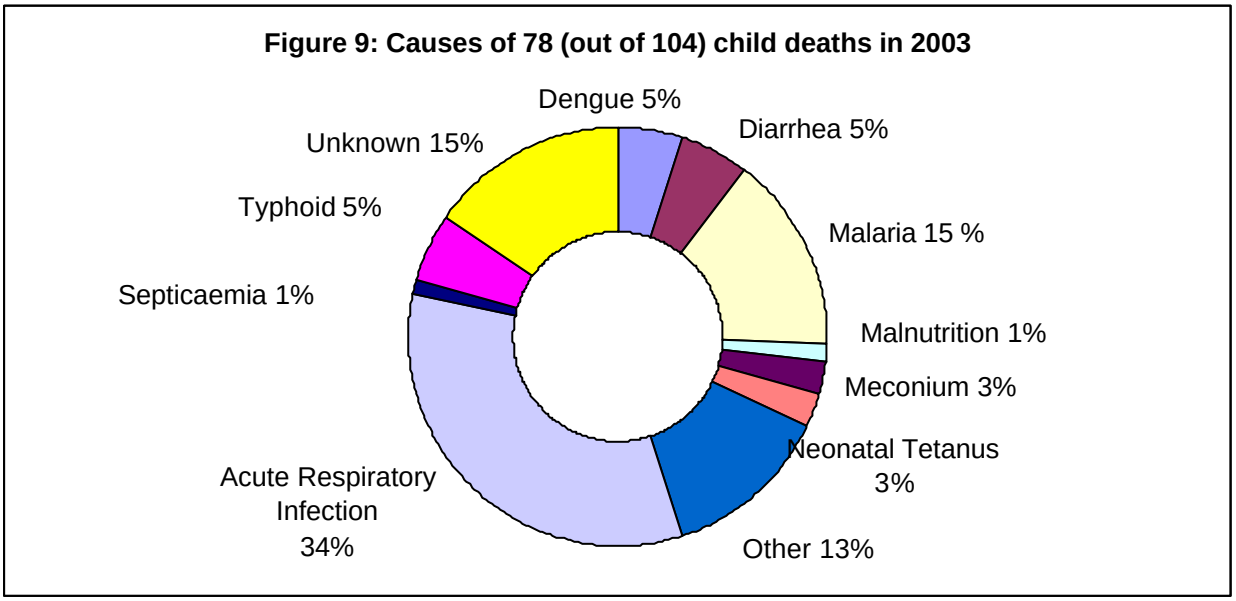
The main conclusion from this analysis is that the Neonatal Mortality contributes to one third of the total under-five mortality. This is consistent with data from other sources, that neonatal mortality remains high. Next phase should focus on interventions addressing this issue.

The death reports should be properly analyzed. Determinants like home remedies and health care seeking behavior need to be identified and used to adapt the behavior change interventions. Seventy-five percent of the deaths are followed by a death report. Performing a child death report can be an embarrassing and during the final evaluation nobody seemed particularly keen on doing it. Analysis and feedback to the Volunteers might be an incentive to continue this exercise. Mothers do not always understand why all the questions are asked and find them unrealistic. Spiritual causes like the previous mother who comes to take her child back, make more sense to them. Death reports are of invaluable importance and could be a core source of information. The reports are underused and feedback is mainly verbal. Monitoring trends and recognizing patterns of health events in the community becomes difficult when data are not (yet) analyzed. Twenty-eight percent of deaths are recorded under "unknown" or "other," which makes trends in causes of death hardly identifiable. Standard forms need to be revised as well as the interview instructions.

No major trends in causes for child death were seen. Acute Respiratory Infections, peri-natal conditions and Malaria remain the main killers in childhood. Diarrhea which is in most countries with comparable nutrition status of children the second killer, is not a cause of major mortality in Cambodia. The main concern is the over consumption of antibiotics in diarrhea which might result in less effectiveness when really required like in ARI.

This figure shows the causes of 78 out of 104 reported deaths in 2003.

Figure 9: Causes of 78 (out of 104) child deaths in 2003



C.7.iii Monthly Activity Reports and Annual Reports

Information of the VHV and Child Death reports are merged by the program manager into the monthly activity report. A standard format is used to report on all activities. This is an integrated report covering the Child Survival, the Reproductive Health Program and CBD program, and the Hearth program. Due to the integrated approach of PFD disaggregation of data as sometimes requested by donors is not always possible and not desirable. Progress of

activities is reported during the monthly staff meeting in Chhlong and the feedback during this meeting is included in the report. The report highlights successes and key achievements. Constraints and obstacles are addressed.

The monthly reports are used to compile the annual reports. On their turn, the annual reports are used to measure project progress towards the objectives. Monthly meetings are conducted in Phnom Penh to monitor progress and to readjust the targets if surveys reveal that earlier targets have been met before program completion. The objectives and the monitoring tools have been streamlined over the years. A coherent and consistent information framework is established.

C.7.iv LQAS and KPC

LQAS surveys are done every 6 months and are used to monitor progress and mainly for internal use. The fact that the surveys are done by the Village Health Volunteers is seen as major achievement for capacity building of community workers by enabling them to review their own work and gain deeper understanding of the problems.

The KPC survey is used for establishing baseline data and to measure final impact of the program though external evaluation.

Reliability of collected data is dependent on the knowledge of the Village Health Volunteer involved, because she needs to decide whether an answer is right or wrong. Inconsistency in data confirmed this observation. Two examples: While only a few mothers could recognize danger signs, the score for appropriate referral was high. The scores on complementary feeding were high in the LQAS survey, where the interviewer needs to decide whether an answer is right or wrong. In the KPC survey questions are open. Although some Volunteers involved in the surveys were new to the project, the request from the evaluator to test first the level of knowledge of the Volunteers involved in the Final Evaluation survey could not be complied with due to time constraints.

During the Final evaluation 'survey tiredness' was sensed. Doing a community survey in a proper way will take more then 1 month. If the exercise is done biannually 2 months will be 'lost' for project implementation. Sufficient time has to be allocated to surveys and sufficient qualified staff has to be asked to be involved. Better do a good survey once then two which are less reliable.

C.8 Technical and Administrative Support

Technical and administrative support has been sufficient throughout the project. Three program coordinators contributed to the achievements of the program through profound technical knowledge and understanding of the grass root level. The Child Survival has its current shape and excels in practical implementation of theoretical models and evidence based interventions.

The external consultants during the Mid Term Evaluation made useful recommendations, which improved the quality of the Child Death register. The initial phases of the Hearth program were supported by expatriate volunteers and interns.

Technical support from the Phnom Penh based experts should also not be left unnoticed. Continuous support from the finance department to the field, through field visits, coaching

and weekly feedback, contributed to a well-established and transparent financial system. Steady capacity building over the years has been the motive and the results are visible. Contributions from coordinators with field experience and a sound medical background could give high value advice.

C.9 Management and Lessons Learned

During discussions with the involved partners the following lessons could be distilled:

- The Participative approach to program design has proven to be successful and is repeated in other programs
- Coaching is the most important feature of supervision
- An atmosphere where everybody is motivated to take his/her responsibilities is the approach for PFD. This applies to capacity building and empowerment at all levels: from the community up to the headquarters
- Supervision and field visits should be planned in advance
- More meetings should be conducted with the Health Center VHV supervisors
- Feedback of results and progress toward objectives motivates the Village Health Volunteers and the institutionalizing of monitoring and evaluation contributed to that
- The organization structure of PFD can be defined as the Learning Organization. Knowledge Management is one of the centers of the organization and helps to evolve towards the most successful approaches
- Integration of several program components is a successful approach for the implementation and sustainability of the interventions
- Participative development of policies and procedures contributes to the example function the PFD has towards community organizations. Planned establishment of a Staff Association is evidence of such a participative approach. Taking responsibility does not exclude participation.

D. Other Issues Identified by the Team

All of the issues identified have been incorporated into the body of the report. There are no further outstanding issues to be included in this section.

E. Conclusions and Recommendations

The successful implementation of the Northeast Cambodia Child Survival Program by Village Health Volunteers and Health Center Supervisors supported by the PFD staff has resulted in a decrease in morbidity and mortality of children of less than 5 years of age. The approach to train Village Health Volunteers and involve Health Center staff in the supervision has been an effective strategy.

Behavior change on breastfeeding, immunization, nutrition and the management of diarrhea among young mothers with children took place and results are presented. Promotion of breastfeeding has been very successful. Mothers initiated breastfeeding immediately after giving birth and continued to give exclusive breastfeeding. The most tangible is the improved immunization coverage achieved by community mobilization efforts. That the coverage increased before outreaches from the Health Centers were supported, underlines the importance of knowledge transfer to and motivation of mothers. It can be concluded that community mobilization strategies by involving Village Health Volunteers and Health

Centers Supervisors has been very effective. Knowledge and practices of mothers on the feeding of young children improved. The impact of the improved nutrition practices is more difficult to measure and longer-term interventions are needed. Dietary Diversification messages to prevent micronutrient deficiencies have been very effective. The Hearth nutrition interventions are very intense and the knowledge and understanding gained during the NERP's can be used in the general program. Morbidity due to diarrheal diseases decreased considerably. This will contribute to less malnutrition and less over consumption of medicine and in particular antibiotics. Feeding practices when the child was ill improved considerably and a sick child will have a quicker recovery and will be less prone to enter the vicious circle of disease and malnutrition. Management of diarrhea at home improved and recognition of danger signs and referral practices show a positive trend.

Let me start the recommendations by congratulating the mothers, the Village Health Volunteers, the VHV supervisors from the Health Center, the OD staff and the PFD team with their achievements! Hard work, good collaboration and a positive spirit contributed to the overwhelming success of the program. A sound theoretical framework and evidence based activities have been translated into very practical and community centered interventions. The motivation of the Village Health Volunteers is admirable. Given the situation of the health system a couple of years ago, the figures show that the Health Center staffs in the Chhlong OD are motivated and the community is satisfied with the quality of the services provided. It is well known that effectiveness of a program depends on the motivation of and support from the Provincial Health Director. A special word of thanks is for Dr.Cheam Saem (PHD Director). His personal interest made this program feasible.

I deeply respect the people who made the change possible, who went on their motorbikes to remote areas defying the hot sun and the heavy rains.

Overall Recommendations

1. The Child Survival activities should continue and the existing structure of Village Health Volunteers being supervised by Health Center staff should be maintained. The strength of PFD lies in its understanding of and working with and through the community. Child Survival Program should remain a community program, even when program activities are expanding to Health Systems Strengthening, the focus should remain at the community.

Program interventions and technical issues

2. Evaluate the Nutrition interventions in the Hearth villages with an external evaluator. Technical Advice should be done together with MoH staff from Chhlong and should cover:
    1. Evaluation of the positive deviant model;
    2. Nutritional/dietary analysis of food produced in the villages;
    3. Analyze data collection system and suggestions;
    4. Analyze what additional activities should be needed and feasible concerning health status of the children;
    5. Analyze what additional activities are required to improve the food security situation (home gardens, poultry);
    6. Create more possibilities to do Hearth within a research setting (probably can be done in a very easy way, without extra budget requirements);

7. Investigate the possibilities to involve MoH staff in set up a mobile clinic for deworming during NERP and on a regular basis;

Investigate a micro credit system (food production) and community based transport system (accessible health care)

3. Continue with the integrated approach. Village Health Volunteers continue in other program interventions. This contributes to sustainability. At the grass-roots level this strategy for community mobilization is effective and should continue. The VHVs could work as malaria volunteers or should deliver integrated messages and also address EPI and breastfeeding.

4. Promote growth monitoring as an overall part of the program as in Hearth villages. The yellow card should be actively promoted. Train VHV's in recording to assist HC staff during outreaches. Promote recording in the yellow card. It is very motivating for a mother to see the weight of her child. Recording is of crucial importance in clinical settings to diagnose properly and differentiate between acute or chronic conditions.

5. To reduce over consumption of drugs, in particular antibiotics, a pilot should be conducted to introduce the Health Booklets, or Health Passports. Over consumption is a real threat to health of under-five children and should be a priority intervention. Sensitive messages should be developed and tested as pilots. Radio / TV messages should be supported.

6. Interventions should continue to be evidence-based. Refreshers should be done annually on all topics. Trainers should be a mix of internal and external (MoH) staff. External trainers can identify gaps in knowledge or evidence based messages. Internal training mechanisms have the advantage of establishing relationships and knowledge on the level of the VHV's

Community Mobilization and Communication for Behavior change

7. Elaborate actively in health education and nutrition education models. PFD's specialty is the profound knowledge of the community characteristics and model-building for health education. Specific characteristics like casual labor and high turnover of immigrants, in some places, requires a campaign-like approach. In bigger places like Psa Snoul, regular campaigns could raise awareness among the people. The Vietnamese minorities could be reached by small campaigns.

8. To guarantee sustainability the Village Health Support Groups should continued to be supported. The government policy is that 2 VHSGs should be selected per village. For small villages this is not an issue, but for the towns this number would be too small. Usually, one of the VHV's is selected to be a member of the Village Health Support Group. Continuation of support from PFD to the VHSG will make community participation sustainable. If the VHV model continues, adjust number of 410 to 520 Volunteers (based on 50 HH X 5 members X 520 volunteers = 130,000 people, correction for expected population growth).

9. After training, sign a contract with the Village Health Volunteer and agree on responsibilities. Agree on a minimum of activities she needs to fulfill to be called a

VHV and what are behaviors that will exclude her from being a VHV (like selling inappropriate drugs or promoting hazardous treatments). Train the PFD staff to actively identify VHV's who are delivering hazardous messages.

10. Village Health Volunteers should be trained further on Community IMCI with a priority on:

    a. What is expected from good health care? Which medicines are good and which ones are dangerous? The dangers of over consumption of medicine, side effects of medicine (like diarrhea). Messages for the Management of Diarrhea and ARI should be specified. Referral to the Health Centers, why and what is expected?
    b. Acute Respiratory Infections: prevention, home remedies, recognition of danger signs, referral and correct treatment
    c. Birth preparedness and care for the newborn, including hygiene
    d. Iron Deficiency Anemia: Prevention, Dietary Diversification, Treatment of worms, supplementation

    Continue to have a fixed amount of new messages. Nearly all VHV's could mention the 4 interventions. If the program continues, concentrate on 4 new messages. Continue with the old messages and put new priorities in the old messages. For example: Nutrition could focus more on iron rich foods, etc

11. Support actively or passively other forms of mass media health messages like radio messages and try to synchronize with radio messages. Behavior change is more likely to be achieved when the community mobilization and BCC strategies of the VHV's are supported by mass media and Health Center staff. The credibility to the VHV's increases. Furthermore it helps women to maintain their behavior change. It reinforces the decision taken by the mother and helps her resist pressure from the community.

12. Continuation of activities on motivation of Village Health Volunteers. A competitive element could increase coverage op EPI in areas that have lower scores. For many Cambodians it is their dream to see Angkor Wat once in their life. A very motivating factor could be that a VHV could visit Angkor Wat after 4-8 years of being an active Volunteer.

Health Systems Strengthening

13. The entry point for the Strengthening of the Health Services should be the community. Conduct a workshop with the OD and the HC staff and establish together the (community) objectives for the Child Survival component of *Spien Sokhapeap* program. Conduct quarterly meetings with all VHV supervisors/involved Health Center staff at the OD to institutionalize planning, supervision and feedback and create ownership. Meeting should be about community supervision, problems faced with the community, planning, transport, feedback etc

Supervision

14. Prepare strategy for supervision. The tools used for supervision should be revised. Strategies for coaching and responsibility should be developed. Improve on supervision at all levels. Conduct workshop on how to institutionalize supervision.

Capacity building and Training

15. Arrange exchange visits to other Child Survival programs for senior PFD staff Program officers

    Invest in training of senior staff like on Epidemiology, statistics, community participative approaches, model building in health education, behavior change models. Especially the senior staff would benefit of training which require more abstract understanding. This would enable them in the future to deal with proposal writing.

Management

16. Develop an organizational structure whereby senior staff is not continuously overburdened. Senior managers need assistants

17. Establish strong links with the NGO involved in the equity fund for the Referral Hospital in Chhlong

Information Management

18. Analyze the Child Death register and make adjustments. Hold a workshop with the Health Center staff in the future on Child Death register. Keep the forms simple and practical. List of diagnoses should be adjusted. More information on peri-natal conditions required. For example: low birth weight should be added. Check with other Community based databases to make data comparable. Enter all data in a data base (EPI info, English) to make it accessible for analyzing. Now you have loads of information that are not used.

    The completeness of the VHV reports should be assessed. Only when the reports are complete the figures on under five mortality make sense, while this is the strongest impact indicator.

19. Community survey, if possible should be done less frequently, but with better qualified staff and with better preparation. Surveys should be supervised and really looked into at random selection. (I still feel that the poorest of the poor are not reached)

Finance

20. This program is particularly well situated for scaling-up. Taking into consideration the annual costs of 250,000.00 US$ and the outputs, the cost benefits ratio is high. To make this understatement plausible a formal cost effectiveness analysis could be convincing that the approach of PFD is effective and ready for scaling up.

F. Results Highlight

The results of the Child Survival Program as implemented by PFD is very convincing that the community centered approach with a health education strategy designed to focus on the demand side of the child health problem is effective and achieves improved health and reduced mortality in under five children. It has a potential for scaling-up. The Child Survival program designed 4 interventions to address poor breastfeeding practices, low EPI coverage, poor nutrition and micro nutrition status and insufficient management of diarrheal diseases. Among the 130,000 people living in Chhlong OD the 17,200 under five children and their mothers were the direct beneficiaries of these 4 interventions.

Table 25: Highlight Child Survival Results		BL	FE
Breast-feeding	% of mothers who initiated breastfeeding 1hour after delivery	2%	73%
	% of children exclusively breastfed the first 6 months of life	12%	78%
EPI	% of all children ages 12 – 23 months fully immunized	17%	79%
	% of mothers with a card receiving the correct number of TT	15%	67%
Nutrition and Micro-nutrients	% of mothers what is good complementary food for a child	9%	58%
	% of mothers who know which food contains Vitamin A	9%	91%
	% of households where iodine is present in the salt	1%	41%
Diarrheal Diseases	% of children with a diarrhea who were given ORT	15%	81%
	% of mothers who recognize danger signs of in diarrhea	45%	91%

**KPC survey 1999 N=300; ** KPC 2004 N=300*

The strategies which contributed to the success of the program and are ready for scaling-up:

1. Community oriented program design has built trust between the community and health care providers. This trust-building has been a key factor. Training and motivating 410 Village Health Volunteers who are responsible for the community mobilization (> 60,000 household visits; > 20,000 group sessions) has created capacity within the society and created possibility for sustainability through the Village Health Support Groups
2. The structure whereby the Health Center staff supervises the VHV creates a client-oriented health service delivery system. Increased awareness of the community needs among health staff has contributes to quality improvements in the health care delivery. Utilization of Health Services and referral increases Given the laborious and slower then expected development of the Health Systems in Cambodia the results are remarkable.
3. Sophisticated health education models focused on behavior change with an emphasis on positive learning experiences and simultaneously broadcasted mass media messages contribute to sustained behavior change though increased credibility of messages.

Table 26: Summary Sheet Highlight of the Program: Resources and Inputs				
National Staff	FY 1: 12	FY 2: 20	FY 3: 15	FY 4: 11
Technical Assistance	1 Child Survival Program Coordinator and 1 Program Manager Health			
Total Grant	FY 1	FY 2	FY 3	FY 4
$ 1,000,000.00	$ 327,138.98	$ 229,331.60	$ 253,668.57	$ 187,088.91

ANNEX A Evaluation Team Members and their titles

Albertine Baauw, MD, DTM&H	Team leader Final Evaluation
Judi Harris, MA Health Education	Child Survival Program Coordinator Chhlong
Dul Setha, Secondary Nurse	Child Survival Team Manager, PFD Chhlong

ANNEX B Evaluation Assessment Methodology

The guideline Participatory Program Evaluation Manual for Child Survival programs supplied by the Technical Support Project, USAID and CRS was used for the Final Evaluation. The Final Evaluation was aimed to be highly participatory and was seen as an opportunity to serve as a learning experience to facilitate further program implementation. Whereas the Midterm evaluation was a process evaluation the Final Evaluation aimed to assess the effectiveness of the technical approach and develop overarching lessons learned from the NCCSP. Last but not least the Final Evaluation should help to strategize the use and communication of these lessons within PFD, to partners and the wider health community in Cambodia.

At the start of the Evaluation process the Evaluation team set the aims and objectives for the Final Evaluation. The set of indicators defined the sources of information needed to assess effectiveness and impact of the interventions. Some existing data sources like the pre- and post-test were analyzed during the Final Evaluation. No data were available on nutrition status and the Private Providers. Tools to be used in Focus Groups and the interviews for different levels were developed in a participatory way. It was made sure that the questionnaires addressed all the questions of the TOR. Preparation of interviews prior to the field visits included the questionnaire developed for mothers, for Village Health Volunteers, for Traditional Birth Attendants, for Village Chiefs, for Health Center staff, for the OD and PHD, and for PHD staff and private providers. Only the last one was left unused. The questionnaires had space for open questions and consisted of a specific part on the several topics outlined in the TOR.

Selection of place of interviews was partly at random and partly convenience sampling. The Focus Group discussions with the Village Health Volunteers, Traditional Birth Attendants, Mothers and Village Chiefs were done at random by selecting one site from Health Center catchment areas that were accessible during this time of the year. As much as possible surprise visits were conducted to be able to obtain genuine information.

Secondary data analysis was mainly done on the KPC survey and the LQAS reports, Training results, VHV reports and the Child Death Report.

Main constraints and limitations faced during the Final Evaluation:

- The KPC survey and the Final Evaluation coincided. This restricted the availability and the focus of staff. The advantage was that the information obtained through the KPC was directly used for the Final Evaluation and served as background.
- 3 weeks to perform a KPC as well as a Final Evaluation was over ambitious
- The objectives of the Final Evaluation were interpreted differently. The approach as proposed in the Participatory guidelines for Child Survival Evaluation was new to the majority of the involved people. Evaluation was seen as data collection rather than being involved as team. The new approach has been a good learning experience and will contribute to development of participatory evaluation procedures.
- In edition to the previous paragraph, the time was restricted to perform a workshop on Lessons learned. The proposal is that this workshop will be performed internally.

Table 27: Schedule
Final Evaluation

Monday 21	Tuesday 22	Wednesday 23	Thursday 24	Friday 25	Saturday 26	Sunday 27
	KPC,	Indicators		Superv VHV	Preparation FG	Review DIP
	preparation	Training VHV	FE objectives and	and HC staff	Tool	
PHD Kratie	questionnaire		data sources	Hanchei III	development	
OD director Chhlong	Sampling	Finalizing QQ	Child Death	SV Hanchei III	Setup data	Set up data
		Training VHV	Register	questionnaire Interview Chief	base SPSS	Base SPSS
Monday 28	**Tuesday 29**	**Wednesday 30**	**Thursday 1**	**Friday 2**	**Saturday 3**	**Sunday 4**
OD	HC Kanchor	HC Prek Prosop	IV Fin. Dep.	Snuol HC	Data entry KPC	Data entry KPC
Train staff SPSS	FG VHV	Supervision	Travel Snoul	TBA	4 teams	4 teams
	Kanchor	*FG VHV Prek Prosok*		FG VHV + M Psa Snoul		
Interview staff	Chrey Thmor	*Krom*	HC Ksim	OD Chhlong		
Health Syst	FG VHVThmor	*Olong*	FG VHV + M	EPI, director		Analysis KPC
Strengthening	Data entry	*Hearth*	Sre Roneam	PFD staff		
Monday 5	**Tuesday 6**	**Wednesday 7**	**Thursday 8**	**Friday 9**		
Data entry KPC	Boeung Kiep NERP obser	Prep WS Data	Supervision	Krohom Kor Leu, HC + FG		
	FG M + VHV			FG VHV+ TBA		
	PFD staff			FG M		
	Training SPSS	Workshop	Hearth	Interview staff		
Analysis	PFD WS preparation	VHV's FB KPC	Obs CBD Management			

FG= Focus Group Discussion; HC = Health Center; IV = interview; M=mothers

ANNEX C List of persons interviewed and contacted

Core Evaluation team

Albertine Baauw	Team leader Final Evaluation
Judi Harris	Child Survival Program Coordinator Chhlong
Dul Setha	Child Survival Team Manager, PFD Chhlong

Ministry of Health

21-06-2004	Dr. Cheam Saem	Provincial Health Director Kratie
21-06-2004	Dr. Chhneang Sovutha	Deputy Provincial Health Director Kratie
21-06-2004	Mr. Leang Dina	Interim OD Director Chhlong
25-06-2004	not available	Director Referral Hospital Chhlong
2-07-2004	Mr. Leang Dina	Director OD Chhlong
02-07-2004	Mr. Cheng Sam'at	OD EPI Coordinator

Health Center Staff

29-06-2004	Mr.Thiv Tharith	Chief HC Kanchor
29-06-2004	Mr. Por Song Ly	Chief HC Chrey Thmor
30-06-2004	Mr. Leng Chan Thy	Chief HC Pre Prasok
01-07-2004	Mr. Nuon Neang	Chief HC Ksim
01-07-2004	Ms. Kaen Chie	VHV Supervisors
02-07-2004	Mr. Ong Vanara	Chief HC Snuol
09-07-2004	Not present	Tamao HC

VHV

29-06-2004	Ms. So Srey Lep	Village Kbal Kla
29-06-2004	Ms. Khim Samay	Chhlong Psa
29-06-2004	Ms. Tep Vanny	Chhlong Psa
29-06-2004	Ms. Sok Krong	Chhlong Psa
30-06-2004	Ms. Peou Kim Leang	Pre Prasok Krom
30-06-2004	Ms. Chie Chuung	Prek Prosop Krom
30-06-2004	Ms. Tun Sopha	Prek Prosop Krom
30-06-2004	Ms. Sok Sokharie	Prek Prosop Krom
01-07-2004	Ms. Chang Sienet	Sre Roneam Ksim, other village
02-07-2004	Ms. Oek Chan Theng	Psa Snuol
02-07-2004	Ms. Mao Mary	Psa Snuol
02-07-2004	Ms. Chhan Chanthin	Psa Snuol
06-07-2004	Seng Med	Boeung kiep
06-07-2005	Noun Sophal	Boeung kiep
09-07-2004	Ms. Sak Tnavy	Kra Horm Kor Leu

TBA's

29-06-2004	Ms. Choem Aaim	Village Kbal Kla
09-07-2004	Ms. Soun Vama	Kra Horm Kor Leu

Village Chiefs

25-06-2004	Oung Koeun	Chief of Hanchey III
29-06-2004	Mr Saauw Hong	Chief of Kbal Cha

Malaria Volunteers

29-06-2004	Boeun Setha	Village Kbal Kla

Mothers interviewed in

Kbal Klach
Boeung Kiep
Psa Snoul
Ksim
Krohom Kor Leu

PFD staff

Judi Harris	Child Survival Program Coordinator Chhlong
Dul Setha	Child Survival Team Manager, PFD Chhlong
Hoeum Heoun	Health System Strengthening Team Manager
Tuon Thara	PFD Chhlong Finance/Admin/Logistics Officer
Ms. Yim Nady	C.O. PFD Zone Preprosok Tamao
Ms. Long Chandaly	C.O. PFD Zone Snoul and Ksim
Phul Chantorn	C.O. PFD Zone Pong Ro
Chhin Chantha	Junior Community Officer -- Hearth
Bour Vicheth	C.O. PFD Zone Snuol
Kim Seng Yada	P.O. PFD, Zone Snoul
Toeng Rothy	P.O. PFD, Zone Domrey Pong, Kanchor
Mr. Ya Sarouen	C.O. PFD Zone Tamao
Emelita C.Miranda	Finance Advisor, Phnom Penh Office
Mary Mohan	Program Manager Health
Chris Smith	Country Director PFD

NGO's

Dr. Golam Rasul	Health Net International

ANNEX D Diskette or CD of Report

ANNEX E Knowledge Practices and Coverage Report

Knowledge Practices and Coverage Report

Northeast Cambodia Child Survival Program

(NCCSP)

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1 Introduction

1.1 Background

This KPC survey has been conducted to provide qualitative data for the final evaluation of the Northeast Cambodia Child Survival Program (NCCSP). After implementation of a two-year entry-level Child Survival Program funded by USAID, the Northeast Cambodia Child Survival Program became fully opeariotional from October 2000 and phased out in March 2004 and is currently in ts no-cost extension which ends in September 2004. The goal of the Child Survival program is to reduce morbidity and mortality of children under five years of age in Chhlong OD, through control of diarrheal diseases, immunization, nutrition and micronutrients and promotion of breastfeeding.

The purpose of the KPC survey is to assess if the Child Survival Program has met the stated goals and objectives compared to the baseline data and to assess the effectiveness of the technical approach towards reducing morbidity and mortality if children under five years of age in Chhlong OD.

The Operational District Chhlong, located in Kratie Province, has a total population of 130,154 inhabitants[1]. An estimated 17,200[2] children under five years of age and 32,150[3] women in reproductive age are targeted.

1.2 Survey Objectives

Objectives for the KPC survey were to measure the achievements of the Northeastern Cambodia Child Survival Program compared to the baseline data collected in 1999. The survey was conducted in the scope of the Final Evaluation of the program and followed the requirements outlined in the USAID guidelines. The survey aimed to obtain information on:

- Knowledge on the 4 interterventions: breastfeeding, EPI, nutrition and management of diarrheal diseases
- Practices were assessed in order to measure behavior change in mothers of children under five years in the 4 years of the program implementation
- Coverage rates for EPI in children and mothers of young children of less the 24 months

1.3 Schedule

June 21-23	Preparation survey, review of the baseline KPC questionair, consistency with original indicators Detailed Implementation Plan of the NCCSP, compare the KPC with the LQAS, cluster sampling
June 21 – 25	Training of the Village health Volunteers (interviewers) and the VHV supervisors and prepare logistics, try-out of the questionair in Hanchey III (not included in the cluster sampling), household selection
June 28 – July 1	Interviews

[1] General Population Census of Cambodia 1998; estimated annual population growth of 2.49%; data provided by the OD of Chhlong
[2] 13.2 % of the total population
[3] 24.7 % of the total population

July 1- 5	Data entry in Excel and SPSS
July 5 – 7	Data analysis
July 7, PM	Workshop presentation of data and feedback of the Village Health Volunteers
July 7 – 15	Report writing on KPC survey and conclusions on KPC

2 Methodology

2.1 The Questionnaire

The questionnaire used for the Baseline KPC formed the basis of the questionair for the final evaluation. The questionnaire was reviewed to ensure consistency with the baseline KPC, with the indicators of the Detailed Implementation Plan and with the USAID guidelines and indicators. Although the Acute Respiratory Infections were not covered by the program interventions, the questionnaire was not changed. Data on ARI can serve as baseline for the next phase of Child Survival activities and allows an estimation how knowledge of mothers increases by external factors.

The KPC on maternal health covered the majority of the indicators. Only questions directly related to program interventions on Maternal Health were left in place.

II. Sample size

Recommendations of the KPC 2000 + guide[4] for sampling and seize of survey were followed and were consistent with the KPC baseline survey. The 30-cluster sampling methodology was used to guarantee a certainty of 95% (confidence interval 95%). One cluster included 10 mothers of 1 or more children under the age of 2 years.

III. Sampling methodology

The 130,154 people of Chhlong OD live in 101villages and 2 satellite villages. There are 17 Communes. The Chhlong district is inhabited by a riverside community, living along the Mekong and an inland located community, living in forested areas. Along the banks of the Mekong River live the Vietnames people in the floating villages. The Cham people tend to live on the river banks but recently a migration wave occurred due to landshortages and collapsing river banks. The riverine communities are less poor then the inland communities. The river is a continuous source of food and trade. The inland communities tend to be small and poor and are located in malaria endemic areas. Ethnical minorities groups, like the Steang originate from the Ratanakiri and Mondulkiri provinces and speak their own language.
Seizes of villages vary considerably and PFD has focused on the small inland villages which are worse of concerning wealth and health.

Population characteristics:

- Seize of the villages varies considerably
- 43% of the villages have less then 1000 inhabitants
- The smalles villages are more located inland while richer bigger villages are either located on the riverside or along the main road
- The floating villages of the Vietnamese people on the Mekong river are not included in the sample because there is no contact with the Vietnamese

[4] KPC 2000 + Field Guide

speaking community mainly due to communication problems. For the near future PFD office plans to recruited from the Vietnamese minority groups.

- The Steang minority groups speak Steang and Khmer and are included in program activities

Inhabitants per village	Number of Villages	Percentage	Population	Percentage
1 - 999	43	43%	27,840	21%
1000 – 1999	45	45%	65,638	50%
2000 – 2999	8	8%	18,033	14%
3000 – 3999	3	3%	9,603	7%
4000 – 4999	2	2%	9,040	7%
Total	101	100%	130,154	100

Source: Census 1998, annual population growth 2.49%, provided by the MoH

Because of relatively under population, the remote area of Damrey Phong fell outside the first round of cluster sampling. Due to the population distribution it was felt there would be a bias towards the underpopulated, remote and generally poorer areas, whereas PFD prioritize to work in theese villages. Therefore several sampling rounds were conducted until the clusters represented all areas and the clusters were a reflecting the population distribution.

During the training the sampling of the villages was presented and the number of interview locations was determined at 10 households per cluster. Upon arrival in the village, a procedure was followed for at random selection of households with children under 2 years which had already been practiced during the training. The team, consisting of a supervisor, an interviewer and a note taker would first meet the village chief and the village chief would be present while at random selection of previously prepared papers with numbers would be selected. A number corresponded with a household. A set of 4 numbers was at random selected in case the interviewer did not meet the previous selected household.

IV. Selection and training of Supervisors and Interviewers

Eleven teams conducted the survey. The members were selected by the Child Survival Team leader. A team was composed of the following team members:

- Team supervisors were selected from the pool of VHV supervisors (Health Centre staff) and PFD staff (Program Officers),
- An experienced Village Health Volunteer with profound knowledge on surveys
- A new or less experineced Village Health Volunteer with literacy as a precondition

A 5 days training was conducted for the interviewees on the sampling methodology in the cluster villages, the interviewing techniques and the evaluation of the results. The interviewers and supervisors could not conduct surveys in their own catchment areas to prevent bias. For the future the knowledge of the VHV needs to be examined before she qualifies to perform a KPC.

V. Administration of the Interviews

Despite the start of the rainy season and the bad road conditions, all villages still could be reached. The teams conducting surveys in the remote areas left the day prior to the survey and returned when all interviews were conducted. An average of 6-10 surveys was conducted per team per day. An interview lasted from 30 minutes up to more then 1 hour depending on the age and the condition of the child. The teams displayed experience and patience in dealing with poor and illiterate mothers.

During the survey many mothers were out in the field to plant rice or weed the fields. A number of groups traveled long distances to find the mothers for interview. Up to 40% of the mothers could not be traced for interviews. In general these were the poorer mothers who were out in the fields or who were busy earning their living. The questionnaires were reviewed by the supervisors.

VI. Data analysis

The data were entered by the PFD team in Excel. From Excel the data were transferred to SPSS. The decision to follow this procedure was takes because the staff was used to work with Excel. The team was trained on the spot in use of SPSS 10.0 during data entry and SPSS was installed on all computers in the PFD office. The data entry was a lengthy process: power failures and computer crashes complicated the procedure. Furthermore the computers were not compatible and data could not easily be exchanged from one computer to the other. The team managed to work under tremendous time pressure.

VII. Limitations of the survey

The survey has been done was great enthusiasm and the team has done a tremendous effort.
Teams traveling to difficult accessible areas like Domrey Pong had to cope with rain and difficult road conditions. The collaboration and group moral were good and logistically no problems were met.
Constraints influencing the process off the survey were both external and internal:

- Due to the timeframe the survey fell in the beginning of the rainy season, and many mothers were out in the fields. All interviewers tried to locate the mother, and some walked more than 1 hour in the rice fields to find the mother. However, some teams reported that up to 4 out of 10 women were not found at home, creating a possible bias towards to poor mothers who were not available because of working in the field and less poor mothers, who would be more likely to be found at home
- Due to time restrictions the Final Evaluation had to be done at the same time the KPC survey was planned, and activities were overlapping, leaving little room for supervision of the KPC by the core evaluation team members
- The team was used to perform LQAS surveys which has a different set up, mainly yes/no questions, which was sometimes confusing for the interviewers
- The level of knowledge of the Village Health Volunteers conducting interviews varied considerably
- Poor understanding of questions by supervisors who were not present at the workshop

When data from the baseline, the LQAS surveys and the FE are compared the following should be taken into consideration:

- LQAS only includes children aged 12 – 23 months
- LQAS sampling methodology is different
- LQAS scoring in steps of 5 % whereby 91% will be categorized in the group of 95%
- BL and FE same comparable, with possible bias due to the fact that the staff involved is used to score right/wrong answers

3 Results

3.1 Demographics

1. Age Mother

The mean age of the mothers is 28.2 years with a minimum of 18 years and a maximum of 47 years. 14.3% of the mothers were 35 or more years.

2. Age of the selected child less then 2 years of age

The mean age of the 300 children in the survey was 10.31 months. The age distribution of the children in the survey was as follows:

Age of the children	Number (=300)	Percent
0 - < 4 months	51	17.0
4 - < 6 months	37	12.3
6 - < 12 months	92	30.7
12 - < 17 months	75	25.0
18 - < 23 months	45	15.0
Total	300	100.0

180 children (29.3 %) were younger than half a year, and 120 children (40 %) were older than a year.

3. The education level of the mother

Compared to the baseline data more mothers were better educated. This could also be due to the fact that poorer mothers were all working in the rice fields and could not be consulted for the interviews.

The education level of the mother	Number (=300)	%
None	63	21.0
Primary does not read	35	11.7
Primary reads	111	37.0
Secondary	91	30.3
Total	300	100.0

3.2 Breastfeeding and Nutrition

Mothers currently breastfeeding	Number (N=300)	Percent
Currently breastfeeding	266	88.7
Ever breastfed	296	98.6

Mothers currently breastfeeding by age of the child	Number	Percent
0 – 3 months (N=51)	51	100
4 – 5 months (N=37)	37	100
6 – 11 months (N = 92)	89	96.7
12 – 17 months (N = 75)	69	92.0
18 – 23 months (N = 45)	20	44.4

Continuation of breastfeeding of children after 18 months is dropping. Persistent breastfeeding at the age of 20 – 23 months is 33.3 % compared to 86.7 % in the baseline. Secondary data analysis could be conducted to find characteristics of mothers continuing breastfeeding.

Initiation of breastfeeding after delivery	Number (N=296)	Percent
First hour after delivery	220	73.3
1-8 hours after delivery	41	13.7
More then 8 hours after delivery	35	11.7

This is a major achievement. Compared to a baseline of 1.7 % the final KPC revealed that 73.3 % of the mothers started breastfeeding her child the first hour after delivery. This is consistent with knowledge of mothers found during the Final Evaluation whereby mothers were at random selected for interview.

In the last 24 hours the mother gave the child:	Number (N=300)	Percent
Breastfeeding	264	88.0
Water	215	71.7
Canned or powdered milk	29	9.7
Semisolid foods, such as rice soup or chewed rice	196	65.6
Pumpkin, papaya, mango or jackfruit	811	27
Dark green leaves	167	55.7
Peanuts, mung or tofu	99	33.0
Added sugar or honey to the food	122	40.7
Added iodized salt to the food	78	26.0

The season for yellow fruits was low. There were no mangos or pumpkins.

Practice on supplementary feeding of children 0 - 23 months in the last 24 hours as per age group

Age in months	0-3 N = 51	4-5 N = 37	6-11 N = 92	12-17 N = 75	18-23 N = 45	Total
Breastmilk	50	36	90	69	19	264
Water	8	11	84	69	43	215
Canned or powdered milk	1	1	11	9	7	29
Rice soup or chewed rice	-	4	81	71	40	196
Fruits	-	2	40	51	31	124
Pumpkin, papaya, mango, jackfruit	-	1	29	29	22	81
Dark green leaves	-	3	68	59	37	167
Meat or fish	-	3	70	67	41	181
Eat, peanuts, mung, tofu	-	2	32	39	26	99
Egg	-	1	37	29	30	97
Honey, sugar	-	2	42	48	30	122
Add oil to the food	-	2	60	62	38	162
Add iodized salt to the food	-	0	37	28	11	78

77.5 % of the mothers of children under 6 months were exclusively breastfeeding

This funding is consistent with the question on knowledge. One team did not include children younger then 6 months old in the 24-hour recall question. The mistakes were traced and a correction was done.

Breastfeeding and the introduction of solid food	Number	Percent
Exclusive breastfeeding 0 – 3 months (N = 44)**	36	81.8
Exclusive breastfeeding + water 0 – 3 months	8	18.2
Exclusive breastfeeding 0 – 5 months (N=80)	62	77.5
Exclusive breastfeeding + water 0 – 5 months	18	22.5
Introduction of (semi) solids age 6 - 9 months of age (N=52)	49	94.2
Persistent breastfeeding age 20 – 23 months (N=24)	8	33.3

** Total mothers breastfeeding a child 0-3 months = 50 but 6 mothers were not asked whether the child was given additional drinks / foods, therefore those were left out from the tabulation. One questionnaire was left out because the data were inconsistent.

Knowledge of mother on the age of the child when a mother should start adding foods to the breastfeeding	Number (=300)	Percent
before 6 months old	44	14.7
at 6 months old	233	77.7
more than 6 month old	20	6.7
Doesn't know	3	1.0

Iodine present in the food at spot check during interview	Number (=300)	Percent
Yes	124	41.3
No	176	58.7

26% of the mothers was aware the salt they added to the food contained iodine. The actual percentage of iodized salt appears to be higher.

If the child is more then 6 months old, how often does he/she eat semi solid foods	Number (N=206)	Percent
1-2	34	16.5
3	97	47.1
More then 3 times	75	36.4

Knowledge on composition of those additional foods (more than 1 answer possible)	Number (=300)	Percent
Doesn't know	4	1.3
Food rich in Vitamin A	171	57.0
Food rich in iron	174	58.0
Add oil in the food	58	19.3
Enriched *borbor* (=rice soup with fish/meat and vegetables)	157	52.3
Plain *borbor*	125	41.7

This question required profound knowledge of the interviewers. A score would be given to 'oil in the food' when the meat/fish or other food products were fried.

Knowledge of the mother on which Vitamine helps to prevent nightblindness	Number (=299)	Percent
Vit A	248	82.9
Doesn't know or other	51	17.1

The knowledge on Vitamin A increased considerably.

Knowledge of the mother on the food containing Vitamine A to prevent nightblindness (more answers possible)	Number (=300)	Percent
doesn't know	28	9.3
Leafy green vegetables	259	86.3
Orange or yellow fruits	170	56.7
Breastmilk	56	18.7
Egg yolk	73	24.3
Other		

4 mothers mentioned liver as a source of Vitamine A.

3.3 Immunization

The child received any immunizations	Number (=300)	Percent
Yes	277	92.3
No	23	7.7

The mother has the yellow immunization card for the child	Number (=300)	Percent
Yes	261	87.0
Lost it	16	5.3
No card	23	7.7

154 of 180 (85.6 %) children under 1 year have a yellow card
107 of 120 (89.2%) children aged 12-23 months have a yellow card

The place where the mother keeps the yellow card	Number (=300)	Percent
In the EPI flag	19	6.3
Cupboard	116	38.7
Behind the foto	0.2	0.7
On the wall	51	17.0
Other, specify	55	18.3
Missing	57	19.0

Not all mothers who had a yellow card were recorded under this question.
Many other places where the mother kept her card were recorded: 25 in a bag, 1 iun a basket, 14 in a box. Other places where mothers kept the immunization card: in the roof, in the bed, under the mat, in the mosquitonet.

Immunization status in children 12 – 23 months of age			
	Number	% with yellow card (N=107)	% without yellow card (N=120)
BCG	105	98.1	87.5
OPV 1	107	100	89.2
OPV 2	105	98.1	87.5
OPV 3	101	94.4	84.2
DPT 1	106	99.1	88.3
DPT 2	106	99.1	88.3
DPT 3	101	94.4	84.2
Measles	98	91.6	81.7

Children of 12 – 23 months of age fully immunized = BCG + OPV 1 – 3 + DPT 1 – 3 + measles		
Number	% children 12 – 23 months with yellow card (N=107)	% all children 12 – 23 months (N=120)
95	88.8	79.2

Children of 12 – 23 months of age fully immunized		
Number	Number (=120)	Percentage
EPI access = % 0f children 12 -23 months who received DPT 1	106	88.3
EPI coverage = % of children 12 – 23 months who received OPV 3	101	84.2
DPT drop out rate = (DPT1 – DPT 3)/DPT1		4.72
OPV drop out rate = (OPV1 – OPV 3) / OPV 1		5.61
Measles coverage rate		81.7

The reason why the mother missed the immunization visits	Number (=45)	Percent
Side effects	5	11.1
Sore arm	1	2.2
Cried too much	5	11.1
No outreach services	1	2.2
The child was sick	12	26.7
Family members adviced not to go	1	2.2
Child is fully immunized	5	11.1
Mother busy	5	11.1
Other	5	11.1

Among other reasons why the mother did not attend the immunization sessions were: mother went to the wrong village; mother did not know outreach data; mother lost her card and did not dare to come

Number of children who received Vitamin A	Vitamin A 1	Vitamin A 2	Vitamin A 3
Children < 6 months	2	-	-
Children 6 – 11 months	16	-	-
Children 12 – 17 months	39	8	-
Children 18 – 23 months	32	15	4
Total	**89**	**23**	**4**

In total in 89 out of the 261 cards Vitamin A was recorded. In total 116 capsules were distributed.

In the last 6 months recorded were 50 children receiving Vitamin A:
Vitamin A 1: 38
Vitamin A 2: 9
Vitamin A 3: 3
72 out of the 261 children with a yellow card are under 6 months of age. So 50 / 189 children = 26.5 % were recorded to have received Vitamin A under the age of 6 months.

The child received Vitamin A in the last 6 months	Number (=300)	Percent
Yes	134	44.7
No	63	21.0
No, because younger than 6 months old	101	33.7
Doesn't know	2	.7

134 out of the 212 children older than 6 months received Vitamin A according to the mother = 63.2 %.

Knowledge of the mother of the frequency the child needs to receive Vitamin A capsules	Number (=300)	Percent
1 time a year	15	5.0
2 times a year	184	61.3
3 times a year	23	7.7
4 times a year	8	2.7
doesn't know	69	23.0
Other specify: 5 times a year	1	.3

Growth monitoring

Number of children weight in the last 4 months	% with yellow card (N=261)	% of all children (N=300)
10	3.8	3.3

According to the mothers many more children were weight, especially when a HC was visited to calculate the dosage for the medicine.

Knowledge of the mother on the age at wich the child needs to receive measles vaccination	Number (=300)	Percent
9 months	222	74.0
Doesn't know	78	26.0

3.4 Management of Diarrheal diseases

Number of children with diarrhea in the last two weeks preceding the survey	Number (=300)	Percent
Yes	69	23.0
No	231	77.0

Mothers who sought treatment when the child had diarrhea	Number (=68)	Percent
Yes	63	92.6
No	5	7.4

One child who had diarrhea was not included

Place where the mother sought treatment for diarhea	Number (=63)	Percent
Hospital	5	7.9
Health Centre	23	36.5
Private Clinic	30	47.6
Pharmacy and drugsellers	14	22.2
VHV	4	6.3
Traditional medicine	1	1.6

Mothers went to seek more advice for diarrhea than at the baseline. It has to be noticed that the private providers are more often consulted than the health centres.

Mothers practice: breastfeeding during diarrhea	Number (=67)	Percent
More frequently than usual	38	56.7
Same as usual	18	26.9
Less than usual	2	3.0
stop breastfeeding long time ago	9	13.4

Mothers practice: fluids during during diarrhea	Number (=69)	Valid Percent
More than usual	43	62.3
Same as usual	15	21.7
Less than usual	5	7.2
Mother did not provide fluids	3	4.3

Mothers practice: continuation of food / semisolid foods during diarrhea of the child	Number (=69)	Percent
More than usual	29	42.0
Same as usual	21	30.4
Less than usual	8	11.6
Mother did not provide	7	10.1
Child not receiving foods other than breastmilk	4	5.8

Treatment provided during diarrhea (more answers possible)	Number (=69)	Percent
Nothing	5	7.2
ORS	22	31.9
Sugar and salt solution	2	2.9
Borbor (= rice soup)	11	15.9
Homefluids	21	30.4
Antidiarrheal/antibiotics	36	52.2
Infusion	3	4.3
Breastfeeding	5	7.2

Knowledge on actions mother should take when the child has diarrhea	Number (=300)	Percent
Doesn't know	8	2.7
Initiate fluids rapidly	87	29.0
Provide fluid more then usual	111	37.0
Breastfeed more than usual	117	39.0
Provide small amount of food frequently	51	17.0
Proper mixing and administration of ORS	123	41.0
Take the child to the Health Centre or Hospital	122	40.7
Provide food more then usual after diarrhea	14	4.7
Withhold fluids	2	0.7
Total	300	100.0

On other mothers answered:

11	to go to the private provider
8	traditional medicine
37	give medicine
6	give the child coconut
2	give boiled water
1	give breastfeeding

Knowledge mother: has heard of ORS (Oralit)	Number (=300)	Percent
Yes	263	87.7
No	37	12.3
Total	300	100.0

Knowledge of the mother on proper preparation of Oralit	Number (=263)	Valid Percent
Correct	208	79.1
Incorrect	55	20.9

Of all mothers, 69.3 % know how to prepare ORS appropriately. During presentation of the data, it was found out that several ORS packages are available in local markets, with different quantities: same packages are prepared with 1 litre of water, other are made for 1 cup of ORS. The Health Message needs to be adjusted.

Knowledge mother on signs/symptoms when the child has diarrhea to seek immediate advice or treatment from a health professional	Number (=300)	Percent
Doesn't know	28	9.3
Vomiting	45	15.0
Fever	125	41.7
Dehydration	77	25.7
Prolonged diarrhea	93	31.0
Blood/mucus in stool	29	9.7
Loss of apetite	38	12.7
Weakness or tiredness	95	31.7
Watery diarrhea	19	6.3
Abdominal pain / swolen abdomen	18	6.0

Anemia	6	2.0
Convulsion	1	0.3
Crying	2	0.7
Frequent diarrhea	4	1.3
Not sleep	1	0.3
Thin	3	1.0

Knowledge of mother on the symptoms of dehydration	Number (=300)	Percent
Doesn't know	49	16.3
Dry mouth	69	23.0
Thirsty	77	25.7
Sunken eyes	123	41.0
No urine	11	3.7
Loss of skin elasticity or stretchiness of the skin	138	46.0
No tears	13	4.3

If symptoms described under other fitted in the above mentioned signs, they were added. It was remarkable how many people would descibe loss of skin elasticiy as a sign of dehydration.

Other signs of dehydration, describe		Percent
Pale	13	1.0
Buy Medicine	1	.3
Exhausted	17	.3
Fever	3	.3
Rest less	1	.3
Sleepy	1	.3
Thin	6	1.3

Knowledge on actions the mother should take when the child has danger signs of diarrhea	Frequency	Percent
Nothing	1	0.3
Take the child to the HC	245	81.7
Take the child to the private clinic	58	19.3
Take child to the traditional healer	2	0.7
Take the child to the drugseller	7	2.3

1 mother answered that she would bring her child to the VHV to ask for advice.

Knowledge of the mother on actions she should take when a child is recovering from diarrhea	Number (N=300)	Percent
Doesn't know	31	10.3
Feeding small amounts of food more frequently	131	43.7
Give more food than usual	152	41.7
High calorie food	92	30.7

Under 'high calorie' food fell enriched *borbor*, *borbor* with eggs.

32 (10.3%) mothers answered they would breastfeed the child more often. 7 mothers answered they would provide food just as usual.

Prevention of diarrhea

Practice: the kind of drinking water the mother provided to the child in the last 24 hours	Number (=300)	Percent
River water	59	19.7
Filter water	8	2.7
Well water	194	64.7
Rain water	40	13.3

Mother provided boiled water	Number (=299)	Percent
Yes	265	88.3
No	30	10.0
No but the water was filtered	4	1.3

Practice: presence of hand washing station / place where family members wash hands	Number (=299)	Percent
Yes	217	72.6
No	82	27.4

The interviewer inspected the washing station:	Number (=300)	Percent
Water present	218	72.7
Soap, ash or other cleansing agent present	200	66.7
Towel or krama present	73	24.3
Basin	95	31.7

Complete hand washing station	Number =(299)	Percent
Complete (water and soap)	200	66.7

The hanswashing station was classified as complete as the mother showed the Volunteer water and soap are present in the household, not neccasarily on the same spot

Practices mother on faeces disposal child	Number (N=300)	Percent
Bury	172	57.3
Thown in the latrine	58	19.3
Thrown into the river	3	1.0
throw outside HH	44	14.7
Wash the stools from the floor	23	7.7

3.5 Acute Respiratory Infections

The child has been ill with cough and/or difficult breathing in the last 2 weeks preceeding the survey	Number (=300)	Percent
Yes	47	15.7
No	253	84.3

The child experienced rapid/ fast and or difficult breathing (dyspnoea) when ill	Number (=48)	Percent
Yes	39	81.3
No	9	18.8

Practice mother: treatnment sought when the child was ill with theese respiratory problems	Number (=39)	Percent
Yes	36	92.3
No	3	7.7

Place treatment sought for child when ill with rapid and difficult breathing	Number (=36)	Percent
Hospital	3	8.3
Health Centre	14	38.9
Private clinic / private practitioner	20	55.6
Pharmacy or drugseller	5	13.9

Treatment received for child ill with rapid and difficult breathing	Number (= 39)	Percent
Home treatment	9	23.1
Tablets	19	48.7
Antibiotics	10	25.6
Injection	12	30.8

Signs and symptoms of respiratory infection that makes mother seek treatment from the Health Centre or the Hospital	Number (=300)	Percent
Rapid and difficulty in breathing	194	64.7
Chest indrawing	54	18.0
Loss of apetite	11	3.7
Fever	115	38.3
Cough	107	35.7
Runy nose	3	1.0
Doesn't know	67	22.3

3.6 Maternal Health

Mother reports to have visited ANC in any Health Site during last pregnancy	Number (=298)	Percent
Yes	170	57.0
No	128	43.0

Mother has a white maternal health card	Number (=170)	Percent
Yes	76	44.7
Lost it	74	43.5
None	20	11.8

Number of ANC visits	Number (N=76)	Percent
1	16	21.1
2 or more	61	80.3

Reason pregnant women need to receive TT	Number (=300)	Percent
To prevent the mother and the newborn from tetanus	196	65.3
To prevent mother from tetanus	8	2.7
To prevent the newborn from tetanus	36	12.0
Doesn't know	53	17.7
Other specify	7	2.3
Total	300	100.0

Other reasons mothers thought why the pregnant mothers need to receive TT: to prevent polio (3), to prevent toxicosis (3)

Mother has a pink card or another ANC card	Number (=300)	Percent
Yes	166	55.3
Lost her card	100	33.3
No card	34	11.3
Total	300	100.0

The number of TT received among mothers with the pink ANC card	Number (=166)	Percent
1	13	7.8
2	45	27.1
3 and more	103	62.0
None	5	3.0

The number of TT's the mother received during the last pregnancy	Number (=300)	Percent
1	67	22.3
2	127	42.3
More than 2	67	22.3
None	34	11.3
Doesn't know	5	1.7

Knowledge of the mother on the number of TT injections needed to protect the child from tetanus	Number (=299)	Percent
1 injection	11	3.7
2 injections	147	49.0
More than 2 injections	88	29.3
None	6	2.0
Doesn't know	47	15.7

Forms of transportation accessible to the mother in case the child is ill and needs referral (own or rented)	Number (=300)	Percent
Bicycle	88	29.3
Moto	206	68.7
Oxcart or horsecart	13	4.3
Car	18	6.0
Boat	36	12.0
Mototaxi	21	7.0
Walking	28	9.3

4 Discussion and Recommendations

Demographic data

If the age distribution in the survey is compared with data from the Population Census 1998 of Cambodia[5], which is the most reliable source used for population estimation in Cambodia, the children under 1 year are over represented in the survey. Possible explanations for this:

- Mothers with small children under 1 year, especially when exclusively breastfeeding, are more likely to stay at home then the mothers with older children more independent from the mother (sampling error). During the survey, 1 – 4 out of 10 mothers in 1 cluster were not found at home, mainly due to working in the rice field.
- True difference in age distribution. Also baseline and other KPC studies consistent on age distribution found in KPC 2004

[5] General Population Census of Cambodia 1998

Population age group	Census data 1998	KPC NCCSP 2004
0 – 11 months	2.1 % = 45.7 %	60 %
12 – 23 months	2.5 % = 54.3 %	40 %

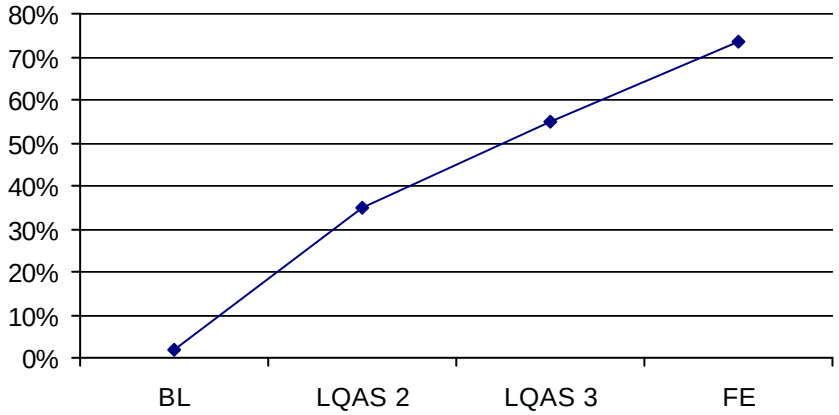
In the survey it was found that 32.7 % of the women were illiterate and 30.3 % of the mothers had attended secondary school. The eductaion levels are higher than the education levels in the Demographic Health Survey of 2000, but the data are now 5 years old. According to the VHV reports the general education level is increasing daily. Even in the most remote areas schools have been built over the last years. Another possible explanation many poor uneducated mothers were working in the rice field, the better educated mothers were found at home. The survey was done in the planting season.

4.1 Breastfeeding and Nutrition

Feeding of the newborn

Knowledge on feeding of young infants and toddlers has considerably increased. Especially the message on the importance of colostrum has been very effective. Initially colostrum is perceived as dangerous for the child. The mothers believe it is contaminated and causes diarrhea in the child. The mothers would express the yellow colostrum and throw it away until the 'proper' white milk would appear. The health eduction message is clear and simple and is supported by mass media messages. Nearly all mothers interviewed heard the message from the Village Health Volunteer and from the radio.

Initiation of breastfeeding within 1 hour after birth



During the Final Evaluation the Village Health Volunteers were asked what contributed to the increased knowledge. The main reasons why the mother would be convinced to change her behaviour were:

- To see another mother with a thriving baby because she had brought in practise the new advice. Especially if a child under 6 months of age would not suffer from diarrhea, was a reason for mothers to stick to exclusive breastfeeding
- Repetition of the same message
- Congruent messages

- The combination of health eduction and messages on radio and television contributed to the credibility of the Village Health Volunteer's message and the subsequent rice in status of the VHV's made their messages more effective. Nearly all mothers had heard the message from the VHV and from the radio.

Exclusive breastfeeding

Exclusive breastfeeding of children under 6 months has been the major achievement in this project period. Although data have to be treated with caution, scores on knowledge and practice are consistent, which would plead for correct scores. Many mothers interviewed compared the children they are nursing currently with the firstborns, who were not exclusively breastfed. All comments were in favour of exclusive breastfeeding.

Some mothers are confused with the advice of exclusive breastfeeding and the administering of ORS when a child of less then 6 months suffers from diarrhea. The message should be nuanced: children under 6 months of age with diarrhea and signs of dehydration should be given ORS. Deep rooted beliefs exist in Cambodian society. If a young child is not given water while it is thirsty because it is not yet able to express the thirst, this will give "BAA" (check with Setha) meaning bad karma to the care giver of the child. The health education message given by the Village Health Volunteer focussed on breastfeeding being sufficient and not leaving a child thirsty afterwards.

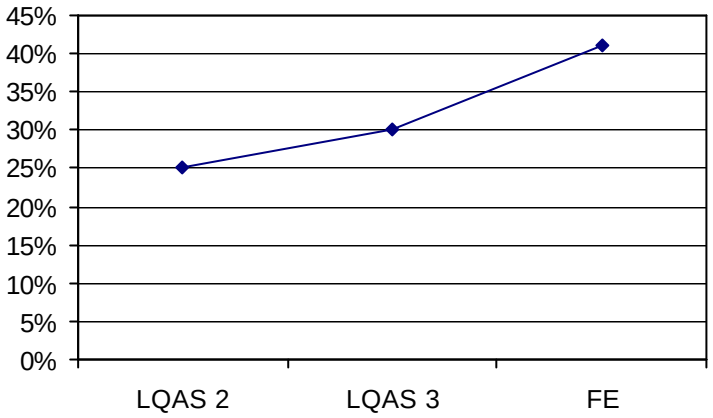
Knowledge on supplementary feeding has increased considerably over the last 5 years. 78 % of the mothers knows to start adding food to breastfeeding. Whereas in the baseline 55 % of the mothers responded they would add food before the 6th month, the Final Evaluation showed that only 15% of the mothers would add food to breastmilk before the age of 6 months. 83 % of the mothers are convinced that they need to feed a child of more than 6 months old 3 or more times a day.

Knowledge on what the additional foods should contain is still limited. 41% of the mothers reported that they would still give plain rice soup soup to a child. Plain *borbor* has low nutritional value. Knowledge on oil, as energy rich food, as additional food was mentioned in 19.3 % of the cases, which is an increase compared to the baseline of 9.3 %. The 24 Hour- Recall showed that many more mothers were adding oil to the food, but awareness of its importance of still limited. The knowledge on importance of adding Vitamin A and iron rich ingredients to the foods has increased compared to the baseline (from 35 % to nearly 60 %).

The LQAS surveys target the mothers with children aged 11-23 months. The questions on colostrum and supplementary feeding are therefor more prone to recall bias in the LQAS surveys.

Supplementary feeding practices depend among other things on the availability of food. At the time of the FE KPC, the season for Vitamine A rich foods is low. At the moment there are no pumpkins or mango's available. Other things are available in abundance, like the morning glory, tamarind and sponge gourd.

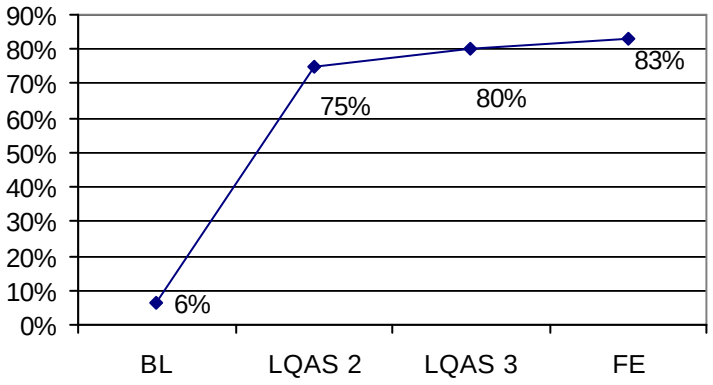
Iodine present in the food



Iodized salt becomes more and more available in the villages as shown in the following table. In remote villages there is not always a choice to buy iodized or non-iodized salt, even though awareness also increases. Furthermore, salt is used as an exchange item for example for scrap metal. Door to door collectors of metal tins give salt in return.

Knowledge of mothers on the importance of Vitamine A to prevent nightblindness has increased steadily over the period of the project implementation. The percentage of mothers who don't know which food contains Vitamine A has decreased from 91.3 % to 9.3 %. Whereas egg yolk and breastmilk were only mentioned in 1.3 % of the cases in the baseline survey, it was mentioned in 43% in the FE.

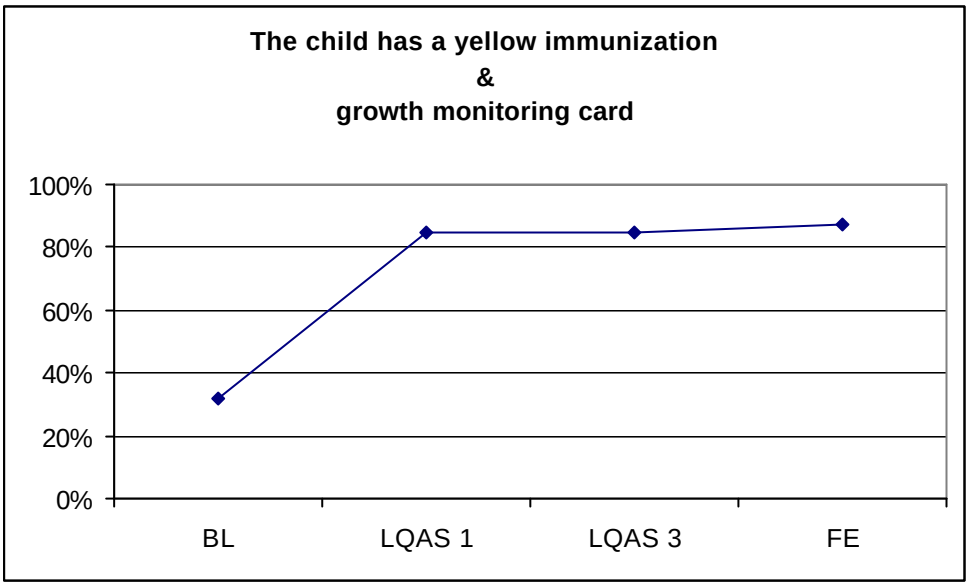
Mother's knowledge of the Vitamine that helps to prevent night blindness



4.2 Immunization

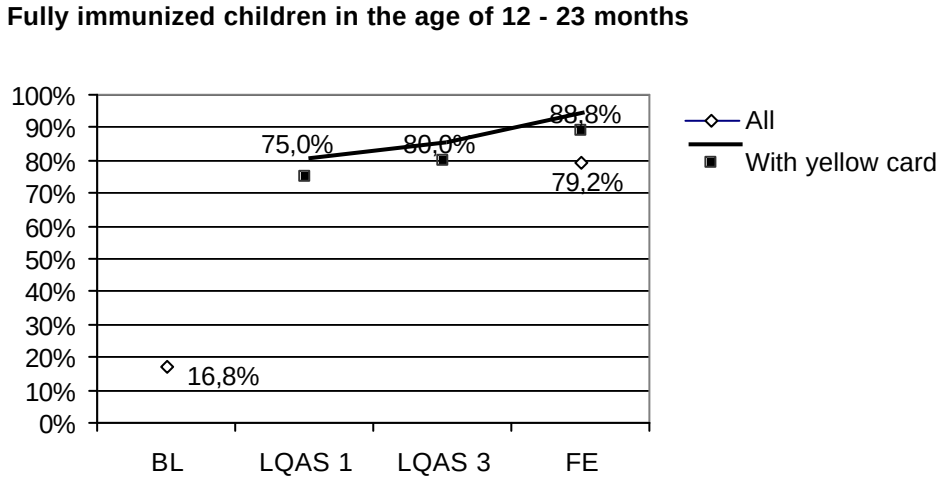
92.3 % of the children investigated received any immunization ever, more than double compared to the baseline (49.0%) in 1999. According to the Village Health Volunteers the 7.7% of the children not receiving any kind of immunization are thoose children of mothers who fear immunization due to rumours. In 1 village a child was said to be paralyzed after immunization. In 1 area many abcesses occurred after

vaccination. 6 % of the children have received any kind of vaccination but the yellow card got lost. EPI coverage for children aged 12 – 23 months is 88.3 %, meaning that 11.7 % have no access to outreach services. This figure is lower if children with a lost card would be included.



Among children with a yellow card, the coverage for immunization is high. The increase in coverage is clear and vissible for community members and during the FE all people interviewed mentioned they did not see a child becoming blind from measles. Diphtery or tetanus has not been seen in villages for the last years. A sense of pride on this achievement was shared with the Evaluation team.

OPV and DTP coverage is very high and DPT drop-out rate decreased from 44.2 % at the baseline to 4.7 % at the FE. Lowest score is on measles vaccination, mainly because mothers tend to forget to come back at 9 months for measles vaccination.



The data collected from PFD on immunization status of the children between 11-23 months is higher than the EPI data from the Operational District due to:

- Different way of data collection: community survey versus EPI outreach attendance
- Calculations (denomintor) used by the OD based on the estimated population extrapolated from the Census 1998. The actual population might be lower due to increased use of contraceptives.
- OD figues based on children < 1 year, while PFD calculates the children fully immunized between the age of 12 – 23 months
- It should be taken into consideration that the highest percentages are found amongst children with a yellow card.
- There might be a bias in the survey as discussed in the previous chapters: not all population groups are included in the survey

Growth monitoring is not performed during EPI outreach services. In 261 yellow cards, only 10 times a weight was recorded. Many mothers are interested in the growth of their child and are eager to know if the development is within the 'lines'. The Village Health Volunteers reported that the children were weight when the child visited the Health Centre. The weight was not recorded because the mother would not bring her yellow card to the HC. During Nutrition Education and Rehabilitation activities in the villages the growth card is not used either. The recording on the growth chart is useful and should be encouraged. It is a strong visual aid for the mothers to see how their children are developing and how diseases and seasonal differences influence the growth of their child. The use of the growth card needs to be explained to mothers, and for some it will be difficult to understand. If the card is used more for growth monitoring it might encourage mothers to take the card to the Health Centre. Even during NERP's weights are not recorded in the yellow card.

68% of the children aged 6 – 23 months received Vitamine A in the 6 months prior to the survey. Recording in yellow card is not reliable and can not be used for measuring Vitamin A coverage. 61% of the mothers have the proper knowledge on the frequncy of Vitamin A capsule distribution. 32 mothers reported the child could not get Vitamin A because the child was younger than 6 months, while the child's actual age was more then 6 months.
Out of the children aged 12 - 23 months 80.8 % of the children received Vitamin A in the last 6 months (LQAS 1 = 90 %; LQAS 3 = 85 %). Total coverage for Vitamin A reported by mother decreasing.

Knowledge on tetanus toxoid vaccination increased from 25 % at the baseline to 65 % at the FE survey. Among the 55 % of mothers who have an AnteNatal Care card, 89% were recorded to have sufficient protection against tetanus for both mother and child, which makes 49 % out of the total of 300 mothers. The coverage is higher if we rely on the recall of the mother: 67% of the mother reported to have 2 or more TT's and 78 % of the mothers have the right knowledge on TT. The TT recall results are consistent with reported ANC visits, and most likely to be reliable.

If data from the community survey are compared with the data obtained through the Health Information System, the following it has to be kept in mind. The survey only includes mothers with young children under 2 years of age. Primigravida will be recorded under the HIS data, but are not included in the KPC survey. Furthermore the

HIS's denominator is Women of Reproductive Age, which is a much broader group then mothers of young children and therefore the outcome will be much lower (including women without children and older mothers).

4.3 Management of Diarrheal Diseases

The prevalence of diarrheal has decreased with more then 100 % since the Base line survey. Improved hygiene and other preventive measures have contributed to the decline. For many mothers it was very obvious that feeding practices of the young infant contributed to the dropping rates of diarrhea. The highest prevalence were found in the children aged 6-11 and 12-17 months: around one third of the children suffered from diarrhea in the two weeks prior to the survey. That means children in this age group have an average of 8 episodes of diarrhoea in 1 year. Children under 2 years of age have 5.98 episodes of diarrhea per year. The age distribution is coherent with the findings of the Cambodian Demographic Health Survey 2000.

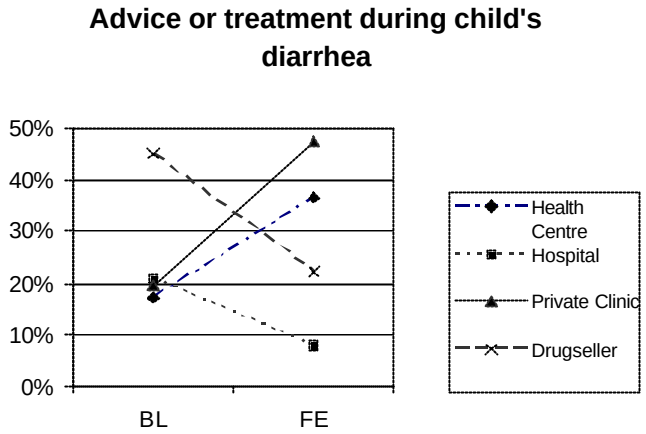
Age of the child	Diarrhea Yes	Diarrhea No	Total
0-3 months	**6**	**45**	**51**
	11.8%	88.2%	100.0%
4-5 months	**3**	**34**	**37**
	8.1%	91.9%	100.0%
6-11 months	**27**	**65**	**92**
	29.3%	70.7%	100.0%
12-17 months	**23**	**52**	**75**
	30.7%	69.3%	100.0%
18-23 months	**10**	**35**	**45**
	22.2%	77.8%	100.0%
Total	**69**	**231**	**300**
	23.0%	**77.0%**	**100.0%**

Prevalence of diarrhea is subject to seasonal fluctuations. At the end of the dry season, with the first rains, the incidence of diarrhea increases. With the water the 'old dirt' is believed to start floating. The waste at the river banks, used as public latrines, will pollute the surface water. When rainy season progresses the soil becomes clean. Seasonality also contributed to the difference in prevalence of diarrheal diseases in the BL (48.7 %) and the 23.0 % reported during the final evaluation. The BL was just before the rains (may 1999) and the FE was done after the start of the rainy season (July 2004). For proper analysis of diarrhea, more needs to be known about other symptoms, like blood and or mucus in stool, watery diarrhea, diarrhea with fever and prolonged diarrhea.

Practice on Diarrheal Diseases

The percentage of mothers seeking advice for a child with diarrhea has increased from 42.5 % to 92.6 %. Utilization of Health Centres for management of diarrheal diseases has increased from 17.1% to 33.8 %. The hospital was consulted less frequently than reported in the baseline (21.0 % BL, FE 7.4 %). It might be because the Health Centres are functioning better then at the BL. In general it can be stated that mothers

tend to seek more advice from qualified health professionals than before. Drug sellers

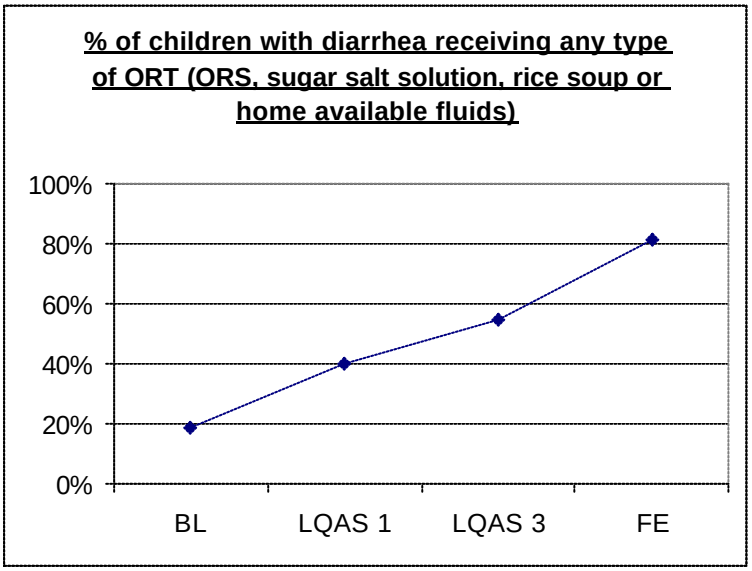


are less often consulted.

During the implementation of the program all feeding practises during diarrhea increased. Mother's practice to breastfeed more frequently during diarrhea of the child, increased from 21% to 57 %.

62 % of the children with diarrhea were given more fluids than usual. Of the 3 mother who did not provide fluid to their child during diarrhea, 2 were under 4 months and 1 was under 6 months old. 72.4 % of mothers gave (semi) solid foods during diarrhea of the child, which is an increase towards the baseline of 47 %.

Out of the 69 children with diarrhea 81.1 % received any kind of Oral Rehydration Therapy (ORS, sugar salt solution, rice soup and othe home fluids) a considerable increase from the baseline of 18.5 %. ORS



Still 52 % of the mothers gave their children antibiotics or an anti-diarrheal, only a slight decrease from the 66 % at the baseline. Antibiotics and an anti-diarrheal were mostly obtained from the Private Providers, 20 out of 36 times. Drug sellers sold 9 of the 36 times medicine was provided. Health Centres accounted for 5 prescriptions and the Hospital 1. A Village Health Volunteer was reported 1 time to have provided medicine for diarrheal diseases. Anti-diarrheals and antibiotics were never provided to children less then 4 months old.

Knowledge on diarrheal diseases

Compared to the baseline the knowledge on actions mothers should take when the child has a diarrhea increased considerably. Actions mothers most often included were: take the child to the Health Centre and administering ORS. Only 2.7 % reported not to know what to do, a decrease compared to the BL of 29.7 %. Only 2 mothers said they would withhold fluids. Knowledge on ORS increased to 87.7 % and 79.1 % would mix the ORS properly. However as comment needs to be given that only 1 mixing method was considered as correct, whereas the Village Health Volunteers reported that 2 types with different mixing schedules are circulating. Private drug sellers seem to sell packets that need to be mixed with 1 cup of water, while the ORT provided in the HC needs to be mixed with 1 litre.

Knowledge of symptoms accompanying diarrhea that would be the reason for seeking advice increased during the 5 years of intervention. Especially dehydration scored much better, with a baseline of 2%, during the FE 26% would look for medical treatment when a child had symptoms of dehydration. Fever, like in the baseline, would be the most alarming symptom for a mother and is the main reason for seeking professional advice. Prolonged diarrhea and blood in stool together scored 41%, whereas the baseline only scored 12%.

16.3 % of the mothers were not able to describe signs of dehydration. Dry mouth and thirst was recognized by nearly half of the mothers, and a surprising number mentioned the (mainly abdominal) loss of skin elasticity, 46%. 82% of the mothers reported they would bring the child to a Health Centre when it would show danger signs.

90% of the mothers described any form of actions she would take after a child has had diarrhea. On all topics the mothers scored more than double, like high calorie food, or more frequent feeding and more food than usual.

Prevention of diarrhea

83% of the mothers reported to give their children boiled water. More often a complete hand washing station was observed in the households, 66.7 % of the houses had hand washing stations. The hand washing station was classified as complete as the mother showed the Volunteer water and soap not necessarily on the same spot. To compare the questions with the baseline, they were phrased the same way. To obtain more accurate information, the questions should be rephrased. 76.6 % of mothers reported to dispose their child's faeces sanitarily, compared to a baseline of 70%. The hand washing was left out of the survey because the question was suggestive and scored 100%.

4.4 Acute Respiratory Infections

Although ARI is NOT an intervention, it was decided to leave it in the KPC survey to serve as a baseline for future program interventions.

Point prevalence of ARI is much lower (15.7 %) than the baseline survey which reported 54.7 % of children ill with cough and or fever. On average a child will have 4.1 episodes of ARI / year. Out of 47 children reported with an ARI, 81 % experienced rapid/ fast and or difficult breathing. This percentage is comparable with the baseline survey and indicates a Lower Respiratory Infection. More mothers than

in the baseline survey sought treatment and utilization of the Health Centres for ARI nearly doubled. Private practitioners are most frequently visited and consultation more than doubled. Drug sellers were less frequently visited. 22 children received antibiotics, 55% were injected antibiotics.

Knowledge on signs and symptoms increased considerably, whereby the recognition of danger signs more than doubled.
Baseline difficult breathing: 32 % FE: 65 %
Baseline chest in-drawing 15 % FE: 18 %

4.5 Maternal Health

Compared to the baseline, the number of mothers reported to have visited ANC in any health site increased from 63 to 170 out of 300 (21% to 57%). Half of the 170 has a white ANC card. 81% paid 2 or more visits.

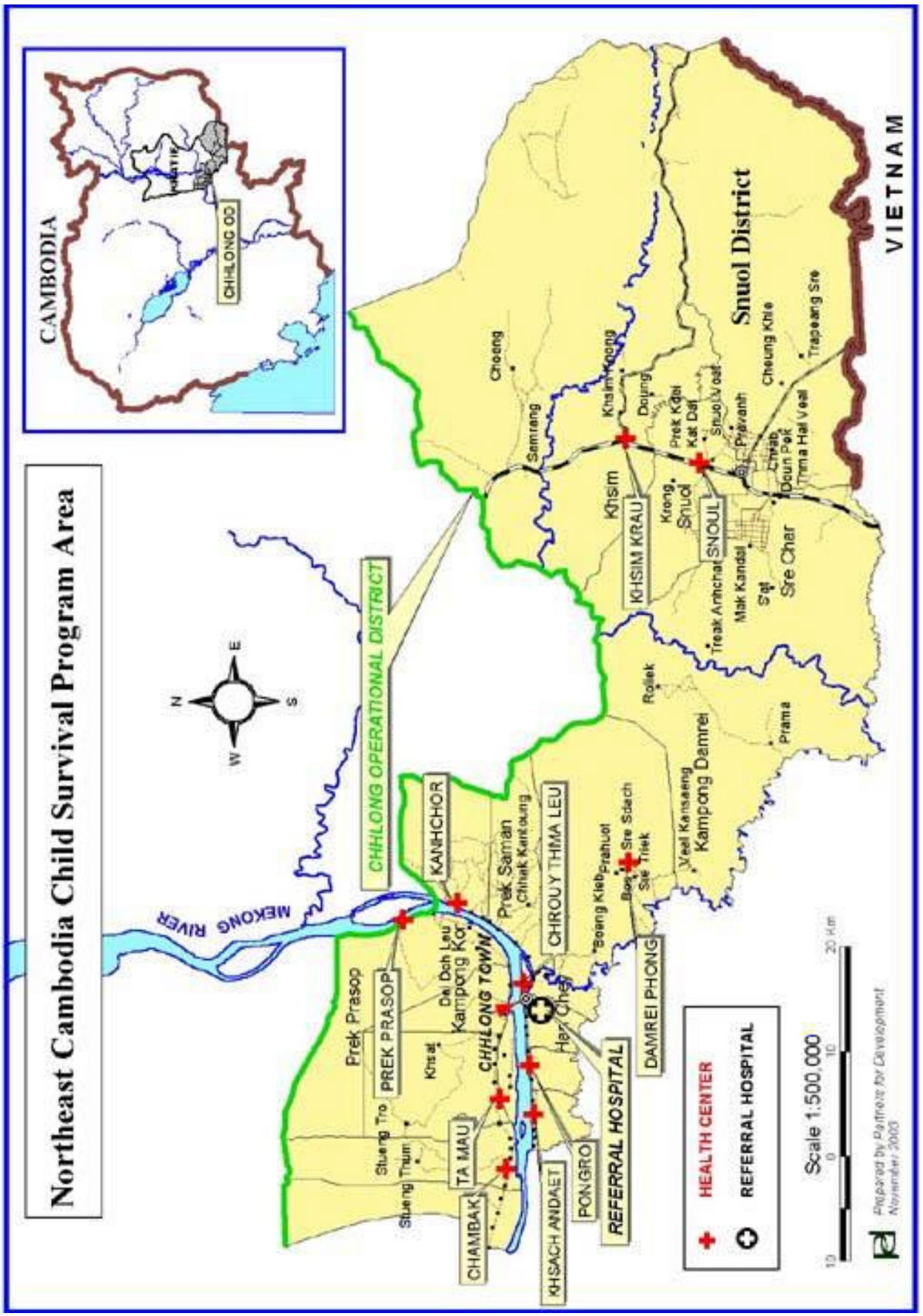
Knowledge on tetanus vaccination increased from 25 % at the baseline to 65 % at the FE survey. Among the 55 % of mothers who have an AnteNatal Care card, 89% were recorded to have sufficient protection against tetanus for both mother and child, which makes 49 % out of the total of 300 mothers. The coverage is higher if we rely on the recall of the mother: 65% of the mother reported to have 2 or more TT's. 78% of the mothers knew the right amount that would prevent tetanus.

Names of Supervisors and Interviewers for the KPC survey

CLUSTER	NAME	VILLAGE	DATE	OTHER
I	Nady	Ksim Krao	28/06/04	
	Thong Navy	Prek Kdey	29/06/04	
	Prum Kimseak	Phsar Snoul	30/06/04	
II	Rathy	Kat Dai	28/06/04	
	Sok Leark	Snoul Vat Keut	29/06/04	
	Kim So	Phsar Snoul	30/06/04	
III	Chann Thon	Thmor Hal Veal	28/06/04	
	Navuth	Cheung Klou	29/06/04	
	Rozana	Phsar Snoul	30/06/04	
IV	Por Sith	Sre Triek	28/06/04	
	Chan Tha	Prey Ko	29/06/04	
	Nourn Learp			
V	You Narith	Beoung Learch	28/06/04	
	Nam	Prek Prosop Leu	29/06/04	
	Ho	Prek Prosop Kandal	30/06/04	
VI	Saroeun	Dey Dos Krom	28/06/04	
	Ey Sas	O' Lung	29/06/04	
	Ravin	Cheuteal Plos Krom	30/06/04	
VII	Seng Chantrea	Chroy Ampil 2	28/06/04	
	Chanthy	Krohom Kor Leu	29/06/04	
	Se Huy	Kampong Kor	30/06/04	
VIII	Long Chan Daly	Russey Kao	28/06/04	
	So Sophal	Svay Chum	29/06/04	
	Somaly	Chambok I	30/06/04	

IX	Kim Seng Yada	Koh Tasu	28/06/04	
	Lim Mony	Pong Ro II	29/06/04	
	Chenda	Pong Ro I	30/06/04	
X	Tourt Rinda	Thmey II	28/06/04	
	Ngy Sok Heng	Prek Samrong	29/06/04	
	Preab Rom	Hanchey 4	30/06/04	
X	Sokha	Hanchey 2	28/06/04	
	Kolyan	Hanchey 1	29/06/04	
	Chatho	Chroy Thmor Krom	30/06/04	

ANNEX I MAP


Northeast Cambodia Child Survival Program Area
CAMBODIA
CHHLONG OD
VIETNAM
Snuol District
CHHLONG OPERATIONAL DISTRICT
MEKONG RIVER
KANHCHOR
CHROUY THMA LEU
PREK PRASOP
CHHLONG TOWN
TA MAU
CHAMBAK
KHSACH ANDAET
PONGRO
REFERRAL HOSPITAL
DAMREI PHONG
KHSIM KRAU
SNOUL
Khsim
Snuol
Sre Char
Kampong Damrei
Prek Prasop
Prek Saman
HEALTH CENTER
REFERRAL HOSPITAL
Scale 1:500,000
20 Km
Prepared by Partners for Development
November 2003

ANNEX II QUESTIONNAIRE IN ENGLISH

CLUSTER: _____ HOUSEHOLD: _____ IDNUM: _____

Northeast Cambodia Child Survival Project
Knowledge, Practice & Coverage (KPC) Survey Questionnaire

All questions are to be addressed to the mother with a child less than 24 months of age.

Interview date __/__/2004_ (dd/mm/yy) Reschedule interview __/__/2004_ (dd/mm/yy)

Interviewer name: _____

Supervisor name: _____

Village: _____ Commune: _____

Identification

1. Name and age of the mother

Name _____ Age (years)_____

Family Occupation (farming/fishing/market seller, etc)_____

2. Name and age of the child under two years old

Name _____ Sex (male/female)_____

Birth date __/__/__ (dd/mm/yy) Age (months) _____

Mother's Education/Occupation

3. What was the highest educational level you attained?
   1. none
   2. primary does not read
   3. primary reads
   4. secondary & higher

Breastfeeding/Nutrition

4. Are you breastfeeding (name of child)?

1. yes
2. no

Have you ever breast-fed (name of child)?
1. yes
2. no

5. After the delivery, when did you breast-feed (name of child) for the first time?
1. during the first hour after delivery
2. from 1 to 8 hours after delivery
3. more than 8 hours after delivery
4. do not remember

6. 24 Hour Recall: Ask the mother questions A-J:
Yesterday during the day and night:
a. Did (name of child) drink breastmilk?
b. Did (name of child) drink water?
c. Did (name of child) drink canned milk, or powdered milk?
d. Did (name of child) eat semisolid foods such as rice soup or chewed rice?
e. Did (name of child) eat fruits?
f. Did (name of child) eat pumpkin, papaya, mango, or jackfruit?
g. Did (name of child) eat dark green leafy vegetables, such as morning glory, *slak bas, p'tee,* or *spy k'mao*?
h. Did (name of child) eat meat or fish?
i. Did (name of child) eat peanuts, mung beans or tofu?
j. Did (name of child) eat eggs?
k. Did you add honey or sugar to (name of child)'s meals?
l. Did you add fat or oil to (name of child)'s meals?
m. Did you add iodized salt to (name of child)'s meals?

7. If the child is 6 – 21 months, How many times did (name of child) eat semi – solid food yesterday during the day and night?
1. 1-2
2. 3
3. more than 3 times

9. Ask the mother to see the salt that she cooked with the previous night. Take a small amount of salt and test the salt for iodine. Is Iodine present?
1. Yes
2. No

10. When should a mother start adding foods to breastfeeding?
1. start adding earlier than 4 months of age
2. start adding between 4-6 months of age
3. start adding later than 6 months of age
4. doesn't know

11. What should those additional foods to breastfeeding be?
(multiple answers possible; record all answers)
1. doesn't know
2. add oil to food

3. give food rich in Vitamin A (such as jackfruit, papaya, mango, pumpkin, green leafy vegetables)
4. give food rich in iron (such as meat, fish, dark green leafy vegetables
5. other (specify)

12. Which vitamin helps you prevent "night blindness"?
1. vitamin A2. doesn't know or other

13. Which foods contain vitamin A to prevent "night blindness"?
(multiple answers possible; record all answers)
1. doesn't know or other
2. green leafy vegetables
3. orange or yellow fruits
4. meat/fish
5. breast milk
6. egg yolks

Diarrheal Diseases

Practice

14. Has (name of child) had diarrhea during the last two weeks?
1. yes. . . . . [ ]
2. no. . . . . [ ] ---> go to 19
3. doesn't know . . . . . [ ] ---> go to 19

15. During (name of child)'s diarrhea did you breast-feed:
(read choices 1-4 to the mother)
1. more than usual?
2. same as usual?
3. less than usual?
4. stopped completely?
5. child not breastfed

16 During (name of child)'s diarrhea, did you provide (name of child) with fluids (other than breast-milk):
(read choices 1-4 to the mother)
1. more than usual?
2. same as usual?
3. less than usual?
4. stopped completely?
5. child not receiving fluids other than breastmilk

17. During (name of child)'s diarrhea, did you continue to provide (name of child) with solid/semisolid foods:
(read choices 1-4 to the mother)
1. more than usual?
2. same as usual?
3. less than usual?
4. stopped completely? 5. child not receiving foods other than breastmilk

18. When (name of child) had diarrhea, what treatments, if any, did you use?
(multiple answers possible; record all answers)

1. nothing
2. ORS packet
3. sugar-salt solution
4. rice soup (*borbor*)
5. home available fluids (such as coconut water or tea from leaves or roots)
6. anti-diarrheal medicine
7. antibiotics
8. infusion/injection
7. other (specify)

ORT Use Indicator: Interviewer check "yes" or "no" to the following (do not read):	
Child received any ORT during diarrhea? (check "yes" if mother answered "yes" to 2, 3, 4, 5 on question 7)	Yes [ ] No [ ]

Knowledge

19. What are important actions you should take if (name of child) has diarrhea?
(multiple answers possible; record all answers)
1. doesn't know
2. initiate fluids rapidly
3. give the child more to drink than usual
4. give the child smaller more frequent feeds
5. proper mixing and administration of ORS6. take child to the hospital/health center
7. feed more after diarrhea episode so that child can re-gain weight
8. withhold fluids
9. withhold foods
10. other (specify)

20. Have you heard of ORS (Oralit)?
1. yes
2. no Go to 11

21. Please describe how to prepare ORS (Oralit)

If Mother includes the following in her description, then check 1, if not check 2:
- Use 1 liter (3 milk cans or one drinking water bottle) of clean drinking water
- Use the entire packet
- Dissolve, stir or shake the powder fully in the water.

1. Described correctly
2. Described incorrectly

22. When (name of the child) has diarrhea, what signs/symptoms would cause you to seek immediate advice or treatment from a health professional?
(multiple answers possible; record all answers)
1. doesn't know
2. vomiting

3. fever
4. dehydration (dry mouth, thirsty, sunken eyes, decreased urine output, skin elasticity)
5. diarrhea of prolonged duration (at least 3 days)
6. blood in stool
7. loss of appetite
8. weakness or tiredness
9. other (specify)

23. If (name of the child) had the danger signs you just described, what would you do?

(multiple answers possible; record all answers)

1. Nothing different
2. Take child to health center
3. Take child to private doctor
4. Take child to traditional healer
5. Take child to drug seller
9. Other (specify

24. What are important actions a mother should take when a child is recovering from diarrhea?

(multiple answers possible; record all answers)

1. doesn't know
2. give the child smaller more frequent feeds
3. more foods than usual
4. give foods with high caloric content
5. other (specify)

25. What kind of drinking water did you give (name of child) in the last 24 hours?

(multiple answers possible; record all answers)

1. river water
2. filtered water
3. well water
4. rain water
5. other (specify)

26. Was the water boiled?

1. yes
2. no
3. no, but it was filtered

27. Does your household have a hand washing station or a place where you wash your hands regularly?

1. yes
2. no Go to 20

28 Ask to see the hand washing station and observe if each of the following items are present:

	Yes	No

A. Water / Tap	[ ]	[ ]
B. Soap, ash or other cleansing agent	[ ]	[ ]
C. Basin	[ ]	[ ]
D. Clean towel or krama	[ ]	[ ]

Immunizations

29 Has (name of child) ever received any immunizations?
1. yes
2. no [ ] Go to 34
3. doesn't [ ] Go to 34

30 At what age should a child receive measles vaccine (injection in the thigh)?
1. specify in months
2. doesn't know

31 Do you have a yellow immunization card for (name of child)?
1. yes (must see card)
2. lost it-----> go to 36
3. never had one-----> go to 36

32 Observe where the mother keeps the yellow card and record below:
1. PFD Immunization Flag
2. Cupboard
3. Behind a picture
4. Inside the wall
5. other (specify)

33 Look at the yellow immunization/growth monitoring card and record the dates of all the immunizations in the space below

		(dd/mm/yy)
BCG		_ _/_ _/_ _
OPV	1st	_ _/_ _/_ _
	2nd	_ _/_ _/_ _
	3rd	_ _/_ _/_ _
DPT	1st	_ _/_ _/_ _
	2nd	_ _/_ _/_ _
	3rd	_ _/_ _/_ _

ALL: BCG+OPV3+DPT3+Measles#1

Yes [ ] No[ ] Measles _ _/_ _/_ _

34 If ticked "yes" in question 29, skip to question 35.

Why did your child miss immunization visits?
(multiple answers possible; record all answers)
1. side effects
2. sore arm
3. cried too much

4. No outreach services
5. Child was sick
6. husband, grandmother etc. advised not to take the child
7. other (specify)
8. child is fully immunized

35. Look at the growth-road side of the yellow immunization card. Record the dates of all vitamin A capsules given to this child in the space below:

	(dd/mm/yy)
1st	__/__/__
2nd	__/__/__
3rd	__/__/__
4th	__/__/__

Has the child been weighed in the last four months?

1. Yes [ ]
2. No [ ]

36. Did (name of child) receive a Vitamin A capsule like this in the last 6 months?
(show capsule to the mother)
1. yes .....[ ]
2. no .....[ ]
3. doesn't know .....[ ]

37. How many times a year should a child receive a vitamin A capsule?
(multiple answers possible; record all answers)
1. one time per year .....[ ]
2. two times per year.....[ ]
3. three times per year.....[ ]
4. four times per year .....[ ]
5. Don't know.....[ ]
6. other (specify) _____.....[ ]

38. What is the main reason why pregnant women need to be vaccinated with tetanus toxoid vaccine?
1. to protect both mother/newborn against tetanus .....[ ]
2. to protect only the woman against tetanus.....[ ]
3. to protect only the newborn against tetanus .....[ ]
4. doesn't know .....[ ]
5. other _____ .....[ ]

39. Do you have a pink or white maternal health card?
1. yes .....[ ] (must see card)
2. lost it .....[ ] skip to 41
3. no .....[ ] skip to 41

40. Look at the pink maternal health card and record the number of tetanus toxoid vaccinations in the space below:
1. one [ ]

2. two [ ]
3. three or more [ ]
4. none [ ]

41. How many tetanus toxoid injections did you receive during your last pregnancy?
    1. one
    2. two
    3. more than two
    4. none
    5. doesn't know

Respiratory Illness

42. Has (name of child) been ill with cough and / or difficult breathing in the last two weeks?
    1. yes
    2. no---> go to 47

43. Did (name of child) experience rapid (fast) and difficult breathing (dyspnea) when ill?
    1. yes
    2. ---> go to 47
    3. doesn't know---> go to 47

44. Did you seek treatment when (name of child) was ill with these respiratory problems?
    1. yes
    2. no ---> go to 47

45. From whom did you seek treatment for (name of child) when ill with rapid and difficult breathing? (multiple answers possible; record all answers)
    1. hospital
    2. health center
    3. private clinic/doctor
    4. pharmacy/drug seller
    5. village health volunteer
    6. traditional healer

    7. Village injectionist
    8. traditional birth attendant
    9. relatives & friends
    10. other (specify)

46. What treatment did the child get?
    1. Home
    2. tablets
    3. Antibiotics
    4. InjectionList

47. What are the signs/symptoms of respiratory infection that would cause you to take (name of child) to a health facility?
(Multiple answers possible; record all answers)
    1. doesn't
    2. fast or difficult breathing
    3. chest indrawing
    4. loss of appetite
    5. fever
    6. cough
    7. other (specify)

Maternal Care

48. When you were pregnant with (name of child) did you visit any health site (hospital, health center) for pregnancy/prenatal care?
    1. yes
    2. no

49. What is the main reason why pregnant women need to be vaccinated with tetanus toxoid vaccine?
    1. to protect both mother/newborn against tetanus
    2. to protect only the woman against tetanus
    3. to protect only the newborn against tetanus
    4. doesn't know or other

50. How many tetanus toxoid injections does a pregnant woman need to protect the newborn infant from tetanus?
    1. one
    2. two
    3. more than two
    4. none
    5. doesn't know

51. Do you have a white maternal health card?
    1. yes (must see card)
    2. lost
    3. no

52. Look at the white maternal health card and record whether the mother ever made any ante-natal visits.

1. one
2. two or more

53. Do you have a pink tetanus toxoid card?
    1. yes
    2. lost it
    3. no

If the mother has no white or pink card, go to 55.

54. Look at either the white maternal health card or the pink tetanus toxoid card and record the number of tetanus toxoid vaccinations in the space below:

1. one [ ]
2. two or more [ ]
3. none [ ]

55. What foods are good for a pregnant woman to eat to prevent pregnancy anemia? (multiple answers possible; record all answers)

1. doesn't know
2. proteins rich in iron (eggs, fish, meat)
3. dark green leafy vegetables (morning glory, *slak bas, p'tee, spy k'mao*)
4. other (specify)

56. When you were pregnant with (name of child) was the amount of food you ate: (read the choices 1-3 to the mother)

1. more than usual?
2. same as usual?
3. less than usual?
4. doesn't know

Transportation

57. What forms of transportation are available to you? (multiple answers possible; record all answers)

1. None
2. Bicycle
3. Motor bike
4. Horse/cow cart
5. Car/truck
6. Boat
7. other (specify)

Thank the mother for her participation in the survey.
********* END OF QUESTIONNAIRE *********

ANNEX III QUESTIONNAIRE IN KHMER

កំរង: ________________ ផ្ទះទី: ________________ លេខកូដ: ________

កម្មវិធីកុមាររស់រានមានជីវិតក្នុងភូមិភាគឥសានកម្ពុជា

ការអង្កេតលើចំណេះដឹង, ការអនុវត្តន៏និងអាត្រាគ្របដណ្តប់

គ្រប់សំនួរត្រូវសួរទៅម្តាយដែលមានកូនអាយុតិចជាង ២៤ខែ

ថ្ងៃខែធ្វើសំភាសន៍: ____/ ____/____ ការសំភាសន៍ឡើងវិញ: ____/ ____/____

ឈ្មោះអ្នកធ្វើសំភាសន៍: ________________ /អ្នកកត់ត្រា: ________________

ឈ្មោះអ្នកអភិបាល: ________________

ភូមិ: ________________ ឃុំ: ________________

អត្តសញ្ញាណ

១-ឈ្មោះ និងអាយុម្តាយ

ឈ្មោះ ________________ អាយុ (ឆ្នាំ) : ________________

២-ឈ្មោះ និងអាយុរបស់កូនអាយុតិចជាង ២ ឆ្នាំ

ឈ្មោះ ________________

ថ្ងៃខែឆ្នាំកំនើត:____/ ____/____ អាយុ (ខែ)

ចំណេះដឹងការសិក្សា/មុខរបររបស់ម្តាយ

៣-តើអ្នកបានរៀនដល់ថ្នាក់ទីប៉ុន្មាន?

១-មិនបានរៀនសោះ....[ ]
២-បឋមសិក្សា, មិនចេះអាន....[ ]
៣-បឋមសិក្សា, អាចអានបាន....[ ]
៤-អនុវិទ្យាល័យ/វិទ្យាល័យ....[ ]

ការបំបៅដោះកូន/អាហារូបត្ថម្ភ

៤. តើអ្នកនៅបំបៅដោះ (ឈ្មោះកូន..........) ដែរឬទេ?
១. ចាំស ( ) លោតទៅទី ៦
២. ទេ ( )

៥. តើអ្នកធ្លាប់បំបៅដោះ (ឈ្មោះកូន..........) ដែរឬទេ?
១. ចាំស ( )
២. ទេ .... ( ) លោតទៅទី៧ ខ

៦. ក្រោយពីសំរាលកូន (ឈ្មោះ.........)រួច អស់រយៈពេលប៉ុន្មាន ទើបអ្នកចាប់ផ្តើមបំបៅដោះកូនជាដំបូង?
១. ក្នុងរយៈពេលមួយម៉ោងដំបូងបន្ទាប់ពីកើត .... ( )
២. ក្នុងរយៈពេលពី ១ ម៉ោងដល់ ៨ ម៉ោងបន្ទាប់ពីកើត .... ( )
៣. ចាប់ពី ៨ ម៉ោងទៅបន្ទាប់ពីកើត .... ( )
៤. មិនចាំ ( )

៧. **រំលឹកឡើងវិញ២៤ ម៉ោងកន្លងមកៈ សួរម្តាយចាប់ពីសំនួរ ក-ឌ**

ក-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន......)មានបៅដោះដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ខ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន.......)មានបានផឹកទឹក ឬទឹកដូងដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

គ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន....)មានបានញុំាទឹកដោះគោកំប៉ុង ឬម្សៅទឹកដោះគោដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ឃ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន.......)មានបានញុំាអាហារទន់ៗដូចជា បាយកិន, បបរដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ង-កាលពីម្សិលមិញតើ (ឈ្មោះកូន...) មានបានញុំាផ្លែឈើដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ច-កាលពីម្សិលមិញ តើ (ឈ្មោះកូន.....)មានបានញុំាផ្លែល្ពៅ, ល្ហុង, ស្វាយទុំ ឬផ្លែខ្នុរដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ឆ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន.....)មានបានញុំាបន្លែស្លឹកពណ៌បៃតងចាស់ ដូចជា ស្លឹកបាស់, ផ្ទី, ត្រកួន, ស្ពៃដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹង .... ( )

ជ-កាលពីម្សិលមិញតើ (ឈ្មោះកូន...) មានបានញុំាសាច់ ឬ សាច់ត្រីដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ឈ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន...)មានបានញុំាសណ្តែកដី, សណ្តែកបាយ ឬ តៅហ៊ូដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹង .... ( )

ញ-កាលពីម្សិលមិញ តើ(ឈ្មោះកូន.....)មានបានញុំាស៊ុតដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ដ-កាលពីម្សិលមិញ តើអ្នកមានបានថែមទឹកឃ្មុំ ឬទឹកស្ករជាមួយអាហារសំរាប់(ឈ្មោះកូន...)ដែរឬទេ?
១-ចាំ .... ( )

២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ថ-កាលពីម្សិលមិញ តើអ្នកមានបានថែមខ្លាញ់ ឬប្រេង ជាមួយអាហារសំរាប់ (ឈ្មោះកូន...) ដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

ឧ-តើអ្នកមានប្រើអំបិលអ៊ីយ៉ូតសំរាប់អាហាររបស់កូន (ឈ្មោះកូន...) ដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( )
៣-មិនដឹងទេ .... ( )

៨-សុំម្តាយពិនិត្យមើលអំបិលអ៊ីយ៉ូតដែលគាត់ធ្លាប់ចំអិនអាហារ. យកអំបិលនោះបន្តិចមក ហើយធ្វើតេស្ត ថាតើជាអំបិលអ៊ីយ៉ូតមែនឬទេ? មាន: ( ), មិនមាន: ( )

ប្រសិនបើកូនមានអាយុពី៦-២៣ ខែ សូមសួរសំនួរទី ៩ នេះ, បើអាយុតិចជាង ៦ ខែ សូមលោតទៅសំនួរទី ១០

៩- , កាលពីម្សិលមិញ តើ(ឈ្មោះកូន...) បានញ៉ាំអាហារទន់ៗ ឬរឹងៗបានប៉ុន្មានដង?
១-១ដង-២ដង .... ( )
២-៣ដង .... ( )
៣-ច្រើនជាង៣ដង .... ( )

១០-តើម្តាយត្រូវចាប់ផ្តើមផ្តល់អាហារបន្ថែមលើការបំបៅដោះនៅអាយុប៉ុន្មាន?
១-មុនអាយុ ៦ ខែ .... ( )
២-នៅអាយុ ៦ ខែ .... ( )
៣-លើសពី ៦ ខែ .... ( )
៤-មិនដឹង .... ( )

១១-តើអាហារបន្ថែមលើទឹកដោះនេះ គួរមានអាហារអ្វីខ្លះ?
១-មិនដឹង .... ( )
២-បន្ថែមជាតិខ្លាញ់ជាមួយអាហារ .... ( )
៣-អាហារដែលសំបូរដោយជីវជាតិអា(ដូចជាខ្នុរទុំ, ល្ហុងទុំ, ស្វាយទុំ,ល្ពៅ,
និងបន្លែស្លឹកពណ៌បៃតងចាស់ .... ( )
៤-អាហារសំបូរដោយជាតិដែក(សាច់,ត្រី,បន្លែស្លឹកពណ៌បៃតងចាស់ ( )
៥-បបរគ្រឿង(បបរអង្ករជាមួយសាច់ ឬបន្លែស្លឹកពណ៌បៃតងចាស់ ( )
៦-បបរ .... ( )
៧-ផ្សេងៗ (បញ្ជាក់អោយច្បាស់) .... ( )

១២-តើជីវជាតិណាមួយដែលជួយយើងមិនអោយកើតជម្ងឺខ្វាក់មាន់បាន?
១-ជីវជាតិអា .... ( )
២-មិនដឹង ឬផ្សេងៗ .... ( )

១៣-តើអាហារណាខ្លះដែលសំបូរទៅដោយជីវជាតិអា?
១-មិនដឹង .... ( )
២-បន្លែស្លឹកពណ៌បៃតងចាស់ .... ( )
៣-ក្រូចពោធិសាត់ ឬផ្លែឈើពណ៌លឿងទុំ .... ( )
៤-សាច់, ត្រី .... ( )
៥-ទឹកដោះម្តាយ .... ( )
៦-ផ្លែកពណ៌លឿងនៃស៊ុត .... ( )
៧-ផ្សេងៗ (បញ្ជាក់អោយច្បាស់)____________________ .... ( )

ជំងឺរាគ

១៤-ចាប់តាំងពី ២អាទិត្យកន្លងមកទល់ពេលនេះតើ (ឈ្មោះកូន:................) ធ្លាប់មានជំងឺរាគដែរឬទេ?
១. ចាំ .... ( )
២. ទេ .... ( ) លោតទៅសំណួរទី ២១
៣.មិនដឹង .... ( ) លោតទៅសំណួរទី ២១

១៥-នៅពេលដែល(ឈ្មោះកូន...) មានជម្ងឺរាគ តើអ្នកស្វែងរកការព្យាបាលដែរឬទេ?
១-ចាំ .... ( )
២-ទេ .... ( ) លោតទៅសំណួរទី១៧

១៦-តើអ្នករកការព្យាបាលពីនរណា នៅពេល(ឈ្មោះកូន...) មានជម្ងឺរាគ?
១-មន្ទីរពេទ្យ .... ( )
២-មណ្ឌលសុខភាព.. ( )
៣-គ្លីនិចឯកជន .... ( )
៤-ឱសថស្ថានលក់ថ្នាំពេទ្យ .... ( )
៥-អ្នកស្ម័គ្រចិត្តសុខភាពភូមិ .... ( )
៦-គ្រូខ្មែរ .... ( )
៧-ឆ្មបបុរាណ .... ( )
៨-អ្នកជិតខាង,បងប្អូន និងមិត្តភក្តិ .... ( )
៩-ផ្សេងៗ (បញ្ជាក់អោយច្បាស់)____________________ .... ( )

១៧-នៅពេល (ឈ្មោះកូន:........) មានជំងឺរាគ តើអ្នកមានបំបៅដោះវាដែរឬទេ?
(អានពីលេខ ១ ដល់លេខ ៤ អោយ ម្តាយជ្រើសរើស)
១. ច្រើនជាងធម្មតា?.. ( )
២. បំបៅដូចធម្មតា .... ( )
៣. បំបៅតិចជាងធម្មតា .... ( )
៤. មិនអោយបៅទាល់តែសោះ? .... ( )
៥. ក្មេងផ្តាច់ដោះទៅហើយ .... ( )

១៨-នៅពេល (ឈ្មោះកូន:.........) មានជំងឺរាគ, (ក្រៅពីទឹកដោះម្តាយ) តើអ្នកមានបានអោយវា ញ៉ាំជាតិទឹកផ្សេងៗដែរឬទេ?
(អានពីលេខ ១ ដល់លេខ ៤ អោយ ម្តាយជ្រើសរើស)
១. ច្រើនជាងធម្មតា?.. ( )
២. អោយដូចធម្មតា? .... ( )
៣. អោយតិចជាងធម្មតា? .... ( )
៤. មិនអោយទាល់តែសោះ? .... ( )
៥. កូនមិនញ៉ាំទឹក, ជាតិទឹកផ្សេងៗក្រៅពីទឹកដោះម្តាយទេ? .... ( )

១៩-ក្នុងកំឡុងពេល (ឈ្មោះកូន:...........) មានជំងឺរាគតើអ្នកនៅបន្តផ្តល់អាហាររឹង ឬអាហារទន់ៗដែរឬទេ?
(អានពីលេខ ១ ដល់លេខ ៤ អោយ ម្តាយជ្រើសរើស)
១. ច្រើនជាងធម្មតា?.. ( )
២. ដូចធម្មតា? .... ( )
៣. តិចជាងធម្មតា.. ( )
៤. មិនអោយទាល់តែសោះ? .... ( )
៥. ក្មេងមិនញ៉ាំអាហារក្រៅពីទឹកដោះម្តាយ .... ( )

២០-កាលដែល(ឈ្មោះកូន:........) មានជំងឺរាគ បើសិនជាអ្នកបានព្យាបាល តើអ្នកបានធ្វើការព្យាបាលដូចម្តេចដែរ?
(អាចមានចំលើយច្រើន, សូមចុះរាល់ចំលើយទាំងអស់នោះ)
១. គ្មាន .... ( )
២. ប្រើកញ្ចប់អូរ៉ាលីត .... ( )
៣. ទឹកលាយអំបិល និងស្ករ.. ( )
៤. បបរ .... ( )
៥. ជាតិទឹកផ្សេងៗតាមផ្ទះ(ទឹកដូង ឬទឹកដាំជាមួយឫសឬស្លឹកឈើ) ( )
៦. ថ្នាំទប់ទល់នឹងជំងឺរាគ ឬថ្នាំផ្សះ.. ( )
៧. ព្យួរសេរ៉ូម .... ( )
៨. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ____________________ ...... ( )

អាំងឌីកាទ័រការព្យាបាលបង្គ្រប់ជាតិទឹកតាមមាត់: អ្នកសំភាសន៍ត្រូវមើលសំនួរខាងក្រោមថា ចាំស ឬទេ (កុំអាន):
តើកុមារបានទទួលការព្យាបាលបង្គ្រប់ជាតិទឹកតាមមាត់ណាមួយដែរឬទេ?
(គូសក្នុង "ចាំស" បើសិនជាម្តាយឆ្លើយចាំសលេខ ២, ៣, ៤, ៥ ទៅនឹងសំណួរទី ២០ **ចាំ** ( ), **ទេ** ( )

២១. តើអ្នកត្រូវធ្វើអ្វីខ្លះជាចាំបាច់ប្រសិនបើ (ឈ្មោះកូនៈ..................) មានជំងឺរាក?
(អាចមានចំលើយច្រើន, សូមចុះរាល់ចំលើយទាំងអស់នោះ)

១. មិនដឹង ( )
២. ចាប់ផ្តើមផ្តល់ជាតិទឹកអោយជាបន្ទាន់ .... ( )
៣. អោយកុមារផឹកទឹកច្រើនជាងធម្មតា .... ( )
៤. បំបៅដោះកូនអោយបានច្រើនជាងធម្មតា .... ( )
៥. បញ្ចុកចំនីអាហារម្តងបន្តិចៗដល់កុមារអោយបានញឹកញាប់ .... ( )
៦. លាយនឹងផ្តល់ទឹកអូរ៉ាលីតអោយបានត្រឹមត្រូវ........ ( )
៧. យកកុមារទៅមន្ទីរពេទ្យ ឬមណ្ឌលសុខភាព........ ( )
៨. ផ្តល់ចំនីអាហារអោយបានច្រើនជងដល់កុមារបន្ទាប់ពីមានជំងរាករួច
ដើម្បីអោយទំងន់កើនឡើង ស្មើដើមវិញ........ ( )
៩. មិនអោយញ៉ាំជាតិទឹក........ ( )
១០. មិនអោយញ៉ាំអាហារ .... ( )
១១. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២២. តើអ្នកធ្លាប់ឮអំពីអូរ៉ាលីតដែរឬទេ?

១. ចាំ .... ( )
២. ទេ .... ( ) លោតទៅសំណួរ២៤

២៣. សូមនិយាយរៀបរាប់អំពីរបៀបលាយទឹកអូរ៉ាលីត?

បើសិនជាម្តាយនិយាយរៀបរាប់ដូចការពណ៌នាដូចខាងក្រោម, សូមគូសយកលេខ ១, បើសិនជាមិនដូចទេ សូមគូសយកលេខ ២:

- លាយនឹងទឹកស្អាត ១ លីត្រ (៣ កំប៉ុងទឹកដោះគោ ឬ ១ ដបទឹកសុទ្ធ)
- លាយទាំងមួយកញ្ចប់
- ដាក់អោយរលាយចូលគ្នា រួចកូរឬក្រឡុកអោយម្សៅរលាយចូលក្នុងទឹក

១. រៀបរាប់បានត្រឹមត្រូវ........ ( )
២. រៀបរាប់មិនបានត្រឹមត្រូវ........ ( )

២៤-នៅពេលកូនមានជំងឺរាក, តើមានសញ្ញា ឬរោគសញ្ញាអ្វីខ្លះ ទើបធ្វើអោយអ្នកទៅរកជំបូន្មានឬការព្យា បាលពីគ្រូពេទ្យ?
(អាចមានចំលើយច្រើន, សូមចុះរាល់ចំលើយទាំងអស់នោះ)

១. មិនដឹង .... ( )
២. ក្អួត........ ( )
៣. គ្រុនក្តៅ........ ( )
៤. ខ្វះជាតិទឹក (ស្លុតបបូរមាត់, ស្រេកទឹក, ភ្នែករូង, ទឹកនោមតិច) .... ( )
៥. រាកមានរយៈពេលយូរ (យ៉ាងតិច ៣ ថ្ងៃ) .... ( )
៦. មានឈាមក្នុងលាមក .... ( )
៧. មិនញ៉ាំអាហារឬផឹកទឹក........ ( )
៨. មានភាពរហិតរហៃ, អស់កំលាំង .... ( )
៩. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២៥-តើសញ្ញាកង្វះជាតិទឹកមានអ្វីខ្លះ?

១. បបូរមាត់ស្លុត........ ( )
២. ស្រេកទឹក.................................. ( )
៣. ភ្នែករូង........ ( )
៤. នោមតិច .... ( )
៥. ស្បែកជ្រួញក្រញូវលា........ ( )
៦. គ្មានទឹកភ្នែក .... ( )
៧. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២៦-ប្រសិនបើកូនមានសញ្ញាគ្រោះថ្នាក់ដូចរៀបរាប់ខាងលើ, តើអ្នកត្រូវធ្វើយ៉ាងដូចម្តេច?

១-គ្មាន.. ( )
២-យកកូនទៅមណ្ឌលសុខភាព.......................... ( )
៣-យកកូនទៅគ្រូពេទ្យឯកជន.......................... ( )
៤-យកកូនទៅគ្រូខ្មែរ.................................. ( )
៥-យកកូនទៅកន្លែងលក់ថ្នាំ.............................. ( )
៦-ផ្សេងៗ (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២៧-តើអ្នកត្រូវធ្វើអ្វីខ្លះជាចាំបាច់ នៅពេលដែលកូនបាត់រាកហើយនោះ?
(អាចមានចំលើយច្រើន, សូមចុះរាល់ចំលើយទាំងអស់នោះ)

១. មិនដឹង ( )
២. បញ្ចុកចំនីអាហារម្តងបន្តិចៗដល់កុមារអោយបានញឹកញាប់ .... ( )
៣. ផ្តល់អាហារអោយបានច្រើនជាងធម្មតា .... ( )
៤. ផ្តល់អាហារដែលសំបូរទៅដោយកាឡូរី........ ( )
៥-ផ្សេងៗ (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២៨-តើអ្នកផ្តល់ទឹកអ្វីអោយកូនផឹកនៅក្នុងរយៈពេល ២៤ ម៉ោងកន្លងមកនេះ?
(អានចំលើយពីលេខ ១ ដល់ លេខ ៤)

១. ទឹកទន្លេ ( )
២. ទឹកដែលច្រោះ ( )
៣. ទឹកអណ្តូង ( )
៤. ទឹកភ្លៀង ( )
៥. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________ .... ( )

២៩-តើទឹកនោះមានដាំពុះដែរឬទេ?

១. ចាំស ( )
២. ទេ ( )
៣. ទេ ប៉ុន្តែបានច្រោះ ( )

៣០-តើផ្ទះរបស់អ្នកមានកន្លែងលាងដៃជាទៀងទាត់ដែរឬទេ?

១. ចាំស ( )
២. ទេ .... ( ) លោតទៅទី ៣២

៣១-សុំមើលកន្លែងលាងដៃ និងពិនិត្យមើលថាតើមានរបស់របរដូចខាងក្រោមនេះទេ?

	ចាំស	ទេ
ក. ទឹក	( )	( )
ខ. សាប៊ូ, ផេះ	( )	( )
គ. កន្សែង ឬក្រមាស្អាត	( )	( )
ឃ. ចានដែក	( )	( )

ចាំស ( ) បើ មានក និង ខ
ទេ ( )

៣២-តើអ្នកបោះលាមកកូន (ឈ្មោះ............) ដែលជុះជាចុងក្រោយនេះយ៉ាងដូចម្តេច?

១. កប់ .... ( )
២. ចាក់ក្នុងបង្គន់ ( )
៣. ចោលក្នុងទន្លេ...................................... ( )
៤. ចោលខាងក្រៅផ្ទះ ( )

៥. ចាក់ទឹកលាងសំអាតចោល................ ....( )
៥. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________________ .... ( )

ការផ្តល់ថ្នាំបង្ការ

៣៣-តើ (ឈ្មោះកូន............) ធ្លាប់បានទទួលការផ្តល់ថ្នាំបង្ការដែរឬទេ?
១. ចាំ .... ( )
២. ទេ .... ( ) លោតទៅទី ៣៨
៣. មិនដឹង..( ) លោតទៅទី ៣៨

៣៤-តើអ្នកមានប័ណ្ណលឿងផ្តល់ថ្នាំបង្ការរបស់(ឈ្មោះកូន.........)ដែរឬទេ?
១. ចាំ .... ( ) ត្រូវមើលប័ណ្ណ
២. បាត់ប័ណ្ណហើយ ( ) លោតទៅទី ៣៨
៣. មិនដែលមានប័ណ្ណ ( ) លោតទៅទី ៣៨

៣៥-ចូរសង្កេតមើលកន្លែងដែលម្តាយទុកដាក់ប័ណ្ណលឿងនេះ ហើយសូមគូសយកខាងក្រោមនេះ:
១. ទង់ចាក់ថ្នាំបង្ការ PFD.............................( )
២. ទូ .... ( )
៣. ក្រោយរូបភាព ( )
៤. សៀតនឹងជញ្ជាំង .... ( )
៥. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________________ .... ( )

បលើប័ណ្ណលឿងចាក់ថ្នាំបង្ការ/ប័ណ្ណតាមដានការលូតលាស់ ហើយសរសេរចុះនូវថ្ងៃខែ ដែលបានចាក់ថ្នាំបង្ការទាំងអស់នៅក្នុងចន្លោះខាងក្រោម:

		ថ្ងៃ / ខែ / ឆ្នាំ
បេសេហ្សេ	:	................/............../..................
ប៉ូលីយ៉ូ	: លើកទី ១	................/............../..................
	លើកទី ២	................/............../..................
	លើកទី ៣	................/............../..................
ដេតេសេ	: លើកទី ១	................/............../..................
	លើកទី ២	................/............../..................
	លើកទី ៣	................/............../..................
រូវ៉ាក់	:	................/............../..................

ចាក់គ្រប់: បេសេហ្សេ + ប៉ូលីយ៉ូ ៣ + ដេតេសេ ៣ + រូវ៉ាក់
ចាំស ( ) បើចាក់គ្រប់
ទេ ( )

៣៧-ពិនិត្យមើលលើផ្នែកតាមដានការលូតលាស់នៅក្នុងប័ណ្ណលឿង ហើយចំលងចូលនូវកាលបរិច្ឆេទនៃការ ផ្តល់គ្រាប់ថ្នាំជីវជាតិអា:

	ថ្ងៃ / ខែ / ឆ្នាំ
លើកទី១	................../.............../................
លើកទី២	................../.............../................
លើកទី៣	................../.............../................
លើកទី៤	................../.............../................

តើកុមារបានថ្លឹងនៅក្នុងរយៈពេល ៤ ខែកន្លងមកនេះទេ?
ចាំ...........[ ] (.........គីឡូក្រាម)
ទេ...........[ ]

៣៨-តើកុមារត្រូវទទួលការចាក់ថ្នាំបង្ការជម្ងឺកញ្ជ្រិលនៅអាយុប៉ុន្មាន?
១-បញ្ជាក់ខែ .... **[.......ខែ]**
២-មិនដឹង..( )

ប្រសិនបើគូស ចាំស លើសំនួរទី ៣៦ , សូមលោតទៅសំនួរ ៤០

៣៩- ហេតុដូចម្តេចបានជា(ឈ្មោះកូន............)ខកខានមិនបានចាក់ថ្នាំបង្ការ?
(អាចមានចំលើយច្រើន, សូមសរសេររាល់ចំលើយទាំងអស់នោះ)
១. ផលរំខាន ( )
២. ហើមដៃ ( )
៣. យំខ្លាំងពេក ( )
៤. ពុំមានពេទ្យចុះមកចាក់ .... ( )
៥. កូនមានជំងឺ ( )
៦. ប្តី, ជីដូន ។ល។ ប្រាប់មិនអោយយកកូនទៅចាក់.. ( )
៧. កូនចាក់គ្រប់ ( )
៨. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________________ .... ( )

៤០. តើ(ឈ្មោះកូន..........)បានទទួលគ្រាប់ថ្នាំជីវជាតិអាដូចគ្រាប់ថ្នាំនេះ នៅក្នុងរយ:ពេល៦ ខែកន្លងមកទេ?
(សូមបង្ហាញគ្រាប់ថ្នាំអោយម្តាយមើល)
១. ចាំស ( )
២. ទេ ( )
៣. ទេ (មិនទាន់គ្រប់អាយុ) .... ( )
៣. មិនដឹង ( )

៤១. តើកុមារត្រូវទទួលគ្រាប់ថ្នាំជីវជាតិអានេះក្នុងមួយឆ្នាំប៉ុន្មានដង?
១. មួយដងក្នុងមួយឆ្នាំ ( )
២. ២ ដងក្នុងមួយឆ្នាំ ( )
៣. ៣ ដងក្នុងមួយឆ្នាំ ( )
៤. ៤ ដងក្នុងមួយឆ្នាំ ( )
៥. មិនដឹង ( )
៦. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់).. ( )

៤២. តើហេតុដូចម្តេចបានជាស្ត្រីមានផ្ទៃពោះចាំបាច់ត្រូវចាក់វ៉ាក់សាំងការពារជំងឺតេតាណូស?
១. ដើម្បីការពារទាំងម្តាយ និងកូនពីការកើតជំងឺតេតាណូស.. ( )
២. ដើម្បីការពារតែម្តាយប៉ុណ្ណោះពីការកើតជំងឺតេតាណូស .... ( )
៣. ដើម្បីការពារតែកូនប៉ុណ្ណោះពីការកើតជំងឺតេតាណូស.. ( )
៤. មិនដឹង ( )
៥. ផ្សេងៗទៀត (សូមបញ្ជាក់អោយបានច្បាស់) ______________________________ .... ( )

៤៣. តើអ្នកមានប័ណ្ណពិនិត្យសុខភាពមាតា ឬប័ណ្ណពណិស្វាយដែរឬទេ?
១. ចាំស ( ) ពិនិត្យមើលបណ្ណ័
២. បាត់ប័ណ្ណ ( ) លោតទៅ ៤៥
៣. គ្មានប័ណ្ណ ( ) លោតទៅ ៤៥

៤៤. ចូរពិនិត្យមើលប័ណ្ណពណិស្វាយ ឬប័ណ្ណសុខភាពមាតា ហើយចុះនូវចំនួនដងនៃការចាក់វ៉ាក់សាំងការពារ ជំងឺតេតាណូសទៅក្នុងចន្លោះខាងក្រោម?
១. មួយដង ( )
២. ពីរដង ( )
៣. បីដង ឬលើស ( )
៤. គ្មាន ( )

៤៥. ក្នុងរយ:ពេលមានផ្ទៃពោះកូនចុងក្រោយនេះ តើអ្នកបានចាក់វ៉ាក់សាំងការពារជំងឺតេតាណូសបានប៉ុន្មានដង?
១. ១ ដង ( )
២. ២ ដង ( )
៣. ច្រើនជាង២ដង ( )

៤. គ្មាន ( )

៥.មិនដឹង .( )

ជំងឺរលាកផ្លូវដង្ហើមស្រួច

៤៦. តើ (ឈ្មោះកូន...........) ធ្លាប់ឈឺហើយក្អក ឬពិបាកដកដង្ហើមទេកាលពី ២ អាទិត្យកន្លងមកទល់ពេលនេះ?

១. ចាំស ( )

២. ទេ .... ( ) លោតទៅទី ៥១

៤៧. ពេលដែល (ឈ្មោះកូន.............) ឈឺហើយក្អកនេះ/ តើវាមានការពិបាកដកដង្ហើម ឬដកដង្ហើមញាប់ ហើយខ្លីៗជាងធម្មតាដែរឬទេ?

១. ចាំស........ ( )

២. ទេ .... ( ) លោតទៅទី ៥១

៣. មិនដឹង .... ( ) លោតទៅទី ៥១

៤៨. តើអ្នកមានស្វែងរកការព្យាបាលទេ នៅពេលដែល(ឈ្មោះកូន....) មានជម្ងឺពិបាកដកដង្ហើម ឬដកដង្ហើមញាប់នេះ?

១. ចាំស........ ( )

២. ទេ .... ( ) លោតទៅទី ៥១

៤៩-តើអ្នកស្វែងរកការព្យាបាលពីកន្លែងណា នៅពេល(ឈ្មោះកូន.....) មានជំងឺដែលមានការពិបាកដកដង្ហើម និងដង្ហើមញាប់នេះ?
(អាចមានចំលើយច្រើន, សូមសរសេររាល់ចំលើយទាំងអស់នោះ)

១. មន្ទីរពេទ្យ ( )

២. មណ្ឌលសុខភាព ( )

៣. គ្លីនិចឯកជន ( )

៤. ឱសថស្ថាន ( )

៥. គ្រូខ្មែរ ( )

៦. ឆ្មបបូរាណ ( )

៧. បងប្អូន /មិត្តភ័ក្រ ( )

៨. មិនមានការព្យាបាលអ្វីទាំងអស់ .... ( )

៩. ផ្សេងៗ (សូមបញ្ជាក់) ____________ .... ( )

៥០-កូនបានទទួលការព្យាបាលអ្វីខ្លះ?

១. ថ្នាំតាមផ្ទះ (បញ្ជាក់អោយច្បាស់)____________ .... ( )

២. ថ្នាំគ្រាប់ (បញ្ជាក់អោយច្បាស់)____________ .... ( )

៣. ថ្នាំផ្សះ(បញ្ជាក់អោយច្បាស់)____________ .... ( )

៤. ចាក់ថ្នាំ (បញ្ជាក់អោយច្បាស់)____________ .... ( )

អាំងឌីកាទ័រ ការព្យាបាលវេជ្ជសាស្ត្រលើជំងឺរលាកផ្លូវដង្ហើមស្រួច: អ្នកសំភាសន៍មើលថាតើ ចាំស ឬទេ លើសំណួរខាង ក្រោមនេះ (សូមកុំអាន):
តើកុមារមានបានទទួលការព្យាបាលបែបវេជ្ជសាស្ត្រទេ?
(គូស "ចាំស" បើសិនជាម្តាយឆ្លើយ "ចាំស" លេខ ១, ២, ៣, ទៅនឹងសំណួរទី ៥០) **ចាំស** ( ) **ទេ** ( )

៥១. តើជំងឺរលាកផ្លូវដង្ហើមកុមារមានសញ្ញានិងរោគសញ្ញាដូចម្តេច ដែលធ្វើអោយអ្នកនាំ (កូនឈ្មោះ........) ទៅ មណ្ឌលសុខភាព?
(អាចមានចំលើយច្រើន, សូមសរសេររាល់ចំលើយទាំងអស់នោះ)

១. ដកដង្ហើមញាប់ ឬពិបាកដកដង្ហើម .... ( )

២. ទ្រូងផិតផត .... ( )

៣. មិនឃ្លានអាហារ .... ( )

៤. គ្រុនក្តៅ........ ( )

៥. ក្អក........ ( )

៦. មិនដឹង........ ( )

៧. ផ្សេងៗ (សូមបញ្ជាក់) ____________ .... ( )

ការថែទាំសុខភាពមាតា

៥២-នៅពេលដែលអ្នកមានផ្ទៃពោះ (ឈ្មោះកូន.........) តើអ្នកមានបានទៅពិនិត្យសុខភាពនៅមន្ទីរពេទ្យ ឬមណ្ឌលសុខភាពទេ?

១. ចាំ .... ( )

២. ទេ .... ( ) **លោតទៅទី ៥៥**

៥៣. តើអ្នកមានបណ្ណ័ពណ៌ស សុខភាពមាតាទេ?

១. ចាំ .... ( ) ពិនិត្យមើលបណ្ណ័

២. បាត់ហើយ .... ( ) លោតទៅទី ៥៥

៣. គ្មាន .... ( ) លោតទៅទី ៥៥

៥៤-ពិនិត្យមើលបណ្ណ័ពណ៌ស និងក្នុងកំណត់ត្រាដើម្បីអោយដឹងថាតើម្តាយធ្លាប់បានពិនិត្យផ្ទៃពោះដែរឬទេ?
១-មួយដង ( )
២-ពីរដង ( )
៣-គ្មាន ( )

៥៥-តើស្ត្រីមានផ្ទៃពោះត្រូវចាក់វ៉ាក់សាំងការពារជំងឺតេតាណុសចំនួនប៉ុន្មានដង ដើម្បីការពារដល់ទារកក្នុងផ្ទៃពីការ កើតជម្ងឺតេតាណុសផ្ចិត?

១. ១ដង .... ( )

២. ២ដង .... ( )

៣. ច្រើនជាង ២ ដង .... ( )

៤. មិនទទួលសោះ........ ( )

៥. មិនដឹង........ ( )

មធ្យោបាយដឹកជញ្ជូន

៥៦. តើអ្នកអាចរកមធ្យោបាយធ្វើដំនើរបានតាមរបៀបណាដែរ?

១. គ្មាន .... ( )

២. កង់........ ( )

៣. ម៉ូតូ .... ( )

៤. រទេះគោ/រទេះសេះ .... ( )

៥. ឡាន........ ( )

៦. ទូក .... ( )

៧. ផ្សេងៗ (បញ្ជាក់អោយបានច្បាស់)____________ .... ( )

ថ្លែងអំណរគុណដល់ស្ត្រីជាម្តាយដែលបានចូលរួមក្នុងការសំភាសន៍នេះ !

ចប់បញ្ជីសំនួរ

ANNEX IV Cluster Sampling

Northeast Cambodian Child Survival Program
KPC Survey Clusters

Health Center	Commune	Village	Pop	Cum	Cluster #
		Boeung Kiep	445	445	
Prek Prosop	Prek Prosop	Boeung Learch	449	894	1
		Boeung Rey	2305	3199	
		Boss	805	4004	
Chambok	Chambok	Chambok I	1652	5656	2
		Chambok II	1982	7638	
		Cheung	428	8066	
		Cheung Kle	425	8491	
Snoul	Pi Thnou	Cheung Klu	778	9269	3
		Cheuteal Plos	4228	13497	
Kanchor	Kanchor	Cheuteal Plos Krom	1341	14838	4
		Cheuteal Plos Leu	1373	16211	
		Chhney	628	16839	
		Chhork Kontong	497	17336	
Pong Ro	Koh Tasu	Chong Koh	732	18068	5
		Chrab	589	18657	
		Chroy Ampil I	1835	20492	
Chambok	Chambok	Chroy Ampil II	1982	22474	6
		Chroy Snang Krobey Krom	1081	23555	
		Chroy Snang Krobey Leu	973	24528	
		Chroy Thmor	827	25355	
Chroy Thmor	Chhlong	Chroy Thmor Krom	2085	27440	7
		Chroy Thmor Leu	1529	28969	
		Dey Thmey	1373	30342	
Prek Prosop	Prek Prosop	Deydos Krom	1830	32172	8
		Deydos Leu	1192	33364	
		Dong	428	33792	
		Dong Kdong	1356	35148	
Chroy Thmor	Hanchey	Hanchey I	2044	37192	9
Chroy Thmor	Hanchey	Hanchey II	2431	39623	10
		Hanchey III	3097	42720	
Pong Ro	Pong Ro	Hanchey IV	1582	44302	11
		Kanchor	1924	46226	
		Kandal Koh	926	47152	
Snoul	Snoul	Kat Dai	1381	48533	12
		Kbal Koh	748	49281	
		Kbal Snoul	320	49601	
		Kbal Trach	916	50517	
		Koh Kandol	1677	52194	
Kampong Kor	Kampong Kor	Kompong Kor	2461	54655	13

		Kompong Sre	713	55368	
		Kroch	252	55620	
		Krohom Kor Krom	1081	56701	
Tamao	Tamao	Krohom Kor Leu	1184	57885	14
		Krong	1383	59268	
		Ksim Knong	476	59744	
Ksim	Ksim	Ksim Krout	1552	61296	15
		Lvea Thum	1117	62413	
		Meak Kandal	1002	63415	
		Mean chey	540	63955	
		Mill	716	64671	
Prek Prosop	Prek Prosop	O' long	1206	65877	16
		Phum Kandal	1863	67740	
		Phum Ksat	425	68165	
		Phum Thmey I	1088	69253	
Ksach Andett	Ksach Andett	Phum Thmey II	1145	70398	17
		Phum Thnot	2342	72740	
Pong Ro	Pong Ro	Pong Ro I	3261	76001	18
Pong Ro	Pong Ro	Pong Ro II	3245	79246	19
		Pong Ro III	1586	80832	
		Prek Chamlak	1855	82687	
Ksim	Snoul	Prek Kdey	971	83658	20
		PreK Kou	913	84571	
		Prek Prang	1776	86347	
Prek Prosop	Prek Prosop	Prek Prosop Kandal	1941	88288	21
		Prek Prosop Krom	1458	89746	
Prek Prosop	Prek Prosop	Prek Prosop Leu	1885	91631	22
		Prek Saman	1742	93373	
		Prek Samrong I	1419	94792	
Ksach Andett	Ksach Andett	Prek Samrong II	1472	96264	23
		Prek Svay	980	97244	
		Prek Tahoup	2096	99340	
Chroy Thmor	Damrey Phong	Prey Ko	1053	100393	24
		Prohout	350	100743	
		Prolay Triek	567	101310	
		Proma	593	101903	
		Provanh	924	102827	
Snoul	Snoul	Psar Snoul	4812	107639	25
		Roha	1314	108953	
Chambok	Russey Kal	Russey Kao	2269	111222	26
		Sa-at	990	112212	
		Samrong	568	112780	
Snoul	Snoul	Snoul Keut	798	113578	27
		Snoul Lech	902	114480	
		Sre Roneam	1103	115583	

		Sre Sdach	192	115775	
		Sre Thmey	1252	117027	
Damrey Phong	Damrey Phong	Sre Triek	684	117711	28
		Srolao Damnak	1802	119513	
		Steung Thom	1090	120603	
		Steung Tro	463	121066	
Chambok	Russey Kal	Svay Chum	1464	122530	29
		Tamao Kandal	1388	123918	
		Tamao Krom	1081	124999	
		Tamao Leu	1246	126245	
Snoul	Pi Thnou	Thmor Hal (Dey Krohom)	518	126763	30
		Thmor Hal Veal	549	127312	
		Tpong	889	128201	
		Treak	686	128887	
		Tropeang Sre	463	129350	
		Veal Kansang	804	130154	
				130154	

Sampling Interval =
4338 .466667

Random Start = 0506

ANNEX E 1 CHILD DEATH REPORTS

Table 28: Child Death Reports	**2001** May-Dec		**2003**		**2004** Jan-May	
Total	**171**	***100%***	**78**	***100%***	**16**	***100%***
Respiratory Infection	43	*25%*	26	*33%*	3	*19%*
Perinatal	20	*12%*				
Meningitis/encephalitis	19	*11%*				
Malaria	17	*10%*	12	*15%*	2	*13%*
Neonatal Tetanus	15	*9%*	2	*3%*	1	*6%*
Unknown	11	*6%*	12	*15%*	4	*25%*
Typhoid	10	*6%*	4	*5%*		
Other	8	*5%*	10	*13%*	2	*13%*
Diarrhea	7	*4%*	4	*5%*	1	*6%*
Accidents	7	*4%*				
Dysentery	5	*3%*				
Dengue	4	*2%*	4	*5%*	2	*13%*
Septicaemia	3	*2%*	1	*1%*	1	
Malnutrition	3	*2%*	1	*1%*		
Meconium			2	*3%*		

ANNEX E 2 Training results

Figure 10:Knowledge of VHV's in Zone Snoel over a period of 4 years

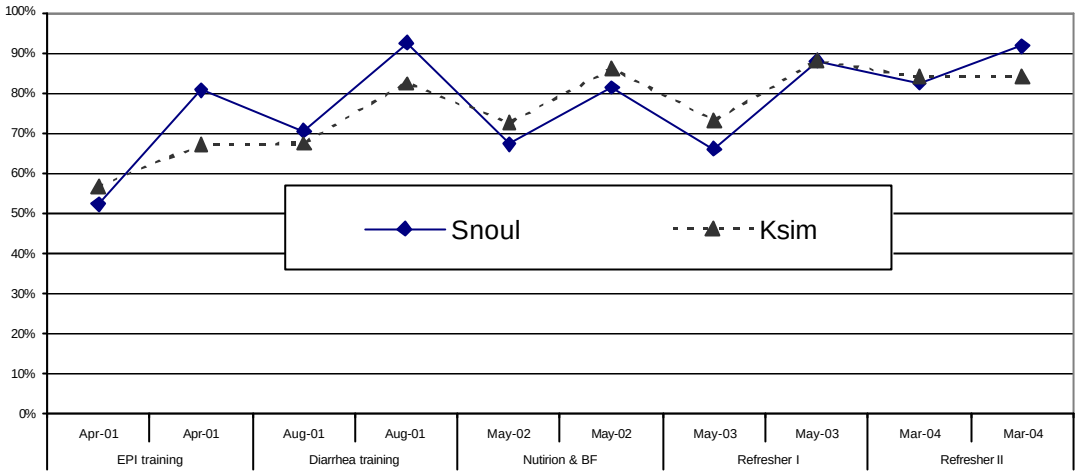


Figure 11: VHV knowledge scores on EPI, Diarrhea and Nutrition in zone Preprosok from 2001-2004

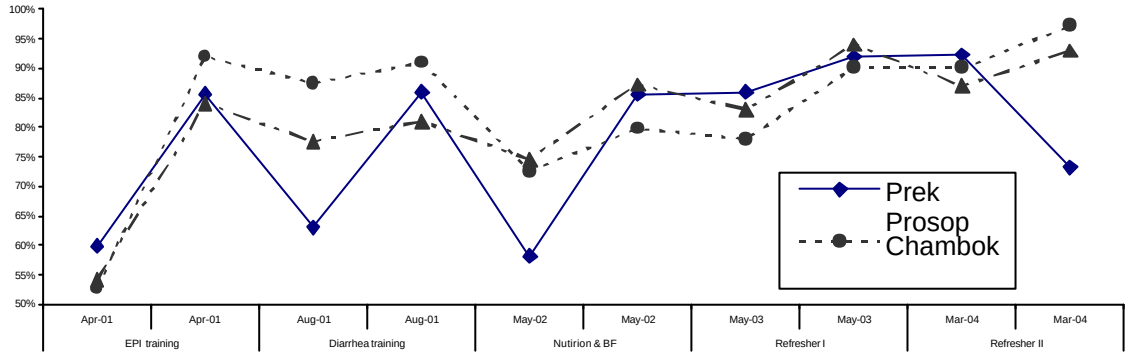
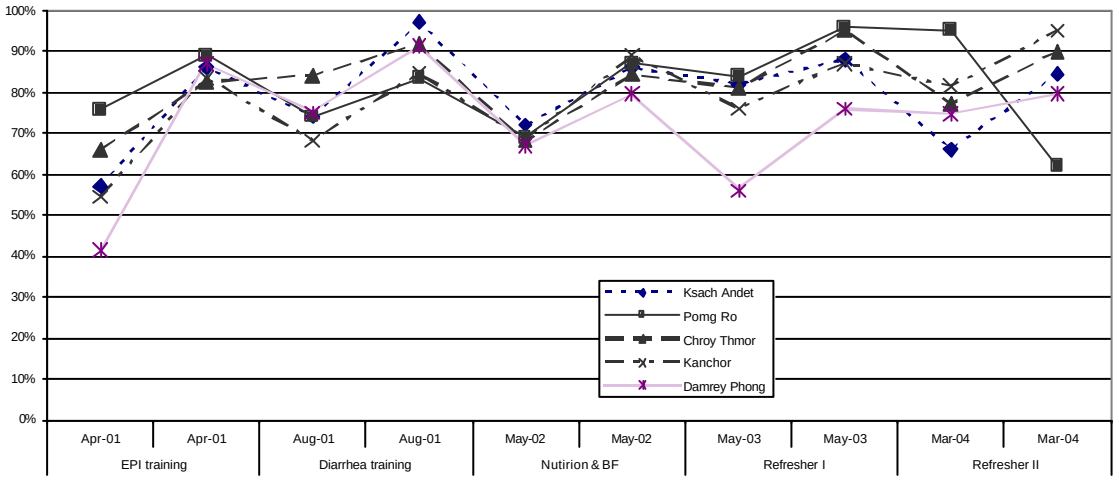


Figure 12: Average knowledge scores of VHV's in the Chhlong zone



ANNEX E 3

Terms of Reference (TOR) for PFD Northeast Cambodia Child Survival Project

Final Evaluation

Location: Chhlong OD, Kratie Province, Cambodia.

Duration: 21 June - 9 July 2004 (LOE: 14 working days)

Supervisor: PFD Program Manager for Health

I Background

Northeast Cambodia Child Survival Program (NCCSP)

Goal: To reduce morbidity and mortality of children under five years of age in Chhlong OD, through control of diarrheal disease, immunization, nutrition and micronutrients, and promotion of breastfeeding.

In 1998, PFD expanded its focus to include health interventions in Kratie, with implementation of a USAID-funded Child Survival Program in the Chhlong Operational District, with a total population of 129,000 covering a target population of over 17,000 children under five and over 28,000 women of reproductive age. This coverage accounts for 48% of the target population of Kratie Province. The Child Survival Program's key interventions focus on immunization, control of diarrheal disease, nutrition, and breastfeeding. The Program is funded through September 2004 by USAID Global Health Bureau in Washington DC.

The CS Program is coordinated by a full-time expatriate coordinator based in Chhlong OD, with a staff complement of 1 Volunteer Maternal Health Advisor, 2 Program Team Managers, 15 Program officers and 7 administrative and support staff.

PFD implemented its two-year entry-level Child Survival Program, the Northeast Cambodia Child Survival Program (NCCSP), from October 1, 1998 to September 30, 2000. The accomplishments and constraints of each year of the Program are described in the annual reports, submitted in October to USAID.

A Mid-term Evaluation was conducted in November 2002 and a report of results and recommendations was submitted to USAID in December 2002.

The NCCSP is complimented by integrated projects which include:

- Reproductive Health/HIV/AIDS, implemented primarily through Community-based Distributors (CBD) who provide education and access to birth spacing and STI/HIV/AIDS prevention products;
- Health Systems Strengthening project which provides formal and in-service trainings to OD and Health Center Staff in order to ensure quality care at health center level;
- Malaria Prevention which provides insecticide treated bednets and community prevention education to residents of Chhlong OD;

- School Health Education which trains teachers who instruct children on basic health messages, sanitation and hygiene; and
- Dengue Operations Research program operated out of two of Chhlong's villages, for the biological control of dengue by breeding the natural predators of the *Aedes Aegypti* mosquito (the dengue vector).

II. SCOPE OF WORK

A. Purpose:

1. To assess if the NCCSP met the stated goals and objectives;
2. To assess the effectiveness of the technical approach;
3. To develop the overarching lessons learned from the NCCSP; and
4. To strategize the use and communication of these lessons within PFD, to partners and the wider health community in Cambodia.

B. Specific Tasks:

In achieving the stated Purpose, the Evaluation Team will include all project partners (in this instance staff from Chhlong OD and Kratie PHD) to conduct the following activities:

- Conduct a Random Sample KPC Survey consistent with the NCCSP baseline evaluation for comparison;
- Conduct systematic qualitative assessments to assess impact of the Child Survival interventions at the community, health center and OD levels;
- Compare and analyze results between baseline, mid-term and final surveys; and
- Produce final evaluation report based on the USAID/CSHGP guidelines (attached) to be submitted to USAID/CSGHP.

The Evaluation Team will specifically consider and respond to each of the following questions (from the USAID guidelines), including explanation of factors contributing to or constraining performance and recommendations for improvement where appropriate:

a. Technical Approach

(i) What are the factors affecting achievement of NCCSP objectives?
(ii) For objectives not fully achieved, what are the contributing factors?
(iii) For each intervention, what are the main lessons learned?
(iv) What are unexpected outcomes, and unexpected successes or constraints?
(v) How will the lessons learned be applied to future activities?
(vi) Are there any new tools or approaches that the program developed or used; operations research or special studies that were conducted; how the data/information has been used and what actions have been taken.

b. Cross-cutting Approaches

Community Mobilization

(i) How effective was the approach for community mobilization?

(ii) Were the objectives met for community mobilization?
(iii) What lessons were learned for future community mobilization efforts?
(iv) Is there demand in the community for NCCSP activities to continue? How was this measured?
(v) What are the plans for sustaining these activities once the NCCSP closes?
(vi) Are the sustainability plans realistic?

Communication for Behavior Change

(i) How effective was the approach for communication and behavior change?
(ii) Were the behavior change objectives met?
(iii) What were the lessons learned?
(iv) How will these behaviors be sustained once the program closes?
(v) Are the sustainability plans realistic?

Capacity Building Approach

(i) How did NCCSP strengthen the capacity of PFD?
- How has this grant improved the capacity of PFD to design, implement and evaluate effective child survival programs?
- Have effects of this grant influenced other programs operated by PFD?

(ii) How did NCCSP strengthen the capacity of the Local Partner Organizations?
- What are the organizational capacity building efforts with the local partners?
- What are the outcomes of the formal and informal assessments, conducted at the outset of the program to determine the organizational capacities of local partners?
- How have the organizational capacities of the local partner changed since the beginning of the program? What factors/interventions have most contributed to those changes?
- What are the lessons learned in capacity building of local partners?

Health Facilities Strengthening

- How effective was the approach for improved management and services at health facilities?
- What tools did the program use for health facility assessments? Were the tools effective for measuring change?
- What were the lessons learned?
- What are the plans for sustaining these activities once the NCCSP closes? Are the sustainability plans realistic?
- What are the linkages between these facilities and the communities?

Strengthening Health Worker Performance

- How effective was the approach for strengthening health worker performance?
- Were the performance objectives met?
- What were the lessons learned?

- What are the plans for sustaining health worker performance once the NCCSP closes? Are the sustainability plans realistic?
- Were the tools used to assess the results of improving health worker performance sensitive enough to measure change over the life of the program?
- Did the program address the gaps between performance standards and actual performance?

Training

- How effective was the training strategy?
- Were the training objectives met?
- What evidence is there that suggests that the training implemented has resulted in new ways of doing things, or increased knowledge and skills of the participants?
- What were the lessons learned?
- What are the plans for sustaining these training activities once the NCCSP closes? Are the sustainability plans for training realistic?

c. Sustainability Strategy

(i). Were the sustainability goals and objectives that were articulated in the DIP met?
(ii). What is the status of the phase-over plan, and is it on schedule? After the NCCSP, will there be any continuing technical and management assistance?
(iii). Have the approaches to building financial sustainability-- (e.g., local level financing, cost recovery, resource diversification, corporate sponsorships) been successful?
(iv). How has the program built demand for services, and is the community sufficiently engaged to influence how services are delivered?

d. Program Management

Planning

(i). How inclusive was the program planning process and what effect did this have on the implementation process?
(ii). To what extent was the DIP work plan practical? Based on PFD and its partner's experience with this program, what could be added to the DIP preparation and review process that would have strengthened implementation?
(iii). What were the gaps in the DIP and how were they addressed by the program staff?

Staff Training

(i). What change is there in the knowledge, skills and competencies of the program and partner's staff? Is there evidence that the staff has applied these skills both within NCCSP and in another context?
(ii). Were adequate resources dedicated to staff training?
(iii). What are the overall lessons learned about building the capacity of NCCSP staff?

Supervision of Program Staff

(i). Was the supervisory system adequate?

(ii). Is the supervisory system fully institutionalized and can it be maintained?

(iii). Is there evidence that the program's approach to strengthening supervisory systems has been adopted beyond NCCSP?

Human Resources and Staff Management

(i). Are essential personnel policies and procedures in place to continue NCCSP operations that are intended to be sustainable?

(ii). How are the morale, cohesion and working relationships of NCCSP personnel and how this affected program implementation?

(iii). What is the level of staff turnover throughout the life of the NCCSP, and the impact it has had on NCCSP implementation?

(iv). Have plans been developed to facilitate staff transition to other paying jobs at the end of the NCCSP?

Financial Management **[to be completed with the field staff and lead evaluator]**

(i). ARE PFD's and partners' financial management and accountability for NCCSP finances and budgeting adequate? If the project budget was adjusted, explain why. Do the program implementers have adequate budgeting skills to be able to accurately estimate costs and elaborate on budgets for future programming?

(ii). Are adequate resources in place to finance operations and activities intended to be sustained beyond this cooperative agreement?

(iii). Was there sufficient outside technical assistance available to assist the grantee and its partners to develop financial plans for sustainability?

Logistics

What impact has logistics (procurement and distribution of equipment, supplies, vehicles, etc.) had on the implementation of NCCSP?

Is the logistics system sufficiently strong to support operations and activities intended to continue beyond the life of the project?

Information Management

(i). How effective was the system to measure progress towards NCCSP objectives?

(ii). Was there a systematic way of collecting, reporting and using data at all program levels? Cite examples of how NCCSP data was used to make management or technical decisions.

(iii). Is NCCSP staff sufficiently skilled to continue collecting program data/information and to use it for program revisions or strengthening?

(iv). Did the NCCSP conduct or use special assessments, mini survey focus groups, etc. to solve problems or test new approaches? Give examples of the research, use of data, and outcomes.

(v). To what extent did the NCCSP strengthen other existing data collection systems (i.e. government)?

(vi). Do the NCCSP staff, headquarters staff, local level partners, and the community have a clear understanding of what the NCCSP has achieved?

(vii). How have the NCCSP's monitoring and impact data been used beyond this child survival program?

Technical and Administrative Support

(i). Discuss types and sources, timeliness, and utility of external technical assistance NCCSP has received to date.

(ii). What assistance did the NCCSP need that was not available? How could PVO headquarters and/or USAID better plan for the technical assistance needs of PVO programs?

(iii). Discuss PVO headquarters and regional technical and managerial support of the field program. Approximately how much time has been devoted to supporting this program?

Management Lessons Learned

- What are the overall management lessons learned?

e. Other Issues Identified by the team

- What are any other issues that the evaluation team would like the Child Survival community to know?

ANNEX F Project Data Sheet Form - Updated Version

Child Survival Grants Program Project Summary

Final Evaluation Submission: Dec-15-2004
PFD Cambodia

Field Contact Information:

First Name:	Mary
Last Name:	Mohan
Address:	House #26. Street 334
City:	Phnom Penh
State/Province:	
Zip/Postal Code:	
Country	Cambodia
Telephone:	011-855-23-213 335
Fax:	011-855 23 213 275
E-mail:	marym.pfd@online.com.kh
Project Web Site:	

Project Information:

Project Description:	To improve the health of children less than five years old by controlling diarrheal disease, increasing immunization, improving nutrition, and promoting breastfeeding.
Partners:	Chhlong Operational DistrictKratie Provincial Health Department
Project Location:	Chhlong Operational DistrictSnoul Operational District

Grant Funding Information:

USAID Funding:(US $)	$1,000,000	**PVO match:(US $)**	$439,816

Target Beneficiaries:

Type	Number
infants (0-11 months):	2,750
12-23 month old children:	3,250
24-59 month old children:	11,200
0-59 month old children:	17,200
Women 15-49:	27,000
Estimated Number of Births:	0

Beneficiary Residence:

Urban/Peri-Urban %	Rural %
(No Data)	100%

General Strategies Planned:

Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System
Advocacy on Health Policy
Strengthen Decentralized Health System

M&E Assessment Strategies:

KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment

Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation) KPC Survey
Health Facility Assessment
Participatory Rapid Appraisal
Participatory Learning in Action
Lot Quality Assurance Sampling
Community-based Monitoring Techniques
Participatory Evaluation Techniques (for mid-term or final evaluation)

Behavior Change & Communication (BCC) Strategies:

Mass Media
Interpersonal Communication
Peer Communication
Mass Media
Interpersonal Communication
Peer Communication
Mass Media
Interpersonal Communication

Peer Communication
Mass Media
Interpersonal Communication
Peer Communication
Mass Media
Interpersonal Communication
Peer Communication
Mass Media
Interpersonal Communication
Peer Communication
Mass Media
Interpersonal Communication
Peer Communication

Capacity Building Targets Planned:

PVO	Non-Govt Partners	Other Private Sector	Govt	Community
US HQ (General) Field Office HQ CS Project Team US HQ (General) Field Office HQ CS Project Team US HQ (General) Field Office HQ CS Project Team US HQ (General) Field Office HQ CS Project Team US HQ (General) Field Office HQ CS Project Team US HQ (General) Field Office HQ CS Project Team	(None Selected)	Traditional Healers Private Providers Traditional Healers Private Providers Traditional Healers Private Providers Traditional Healers Private Providers Traditional Healers Private Providers Traditional Healers Private Providers Traditional Healers Private Providers	Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff Dist. Health System Health Facility Staff	CHWs CHWs CHWs CHWs CHWs CHWs CHWs

Interventions:

Immunizations 25 **%**
** IMCI Integration
** CHW Training
** HF Training
*** Classic 6 Vaccines
*** Vitamin A
*** Cold Chain Strengthening
*** Mobilization
Nutrition 35 **%**
** IMCI Integration
** CHW Training
** HF Training
*** Comp. Feed. from 6 mos.
*** Hearth
Control of Diarrheal Diseases 25 **%**
** IMCI Integration
** CHW Training
** HF Training
*** Water/Sanitation
*** Hand Washing
*** ORS/Home Fluids
*** Feeding/Breastfeeding
*** Care Seeking
*** Case Mngmnt./Counseling
Breastfeeding 15 **%**
** IMCI Integration
** CHW Training
** HF Training
*** Promote Excl. BF to 6 Months
*** Intro. or promotion of LAM

Indicator	Numerator	Denominator	Estimated Percentage	Confidence line
Percentage of children age 0-23 months who are underweight (-2 SD from the median weight-for-age, according to the WHO/NCHS reference population)	0	0	0.0	0.0
Percentage of children age 0-23 months who were born at least 24 months after the previous surviving child	0	0	0.0	0.0
Percentage of children age 0-23 months whose births were attended by skilled health personnel	0	0	0.0	0.0
Percentage of mothers of children age 0-23 months who received at least two tetanus toxoid injections before the birth of their youngest child	194	300	64.7	0.0
Percentage of infants age 0-5 months who were exclusively breastfed in the last 24 hours	62	80	77.5	0.0
Percentage of infants age 6-9 months receiving breastmilk and complementary foods	49	52	94.2	0.0
Percentage of children age 12-23 months who are fully vaccinated (against the five vaccine-preventable diseases) before the first birthday	95	120	79.2	0.0
Percentage of children age 12-23 months who received a measles vaccine	98	120	81.7	0.0
Percentage of children age 0-23 months who slept under an insecticide-treated bednet the previous night (in malaria-risk areas only)	0	0	0.0	0.0
Percentage of mothers who know at least two signs of childhood illness that indicate the need for treatment	0	0	0.0	0.0
Percentage of sick children age 0-23 months who received increased fluids and continued feeding during an illness in the past two weeks	0	0	0.0	0.0

Percentage of mothers of children age 0-23 months who cite at least two known ways of reducing the risk of HIV infection	0	0	0.0	0.0
Percentage of mothers of children age 0-23 months who wash their hands with soap/ash before food preparation, before feeding children, after defecation, and after attending to a child who has defecated	0	0	0.0	0.0

Comments
PFD began CS before Rapid Catch indicators were in place so, although PFD does have data on many of these indicators, the numerators and denominators are not exactly the same and they have therefore been omitted.

TB Indicator			
Indicator	**Numerator**	**Denominator**	**Estimated Percentage**
% of new smear positive cases who were successfully treated	0	0	0.0

ANNEX G: Reference Documents used for Report

Additional Annex to Detailed Implementation Plan (DIP), response to USAID on DIP review, August 2000

CIDA, Health and Nutrition Initiatives Fund, PFD Model Family Nutrition Project (Krusa Kumru L'ol), Final Report April 2002 – 2004

Detailed Implementation Plan, Northeast Cambodia Child Survival Program, Valery Flax ea, 1999 Kratie Province, Cambodia, October 15th to 31st, 2001

KPC 2000+ Field Guide, Knowledge, Practices and Coverage Survey, Child Survival Technical Support Project and the CORE monitoring and Evaluation Working Group

LQAS 1 – 3, Diarrhea, Breastfeeding and Nutrition and EPI

Midterm Evaluation of the NCCSP, 2001, Sheryl Keller

Monthly Narrative Reports Northeast Cambodia Child Survival Program, Chhlong OD, 2000 - June 2004

Participatory Program Evaluation Manual, Child Survival Technical Support Project, USAID and CRS

Report on Consultancy and Training of Trainers to Initiate a Child Nutrition Intervention Based on the Positive Deviance/NERP Approach in Chhlong District

Village Health Volunteer reports, 2000 – 2004

Volunteer Motivation for VHV & CBD Supervisors, Workshop Manual

ANNEX H: Pictures

VILLAGE CHILDREN

THE MARKET IN SNUOL

A NUTRITIONAL EDUCATION REHABILITATION PROJECT (NERP) SESSION

LOCAL TRANSPORTATION

PREK PRASOP HEALTH CENTER

A PROUD VILLAGE MOTHER

WEIGHING CHILDREN IN THE VILLAGE

ETHNIC VIETNAMESE FLOATING VILLAGES

THE SURVEY TEAM IN CHHLONG

CHILDREN SHARING CORN

OLDER SIBLING TAKES CHILD TO NERP

MOTHER SHOWS GROWTH MONITORING IMMUNIZATION CARD