

Assignment Report on Maternal & Child Health
(WHO Project: Nepal 0008)

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1. INTRODUCTION

This project was undertaken jointly by His Majesty's Government of Nepal, the World Health Organization and UNICEF. It started in December 1963 under the title "Maternal and Child Health, Kathmandu" and was renamed "Maternal and Child Health Services and Training, Nepal" in September 1965. WHO provided an MCH Officer in December 1963 and a Public Health Nurse in August 1965. The Public Health Nurse worked within the framework of the project "Nursing Services and Education, Nepal" since the end of 1966 and left in December 1967 and the WHO MCH Officer left in January 1968. The Government provided staff, budget, buildings, supplies and appointed national counterparts to the WHO staff. UNICEF supplied basic equipment, drugs and diet supplements for health institutions where MCH was being upgraded, vehicles for the project and equipment for paediatric and obstetric hospital wards.

2. GENERAL BACKGROUND

Nepal, a country with a population of about 10.5 million, is geographically divided into three main regions:

- the Southern Plains (Terai)
- the Bhabar and Churia Hills (Inner Terai)
- The High Himalayas in the North.

The mountains and hills ranging from West to East, as well as the large rivers crossing the country from North to South, pose great problems to road-builders. Transport and communication are therefore still very limited. This greatly complicates the tasks of the Health Department of giving the people throughout the country preventive and curative care, getting information and reports from the periphery, supervising and guiding the staff and sending supplies to the health institutions.

The occupation of the majority of the population of Nepal is agriculture. The main products are rice, wheat, sugar; jute. Forestry is also important while industrialization is in progress,

Nepal is a kingdom which is administratively divided into 14 zones sub-divided into a total of 75 districts.

The panchayat system has been adopted with local and village panchayats and at the central level the Rashtrya panchayat.

2.1 The Health Situation

There are as yet no detailed figures available about birth-rate (estimated to be 39/1000) and death rate (estimated to be about 20/1000. The infant and pre-school age mortality rates are thought to be high because the health services can as yet only cover part of the population, environmental sanitation is inadequate and because of the specific health problems described below:

Smallpox, cholera and plague still occur in Nepal. A smallpox eradication project has been undertaken by the Government with international assistance.

Tuberculosis is a serious problem. In the Kathmandu Valley a tuberculosis control project was started by the Government assisted by WHO and UNICEF in 1964 and to date 79 525 persons were given BCG up to the age of 15 years.

Diarrheal diseases, worm-infestations particularly by hookworm and roundworm, respiratory and skin infections are frequent, as well as the infectious diseases of childhood.

The main nutritional deficiency diseases are:

- protein caloric malnutrition and hypovitaminosis A, especially amongst pre-school children
- endemic goitre, with cretinism and deaf-mutism

Iron deficiency anaemia is known to occur but detailed surveys have not yet been done.

Maternal mortality is also thought to be high, particularly because assistance at child birth is given mostly by untrained persons.

Tetanus following puerperal infections is known to occur, but neonatal tetanus does not appear to be frequent, at least not in the Kathmandu Valley and in the Trisuli Area.

In Nepal in 1962 5 1/2 million people lived in malarious areas and the spleen-index up to the age of 10 years in the hyper-endemic belt was 80 per cent while the parasite-rate was 50 per cent.

The malaria eradication programme will no doubt have the most beneficial effect on the health of mothers and children. Already surveillance has been introduced in most of the areas in Middle and East Nepal. Many new settlements have come up in the plains where it was unsafe to live.

2.2 The Health Services: Care of Mothers and Children

The Health Services of Nepal are the responsibility of the Minister of Health assisted by the Secretary of Health.

There is a Directorate of Health Services. When the project started the Director of Health Services was assisted by a Deputy Director and two other Medical Officers, while one Public Health Nurse was attached to the Directorate. There was no decentralization as yet. There were 126 doctors in Government service, 69 graduate nurses, 20 women auxiliary health workers and 90 health assistants. The total number of beds in hospitals was about 1,200. The training of women auxiliary health workers was subsequently discontinued and most of them were re-trained to become Assistant Nurse Midwives. Instead of Health Assistants junior and senior Auxiliary Health Workers were trained.

The total number of beds in Maternity Wards of hospitals in

Kathmandu Valley was 90, accounting for 2000 deliveries per year. So deliveries were done by private practitioners and by Government medical Officers: allowed to do private practice. Therefore about 90 per cent of the deliveries were done by untrained persons and this percentage would be even higher outside the Valley.

In Nepal there are traditional midwives, called Surenis. The experience in Kathmandu Valley showed however that assistance was often given at delivery by the father, a female member of the family or by nobody. The Surenis would often work for only one (extended) family. Training of Surenis would, therefore, only be beneficial to part of the population of Kathmandu Valley.

The number of paediatric beds in hospitals in Kathmandu Valley was about 70. There were ante-natal clinics in the Bir Maternity and United Mission Hospitals in Kathmandu and a post-natal clinic in the Maternity Hospital where infants were also seen.

In Bharatpur where the first school for assistant Nurse Midwives was established, home-visiting was done by staff and student. There were no school health services. Although there were no figures available for infant, child and maternal mortality, it could be presumed that these were high and that there was an urgent need for expansion of services for mothers and children.

3. THE PROJECT

3.1 Purposes

- (1) To upgrade and expand Maternal and Child Health Services integrated into the general health services, initially in the Kathmandu Valley, later also in other regions of the country.
- (2) To provide education and training fields for all categories of students and staff who would have MCH services as part of their duties.

3.2 Methods (Services Established at the Central, Intermediate and Peripheral Levels.

Maternal and Child Health Services were developed at three levels:

3.2.1 Central level in Kathmandu

(1) An assistant Director of Maternal and Child Health and Family Planning was appointed in the Directorate of Health Services in September 1966 (Family Planning Services are integrated in Maternal and Child Health Services). The Assistant Director is responsible:

- developing plans and policies
- co-ordination with the other departments in the Directorate of Health Services
- training of staff in close co-operation with the Assistant Director of training and education and with the Nursing Section of the Directorate (and other Assistant Directors who had been appointed in September 1966)
- administrative organization of MCH and FP services in the country through the MCH/FP Project Office (in Kathmandu, which was also established in September 1966).

(2) The MCH/FP Project Office has a dual role:

(a) It is the administrative office at the central level and as such, implements the plans and policies of the Directorate in respect of MCH/FP

- handles the budget of MCH and the budget of FP
- supervises and guides the staff giving MCH/FP services
- distributes MCH and FP supplies
- collects MCH and FP reports and evaluates the work
- organizes basic- and in-service training of students and staff.

(b) The MCH/FP Project Office is also the administrative office at the intermediate level for MCH and FP services in the Kathmandu Valley.

The Health Services in the Kathmandu Valley are the direct responsibility of the Directorate of Health Services, there is no intermediate level. Similarly, the MCH/FP project office has the direct responsibility for supervision and guidance of MCH/FP services in the Valley.

The MCH/FP project office has the following staff.

Medical Officer in charge of MCH/FP

Public Health Nurse

Health Educator

Evaluation Officer

Supply Officer

Administrative Officer

Ancillary Staff

3. 2. 2 The intermediate level outside the Kathmandu Valley

(integrated in the general health services)

The Government plans to decentralize the health services gradually. The areas for the decentralized set-up will coincide with the 14 administrative zones and 75 administrative districts in which the country is divided.

In the year 1966/1967 three zones were developed and in the year 1967/1968 two more zones will follow.

In each zone a Zonal Medical Officer (who is at the same time in charge of the Zonal Hospital) will have the overall responsibility under the direction of Directorate of Health Services. He will have a zonal Medical Office staffed as follows.

- Zonal Medical Officer of Health
- Zonal Public Health Nurse
- Zonal Health Educator
- Zonal Auxiliary Health Worker
- Zonal Sanitarian

—Administrative Officer

—Ancillary Staff

This pattern has already been established in three zones. These are the three zones outside Kathmandu Valley where MCH/FP services were introduced in 1966-67, as one of the responsibilities of the Zonal Medical Officer.

Three more zones will follow in 1967/68.

3. 2. 3 The peripheral level

The principle is to integrate MCH/FP at the peripheral level into the general health services. The necessary time of the available staff and space of the health institutions are set aside for MCH and FP services.

As already described, the MCH/FP services at central level organize the planning, methods, supplies, training, supervision and guidance, reports and evaluation.

4. ACCOMPLISHMENTS

4.1 Maternal and Child Health Services in the Kathmandu Valley

4.1.1 Maternal and Child Health Services clinics

The first activity of the project was to open combined weekly clinics for ante-natal and post-natal mothers and for children up to the age of 5 years. These were located in Gokarna (a Health Post), Chettrapati (in the School of Nursing building in Kathmandu), Patan Hospital and Bhaktapur. The active co-operation of those in charge of these institutions in respect of space, furniture, ancillary staff, etc., was obtained.

In the beginning, the clinics were conducted by the Medical Officer in charge of MCH, who later became Assistant Director (MCH/FP), the Public Health Nurse attached to the Directorate of Health Services and four Women Auxiliary Health Workers, who were attached to the above institutions or working in a near-by area (in the case of Chettrapati).

The clinics were more attractive to the mothers with their children than the Out-Patient Departments; there was more nursing staff, there were free drugs, individual records and the attention was focussed on the mothers and children.

Therefore, the attendance of children increased rapidly although no propaganda was made for the clinics. The sick as well as the healthy were welcomed. It was felt that the mothers would be more receptive to long-term preventive measures if the immediate needs for treatment of their sick children would be fulfilled.

The pattern of disease soon became clear: diarrhoeal diseases, worm-infestations, protein-calorie malnutrition and xerophthalmia, respiratory and skin and ear infections and pertussis were very prevalent. Especially in rural areas malnutrition was a problem of which the size had not been evident earlier and the need for a food-supplement became very acute. Annex 1 to this report shows the diagnoses made in children seen in one MCH clinic during four months.

Children who needed follow-up treatment were seen by the field staff or hospital staff between clinic days. When necessary, mothers and children were referred to the Bir and Maternity Hospitals. The attendance at ante-natal and post natal clinics never achieved the heights of children's attendances. It may be that the still inadequate assistance given by the MCH services during the critical time (at delivery) makes the mothers less interested in ante-natal and post-natal care. This might explain why the attendances are much better in ante-natal clinics of the hospital in Kathmandu, where there are facilities for institutional deliveries.

4.1. 2. Home visiting

Home-visiting, as an essential part of Public Health Services and of MCH in particular, was started wherever possible.

The tendency had been both in Kathmandu Valley and Bharatpur to let Woman Auxiliary Health Workers visit families in very rural areas so that few families could be visited in the given time and for those families

it was difficult to reach the health institutions for follow-up of the advice given in the homes. Gradually, however, closely populated home visiting areas near the clinics were selected.

Home visiting was done on a selective basis; priority was given to those who needed it most. children with malnutrition, with dehydration, and other acute illnesses, and ill antenatal mothers and post-natal visits were done when possible. There was little opportunity for "systematic" home-visiting to healthy mothers and children, due to lack of staff.

When the choice had to be made between more clinic-sessions and more home-visiting days the decision was usually in favovr of more clinic-sessions.

Admittedly, the opportunities for health education are better during the more personal and longer contact of a home visit than in a busy clinic. But the number of mothers and children that could be given care in clinics was very much larger than that reached during home visits by the same staff in the same time. This may be seen from the figures for Gokarna Health Post at a time when there were two clinic-sessions and three home visiting days weekly: during three months the Woman Auxiliary Health Workers and the Assistant Nurse Midwives made 146 home visits while in the same period the total number of clinic attendances was 1218. More frequent home visiting was therefore postponed until more staff will be available.

4.1.3 Immunizations

Smallpox vaccination and BCG immunization were given in the MCH clinics with assistance from the Smallpox and TB Control. Projects, which gave advice, training to staff working in MCH clinics and supplied vaccines.

Initially, Mantoux-testing was done before BCG vaccination. It was obvious very soon however that the number of children returning for reading of the tests was small and it was also impossible to follow up the few who had a positive test. Therefore direct BCG immunization was

introduced and later simultaneous BCG and smallpox Vaccinations was given to the newborn infants in the Bir and Maternity Hospitals and to older children in the clinics. When the MCH services were started outside the Valley, BCG was also given in clinics in Birganj and Nepalganj. The immunizations are done by Public Health Nurses and Assistant Nurse Midwives and it would be very beneficial if they could all be trained in BCG techniques by the TB project staff, in particular the Assistant Nurse Midwife students in Biratnagar. The number of immunizations in clinics was limited due to shortage of staff, but also because many of the children had already been vaccinated by the Smallpox and TB Projects before attending clinics. Figures for numbers of vaccinations are given Annex 2 to this report.

1. 4 Serological reactions for syphilis of ante-natal mothers

With the assistance of Regional Office, WHO, FTA tests with rondelles were done of 1 417 ante-natal mothers of whom 41 had a positive reaction. As far as possible the mothers with positive reactions were treated with penicillin. The FTA tests were done in the beginning by the Institut Fournier in Paris, and since the end of 1967 by Professor Chacko in Madras. Since October 1967 the Public Health Laboratory in Kathmandu is in a position to carry out VDRL tests free of charge.

4. 1. 5. Nutrition and nutrition education

The main food-items in Nepal are rice, wheat and pulses, eaten with vegetables and roots. Mustard-oil and ghee are used. Fruits, meat, eggs and fish are luxuries. Milk and curd are highly valued but expensive.

The children in Nepal are breastfed almost without exception and in the rural areas breastfeeding is often continued until the children are two years old.

Only if there is insufficient or no breast milk due to ill-health or death of the mother or in the case of subsequent pregnancy or twins or for other reasons the infants are given diluted buffalo or cow's milk. Because the amount of tinned milk products available in Nepal is very limited

penetrate beyond the large towns, there is as yet no trend of replace breast-feeding by artificial feeding with its risk of malnutrition.

At the same time, lack of knowledge about the food needed by the child is no longer enough, infections and worm-infestations cause malnutrition in the children in Nepal as in other countries.

Treatment of the malnourished children presented great problems. Protein caloric malnutrition. Solid or semi-solid foods are not acceptable to the children and for ambulant treatment (hospitalization if possible) a fluid protein-rich food was urgently needed. Skimmilk powder since 1965.

Great care was taken to demonstrate to all mothers who receive it how to prepare it and to make sure that the children would accept it before the powder was given to the mothers. It appeared very quickly in those children who were not in good condition and the milk powder became one of the great attractions. It was not given to children under one year except in special cases. In one clinic skimmilk powder was distributed to ante natal feeding mothers which resulted in a sharp increase in attendances.

Milk-production in Kathmandu Valley and the rest of Nepal is low and the price of milk is high. It will be difficult, therefore, to increase the consumption of milk locally produced by the vulnerable groups: the children. Cereals and pulses are, however, grown in Nepal, especially rice, in great quantity.

Education of mothers in the special needs of the pre-school children and to calories and proteins might reduce the incidence of malnutrition in this group.

Families were frequently seen with a well-nourished infant and a malnourished toddler, while the requirements of the toddler are less than of the older child.

Food-demonstrations were introduced at an early stage of project. Locally available cereals, pulses and vegetables prepared, according to recipes given by the Home Economics Section of the Department of Agriculture, and eaten by the children attending clinics. Funds were provided in the MCH budget. Later several demonstration-kitchens were built next to the clinics and their number will be increased when funds become available. Guidelines for the demonstrations and discussions with mothers were developed by the Public Health Nurses working in the clinics with the assistance of the WHO Public Health Nurse.

In the end of 1967 CSM was introduced to begin with in one clinic and appeared to be acceptable to mothers and children.

It is hoped that in the future it would be possible to produce in Nepal itself a food rich in calories and proteins (vegetable and/or animal) that is cheap and suitable for children when breast milk is no longer enough.

One Lady Medical Officer completed the Nutrition Course in Hyderabad and another started the course in the end of 1967. Height and weight studies were done by the project staff of pre-school children and the results are being prepared.

4.1.6 Domiciliary and institutional midwifery services

Continuous efforts were made by the Public Health Nurses assisted by the WHO Public Health Nurse to build up domiciliary midwifery services. The progress was very limited however. The mothers are not aware of the advantages of trained assistance at delivery. Besides, available staff had little time for home deliveries in addition to their other duties and often had no quarters where they could be called at times.

Four-bed maternity wards were established in the Patan and Bhaktapur hospitals.

The maternity Hospital in Kathmandu was expanded from 40 to 60 beds in 1967.

Midwife Schools) and Birgunj and Nepalgunj Hospitals. In Nepalgunj, the third school might be established in the future. Biratnagar, Birganj and Nepalgunj are the headquarters of the three Zones that were developed first by the Directorate of Health Services. A Public Health Nurse was appointed for field work in Bharatpur and Zonal Public Health Nurses were appointed in the other three areas. To each of the four institutions two Assistant Nurse Midwives were attached for field work.

It was a problem however that the Assistant Nurse Midwives were not appointed specifically for public health work but had to do hospital duties as well.

The paediatricians attached to the hospitals in Biratnagar and Birganj conduct the Children's Clinics in their areas, the Lady Medical Officers conduct all other clinics.

In three centres, Khajura resettlement area (Nepalgunj), Dharan Hospital (Dharan) and Kalaiya Hospital (Birganj), clinics were established and run by the staff of the Zonal Hospitals.

In the Kathmandu Valley two more clinics were started in 1967: Thimi and Dhapaki, both Health Posts. Several of the clinics are run by two Lady Medical Officers stationed in Chetrapati, assisted in some centres by two "mobile Assistant Nurse Midwives".

4.1.7 Health Education

Health Education was considered to be the basis of all work. Assistance was received from the Health Education Section of the Directorate of Health Services. This Section advised on methods of Health Education, printed some feeding leaflets, arranged film shows and radio talks. Later, a Health Educator was attached to the project who mainly concentrated on the Family Planning aspects of the work.

4.1.8 Records and reports

Individual records (childrens, antenatal, delivery records and

appointment cards) were developed and when necessary revised. A simple reporting system was introduced, which still mainly shows the quantity of work done but also gives useful information about the popularity of the MCH services and guidance for planning of future work.

Efforts were made continuously to develop reporting of all aspects of the work by the health institutions in one report instead of separate reporting about MCH, tuberculosis, leprosy, smallpox and it is hoped that this will be achieved in the near future. A consolidated report of all activities might have been prepared for the whole country by the Statistics Section of the Directorate of Health Services. It is suggested that the earlier methods of quarterly reports be re-introduced instead of the present monthly reports. This reduces the work spent on preparing reports while quarterly reports give a clear picture of the progress of the work in respect of seasonal variation, etc.

WHO Consultant Statisticians advised and assisted at all stages of the development of the records and reporting system.

4.2 Expansion of Maternal and Child health Inside and Outside the Kathmandu Valley

In 1965 Lady Medical Officers were appointed to the Patan and Bhaktapur Hospitals, one Public Health Nurse and two graduate nurses were appointed to work in the field in the Kathmandu Valley as well as six of the first group of 18 Assistant Nurse Midwives passing out from the School in Bharatpur. They were all attached to the health institutions where MCH services were given and from then on these services were based on health institutions and no longer run by the project staff. In 1965 a children's clinic was started in the Bir Hospital in Kathmandu assisted by the paediatrician in addition to the already existing ante-natal and post-natal clinic. Further, two clinics for mothers and children were opened in Thakot and Katunje, visited by staff from Patan and Bhaktapur Hospitals respectively. All clinics were supplied with equipment drugs and milk powder by UNICEF.

In 1966/67 expansion outside the Kathmandu Valley took place. The main consideration in selecting areas for expansion was to develop MCH services as practice areas for present and future Assistant Nurse Midwife Schools. Thus, MCH services were established in Bharatpur and Biratnagar Hospitals (locations of the first and second Assistant Nurse

A map of all institutions where MCH services are provided is given as Annex 3 to this report.

The staffing of these institutions as related to MCH is given in Annex 4 of this report.

The attendances at all clinics since the beginning of this project are shown in figures in Annex 2 and as graphs in Annex 5 and 6 to this report. These graphs show the steady increase in attendances from year to year with a regular reduction in the last quarter due to the festival and cultivation season.

4.3 Education and Training

The WHO Public Health Nurse and her national counterparts were closely associated with the establishment of the second School for Assistant Nurse Midwives in Biratnagar, which took in the first group of students in November 1966.

A curriculum of 18 months was prepared, this was a reduction of 6 months from the course that was given in Bharatpur where the first Assistant Nurse Midwife School had been started in 1962. From 1967 the Government adopted the shorter curriculum for both schools. The WHO Public Health Nurse made frequent visits to the Bharatpur and Biratnagar Schools to assist the staff of these schools. In Biratnagar three groups of students were taken in and the first group will pass out in May 1968. The school building and hostel are almost complete. For their midwifery training, however, the students from Biratnagar still have to come to Kathmandu because the maternity ward in Biratnagar is not ready. Preparations were also made for a third Assistant Nurse Midwife School and it is hoped that this will be opened at an early date. It is hoped that it will be possible to create

posts for Assistant Nurse Midwives in an increasing number to absorb the output of the existing as well as future school (s), and that some of the Assistant Nurse Midwives could be appointed for public health services as has been done in the previous years.

From the beginning of the project there has been active participation in the training of different categories of staff.

Student nurses of the School of Nursing and student assistant nurse midwives get part of their field practice in public health in the MCH and FP project, and MCH and FP are subjects in their examinations.

Students from the School of Auxiliary Health workers are given lectures by project-staff and since 1967 they come to the project for practice in MCH and FP services. Student assistant nurse midwives on the other hand receive education in environmental sanitation in the School of Auxiliary Health Workers.

Courses of one to two weeks with lectures and field practice are given to all medical officers who have MCH and FP as part of their duties.

4.4 Endemic Goitre Survey

The project assisted with goitre surveys and preparing a report on the prevalence of goitre in the country. The impressions that endemic goitre cretinism and deaf mutism are serious problems in Nepal were amply confirmed.

The report (SEA/Goitre Sem./3) was presented at the WHO Seminar on Endemic Goitre in New Delhi in November 1967. It is hoped that bio-chemical base-line studies of endemic goitre in Nepal can be done at an early date and that subsequently all salt imported into Nepal will be iodized.

5 FAMILY PLANNING

In September 1966 the Government introduced Family Planning Services in several centres in the Kathmandu Valley where MCH services were already provided. The existing accommodation and staff were used

with additional supplies. Weekly FP clinics were held where IUCD were introduced either on separate days or (in small health institutions) combined with children's clinics. FP was expanded to all institutions in Nepal where MCH services were already organized. Motivational education was made in newspapers, radio, meetings and during home visits.

In 1967 condom-distribution was started and contraceptive pills were prescribed in centres in the Kathmandu Valley on a limited scale.

Figures for family planning are given in Annex 2 and 5 to this report.

For the year 1967/68 the Government decided in of a rapid expansion of FP services. As the existing auxiliary staff was in sufficient a new category of staff was prepared: Health Aids, who have pre-matriculate school-education. About 70 will pass out in February 1968. Half of them received 2 months FP motivation education, the other half had 2 months limitations of staff the supervision of Health Aids remains an unsolved problem.

In these new centres it is intended to give MCH Services on a limited scale as well as FP services.

The impression was gained however that the demand for FP grew more rapidly in those centres where MCH services were a ready developed.

3. UNICEF ASSISTANCE

The UNICEF supplies contributed greatly to the satisfactory development of the project. The vehicles are essential for the work. In the second half of 1964 basic equipment, midwifery kits and standard drug sets, for the MCH clinics arrived. In the middle of 1965 the first UNICEF skimed milk power was received.

The new four-bed maternity wards in Patan and Bhaktapur Hospitals are equipped by UNICEF and equipment needed by the Maternity Hospitals for the future expansion of the Obstetric and Paediatric Units in the Patanagar, Birganj and Nepalganj Zonal Hospitals was also supplied by UNICEF.

7. SUPPLIES

Supplying health institutions in Nepal is complicated by the fact that there are as yet no road or train connections within the country between the capital city and most of the zones. Supplies arriving in Kathmandu by road from outside the country have to be re-routed by road-train through India and re-enter Nepal to reach their destinations. Long delays and extra expenditure result.

It would be beneficial if distribution of supplies to health institutions could be done not from Kathmandu, but at the entry-point into Nepal or even before that.

It would also appear to be a simplification for those institutions which can be reached easily from Kathmandu if there were any integrated supply system, whereby all supplies for the institutions for different purposes (hospital, OPD, MCH/FP, etc.) could come from one central store in Kathmandu.

8. ASSESSMENT

MCH services integrated in the general health services have been firmly established in the Directorate of Health Services, and at the intermediate and peripheral levels in the Kathmandu Valley and the zones outside the Valley.

Methods for the work, staffing, record-keeping and reporting have been developed and experience has been gained with them.

A net-work of clinics has been developed in the above-mentioned areas, very popular as regards children. Ante-natal and post-natal care and FP services are given, health education, care for the healthy and sick children. Immunizations, nutrition, education and demonstrations and milk powder are provided.

Education and training of staff had a high priority. Compared to the large and vulnerable mother and child population of Nepal in need of care the numbers that have been reached are small.

But, it is believed that the project has laid a sound basis on which to build expanded MCH services integrated in the general health services.

It was not possible for the limited staff to visit schools, see pupils referred by teachers and advise on health and nutrition education programmes in schools as has been planned.

The intended upgrading of hospital services for mothers and children in 3 zonal Hospitals succeeded in part; the medical and nursing staff increased and UNICEF supplies arrived and were put into use, but the needed space in the hospitals is not yet available.

9. RECOMMENDATIONS

(1) That MCH and Family Planning continue to be expanded as one service for the following reasons:

Fertility regulation and Family Planning can be most effectively carried out when other aspects of the health of mothers and children are attended to at the same time.

(2) That an Assistant Nurse Midwife be appointed to and stationed in each of the Health Posts, initially in Kathmandu Valley, to give field services in co-operation with the Auxiliary Health Worker of the Health Post.

In respect of MC/FP this would have the advantage that MCH/FP services would not be limited to clinic-care.

(3) That Public Health Nurses and the necessary auxiliary nursing staff be appointed to the Bir and Maternity Hospitals to follow up patients discharged from the hospitals and those attending MCH/FP clinics. This would also provide an additional Public Health training field for student assistant nurse midwives and student auxiliary health workers.

(4) That for an effective growth of field services:

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- Zonal Public Health Nurses be appointed in all Zones the Directorate of Health Services,
 - Assistant Nurse Midwives be appointed full-time for work to all institutions in zones where public health services (particularly MCH and FP) are being introduced.
 - Public Health Nurses or Graduate Nurses be appointed in Zonal Hospitals so that the Zonal Public Health Nurses be free for supervision of all nursing activities in the zones.

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FINDINGS IN 434 CHILDREN UP TO THE AGE OF 5 YEARS SEEN IN
BHAKTAPUR MCH CLINIC FROM 17 JUNE TO 11 OCTOBER 1964

Gastro-intestinal diseases	X	154
Malnutrition	x	76
Upper respiratory infections and pneumonia		45
Impetigo, abscesses		24
Allergic dermatitis		12
Otitis media		10
Scabies		9
Suspect Pertussis		7
Anaemia, not specified		6
Conjunctivitis		3
Lymphadenitis colli		3
Other diagnoses		27
No complaints no findings		58

X These children presented with diarrhea as the main complaint.

x Of the 76 children with malnutrition 32 had protein calorie malnutrition (of whom 7 had xerophthalmia also) 33 children had marasmus (of whom 2 also had xerophthalmia) and 11 had only xerophthalmia.

Of the 434 children 15 had small pox.

Roundworm-infestation of the children was reported by about 20% of the mothers and can be presumed to be much higher.

STAFF OF HEALTH INSTITUTIONS WHO GIVE MCH SERVICES

1. Inside the Kathmandu Valley

<u>Institutions with MCH/FP Clinics and home-visiting</u>	<u>Institutions with MCH/FP clinics without home-visiting, visited by LMOs from other centres and by the two "mobile ANMs"</u>
<u>Patan Hospital</u>	<u>Thankot Health post</u>
1 LMO, 1 PHN, ANMs	LMO from Patan or Chhetrapati
<u>Gokarna Health Post</u>	2 "mobile" ANMs
1 ANM, 1 WAHW	<u>Dhapakel Health Post</u>
<u>Bhaktapur Hospital</u>	Same as Thankot
1 LMO, 1 PHN, 2 ANMs	<u>Katunje Health Post</u>
Visited by Chhetrapati LMO	LMO from Bhaktapur or Chhetrapati
<u>Chhetrapati MCH/FP Centre</u>	2 "mobile" ANMs
2 LMOS 1 PHN 3 ANMs	<u>Thimmi Health Post</u>
visiting 2 "mobile" ANMs	LMO from Chhetrapati
other clinics (working in other	2 "mobile" ANMs
as well clinics only)	

MCH/FP Clinics in Hospitals in Kathmandu : No home-visiting

<u>Maternity Hospital</u>	<u>Bir Hospital</u>
Doctors, nurses of hospital	Doctors, nurses of hospital
2 "mobile" ANMs once weekly	(Children's Clinic no doctor)
for Children's Clinic	

United Mission Hospital in Kathmandu

AN + Children's Clinic and several clinics South of Kathmandu

JNMA, July/Oct. 1968

2 Outside the Kathmandu Valley

Institutions with MCH/FP Clinics and home visiting

<u>Birganj Hospital</u>	:	1 Paediatrician, 1 LMO, 2 ANMs (there a zonal PHN Part-time)
<u>Bharatpur Hospital</u>	:	1 LMO, 1 PHN, 2 ANMs part-time
<u>Nepalgunj Hospital</u>	:	as Birganj; no paediatrician
<u>Biratnagar Hospital</u>	:	as Birganj;

Institutions with MCH/FP clinics visited by staff from other institutions

<u>Kalaiya Hospital</u>	(Birganj staff)
<u>Khajura (village)</u>	(Nepalgunj staff)
<u>Dharan Hospital</u>	(Biratnagar staff)