

CHAPTER III

An intervention program for the improvement of ARI Case Management of children under 5 years old by Female Community Health Volunteers at the Sub - Health Post level of Thakre Village in Dhading District of Nepal

3.1 INTRODUCTION

3.1.1 Rationale

More than 4 million children under 5 age years of age are dying each year in the world, one every 8 second, due to Acute Respiratory Infections (ARI), specifically from pneumonia (WHO, 1995). It is estimated that about 40,000 children under 5 years old die each year due to ARI in Nepal, which accounts for 35% of all mortality among children under 5. Pneumonia is the leading cause of death which accounts for more than 80% of mortality among under 5 year old children in Nepal (MOH, 1994).

The factors behind the high mortality from pneumonia are numerous. Among the frequently found factors are lack of knowledge and skill of the grass root level health workers in recognizing the ARI and managing it appropriately, insufficient supply of appropriate oral antibacterial for the management of severe ARI and poor

supervision and monitoring of the health workers. These factors are further complicated by ignorance, and late seeking of help and low attendance of the children to the health facilities. In addition, an appropriate antibacterial (Co-trimoxazole) can prevent 50% of death due to pneumonia (Pandey et al., 1988 & Khan et al., 1989). The cost of managing ARI is not very high, and averages only 20 US cents (WHO, 1995). The government of Nepal has already recognized that pneumonia should be treated with antibacterial and appropriate home care (MOH, 1994).

The insufficient training of health workers and inadequate supply of Co-trimoxazole to treat severe ARI, especially pneumonia to the peripheral level health workers in the grass root level health institutions of Nepal is the main cause of ARI mortality in children under 5, can be addressed effectively. In most of the peripheral level health institutions of Nepal, the grass root level health workers are not appropriately trained on the case management of ARI. Therefore, due to insufficient knowledge and skill, and limited drug supply, health workers often treat patients with under doses and in doing therefore, contribute to the development of drug resistant strains of disease, which might lead to serious health problems in the future (NPC/HMG, 1996).

A wide range of factors including drug availability, health care provider experience, economic influences, cultural factors, community belief system and the complex interactions among these factors influences the actual use of drugs. Among these factors, provider experience and drug supply can be improved with appropriate management intervention.

It is found that the adequacy of drug supply at the Sub-Health Post is also poor. A study on the availability of drug in the Sub-Health Post shows that the present supply is only sufficient for a quarter of a year (K.C., 1995). Standard case management on ARI can only be successful if a good system of drug supply is in place and if antibacterial is readily available at first level health facilities (Douglas, 1992). It has been recommended as early as 1988 that Case management of ARI including anti-microbial therapy should be based at the Health post level (Pandey et al., 1988). If the caretakers are well trained in the management of ARI, there will be sufficient supply of appropriate medicine and management of ARI will improve. This is possible if the grass root level health workers are well trained and provided with some basic skills on ARI management supported with availability of the first line drugs. Therefore that the morbidity as well as mortality due to ARI will decrease.

In accordance with the National Health Policy of HMG, Nepal, 1991, a total number of 3199 Sub-Health Posts have already been established. Sub-health posts (SHP) are located in each village development committee (VDC) of Nepal. One sub-health post covers about 4000 population. of which more than 15% are children under 5 years of age (DHS, 1995). Sub-Health Post are the closest health institutions for the community people, who provide preventive, promotive and curative health services. Each sub-health post has three paramedical staff. One is the Auxillary Health Worker who is recruited in this post after one year training in basic community medical services after passing higher secondary level. Maternal and Child Health Workers are recruited from the area where they live and undergo 90 days training in all aspects of maternal and child health care after passing grade 8. Village Health Worker is usually males and

is trained over 90 days in Primary Health Care after passing grade 8. VHW works within his or her own community or village (NPC/HMG, 1996).

All people can not access to Sub-health post services because of distance from the sub-health post, which might be from 10 to 30 km. due to diverse topography. The service providers in front line are Female Community Health Volunteers (FCHV) and Traditional Birth Attendants (TBA) (PPMSD, 1991) but therefore far they are not trained in management of ARI. Nepal is a developing country with limited human resources especially physicians. The treatment of ARI simply depends on having antibiotics available and using anti-bacterial correctly. Nearly all cases can be cured in the community by this simple measure alone. As WHO emphasizes, a minimally trained health worker or volunteer can learn to recognize the clearly defined signs of ARI and can give antibiotic treatment. Hence it is important that every sub-health post is supposed to have a trained Paramedical staff and volunteer who can easily identify pneumonia and can give treatment if the medicine is available.

As mentioned above in the rationale, the training of health workers working at the grass root level and adequate supply of primary antibacterial can be addressed relatively easily if proper management practices are observed in the government sector. Most of the cases of ARI can be prevented and treated at community level without the need for a doctor. Researches conducted in some district have showed that FCHV can correctly diagnose pneumonia and always chose correct treatment (MOH, 1997). Besides, mothers and community leaders considered the FCHV to be acceptable care providers. This research also recommends that the government strengthen the ARI

program by appropriate training of health workers and adequate supply of drugs at the grass root level to reduce the morbidity and mortality from ARI.

The Technical guide lines on the control of ARI (MOH, 1994) recommends that Co-trimoxazole should be given orally for the treatment of pneumonia. Logistic Management Division under the Ministry of Health, Departments of Health Services supplies Co-trimoxazole (Trimethoprim 80 mg + Sulphamethoxazole 400 mg) as an essential drugs to the peripheral Health institution (Sub-Health Post) of Nepal. Estimated population of children under 5 years of age is 29,48,057 out of the 2,00,28,483 population of Nepal (about 15% of total population) in 1994/95 (DHS, 1995).

A regular and adequate supply of essential antibacterial (Co-trimoxazole) can ensure proper implementation of the technical guidelines for case management of ARI (WHO, 1990). In Nepal, ARI prevails as a significant problem as some estimated 40,000 deaths occur due to severe ARI and the drug supply to treat the severe ARI is insufficient and distribution is imbalanced (Pandey, 1987). Therefore, it is essential that adequate supply and distribution of primary antibacterial and the distribution should be addressed in the basis of population and episodes of ARI. This will help ultimately to reduce the ARI mortality in a significant way.

A prospective pilot study on ARI, carried out in a rural community in the hill region of Nepal has established that it is technically feasible to reduce ARI mortality among children under 5 years of age by at least 50% through effective case management approach (using appropriate antibacterial, if and when necessary) within

3.1.2 Problem Statement:

It is estimated that there are an average of 5 episodes of acute respiratory infections per year among under 5 children in Nepal, which is similar to the global incidence. These episodes range from a minor cough problem to severe pneumonia (Dawson, P., 1996). According to the official data from the 1994/95 DHS report of Nepal, the national figures show that 60.06% of all the acute respiratory infection episodes were pneumonia which were severe enough to require antibacterial treatment.

The Co-trimoxazole supply to Sub-Health Post in 1995 was 7.5 million tablets. For the treatment of one episode of pneumonia 10 tablets of Co-trimoxazole are needed and the total requirement reaches more than 40 million (Refer appendices ix, x, xi, xii and xiii). Therefore the above supplied quantity is not adequate even for one episode of pneumonia let alone five, of which 60% are severe ARI. Therefore the current supply of drugs shows that there is a gross deficit of co-trimoxazole to treat pneumonia (LMD, 1995). In such case, there is a great chance of not getting proper treatment at the earliest stages. Better case management is possible only if there is adequate primary drug supply. Therefore manpower trained in the case management of ARI can solve this problem by providing adequate treatment at the earliest stages and acceptable counseling at the doorstep with locally available resources. The children mortality was found higher in a village of Pyuthan district because of inadequate drugs and other technical facilities for the treatment of children (Puri, 1996). If there are adequate drugs and other technical facilities in the closest health institution more cases can be targeted for treatment and management will be better.

Availability of essential drugs for Primary Health Care is an important target to achieve the health for all strategy set by Alma Ata Conference 1979. The primary antibacterial to treat severe ARI is Co-trimoxazole. This drug can be used by community based health workers of peripheral Health institutions like Female Community Health Volunteer/Trained Birth Attendance (FCHV/TBA) (MOH, 1994). However, Technical Guidelines for the control of Acute Respiratory infections published by Ministry of Health, Nepal should be followed for prescribing co-trimoxazole.

The availability of trained staff and facilities, which are accessible to the population, are necessary component of Primary Health programs but they alone are not sufficient to provide effective health care. Medicines must also be available at the health facility because leading causes of discomfort; disability and death in the developing countries are often preventable and treatable with medicines. The underlying factors like malnutrition, poor sanitation, inadequate housing and poor economics, effects on health cannot be ignored but at the same time we can not ignore the importance of essential and potentially life saving medicines (MDS, 1982).

The availability and effectiveness of drugs is a key factor in generating and maintaining public interest and participation in health related activities. Initially, the credibility of health workers depends on their ability to save a dying child with a course of appropriate drugs (MDS, 1982). Adequate and timely supply of these drugs to the health facility is helpful to gain the acceptance of the public. And in Nepal, the primary drug supplier from the government sector is Logistic Management Division, which is responsible for procuring, maintaining and transporting the drug supply to the grass

root level health institutions. This process involves all the steps from getting drug from the supplier to the Sub-Health post and from there ultimately to the individual patients.

After the sufficient supply of Co-trimoxazole to the Sub-Health Post is established, if the drug is not used as recommended in the ARI treatment protocol approved by WHO and HMG/MOH, Nepal, it will be sometime before the benefits are seen because the grass root level health workers are not adequately trained in the ARI case-management. Though the government has given priority for ARI as a major public health problem, the training of the peripheral level health workers is not sufficient in the case management of ARI. (MOH, 1994) For the proper use of Co-trimoxazole, the grass root level health workers should be trained properly.

3.1.3 Background of Study Area

In Nepal, acute respiratory infection is prominent in mountain and hill areas, which cover 83% of total land of the country. According to Annual Report of DHS, 1994/95, Nepal, one of the highest pneumonia incidence occurs in a district amongst the 19 in the central region of the country. In this district, among the reported cases of ARI, more than 76 % were pneumonia and severe pneumonia, which required treatment with co-trimoxazole. Dhading is a hilly district, which lies in the central development region of Nepal.

Thakre village is one of the important locations in the district for our intervention purpose. It has in total population of 6842 of which 1012 are less the 5

years old. This village is chosen because of the following reasons (Refer appendix II and III for the Map intervention village and District).

- 1) It falls on mid- hill region of Nepal, where majority of the population lives.
- 2) It is easily accessible with black topped road and therefore, training, monitoring and impact study will be easier.
- 3) The problem is high in hill region. Therefore It is considered an area with high prevalence of ARI
- 4) The Socio-economic factors are more or less comparable to other villages of the country therefore the study findings can be replicated in other areas.
- 5) The FCHV and VHW, during our meeting, were found to be very willing to undertake intervention to reduce severe ARI morbidity.

3.1.4 Relevancy:

HMG/Nepal supports the policy that health care should reach the grass root level. For this purpose, establishment of sub-health post in each village (called VDC) and provision of grass root level health workers like village Health Workers (VHW), Female Community Health Volunteers (FCHV) and traditional birth attendants (TBA) are made to reach the household level. However, training of this manpower and supply of appropriate drugs is always questioned and found to be deficit. Therefore, training on ARI case management is a relevant activity for the FCHV to recognize early signs of severe ARI and treat the child appropriately at first visit. Similarly provision of primary antibacterial at the house hold level is important. It will ultimately reduce the incidence of severe ARI morbidity and thereby mortality too. The intervention will aid the government's efforts.

3.2 PURPOSE STATEMENT:

The purpose of this pilot study will be to improve the level of ARI case management at the grass root level through FCHV who already exist in the health care system of Nepal. This will be done by training of FCHV on ARI case management according to the available ARI case management Guidelines. First line antibacterial for the treatment of severe ARI will also be provided to the FCHV for the earliest possible management of the children under 5 years with ARI to increase the availability of the drug at the door step. For this purpose, present drug supply system will also be strengthened at the selected sub-health post. After a year of the intervention, the impact of the intervention will be assessed.

3.3 THE OBJECTIVES OF THE STUDY ARE AS FOLLOWS.

3.3.1 General Objectives:

To improve the management of severe acute respiratory infection in children under 5 year old at the grass root level through Female Community Health Volunteers (FCHV), to reduce the mortality from ARI.

3.3.2 Specific Objectives:

1. To train the FCHV on ARI case management in Thakre village of Dhading District, Nepal according to the available ARI case management guidelines for providing services at the door step.

2. To strengthen the drug supply for ARI management at the Thakre Sub-Health Post in Dhading district Nepal.
3. To improve the case management services of FCHV through supervision and monitoring,
4. To assess the impact of given intervention.

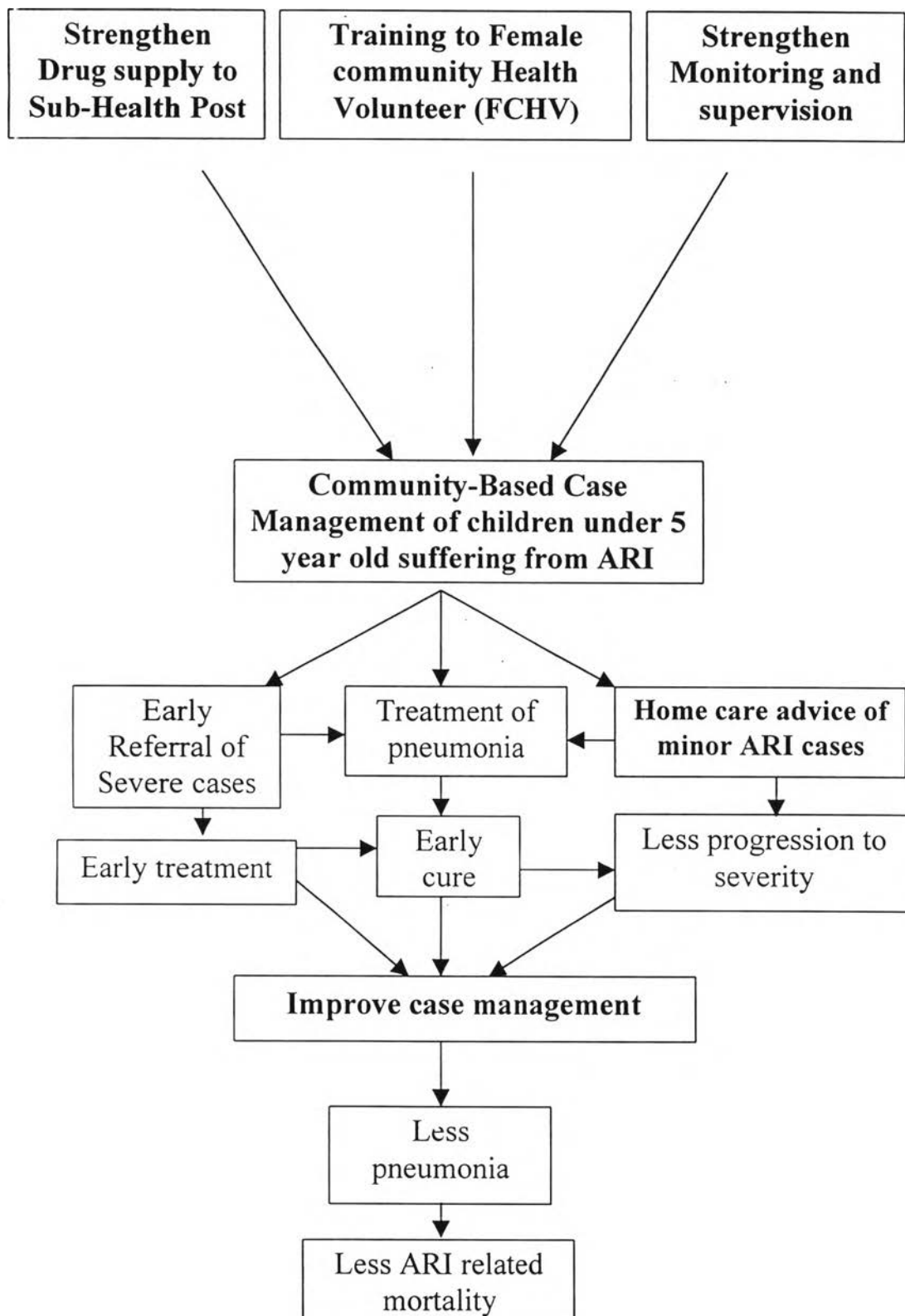
3.4 IMPLEMENTATION OF THE INTERVENTION PROGRAM

The figure 3.1 shows the steps that will be taken to achieve the objectives of the intervention. As this intervention intends to improve the case management of children 5 years old with Acute Respiratory infection at the mentioned community and therefore reduce ARI mortality in those children. To assess the need for the Female community Health Volunteer (FCHV) and the opinion of the community members, the data exercise was done in the intervention village. The FCHV of the concerned village were very interested to do the mentioned job of case management. The VDC members, the main stakeholder, were also positive and committed to give any support in the intervention. The problem analysis already shows that there is a gross deficit of ARI anti-bacterial in the concerned sub-health post. Therefore the drug supply during intervention period will be asked for from the VDC because government has allocated 0.5 million budget to the VDC for local development. From this budget the VDC should allocate 5 % for health prevention activities. Drug supply will be regular to the FCHV as well as Sub-Health post of the intervention village.

To strengthen the services; regular supervision and monitoring activities will be carried out by the health post. The immediate supervisor of the FCHV will be Village

Health Worker of the Sub-Health post. Prior to launching the case management activities, training of the FCHV in under 5 year old's ARI case management will be provided. VHW will be the observer as well as the participant in the whole three day training. In the First day, the in-charge and the MCHW of the concerned Health post will also participate to become familiar with the activities of the intervention. Although they are trained in ARI case management. For the Case management, the FCHV will be provided with ARI Anti-bacterial and recording and reporting forms through the Sub-Health post. She will also receive the Respiration timer (sound timer) which is very important during the classification of the ARI cases. She will treat the simple pneumonia cases and also advice the mothers for the home care of simple cough and cold cases and the severe cases will be referred by her to the health facility. During the regular mothers group meeting she will provide health education message about ARI. The assumption is that being a community member, the FCHV will be believed by the mothers and available be at any time. With some education of mothers, referral will increase resulting in more and more ARI cases by dealt with in the early stages. The treatment to simple ARI cases by her will be effective to reduce ARI morbidity and mortality in the community. The process of intervention is given in figure 3.1.

Figure 3.1 Process of implementation of the intervention



3.4.1 Project Implementation committee

A committee for the implementation of the project will be formed. Chairman of the concerned Village Development Committee will be the head of the (chairman) team. Other potential members of the committee will be the Village Health worker of that village (who is also the immediate supervisor of the case management services given by the FCHV) and the in-charge of the Sub-Health Post. I also will provide all the technical assistance to the committee as required by the committee during intervention time.

3.4.2 Training on ARI case management:

Training of the FCHV will be done through the District Health System with the help of National Health Training Center. As the FCHV are not trained on case management of ARI, the training will be conducted according to the recommended ARI Case Management Guidelines recognized from HMG/MOH. Such a guideline targeted to FCHV has been already existed and therefore does not need extensive workout.

FCHV have already received basic training about all primary Health care activities with a short introductory part of ARI. Therefore, after the proposed training they are expected to provide case management services of ARI to the under 5 year old children also. So far they are not providing ARI case management services because of poor knowledge on ARI and limited case management skills. Case management of ARI for under 5 year olds through a community Health worker is a effective measure

for the prevention and control of ARI because they are the community members closest to the family and the sick child besides this they are available at any time at the village.

3.4.2.1 Responsible Organization

As a researcher, I will brief the proposed study to the Director, National Health Training Center (NHTC) because the NHTC has the mandate to provide different kinds of training to the Health workers of the various health institutions including FCHV in the country as well as in the community. As I have planned that this intervention is going to be launched in Thakre Village of Dhading Districts which is under the Ministry of Health. Therefore the NHTC will be requested to organize the training to the FCHV of Thakre Village and also to arrange the VHW for supervision and monitoring purposes. After training, the FCHV of Thakre Village will be responsible for the ARI case management of children under 5 with ARI with the close supervision of Village Health Worker (VHW) of that village. Necessary drugs will be supplied to FCHV regularly by Thakre Sub-Health post through the responsible VHW.

3.4.2.2 Training Objectives

The main objective of the training is to provide knowledge and skills to FCHVs in standard case management of ARI, so that they can contribute to the reduction of pneumonia death at village level. The training will teach them how to do this job properly to all the children under 5 years old with a cough or fast breathing. This includes recognizing the children who have pneumonia. Refer appendix VIII for detailed learning objectives for the FCHV ARI training

3.4.2.3 Training Methodology

The training will be conducted at the sub-health post setting with appropriate methodology. The methodology is based on the adult learning process with in-service training in mind. The training is designed to be participatory with a lot of activities and discussion, not just the lecture method. In order to teach the required skills; role-plays, demonstrations, showing of video, and actual practice on real cases will be done. Most of the FCHV participants of the training may be illiterate therefore the manual is made pictorial with little text. It is important that the trainers take advantage of the pictures when teaching. If the picture and their meaning is well explained, when the trainees refer back to those pictures they should be reminded of the health messages taught to them. A training manual will be provided to each FCHV on the first day of training which is already prepared and in Nepali Language. Throughout the training, the following steps should be taken.

- Ask about the pictures and their meaning during the presentation of each session
- At the end of each session teaching the meaning of the pictures or series of pictures to each other in groups to demonstrate their knowledge and understanding. If any correction is needed, the trainer should make the necessary corrections immediately explaining the fact.

3.4.2.4 Training curriculum

The curriculum of the ARI case management training for FCHV is prepared from the trainers guide prepared from the Child Health Division. The curriculum has

3 sessions, all together which take 3 days to complete. The main objective of the training is to provide knowledge and skills to FCHV in standard case management of ARI. (Refer appendix XXI for detailed of curriculum).

3.4.2.5 Training process evaluation

Evaluation is an important part of any training. It helps to know the effect of training to the health workers in terms of their knowledge, attitude and skills. Training process evaluation is the observation and description of how training program is being conducted. This process suggests strengths, weaknesses and potential improvements in future training. It focuses on the training objectives, contents, methods, materials, facilities, duration etc. It also helps to know the effectiveness of the trainers in conducting training and application of the training in the work place. The evaluation of case management training of ARI to the FCHV will help to improve the future ARI case management training activities.

One of the techniques of training evaluation will be a short written questionnaire to the FCHV (Appendix.20) as a reaction evaluation. Training evaluation will also be done daily at the end of the session.

One of the evaluation process of the training is learning the outcome, this will be done by pre test and post test questionnaire. This process is necessary to measure whether the trainee's skills and knowledge improve as expected in providing case management services to under 5 year olds suffering from ARI. There fore pre-test and

post-test (appendix 19.) will be done before and after training with multiple and yes/ no questions.

3.4.2.6 Duration of the training

The duration of the training program for FCHV will be 3 days and on the first day orientation to the SHP staff (AHW, MCHW, and VHW) will be given. The VHW will be used also as a facilitator and observer for the whole training session. The date of the session will be fixed by discussing it with the person in-charge of the Sub-Health Post.

3.4.2.7 Venue of the training

This intervention will be carried out in Thakre village of Dhading District. So, the venue for training will be the Sub-Health Post of Thakre Village. In rural areas it may be hard for busy women to leave home for training. They may not be allowed to sleep away from their communities. Therefore it will be more convenient for FCHV to train in their own villages. This is the right place for conducting this training because it is in the intervention area, not far from the FCHV and also it will be easy to provide demonstrations to the trainees using under 5 year olds with ARI.

3.4.2.8 Trainees

The trainees involved in the training will be 9 FCHV of the said intervention village. A one-day's orientation to the para-medicals of Thakre Sub-Health Post will

also be provided. They will be the Auxillary Health workers (AHW), Maternal and Child Health worker (MCHW) and Village Health worker for co-operation in ARI case management and understanding of the intervention activities.

3.4.2.9 Trainers

The required trainers for the case management training will be available from the National Health Training Center and Regional Health Training Center to conduct training for the FCHV of Thakre village. The trainers have already been trained in case management of ARI. For this purpose, a request will be made to the director of National Health Training Center.

3.4.3 Strengthening The Drug Supply System

By analyzing the supply data of co-trimoxazole supplied from LMD, we already know that there is gross deficit of co-trimoxazole in the HP/SHP of Nepal.(see appendices 8-12) Thakre Sub-Health Post is also a grass root level Health institution under Government Health System of Nepal. The local village development committee will be asked to minimize the deficit quantity of co-trimoxazole. This is possible as the Village Development Committee has the resources available to them. It is imperative that VDC allocate at least 5% of their total budget to Health prevention and promotion activities. If the village committee members are well persuaded and mobilized, the budget could even be increased to a great extent for other prevention activities like EPI and improvement of housing conditions. Even if with the support of VDC, if there is

deficit of Co-Trimoxazole, a special request will be made to the government and adequate supply will be made available during intervention period.

As already mentioned above the government has a policy to allocate Rs 500 thousand to each village Development Committee each year. Thakre village is among these. Out of this amount they have to allocate 5% for health prevention activities. This 5% share comes to Rs. 25000.00 In this intervention they have to expend Rs. 2000.00 to purchase the ARI antibacterial and respiration timers (Appendix 13). The village can afford to spend this sum of money each year in this activity if the result are positive. The VDC with members I have discussed this with during data exercise, are interested to be involved in intervention.

3.4.4 Supply of Primary Anti-Bacterial to FCHV and Regular Supervision and Monitoring Activities

3.4.4.1 Supply of Primary anti-bacterial to FCHV:

The FCHV will also be supplied with primary antibacterial to treat pneumonia for one year during which regular monitoring of their activities in this regard will be carried out. FCHV will provide a regular ARI prevention education message in their regular mothers group meeting. In this regard the National Health Education, Information and Communication Center (NHEICC) will be requested to supply the IEC materials to the FCHV through the SHPs. The village Health Worker of that village will help her to carry out these activities. The FCHV will also keep all the records of

ARI morbidity and mortality among children under five with the help of VHW and appropriate forms will be given to them.

Sufficient supply of Pediatric Co-trimoxazole will be ensured through monthly ledger book maintenance which provide the information of drug expenses and stock in the possession of the FCHV. Respiration timer will be provide to each FCHV to measure the respiration rate of a child suffering ARI which will be very helpful in the diagnosis of severe and non severe ARI.

3.4.4.2 Regular supervision and monitoring Activities:

Supervision is an important part of improving the performance of health workers in any program. Supervision will help to FCHV the perform their case management job better by improving their knowledge and skills. FCHV will learn ARI case management skills from the training, then they will apply those skills in actual problem situations. Periodic supervision of ARI case management services provided by the FCHV will be done by the VHW and SHPI who will help the FCHV to perform case management services more effectively. They will also help the FCHV in managing some special cases; if some relevant issues are raised in a particular case. The checklist for monitoring and supervision of FCHV activities is given in appendix 8.

The monitoring of case management of ARI will be carried out as planned. The monitoring will help to determine the performance of FCHV in ARI case management. The main purpose of monitoring in the case management services is to look at the service achievements (performance of FCHV and drug supply) in the intervention

village. For this purpose monitoring of ARI case management services will be done through routinely collected data during the case management intervention. Immediate supervisors (VHW) will do monitoring, Sub-Health Post in-charge and the researcher him-self. If the FCHV faces any difficulty in case management it will be solved by appropriate method i. e, on the spot training in case management, supply of cotrimoxazole, filling up the necessary format etc. The service achievements (performance of the FCHV and drug supply) will be seen through the ARI referral book, treatment book, treatment card of FCHV, drug supply etc. The referral can also be seen from the SHP OPD register. This can be compared with the referral and previous record of the SHPs. SHPs in-charge of the Tharke SHP will be responsible for monitoring the case management services given by FCHV in the village.

3.4.5 Assessment of the Intervention:

The services provided by FCHV will be assessed through the semi-structured interview and FGD with the FCHV, and FGD with mothers of Thakre village who received the service from the FCHV for their children with ARI and document review. The evaluation will ask questions such as advice given by the FCHV, knowledge of home care practice to mothers, identification of severe and non severe ARI by mothers and FCHV, correctness of drug administration by mothers to their child, number of cases referred by FCHV etc. The component of the survey will be the following.

3.4.5.1 Socio-Demographic profile: - Under this component the following

will be considered;

- Place of residence,

- Age of FCHV,
- Number of children under 5 year old under the FCHV,
- Education of the FCHV,
- Area covered by FCHV services

3.4.5.2 Disease profile encountered in the last Year: - Under this component the following will be seen;

- Record keeping by FCHV
- HP/SHP record on referred cases among children 5 year old ARI child. Number of ARI/Pneumonia deaths will be collected and analyzed.

3.4.5.3 Quality of Health Services rendered by the FCHV regarding the ARI management and referral: - Under this component;

- Knowledge of FCHV in ARI
- Ability to identify different stages of ARI
- Number of refer cases during intervention period
- number of treated cases.
- Along with this, expenditure record of ARI antibacterial from the FCHV will be collected and analyzed.

3.4.5.4. Drug availability for ARI case management: -This component will case;

- Whether the drug supply for co-trimoxazole was sufficient during intervention period.
- Dispatched/ Received quantity of Co-trimoxazole to FCHV,
- Stock of cotrimoxazole with the FCHV, time of supply of the antibacterial according to the schedule,
- Problem and constraint on the drug supply will be determined and analyzed.

3.5 RESEARCH APPROACH

The approach for the research will be qualitative with a component of focused group discussion, documents review and semi-structured interviews. All the data collection techniques have some advantages and disadvantages. They can complement each other. Therefore a skillful combination of different techniques can maximize the quality of data collected and reduce the chances of bias (Varkevisser et al.). Therefore more than one method will be used.

3.5.1 Documents Review

Document review will be used as one of the techniques of data collection. It helps to look at the service achievements of the ARI case management service conducted in the Thakre village by the FCHV. The VHW register will be the main documents for the study. FCHV record on ARI case management from the sub-health post will be collected. Other related information will also be collected. In this regard registration of every case of ARI in the village their outcome and expenditure record of

antibacterial for under 5 year old ARI treatment will be collected to determine the success or failure of intervention. The check list for the document review is given in appendix 14.

3.5.2 Semi - Structured Interview

This type of interview is suitable for use with illiterate participants and also have higher response rates than written questionnaire. The target groups of my study are not literate therefore, it will help me to find out the facts in an informal conversation. There may be some influences on the interviewee due to the presence of interviewer, this can be reduced by familiarity and a friendly approach. It can be used in both qualitative and quantitative techniques. In this type of interview the interviewer has worked out a set of question in advance but is free to modify the order based upon pre-test and also on the interviewer's perception of what seems most appropriate with a particular interviewee. This type of interview is a flexible and adaptable way of findings thing out (Colin, 1997). This interview will be taken with FCHV of Thakre village. A structured questionnaire will help to obtain information on the treatment pattern used by the FCHV as well as caseload, referral rates and outcomes. It can be compared with their register and also with the register in the sub-Health post (for referral). Besides this it will identify problems/ constraints in providing services to children. The questionnaire for the interview is given in Appendix 16.

The interview will be conducted in Nepali language. The interviewers will be the Auxillary Health Worker (AHW) and Maternal and child health Worker (MCHW) of the SHP in the intervention village. The researcher will train them by organizing 2

days of orientation in Thakre SHP. Interviewers will be trained through class room orientation as well as through demonstration of data collection technique in the field.

3.5.3 Focus Group Discussion

Focus group discussion (FGD) is a method of group interviewing a homogenous group of people on a particular topic or an issue. It is basically a qualitative method of research and supports many individual findings. I will use FGD with the mothers as well as with the FCHV at the end of the intervention to find out their perception on the appropriateness of the service provided by the FCHV and the provision of drugs. Another FGD might be conducted with the VDC members, who are the stakeholders in that they provide the support to bridge the gap in the drug deficit. The guideline for the FGD is given in Appendix 15 and 17.

The focus group discussion will be conducted with the help of moderator, who will be the in-charge of the sub-health post. The discussion will be started with introduction of participants, objectives of the discussion and getting permission to use the tape record. The VHW will be the note taker. Prior going to the FGD the moderator and note taker will be trained for conducting this type of discussion.

3.6 BUDGET FOR THE STUDY:

A Budget will be needed for carrying out the Case Management Training of FCHVs and evaluation of the impact of the given intervention. The impact assessment will be done with the FCHV and the community people of the Thakre Village. There is

no extra provision of budget for the supervision and monitoring of ARI case management services because this will be done by the VHW during his regular work of the VDC. The detailed description of the budget is given as follows using the tentative figures and prepared based on present payment system in Nepal.

Table 3.1 Budget for the proposed study

Description	In Dollars
Training allowance	
a) Observer allowance 2 persons× 3 days ×\$6	36
b) Participants allowance 10 person× 3 days× \$4	120
c) Trainers allowance 3 person × 3 days× \$9	81
d) Researcher allowance 1 person × 5 days× \$9	45
e) Travel allowance 3 person 2 ways estimated	40
f) Assistant allowance 2 person 3 days \$4	24
Sub -Total	346
<u>Materials and supplies</u>	
a) Stationary estimated	100
b) Questionnaires orientating	20
Sub-Total	120
<u>Field expenses</u>	
a) Researcher 1 person 30 days×\$9	270
b) Interviewer 2 person × 15 days× \$7	210
Sub total	480
Report writing and printing	200
Miscellaneous 10%	115
Grand Total USD = 1291	

3.7 ACTIVITIES PLAN WITH TIME TABLE

Available literature will be reviewed regarding the issues mentioned above. The logistic Management Division of Ministry of Health will be contacted to get the necessary information on drug supply. A Community survey of the area covered by the selected sub-Health Post will be done after the intervention. Other related agencies will also be contacted to get more information on the issue is given below. The time table showing the activities for implementing intervention.

ACTIVITIES WITH TIME TABLES

ACTIVITIES	1998		1999	2000				
	Nov.	Dec.	Jan. - December	Jan.	February	March	April	May
Preparation Phase								
A. Meeting with NHTC , CHD and LMD	↔							
B. Request to donor for funds	↔							
C. Project implementation committee Formation	↔	↔						
D. Meeting with DHO Dhading		↔						
E. Meeting with Sub-Health post Staff of Dharke		↔						
Operating Phase								
A. Conducting ARI case management Training.		↔						
B. Strengthening ARI Drug supply		↔						
C. Providing Case management services in the doorstep through FCHV.			↔↔↔↔↔↔↔↔					
D. Monitoring and supervision activities			↔↔↔↔↔↔↔↔					

ACTIVITIES	1998		1999	2000				
	Nov.	Dec.	Jan. - December	Jan.	February	March	April.	May
Evaluation Phase								
A. Recruitment of interviewer			↔					
B. Orientation of Interviewer			↔					
C. Interview with the subject				↔				
D. Focus group discussion				↔				
E. Documents Review				↔				
F. Analysis and interpretation of data					↔	↔		
G. Writing Report							↔	
H. Presentation of the findings								↔

3.8 PLAN FOR DATA ANALYSIS

The information obtained from the given intervention in the form of statements, opinions, descriptions and data containing tables will be analyzed. For this, identification and categorization will be done for the data concerned with child population, morbidity and mortality due to ARI and the supply of Co -trimoxazole to the sub-health post and FCHV. After the sorting of related material, I will match the data with the defectives mentioned above. If discrepancies are observed in the required quantity and supply of co-trimoxazole, appropriate counter-measures will be taken. After the analysis of research findings, a meeting with higher authorities will be conducted to inform them of the situation and advocate for further expansion of necessary activities. This will involve; training of FCHV in ARI case management and improving the supply of antibacterial.

3.9 POTENTIAL PROBLEMS AND POSSIBLE MEANS FOR RESOLUTION:

This active research for improving ARI case management among the children under five in Thakre VDC in Dhading District of Nepal through FCHV might have the following potential problems

1. There may be unwillingness among health workers to provide necessary information. This will be solved by explaining to the relevant person the issues and potential implications. A lack of complete information may have a friendly and positive approach should be most helpful.

2. Non-generalizability of the data obtained from the questionnaires may be an issue but considering the global nature of the ARI, and general uniformity, the issue can be addressed appropriately.
3. Regional variation in incidence of ARI and drug supply. There may be variation in the occurrence of ARI episodes in different regions and the drug supply may differ from region to region but this will be solved by some administrative and financial decision making in the concerned division.
4. Socio-cultural factors in receiving the health services (Health seeking behavior). There are many socio-cultural factors which affect how health services are used. These might be addressed by various Health Divisions. In this regard proper supply of antibacterial might be done by LMD. Similarly, the Village Health Worker and front line health workers might be trained in ARI case management by NHTC with support for the activities of the FCHV provided by HIMDD/DHO.
5. Subjective bias or error in maintaining records. This may arise during reporting/recording but can be solved by good training, friendly approach, and regular supervision.

3.10 ETHICAL CONSIDERATIONS:

The ethical considerations related to this study might be following:

- a) The FCHV under the selected sub-health post will be supplied with antibacterial but not all the FCHVs of the country will be supplied with

necessary drugs. This will pose a potential ethical issue in terms of the supply and perscription of antibacterial.

- b) The area covered by the sub-health post might be questioned in terms of the number of children and services provided there.

3.11 MAN POWER REQUIREMENT:

No extra manpower will be needed to carry out the described intervention as all the SHP staff will be in place. The NHTC/DHO will assist with training. Supervision, monitoring and research will be assisted by the researcher. However, to collect data independently two interviewers will be hired for a period of 15 days.

3.12 TECHNICAL EQUIPMENT REQUIREMENT:

For this intervention no any expensive equipment is required. Nine Respiration timers are required these cost about 6 dollar/per unit and will be managed :by the requesting local authority. The local authority should supply these after these importance in the diagnosis and treatment of severe and non severe ARI cases is explained. This will be distributed to the FCHV after ARI case management training and before starting their activities. Other equipment (over head projector, video deck, screen etc) necessary for training will be requested from the NHTC/RTC/DHO.

3.13 SUSTAINABILITY

Actually sustainability of the services will be determined on the results of the impact evaluation which will be done in December 1999 and January 2000. If the evaluation result are positive, it will be easy to sustain the program in the Thakre village because there will have been involvement of the VDC during intervention time. According to the government policy of Nepal each year the sum of Rs. 500 thousands is allocated to the local development VDC. From this amount, the VDC must allocate 5% to Health Prevention Activities in the village. When the VDC members and the community see the positive impact of the intervention it should be easy to sustain this program.

Case Management service skills and knowledge of participating FCHVs will be refreshed by providing refresher training which will be given by Sub-Health Post each year. Although in the refresher training of the FCHV there is a small section on ARI this is not sufficient. A recommendation will be made to the government to add more of the ARI Case management content to the FCHV manual.

REFERENCES

- Allen, K., lamichhane, K., Dawson, P., (1997). ARI trainers guide for community level health workers. John snow Inc. In collaboration with CDD/ARI section. Child Health Division, Department of Health Services, Ministry of Health, Nepal.
- Child Health Division (1997). Assessment of the ARI strengthening Program. CDD/ARI section. Child Health division. Department of Health Services, Ministry of Health, Nepal. In Collaboration with USAID/WHO/UNICEF.
- Colin Robson (1997). A Resource for social scientist and practitioners-researchers. Real world Research. p. 231.
- Department of Health Services (DHS)(1995). Annual Report of Department of Health Services, Ministry of Health, Nepal. pp. 37-42, 142,151,178.
- Dawsan, P., Jean Anne Ware. (1996). ARI case studies from Chitwan and Morang Districts. Child Health Division/ JSI/Peace crops/Nepal. p. 1.
- Giri, S. (1995). Study of Child Health Care practices with relation to child mortality in Pyuthan Districts, Nepal. A Thesis submitted to Tribhuwan University, Nepal p. 57.
- K.C. Kishor (1995). Assessment of 200 sub-Health Post established during 1991/1992 for HMG/MOH. Institute of Community Health, Kathmandu, Nepal. p 30.

National Planning Commission/His Majesty's Government.(NPC/HMG)(1996).

Children and women of Nepal. A Situational Analysis. pp. 36-39, 61-71.

Managing Drug Supply (MDS)(1982). The Dimension of Drug Supply. The selection, procurement, distribution and use of pharmaceuticals in Primary Health Care.

Management of Sciences for Health. Boston, Massachusetts, U.S.A. pp. 9-14.

Ministry of Health (MOH)(1994). Technical guidelines on the control of Acute respiratory infections. Acute respiratory infections control program, Child Health Division, Nepal. pp. 1-8.

Ministry of Health (MOH)(1994). A manual for the control of Acute Respiratory Infections for physician and seniors health workers. Department of Health Services, CDD/ARI section Nepal/USAID/WHO/UNICEF.

Policy, Planning, Monitoring and Supervision Division (PPMSD)(1991). National Health Policy. Ministry of Health, His Majesty Government, Kathmandu, Nepal. pp. 1-8.

Pandey, M.R. (1987). A social response to Respiratoy infections Nepal Initiative. Future 20. Mrigendre Medical trust/UNICEF. pp. 18-21.

Pandey, M.R. (1996). Smoke. Increasing risk of Acute Respiratory infection. ARI News, issue 4. AHRTAG 85 London. p. 6.

Pandey, M.R., Sharma, P.R., Shakya, G.M. (1988). ARI in Nepal. Nepas J. Mrigendre Medical trust 7, pp.1-8.

Vaskevisser and Indra pathminathan Alee. Designing and conducting Health system research project: vol. 2 p. 247.

World Health Organization (WHO)(1995). Acute Respiratory Infections. The World Health Report. South-East Asia Region. p.6

World Health Organization (WHO)(1997). Managing drug supply. Second edition, revised and expanded. Management Sciences for Health. Collaboration with WHO action program of essentials drugs. Kumarian Press. pp. 1-39.