CHAPTER II

ESSAY

Increasing the immunization coverage: An intervention through the mobilization of Maternal and Child Health Workers in Nepal

2.1 INTRODUCTION:

Measles is an acute highly infectious disease of childhood, transmitted person - to - person through the respiratory route. It is caused by specific group of virus, known as Myxovirus. It is clinically characterized by fever and other symptoms of the upper respiratory tract, i.e,. running nose, redness of eye and cough followed by typical rashes.

Approximately three million children in developing countries die from six infectious diseases annually. These diseases are measles, diphtheria, tetanus, poliomyelitis, pertussis, and tuberculosis Guarin, 1992). This diseases can be prevented by appropriate vaccination. Several studies on immunization coverage have been conducted (WHO / UNICEF Review Team, 1982, Lamdun; 1973; Nadda and Sompong 1983). Their findings indicated that, factors associated with

the clients acceptance of immunization include: parental age, education, income, beliefs, attitudes, and availability of transportation, and factors associated with the health care providers ability to provide immunization including lack of adequate storage of vaccines.

The main issue is how immunization coverage can be increased to prevent these child killer diseases. The reasons for low coverage of immunization in the developing countries are: incorrect screening by the health workers due to lack of understanding of national vaccination schedule, difficulties in calculating the interval between recorded date of birth and current date, and lack of motivation. Low coverage also results from unwillingness of the health workers to administer more than one antigen at a time and health workers fear of wasting vaccine resulting in refusal to open a multidose vial for one child. Absence of staff, vaccine or transport resulting in the cancellation of a scheduled immunization session also contribute to low coverage (Hirschron, 1990).

In April 1994 an informal consultation on strategies to accelerate global measles control convened by WHO in Washington DC (WHO, 1994), agreed to three main approaches to measles control: raising routine coverage, identification and immunizing high risk area and groups and using mass campaign.

Main approach to raising routine coverage is PHC approach to the community. Primary Health Care is well-suited to solving the problems of availability, accessibility and appropriateness in developing countries. A health care system that is community based can combine education and community participation with the provision of essential health services. The success of community based health services ultimately rests on the approval and active participation of the local community and community health workers (Foster, 1989).

Identification and immunization of high risk area groups can be applied to one specific area or selected groups like new refugees and in urban slums have identified as at increased risk for high measles mortality. Thus, such slums area and new refugees are a priority area for targeted immunization(Cutts, et al., 1991).

An annual single-day immunization campaign are effective approach in achieving and maintaining measles control (Clements, 1994). Feasibility of this program is questionable regarding sustainability, however. Because this program required huge manpower, resources and mobilization of all the facilities available in the countries. Developing countries like Nepal can't afford to arrange this type of program without support of other countries or International agencies.

Therefore, conclusion is that, the immunization coverage can be improved through the mobilization of community health workers, who belong to their own community. But community health workers have too much work load in PHC approach. So, work distribution and job description is necessary among the community health workers. Effective monitoring and supervision of the programs by the district health management team is a another cornerstone of the PHC approach.

In this study I have emphasized " Raising routine coverage." Because existing manpower and district health management system is a backbone of this program and such facilities are available in Nepal. So, with effective training to maternal and child health workers and strengthening of district management system will be helpful to increase measles immunization coverage in Nepal.

2.2 MEASLES

2.2.1 Agent:

Measles is a viral infection that causes more child deaths than all the other target diseases combined. According to the data available (WHO & UNICEF, 1995), more than two million children died from measles, diarrhea, pneumonia and malnutrition that measles precipitates. The virus is highly contagious and easily

spread from person to person. without immunization, virtually all children will get measles.

The power of this disease to cause death results in large part from its devastating effect on the nutritional and immune status of the victims. The fever can quickly deplete the body's reserves of both protein and vitamin A, even in children who are well nourished. Measles rarely kills alone. It is almost always aided by at least one other disease, most commonly diarrhea or pneumonia.

Measles is never a trivial disease. Among impoverished children, a high level of malnutrition, crowded living condition and very young age at infection combine to make it particularly devastating. Fatality rates from measles are many times higher in developing reasons, than industrialized countries. In the United States, fewer than 0.001 percent of measles infections result in death (Galway, 1992). In developing countries, according to a recent study, it is nearly 3 percent, with observed rate of nearly 4 percent in Bangladesh, 6 percent in Zaire and more than 15 percent in Guinae-Bissau (EPI, July 1996).

2.2.2 Host Factors

It is striking that the same childhood disease can be so innocuous in one context and so devastating in another. Their tremendous impact on child survival

in developing countries stems from four principal factors: low levels of immunization, young age at infection, the presence of malnutrition and other complicating diseases, and lack of available health care.

Age at infection can have a strong influence on the severity of the disease. Childhood diseases tend to strike at much earlier age in developing countries than in industrialized countries. In poor, densely populated areas, as many as half of children will have suffered measles by their first birthday; virtually all have been infected by age of three (Aaby et al., 1993). Contributing factors include crowded living conditions that give children early exposure to the outside world. A child who lives in one room with a number of older siblings or who rides on his mothers back to a crowded market place is likely to be expose to most common childhood diseases at a very early age. In developed countries, by contrast, most children first encounter this intensity of exposure when they enter school at age 4 or 5. The pattern of declining fatality rates from measles with increasing age shows that an infant with measles is eight times more likely to die than a five year-old with same infection (Foster, 1994).

The combination of malnutrition and concurrent illness is a recurring theme in the major determinant of child mortality. The case of measles provides a classic example of the interplay between these factors. Severely malnourished children

have been shown to suffer twice the measles mortality of children on adequate diets. Under famine conditions, when the prevalence of malnutrition soars, as many as half of children who contact measles die from it. Most measles death follow complicating infections, usually diarrhea and pneumonia. A Bangladesh study found measles followed by prolonged diarrhea to be four times more likely to be fatal than measles alone. The synergistic effect of interaction of two diseases thus far outweighs the total of their individual effects (Sommer and Hussaini, 1993).

Lack of health care is another contributor to high fatality rates from childhood diseases. Some of these diseases can be cured medically. Pertussis and diphtheria respond to antibiotics; tuberculosis can be halted by a complex drug regimen and it is possible to save some children from the grip of tetanus by the use of muscle relaxants and antitoxins. But few in the developing world have access to such advanced medical services, and for other diseases, such as measles, or polio, there are no known cure. Immunization is the only alternative. In any case, the continuing lack of available health care is one of the strongest arguments for immunization.

2.2.3 Immunization coverage

The World Health Organization's Expanded Program on Immunization (EPI) faces significant challenges. Because the targeted diseases strike in infancy in developing regions, effective immunization must occur before a child's first birthday. Vaccination must not be given too early, however, because they can be neutralized by the passive immunity inherited from the mother. This leaves a relatively brief period of time during which it is crucial to reach the child.

Public awareness may be the most important factor in the success or failure of these programs. Adequate supplies, facilities and personnel mean little if local communities are not informed of the availability of services or motivated to use them. Drop-out often plagues immunization efforts, as when parents who bring in their children for the first inoculation of DPT or oral Polio vaccine fail to return for the second or third dose.

Vigorous communication activities that get the message across to the critical audience can be of enormous benefit. Effective communication systems serve three purposes: they educate people about the importance of immunization to children's health, overcome misconceptions that discourage its widespread use, and explain where and when immunization services are available (Aknoff, 1993).

2.2.4 Epidemiological classes of People

The characteristics of measles transmission at the population level are the same in both industrial and developing countries. Infants born to mothers who are immune to measles are protected from infection for several months by transplacental maternal antibodies; the infectivity of measles is high; an individual is both infected and infectious at roughly the same time; case-fatality rates are higher in infancy than in childhood; and recovery from measles results in subsequent long-lasting immunity.

There are four epidemiological classes of people (Foster, 1989):

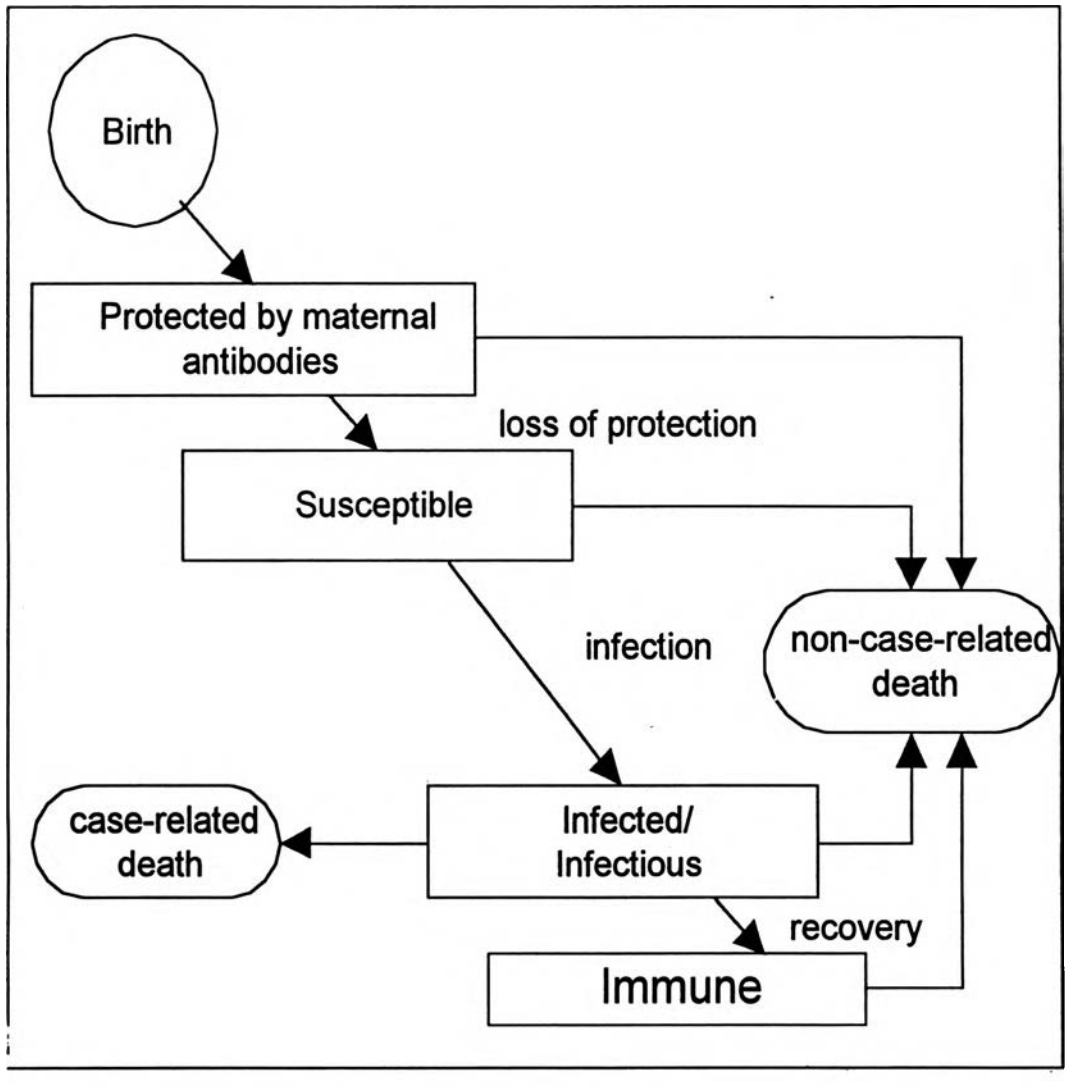
(a) Those protected by maternally derived antibodies.

(b) Those susceptible to infection.

(c) those who are infected or infectious and

(d) Those who have recovered from measles and are therefore immune.

Fig 2.1 **Stages in the measles infection cycle of an individual from birth through sequence of epidemiological classes to death**



Source: Foster, 1989

Initially, a population consists of infants protected by maternal antibodies and of susceptible individuals who mix randomly. A measles outbreak begins when infected and infectious individuals have contact with a sufficient density of

susceptible. Each time a susceptible individual is encountered, the latter may be infected with a probability proportional to the intensity of exposure. At the earliest stage of outbreak, most encounters by infectious individuals are with susceptible individuals; therefore, measles spread quickly. When the illness runs its course in the infected individual, he or she then immune.

As measles transmission progress through the population, the number of susceptible decreases where as the number of immune individuals increases; therefore, it becomes less likely that an infected individual will encounter susceptible individuals and create new infections. If the number of immune individuals is high enough, measles will die out, even though there are still some susceptible individuals in the population. If, however, susceptible enter the population by birth or by migration at a sufficiently high rate, measles may not die-out but may instead become endemic.

Immunization programs thus exert their effect at both the individual and the population level. Vaccination changes the immune status of the individual and, within the population, it decreases the probability that susceptible individual will be exposed to measles.

2.3 Analytical framework

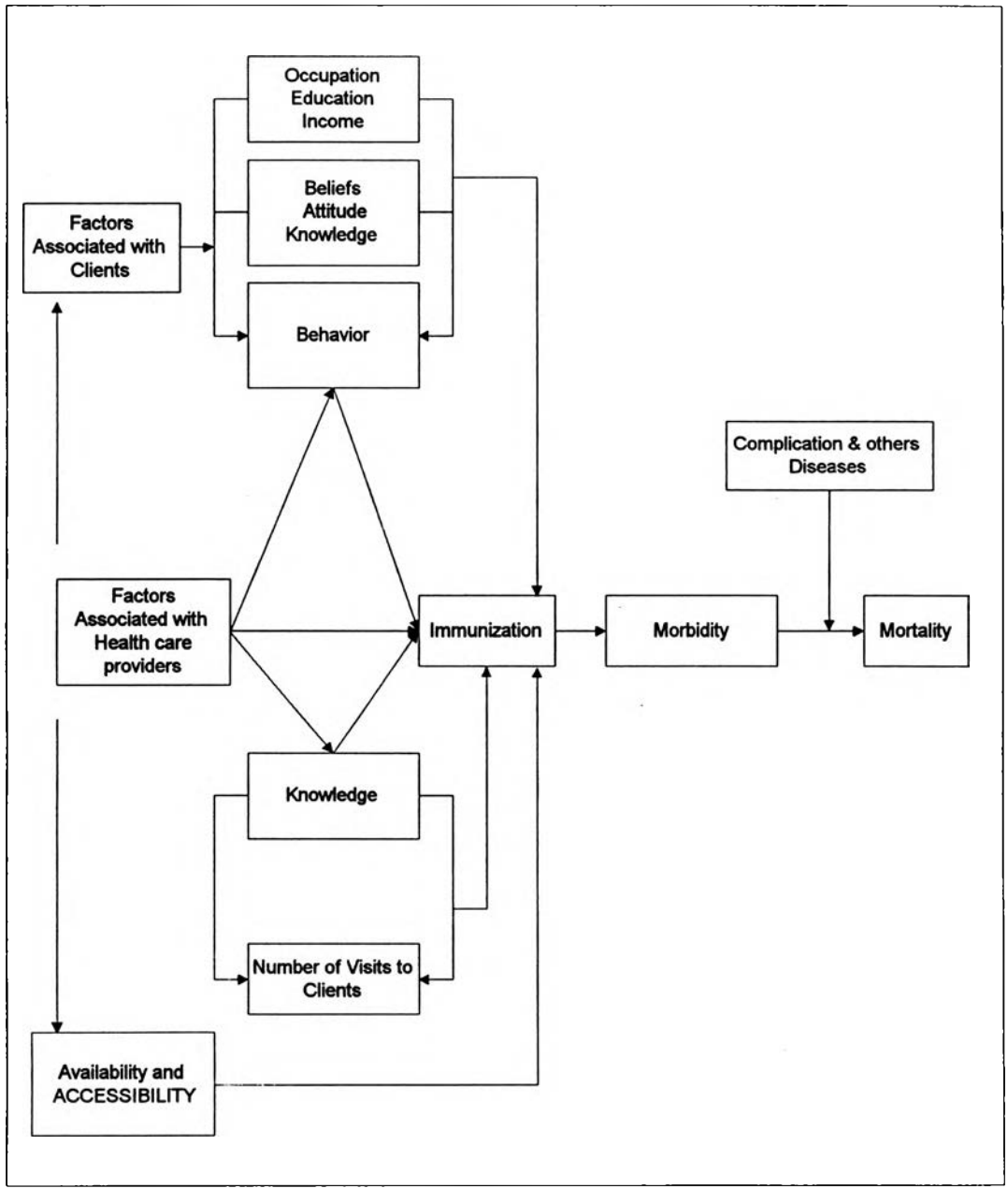
This model has partially adapted from the Mosley and Chain, 1984 (Fig 2.2) and identified a 3 set of variables which directly influence the immunization. These are factors associated with clients, factors associated with health care providers and availability of the services.

All these factors consists of physical, social, and economic environments at the community or village level. These conditions are reflected by the availability of infrastructure facilities. The utilization of these facilities would vary between house-holds within the same village or community. For this reason, the primary effect of these factors on infants mortality will be transmitted through changes in the client level factors.

2.3.1 Factors Associated with clients

In this Model (Fig 2.2), factors associated with clients are: maternal beliefs, attitude, income, occupation, education and behavior of the mothers. Mothers beliefs and attitude and behavior play a major role to immunize the infants and children. Several studies on immunization coverage has been conducted (Guerin, 1983; WHO/UNICEF Review team, 1982; Lamduan, 1973; Nadda and Sompong,1983).Their findings indicated that, factors associated with clients

Fig 2.2 Conceptual frame work of the relationship between associated factors and immunization



Source: Model adapted from the Mosley and Chain: 1984

directly affects the immunization coverage including factors associated with health care providers and availability and accessibility of services. The incidence of measles is higher in the low socio-economic groups and less educated population.

2.3.2 Factors Associated with Health Care Providers

Factors associated with health care providers are 1) number of contacts or visits with target population 2) work commitment 3) knowledge attitude and behavior regarding each type of immunization.

Although factors associated with health care providers affect acceptance of immunization directly, they can also affect immunization indirectly through their effects upon factors associated with clients, and availability and accessibility of services. For example, health care providers may be able to alter negative maternal beliefs about immunization and successfully motivate mothers to have their children immunized, in addition, providers could also increase accessibility to service by increasing contacts with the target population and delivering immunization to them.

2.3.3 Availability and Accessibility of services

The simple presence of health facilities, supplies, and personnel in a country does not itself guarantee a strong positive impact on child survival. With

few exceptions, health systems in developing countries have been modeled after those in industrialized nations, which emphasize curative care in sophisticated hospital settings. The cost of maintaining the facilities, equipment supplies and highly trained personnel needed to run such institutions tend to quickly absorb most of the national resources devoted to health.

The World Bank has estimated that, on average, two-thirds of government health expenditures in developing countries go to teaching hospitals and medical training. Investments in advanced medical care typically come at the expense of simpler preventive and promotive services that have the potential to make a much greater impact on health. As a result, while some health services are technically "available" in the countries, health care is effectively non-existent for those who cannot reach the hospitals or afford their services.

The accessibility and appropriateness of health services are closely related factors that can have a decisive influence on health care. Accessibility is a critical factor that has different meanings in different settings. It is not only measured in terms of distance, but also in terms of affordability of services and absence of social and cultural barriers to their use.

In areas where transportation is poor, the use of health facilities drops off sharply beyond a 3 to 5 kilometer distance. In another context, people may be discouraged from using local health services because they are too expensive, too inconvenient, or too intimidating. The private sector is playing an increasingly important role in improving access to health services in developing countries. Consistent with the primary health care approach, the provision of supplies and services through commercial channels can expand the reach of simple but powerful health technologies such as, immunization, beyond the clinic and hospital setting (Coovida, 1992).

2.4 Use of Services

The crucial link between providing health services and improving health is public acceptance and motivation to use the services provided. Demand for services is often taken for granted where health conditions are poor, but cannot be assumed. Modern health treatments such as immunization may compete with traditional health practices or fatalistic views of diseases that discourage parents or others from taking action. Before people will adopt effective measures for child survival, they must first be made aware that alternative treatments exist, and that they are, in fact, better in comparison. Secondly, they must be willing to invest their time and effort in the process, and to entrust their children's live to unfamiliar practices and practitioners, no small demand in itself.

Both public and private sectors have important roles to play in increasing awareness and use of existing health services. It has been noted, social marketing techniques can enhance the role of the private sector in expanding the reach of simple health technologies beyond clinic settings. The technique can also help to increase awareness of these life-saving measures and bridge the gap between the availability of health services and their use.

A community willingness to take advantage of health services depends to a great extent on the social and cultural context into which they are introduced. Since mothers are the primary child care providers in virtually all cultures, their attitudes and practices are likely to be a crucial factor in the optimal use of health services for children. It is not surprising, then, that the level of female literacy is a key factor not only in the adoption of modern health care but in child survival in general.

2.5 Prevention of measles

Measles can be best prevented by active immunization. Only live attenuated vaccines are recommended for use, they are both safe and effective. No egg culture vaccine are produced at all today; all are tissue culture vaccines, either chick embryo or human deploid cell live vaccine. The vaccine is presented

as a freeze - dried product. It is most important to store the vaccine at recommended temperature. Heat stable measles vaccines, able to maintain their potency for more than two years at 2-8 deg. C, have been developed (Hinman, 1993).

The principal problem of measles immunization is timing; immunization before the age of nine months runs the risk of the vaccine being rendered ineffective by the natural antibodies acquired through the mother. Immunization later than nine months means that a significant proportion of children will contact measles in the interval between wearing off natural protection and the introduction of the vaccine. The most effective compromise is immunization as close to the age of nine months as possible (UNICEF , 1995). The WHO, Expanded Program on Immunization recommended vaccination at nine months of age.

The reconstituted vaccine is administered in a single subcutaneous dose of 0.5 ml. The diluting fluid for reconstituting the vaccine should be kept on ice and used within one hour. Measles vaccine has recently been adopted for aerosol administration. When vaccine injected into the body, the attenuated virus multiplies and induced mild "measles'' illness (fever and rash) five to ten days after immunization, but in reduced frequency and severity. This may occur in 15 to 20 percent of vaccines. The fever may last for one to two days and the rash for

one to three days. The vaccines now given, rarely causes severe reaction (Comstock, 1995). There are no spread of the virus from the vaccines to contacts.

The vaccine has convincingly demonstrated to provide immunity to even severely malnourished children. Immunity develops 11 to 12 days after vaccination and appears to be of long duration, probably for life. One dose of the vaccine appears to give 95 percent protection. Susceptible contacts over the age of 9-12 months may be protected against measles with measles vaccine, provided that this is given within three days of exposure. This is because, the incubation period of measles induced by the vaccine is about seven days, compared with ten days for the naturally acquired measles.

Acute illness, deficient cell-mediated immunity, and use of steroid or other immuno-suppresive drugs are contraindicated for measles vaccination. Measles vaccine can be combined with other live attenuated vaccines.

Measles may be prevented by administration of human immunoglobulin early in the incubation period. The dose recommended by WHO is 0.25 ml per Kg of body weight. It should be given within three to four days of exposure. The person passively immunized should be given live measles live vaccine 8 to 12

weeks later. The need for immunoglobulin is now much reduced because of the availability of an effective live attenuated vaccine.

2.6 Approaches to increased measles immunization

Appropriate health care might be defined as the kind of health care, within available resources, that most effectively addresses the prevailing health conditions of a population. Health care is best determined based on local health conditions and the resources that can be allocated. Considerations include choice and distribution of services offered, type of personnel and training necessary, and the balance of preventive and curative services (Galway et al., 1993).

2.6.1 Raising routine coverage

The primary health care approach provides a solid foundation for addressing the health needs of developing areas by using the means at hand. It is at the heart of current efforts to make better use of today's limited health resources, and has been adopted and endorsed by all of the major international organizations concerned with health. Primary health care is the basis of an international drive to improve health for all by the year 2000, with special emphasis on reducing the toll of illness and death among children.

Primary health care is particularly well-suited to solving the problems of availability, accessibility, and appropriateness in developing countries. It entails a comprehensive approach to health that is designed to shift the traditional emphasis from a few specialized institutions to the areas of greatest need the local communities. The concept is simple: a country's resource for health is the potential for its people to take care of themselves.

A health system that is community-based can combine education and community participation with the provision of essential health services. When health services are weighed in the local context, efforts to make them appropriate for local needs and accessible to everyone become an integral part of the planning process.

The success of community based health services ultimately rests on the approval and active participation of the local community. Primary health care includes activities in each of the major categories: preventive, curative, promotive, and rehabilitative. They are limited only by what is economically and culturally feasible on the local level. Although the design of the services for each community will vary according to local health needs.

Lesotho and Burundi provide examples of measles control in countries with predominantly rural population. Moderately high coverage has had a marked impact on reducing measles transmission. The effect on the age distribution of measles has been greater in Lesotho, which is less densely populated than Burundi. In Lesotho, where coverage has reached 80%, 60% of cases occur in school-aged children. In response to this, a policy of vaccinating school children was introduced. Because this was difficult to implement the policy was changed later to the administration of a second dose of measles vaccine together with the DPT booster at the age of 15 months (Foster, 1989).

In Burundi, coverage of 55% - 75% was attained in the mid - 1980's. An outbreak of measles in 1988 affected children of all age, with the highest age specific attack rates among nine to eleven months old, followed by six to eight and twelve to twenty-three month old. However, 54% of cases were in children below the 24 months of age. An investigation in a primary school suggested that school children were an important source of infection for younger siblings (Chen, 1990). Burundi has not changed the measles control strategy but has continued efforts to sustain and increase coverage and to improve surveillance.

In Maputo, Mozambique, door - to - door mobilization has conducted to identify eligible children and refer them for immunization. Card-documented

measles vaccine coverage, estimated by community survey, rose from 48% in 1982 to 86% in 1986 and 92% in 1992 (Cutts, 1994).

Measles vaccine is effective when administered to a susceptible individual prior to or at the time of exposure to measles. The WHO and UNICEF have emphasized the importance of vaccination in the first year of the life in developing countries. Vaccination of older children is less effective in developing countries, because many children may have already become immune through infection with wild virus (Bart et al., 1990).

Increased attention to vaccination in the first year of the life, at nine months for the Schwarz strain that provide high rates of sero-convertion and protection, will increase the probability that a dose of vaccine will be administered to a susceptible infant and thus, depending on age-specific rates of the vaccine efficacy, increase program effectiveness in achieving disease reduction.

The term " missed opportunities'' is defined as contacts of a target age individual in needed of one or more vaccine with a health facility capable of providing that vaccine and a failure of that contact to provide the needed vaccine. There are two types of missed opportunities for immunization: missed vaccination opportunities and missed health facility opportunities.

Community partnership in immunization is important to the achievement and maintenance of high levels of vaccine coverage. In Liberia and Mozambique, the participation of local chiefs, traditional birth attendants, and village health committees has been effective in increasing coverage(Cutts and Bender; 1990).

Active involvement of local Rotarians in social mobilization and direct assistance in vaccine delivery activities give good results. Prime emphasis is being given to the training of community volunteers to identify and refer eligible children for immunization. In area where such programs are operational, for example Ijeru-Ekiti, Nigeria coverage rates are over 90% and drop-out rates are near zero.

2.6.2 Identification and immunization of high risk area and groups

Children's are particularly at risk from measles should be vaccinated or in certain cases, revaccinate. Among refugees, measles has been identified as the main causes of mortality in new refugees population (Toole et al., 1992). Measles immunization has been identified as a high priority in emergency relief programs, second only in importance to the provision of adequate food rations (Toole, 1992).

Hospitalized children, especially those who are severely malnourished, are if infected, at high risk of measles-associated mortality. Mortality in malnourished children infected with measles in a hospital setting is frequently above 50 percent. All pediatric admissions without written documentation of measles immunization at any appropriate age should be given measles vaccine on admission. Children vaccinated prior to twelve months of age should be reimmunized.

Children in urban slums have been identified as at increased risk for high measles mortality, due to low coverage and low age of infection, and thus such slums are a priority area for targeted immunization (Cutts et al., 1991). Priority attention to use these high-risk groups will have maximum effect on measles associated mortality. Targeting vaccine to place and groups for which epidemiological data document increased mortality risk, for example, supplementary feeding centers and girls in poor homes in Bangladesh can increase the efficiency of immunization in achieving the mortality reduction goal.

2.6.3 Using mass campaign as National Immunization Days

For measles, experience in India demonstrated that annual single-day measles campaign in a village without access to routine vaccine services was effective in achieving and maintaining measles control (Clements, 1994). In Liberia a country in which only 40 percent of the population has access to health

facilities, annual immunization weeks for five consecutive years, epidemiological timed to precede the measles season, have succeeded in increasing immunization coverage from 15 to 60 percent (CDDD, 1990). During 1989, approximately 40 percent of annual immunizations were administered during this vaccination week. Special importance to the success of these campaigns was the local partnership in the planning, funding of local costs, and implementation of the vaccination week.

Following conditions are suggested as criteria for the appropriate use of accelerated strategies in achieving National EPI target (WHO, 1994). In area of low access to health facilities and where the potential for out-reach is limited, accelerated strategies provide an attractive option in achieving coverage and disease reduction targets. As needed, accelerated strategies should be conducted annually. For measles, timing the activity to the pre-epidemic season maximizes effect and cost effectiveness.

As sustainability and effectiveness are very dependent on local participation, responsibility for planning, vaccine delivery, supervision, and evaluation should be decentralized to the level of implementation, for example, district, sector and so on. Target age groups for immunization, selection of antigens, and timing of activities needed to be based on relevant local data about the availability of the population, physical access to that population, and disease

epidemiology. Safety, includes maintenance of the cold chain and sterilization, appropriate age and instruction to the mother about need for return visits to complete immunization.

2.7 Role of community health workers

The main message appears to be not whether they have a role to play in improving basic health status, but how they can reach their full potential. The extent of community participation in the development of CHW programs is a key determinant of their success or failure. Small-scale programs have generally been more successful than national initiatives largely because the degree of financial and other support required, such as policy, has not been forthcoming at national level. In many countries, planners and communities have had unrealistic expectations of CHWs which had led to disappointment all round.

CHWs must have very specific roles, be responsive to the needs of their communities and be well supported by the rest of the health services and any non-governmental organizations (NGOs) working with them (Omaswa et al., 1997).

2.7.1. Financial implication of the CHW programs

It is essential that CHWs are not seen as providers of cheap or inferior quality health care. There value is that because they are community-based, they

can more successfully provide an affordable first level contact within a PHC system than other health providers. planners must, however, find ways of enhancing the cost-effectiveness of CHW programs. Funding may come in part from NGOs, but there should be state commitment to provide support not only financial but in terms of training to ensure program sustainability.

A proportion of funds should be allocated through community structures, for items such as CHWs salaries and some support costs, to enable programs to community-bases. It is important that programs retain their NGOs status while benefiting from structural links to support from the state.

One major difficulty for CHWs, working at the interface between the community and rest of the health services, is the dual acceptability. There is formal line accountability to the health structure as it is the employer. The CHW is accountable interms of performance and outcome. The health structure itself must be accountable to the community (Aylward, 1997).

Accountability to the health personnel, however, is not a control mechanism, but aimed at providing training and support. The setting up of strong community health development committee within the context of the new district health system will facilitate communication and reinforce the CHWs position.

2.7.2. Training

Good training is essential for community health workers and planners must not underestimate the financial implication of this. Manager of CHWs, trainers and staff at referral centers should have to keep expertise in the community approach. The issue of accreditation of CHW training must be addressed once a national core curriculum has been finalized. It is felt that CHWs should form a specific category of their own as multi-purpose PHC workers. Accreditation of CHWs will reinforce their role within the PHC structure (Stockel, 1993).

2.7.3. Sustainability

It is all too easy to focus on the lack of financial resources and to ignore the other aspects of sustaining programs such as planning of the training models, commitment of the health worker, good supervision and monitoring. Planning of community based health programs should be guided by national policies.

Equally, efficient supervision and support are essential to the success of CHW interventions. CHWs must also be able to rely on good referral systems to be able to function satisfactorily. Evaluation must be seen as an integral part of CHW programs and not as a addition. Community involvement in evaluation often helps to create greater awareness of health problems. Within programs, evaluation

will help to obtain an overall view of the program, monitor progress and determine which aspects of the program need strengthening or change (Bryce, et al., 1990).

Recording of activities done by CHWs as a first step in acquiring program data is a weakness in many programs. At national level, the more evaluated data that can be shared from individuals programs, especially that assessing the impact of the CHW program on health status, the more other programs will be benefited. Program evaluation is reach their full potential.

The main questions raised regards the successes and failure of existing programs provided by community health workers. They vary in terms of size, funding and support. However, the key question that applies to all of them is to what extent they have manage to provide an affordable, accessible and acceptable service to communities which had little or no access to health care before.

These factors are linked to both efficiency and effectiveness and must surely be the main criteria against which the success of CHW programs is measured.

2.8. Identification of the level where intervention is needed

Immunization services is delivered to the community, by the village health worker through conducting 3 to 5 out-reach sessions per village development committee, per month. Now each village development committee has a sub-health post which provides integrated health services (Table.2.1) preventive, promotive and curative to the community.

Table 2.1 Staffing pattern of sub-health post

Auxiliary health worker----------1
Maternal & child health worker - 1
Village health worker ---------- 1
Peon ---------- 1

Source: Department of Health Services (1996), Nepal.

In the integrated approach of the health delivery system, main focal personnel are village health worker and maternal and child health worker. Village health worker does not belongs to local community and per month he suppose to work 29 days in the field. In the end of the month he prepared all vital statistics

reports and Ministry has to rely upon this. There is no effective supervision and monitoring system, either he is doing his work in the community perfectly or not.

In comparison to village health worker, maternal and child health is a married female health worker has been selected from the same village. If maternal and child health worker will get immunization training for 7 days and attached to immunization services will be helpful to increase the routine coverage. Being a female health worker from the same community, she can easily convince and motivate the mother for immunization to her child. She is also easily available to the community and to the district health supervisor.

2.9. A bridge to Community Health

The community health worker comes from the community and is trained to work in it, in close relationship with the health care system. They are expected to perform a wide range of functions, which generally include: home visits, environmental sanitation, provision of an adequate and safe water supply, and common ailments, health education, nutritional surveillance, maternal and child health work including immunization, and family planning activities referrals, record keeping, and collection of data on vital events.

Community health workers are in a unique position because they have a role both in the community and the health care system. They make a bridge between one and the other. In the community they help to identify problems, and people at risk or in need. They involve the community in planning how to deal with its own problems, and they help the community to be in touch with the health services. The community health worker also provides the health services with information needed for surveillance, for health (WHO, 1994).

2.10 Conclusion:

Measles is a global public health problem, but the enormity of the problem is more in developing countries, endangering thousands of lives of children each year. Lopaz (1996) had identified ten top causes of death world wide, and measles has placed on the eighth place. Infant mortality in Nepal is very high in comparison with other countries of the world, at 86 / 1000 live births (Pradhan et al., 1997).

The major causes of infant death in Nepal is vaccine preventable diseases and diarrhea. Several studies has confirmed that the training of the community health workers clearly helped to raise the immunization coverage (Stockel, 1993). In Maputo, Mozambique door to door mobilization through the community health worker has conducted to identify the eligible children and refer them for

immunization. Card documented measles vaccine coverage, estimated by community survey, rose from 48 % in 1982 to 86 % in 1986 and 92% in 1992 (Cutts et al., 1994).

The frequency of contacts between clients and community health workers is the most important factor determining the completion of the immunization. These contacts involves the provision of health information and the making of appointments for children to be immunized. The proportions of children completely immunized varied directly with the knowledge that mothers possessed about infectious disease. Coverage also varied with the levels of knowledge of health workers about infectious disease and immunization (Limtragool, 1992). The frequency with which they reported on local situations to district health offices assisted them in program planning and coordination, and the proportion of the community health workers making house hold visits inorder to disseminate health information.

Alternative methods to increasing immunization coverage are identification of high risk area or groups and immunized them and mass comparing for immunization. For these methods country needs more financial resources and manpower, so question arises for sustainability of the program.

Mobilization of maternal and child health workers with effective immunization training and implementation of the program with community partnership will be effective in rural community, where immunization services are provided through the community health worker.

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