



Nepal Family Health Program Technical Brief #4

Innovations in Community-Based Integrated Management of Childhood Illnesses



Female Community Health Volunteer counting respiratory rate using a timer.

BACKGROUND

Nepal has made several important modifications to the original Integrated Management of Childhood Illnesses (IMCI) package developed by WHO. These include innovations in five important areas (see box, right). JSI has been leading these innovations since the early 1990s, from the inception of these ideas to advocacy, policy changes, implementation and assessment after innovations (see **NFHP Technical Brief #3: Overview of CB IMCI**).

The Nepal Family Health Program (NFHP) is designed to improve the delivery and use of family planning and maternal and child health (MCH) services, particularly at the community level.

Community-Based Pneumonia Treatment

Nepal's model for IMCI is gaining international recognition because of its very strong community component. The JSI child health team has been at the forefront of this initiative since 1992 with involvement in the initial policymaking and advocacy, as well as supporting the government and other partners implement community-based pneumonia treatment through the CB-IMCI program.

To initiate community-based pneumonia treatment, a short but intensive 5-to-7 day CB-IMCI training is given to Community Health Workers (CHWs). The CHWs include Village Health Workers (VHWs), who are mostly, but not always, male, Maternal and Child Health Workers (MCHWs) who are exclusively female, and Female Community Health Volunteers (FCHVs). After such training, CHWs can

determine if a child has pneumonia, using a specially designed timer to count the respiratory rate. Giving the responsibility for pneumonia treatment to CHWs—including community volunteers such as FCHVs—on such a large national scale, is unique to Nepal. To make this possible, JSI/NFHP was heavily involved in designing appropriate materials for training illiterate and semi-literate community health volunteers such as FCHVs to give them the skills to assess and treat children for pneumonia. These CB-IMCI training materials enabled FCHVs to play a critical role in reducing childhood morbidity and mortality in Nepal.

Caretakers in the community are clearly informed that CHWs are trained and capable of diagnosing and treating sick children with certain common childhood illnesses such as pneumonia and diarrhea, and can refer sick children with measles, malaria, and malnutrition. This awareness process begins with a Mothers' Group orientation in each community, which is integrated within the initial CB-IMCI training. Caretakers bring their sick children to CHWs, who assess them for danger signs, based on the WHO algorithm for IMCI. They treat pneumonia in children (2 months to 5 years) with Cotrimoxazole -Pediatric (Cotim-P) tablets, and refer cases with danger signs or severe pneumonia to the health facility (HF). Similarly, they manage diarrheal de-

Nepal's Innovations in IMCI

1. A strong community-level component in the IMCI program in which peripheral health workers and especially FCHVs are trained to recognize and treat pneumonia in children less than 5-years-old.
2. Assessment of sick neonates by community health workers and health facility workers with treatment of sick neonates, within certain limits, at the HF level.
3. Use of zinc in the treatment of diarrhea along with the newly formulated low-osmolar ORS.
4. Without compromising quality, the number of training days was reduced so that training costs are lower and health workers have fewer days away from their health facilities. Also, the development of a "transferred in" health worker training package helps train new health staff.
5. The CB-IMCI Program Management Package and Monitoring System emphasizes the health worker's supportive supervisory responsibilities. A monitoring system that allows compilation of CB-IMCI service data, FCHV-level up to central level was established.

hydration in children with the newly developed low-osmolar oral rehydration salts (ORS) and, more recently, also with zinc tablets. Severe cases are referred to the HF. Whether the CHWs treat the child themselves or refer the child to a HF, they follow up these children to document progress.

Community-based pneumonia treatment, as part of CB-IMCI, has resulted in an increase in the percentage of expected pneumonia cases treated. In CB-IMCI districts approximately 60% of expected pneumonia cases received treatment, as compared to only about 30% treated in non-CB-IMCI districts.

The knowledge and skills of FCHVs, who treat the majority of acute respiratory infection (ARI) cases through this community-based pneumonia treatment program, are very encouraging, as reflected by the NFHP monitoring data presented below for the period July 2005-June 2006. Since FCHVs see more ARI cases than HFs, this program has helped to bring services closer to the children's homes.

Figure 1. Monitoring Data - 2005/06

Indicators	Percentage
Percentage of FCHVs who know two respiratory cut off rates for ARI	98
Percentage of FCHVs who know four or more ARI danger signs	99
Percentage of FCHVs who know Cotrim-P doses for two age groups	98
Percentage of pneumonia cases given the correct dose of Cotrim-P for their age AND who also received a third-day follow-up visit from the FCHV	98

Community Management of Sick Neonates

Neonatal mortality in Nepal has decreased over the years, but not at the same pace as child and infant mortality. Recognizing this gap, the National Neonatal Health Strategy (NNHS) was developed by the Ministry of Health and Population (MOHP) and partners and endorsed in 2004. Before 2004, CB-IMCI dealt only with sick newborns from 1 week to 2 months at the HF level. Following endorsement of the NNHS, the IMCI protocol was revised to include assessment and management of sick neonates from the first day of life.

After the changes in 2004, the NFHP took a lead in modifying the training of FCHVs which enabled them to:

- Recognize all relevant danger signs in newborns less than 2 months old and make referral, if necessary, to HFs. These danger signs are included in the 'job aid' which the FCHVs use every time they assess a sick child under 2 months old.

- Counsel mothers of newborns on five essential newborn care messages. These messages are included in the FCHV CB-IMCI training booklet on child health, which FCHVs are encouraged to refer to, even after training.

NFHP was integral to modifying the training of HF staff in newer CB-IMCI districts, so that HF staff can treat sick newborns with Cotrim-P and injectable Gentamicin if further referral is not feasible.

The first district to implement these changes in neonatal service delivery was Sarlahi. The main results of a small assessment done in 2006 in Sarlahi are presented below:

Results on Addition of Newborn Health Services to CB-IMCI in Sarlahi District (9 month study period - 2005/06)

- 36% of expected newborns less than 2 months old sought care in 59 HFs in Sarlahi compared to 14% in other CB-IMCI districts which do not have the newborn care package.
- Of the 499 cases less than 2 months old who presented at HFs, 29% were classified as possible severe bacterial infection (PSBI), of which 87% were either treated at peripheral HFs or referred to a higher level.
- On average 1.7 newborn cases (n=64) were referred by the FCHVs interviewed during this 9 month period.
- Of the sick newborns brought to the FCHVs, 76% were brought within 3 days of onset of illness.
- Of the newborn cases that the FCHVs referred to the HF (n=39), caretakers took 54% to a MOHP HF, 44% to a private clinic, and 3% to the hospital. All caretakers reported seeking further care for their sick newborns based on the advice given by the FCHVs.

The Morang Innovative Neonatal Intervention (MINI) (see **NFHP Technical Brief #5: MINI**) goes further in the care for neonates at the community level. This program trains and supports FCHVs to assess sick newborns under 2 months old and to initiate treatment for possible severe bacterial infection (PSBI) with Cotrim-P immediately and to facilitate referral to the VHW/MCHW or auxiliary health worker for injectable Gentamicin.

In view of the positive results of the MINI Program, the NFHP is already garnering support from the Child Health Division (CHD) and other partners in CB-IMCI to have FCHVs initiate Cotrim-P treatment for sick newborns less than 2 months old and to make Gentamicin available up to sub-health posts (SHP), through an addition to the existing Essential Drug List for SHPs.

Diarrhea Treatment with Zinc

Following WHO/UNICEF recommendations for changes in diarrhea management practices,¹ the IMCI protocol in Nepal was changed to include use of zinc in the treatment of diarrhea along with the new low-osmolar formulation of ORS. Use of zinc, together with the new ORS, helps children get better faster, reduces the episodes and severity of diarrhea, improves intestinal absorption of fluids, and reduces future episodes of diarrhea. UNICEF and WHO also state that the treatment with zinc, in addition to ORS, can reduce child mortality.

Nepal is one of the first countries to introduce zinc through the public sector and is rapidly expanding its use. NFHP has been at the forefront of this initiative, supporting the Nepal government to introduce a revised protocol for treatment of diarrhea with zinc and in piloting its introduction through the public sector.

Zinc was first introduced in two districts, through the government public health system, with financial support from USAID and technical support from NFHP. In Parbat, zinc was introduced as part of the CB-IMCI training package when the district began implementing the CB-IMCI program. In Rautahat, however, an orientation on use of zinc in diarrhea was carried out in a cascade training (where senior staff, after receiving training themselves, are responsible for conducting training for lower levels) from district level supervisors to HF staff and to FCHVs at community level. Although zinc is now a part of CB-IMCI, it can also be introduced through an orientation, independent of the usual CB-IMCI package, in other 'older' CB-IMCI districts, as was done in Rautahat. The results (see box, right) of the implementation of the zinc program in Parbat (from the FCHV Survey 2006), are quite promising. This program will be implemented in more districts in the forth coming years.

Using a model similar to the one in Rautahat, zinc for the treatment of diarrhea, was implemented in 18 more CB-IMCI districts with financial and logistical support from UNICEF. Although financial support came from elsewhere, NFHP provided technical assistance during a planning and orientation meeting to district-level focal persons. The district focal person was then able to carry out a similar orientation on the use of zinc for diarrhea treatment in their respective districts.

Zinc Implementation in District of Parbat

- 98% of FCHVs interviewed (n=49) for the survey had zinc in stock (one FCHV without zinc had not attended the zinc training).
- All FCHVs who had received training on zinc (n=48) had the 'zinc job aid' with them at the time of the survey.
- 98% of FCHVs who had received training on zinc (n=47) did not have a stock out, reflecting good logistics support.
- Accurate recollections of the benefit of zinc taught during the training, were i) to cure diarrhea (93.8%), ii) to prevent diarrhea in the future (58.3%), iii) to keep the child healthy (60.4%) and iv) to make the baby strong (16.7%).
- FCHV knowledge on the duration and dose of zinc for the two age groups, 2-6 months and 6 months-5 years, was 100% accurate among the FCHVs (n=48) who had received training.
- 48% of FCHVs (n=23) who had been trained in the use of zinc, provided zinc to children with diarrhea in the month prior to the survey.

Other Training Innovations

The duration of CB-IMCI training has been modified several times over the years without compromising quality (it has been reduced from 11 to 7 days). JSI/NFHP advocated for these changes which were subsequently endorsed by the Child Health Division. The number of training days were reduced in order to lower costs and to reduce duration of absences of health workers from their posts. Analysis of data collected after training, revealed that there was no difference in the knowledge and skill among health workers who were trained for 11 as opposed to seven days.²

The CB-IMCI program in Nepal has also developed a shorter three-day orientation for health workers who are 'transferred in' to districts using the CB-IMCI program. This was a very useful innovation considering the high transfer rate of health staff between districts, with most districts requiring 'transferred-in' staff training for about 20 new health workers per district per year. Not only was the concept of a 'transferred in' staff training initiated by NFHP, these trainings have so far been solely carried out by NFHP. The CB-IMCI strategic review has recommended formalizing a training package for 'transferred in' staff training, with technical input from NFHP.

Management Package & Monitoring System

The CB-IMCI program in Nepal added a two-day Program Management Package which emphasizes health worker's supportive supervisory responsibilities. This management package is not a part of the original WHO-developed IMCI approach and NFHP was integral to developing the training package that the government endorsed. The management package emphasizes logistics support, having health workers check for and provide adequate program commodities during their supervisory visits to CHWs and especially FCHVs. This management package also teaches health workers skills needed to conduct review meetings, during which CHWs discuss achievements and challenges running the program and help develop creative solutions to address issues.

The Nepal CB-IMCI program has also developed a monitoring system which is quite unique and is not a part of the WHO training package in IMCI. JSI/NFHP helped the government design this reporting system used as a key information resource by the CHD. This monitoring system has made the compilation of CB-IMCI service data possible, from community health volunteers, HFs, district health offices, and the Child Health Division.

In addition, NFHP has a separate monitoring system that, among other things, collects and evaluates information on NFHP-supported programs including CB-IMCI. Conducting technical support visits (see **Technical Brief #18: Technical Support Visits**) within the program districts is an integral part of the monitoring system used by NFHP. Often, when NFHP staff in the district conduct TSVs, they also

support District Public Health Office counterparts to conduct joint supervisory visits. These TSVs have provided opportunities to ensure the quality of care provided in communities and health facilities and ensure adequate documentation of program activities and achievements at all levels, with particular focus on the community level.

REFERENCES

1. WHO/UNICEF Joint Statement 2004. Clinical Management of Acute Diarrhea
2. CB-IMCI Strategic Review 2006/07
3. FCHV Survey 2006

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