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Summary

Report of the Situation Analysis

Team - 1976 of the

Nepal Malaria Eradication Organization

February 17, 1976

Kathmandu, Nepal

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Nepal Malaria Eradication Organization

Report of the Situation Analysis - 1976

SUMMARY

I. Introduction

- A. The Nepal Malaria Eradication Board (MEB) in its 134th meeting held on 7 October, 1975 determined that a Situation Analysis of the Nepal Malaria Eradication Organization (NMEO) be held during the period mid-January to mid-February, 1976. The Situation Analysis was later scheduled by the Chairman, MEB to be held during the period from January 26 - February 17, 1976. The MEB requested the assistance of the World Health Organization (WHO) and the U. S. Agency for International Development (AID) to participate with HMG officers in this Situation Analysis. These assisting agencies agreed with this request and assigned personnel. The Chief Officer of the NMEO was to serve as Chairman for the 1976 Situation Analysis.
- B. The Terms of Reference provided for this Situation Analysis are as follows:
1. To evaluate the present epidemiological situation concerning malaria in the country.
 2. To try to find out reasons for difficulties in proper and timely execution of scheduled activities in MEP.
 3. To recommend ways and means to rectify these difficulties.
 4. To study and advise regarding the proper type of activities in the Eastern Hills now under full NMEO activities.
 5. To bring out any point/points which may have far reaching effects on the overall efficiency of the program.

The MEB, recognizing the importance of proper managerial practices within the NMEO, requested that more emphasis be placed during this analysis on this aspect both at NMEO National Headquarters and in Regional field areas.

C. The members of the Situation Analysis Team - 1976 are as follows:

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2. Dr. Y. N. Sharma, Malaria Consultant, NMEO
3. Dr. H. N. Uprety, Ministry of Health, HMG
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5. Dr. P. F. Beales, WHO/Thailand
6. Mr. A. Davidson, USAID/Washington
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II. Current Status of the NMEO Program

A. General

The Nepal Malaria Eradication Organization (NMEO) is a national health activity covering the assigned malaria areas of the country. The Organization is under the authority of the Nepal Malaria Eradication Board (MEB). The National Headquarters of the NMEO is located in Kathmandu and has under its organizational scope four Regional Offices (Biratnagar, Birgunj, Bhairahwa, Nepalgunj); 36 District Offices, 156 Unit Offices and 927 localities. The Organization has approximately 3500 employee with special temporary personnel hired during spray cycles.

The present population status of the program in 1975 is as follows:

<u>Activities</u>	<u>Population</u>
Spraying and Surveillance	2,830,186
Surveillance	<u>2,329,124</u>
Total	5,159,310

There are also 1.5 million population in integrated districts on the malarious areas for which NMEO is responsible for spraying activities. The total population in Nepal receiving malaria services is approximately 6.67 million people.

B. The epidemiological status of malaria in 1975 can be revealed from the following table. The epidemiological data of 1973 and 1974 are also given in the table in order to see the current status in its perspective.

Sr. No.	Item	Y 1973	E 1974	A 1975	R 1975	S 1975
1.	Total Population	12,046,430	12,300,000	12,550,000		
2.	Population Covered by NMEQ	6,349,920	5,084,075	5,159,086		
3.	Population in Integrated areas	342,007	1,474,954	1,531,615		
4.	Population in Attack + Reverted Attack areas	1,073,442	2,202,525	2,787,032		
5.	Population in Consolidation + Case Detection areas	5,375,310	2,881,551	2,372,054		
6.	No. of Slides Collected in Integrated areas	-	201,760	83,997		
7.	No. of Positives in Integrated areas (p.f. in bracket)	-	1140(80)	914(62)		
8.	No. of Slides Collected in Consolidation + Case Detection areas	1,149,806	657,586	527,379		
9.	No. of Positives in Consolidation + Case Detection areas (p.f. in bracket)	4128(923)	3388(1085)	2931(841)		
10.	No. of Slide Collected in Attack + Reverted Attack areas	353,779	796,983	827,107		
11.	No. of Positives in Attack + Reverted Attack areas (p.f. in bracket)	4351(309)	10119(1755)	8011(2049)		
12.	No. of Indigenous Cases in Integrated areas	-	734	310		
13.	No. of Indigenous Cases in Consolidation + Case Detection areas	2016	1327	1013		
14.	No. of Imported 'A' Cases in Integrated areas	-	105	105		
15.	No. of Imported 'A' Cases in Consolidation + Case Detection areas	1112	1171	1075		
16.	No. of Imported 'A' Cases in Attack + Reverted Attack areas	1098	1833	1635		
17.	A.B.E.R. in Integrated areas	-	10.9	5.0		
18.	A.B.E.R. in Consolidation + Case Detection areas	14.33	14.9	15.5		
19.	A.P.I. in Attack + Reverted Attack areas	3.96	4.59	2.87		
20.	A.P.I. in Consolidation + Case Detection areas	0.78	1.17	1.23		

Sr. No.	Item	Y E A R S		
		1973	1974	1975
21.	A.P.I. in Integrated areas	-	0.77	0.60
A.	Bara	-	1.25	0.86*
B.	Parsa	-	1.87	3.08*
C.	Rautahat	-	0.62	0.20*
D.	Siraha	-	0.10	0.006*
E.	Saptari	-	0.08	0.07*
F.	Kaski	-	1.35	0.95
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22.	Total Positives	8479	14,647	11,856
A.	N.M.E.O. areas	8479	13,507	10,942
B.	Integrated areas	-	1140	914
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23.	A.P.I.	1.33	2.2	1.77
A.	N.M.E.O. areas	1.33	2.6	2.12
B.	Integrated areas	-	0.77	0.60

- * Upto October
- * Upto November
- * Upto October
- * June to December
- * June to December

It appears that the case incidence which has been rising during the past few years was checked in 1975. A total of approximately 12,000 cases were detected in 1975 as against 14,647 in 1974. The case reduction has occurred mainly in the attack phase areas.

Regional break-downs of case incidences in 1975 as against 1974 shows that there were reduction of cases in West and Central Region while slight increase of cases were noted in the East and Far West Regions. Importation of cases from abroad has been a problem particularly for the Eastern Region where about 50% of total cases are imported from Abroad.

The Annual Parasite Incidence in some of the Districts under the Integrated Health Services are higher than many Consolidation areas. At the same time, average Annual Blood Examination Rate in the Integrated Districts are at low level.

Keeping in view of the changing epidemiological situation, the entomological program has been concentrating its effort on the India-Nepal Border Terai areas where A. annularis and/or another species have been playing the role of vector.

C. Managerial methods and problems in the National Headquarters and Regional Offices

General

The NMEC at this time is in a somewhat traumatic organizational situation. It is involved in the Integration of Health Services Program and at the same time new Regional-District organizational relationships are being consolidated.

Our findings are summarized under the administrative headings of Reporting, Budget and Fiscal, Supply, Transport, Personnel and Organization.

Reporting

Unusual delays in receiving correspondence and instructions were encountered primarily in the Far Western and Western Regions. The average time from Headquarters to Regional Offices in the Far West was 12 + days. This situation can be corrected by adequate correspondence control and expediting of important documents.

Budget and Fiscal

Some problems exist. In the third week of the third quarter a number of Districts had not received their quarterly allotments. Also 4th quarter budget allotments should be earlier. An examination of the budget procedures show that some of the problems are correctable, and that some flexibility in transfer of funds may be feasible. A more serious problem is local spraymen wages which cannot compete with wages outside of NMEC. Differentials in money or kind is being considered.

The general situation of expending most of the allotment for TA/DA fund is good, running from 80 to almost 100%. Some thought should be given for greater participation by the Regions in the budget formulation not just post fact review of a budget plan determined at headquarters.

Supply

This aspect of administration is weak. Lack of trained supply clerks has led to lapses in management control. Discrepancies exist between records and physical inventories. Storage of DDT, spray pumps and drugs in many districts and units is far below standard. However, the Team found few areas where there were serious deficiencies in supplies. The problem was accountability for supplies and proper control. The strongest evidence is apparent for training and retraining of personnel in supply procedures.

Transport

The situation in transport if anything has further deteriorated since the 1975 survey. For instance, only 2 vehicles are available in the Far West Region and 1 Land Rover in the Western Region. The need for better transport and repair facilities is most apparent. The Team was of the opinion that a new survey of transport needs be made and that priority for use of the new incoming vehicles be based on that survey. The Team also urges completion of Regional Repair facilities if possible.

Personnel

The Team found that most authorized positions were filled. But in examining the level and quality of personnel, it was found that many senior and middle level personnel were new in their jobs and that many were not fully acquainted yet with their duties. Apparently there has been much turnover. The percentage of time spent in the field was generally satisfactory with a few exceptions. Most Regional and District Officers showed less interest in management problems than in technical problems. The Team considered supervisory training for Sr. officers. There was also a strong feeling that personnel turnover should be stabilized to assure continuity.

Organization

There is need to clarify the roles of the Regional Officers in their relation to the District and vice versa. The powers and authorities of Regional Officers did not seem clear. Are they coordinating or supervisory? Should they have knowledge of all administrative problem of their region? Should they be fed information by the Districts? These points should be clarified in written instructions and manuals.

The Team concluded that the NMEC is an effective and viable organization which could become more effective with improved management and assurance of stability.

D. Operational Accomplishments and Problems in 19751. Spraying

- 1.1 During the year 1975 spraying activities were carried out on highly selective basis on the basis of epidemiological situation because of lack of DDT. During the February/March cycle of spraying, a population of only 155,000 (8%) was brought under insecticidal (DDT) coverage as against the planned population of 1,990,000.

Similarly in the May/June cycle of spraying a total of 960,000 (43%) population was protected as against 2,219,000 as originally planned. During the August/September cycle spraying had to be restricted to a very considerable extent. Besides the lack of DDT, a change of senior level personnel also affected the even restricted schedule of spraying in some areas. The total population covered with DDT and BHC respectively were 423,000 and 47,000 as against 1,422,000 and 95,000 as planned (30% and 49.47% respectively).

The above population figures were projected as per the approved budget. However, according to the 1975/76 revised Plan of Action as approved by M.E.B. a population of 1,000,000 had to be covered with DDT during the May/June cycle of spraying. So the actual spray coverage during that cycle is 96% (not 43% as shown). Also during the August/September spraying cycle a target population of 1,000,000 was to be covered according to the revised M.E.B. approved Plan of Action. So 42% (not 31%) has been covered by the spray operation.))

- 1.1.1 In some of the localities especially in foot-hills and in the difficult communication areas of the Western and Far Western Regions the quality of spraying needs improvement.
- 1.2 Though focal spraying was carried out around detected foci, much room exists for improvement in quality, in quantity and in time.
- 1.3 On a trial basis two localities under the Baluhawa Unit of Kapilvastu District were brought under larviciding operation with "ABATE". With the help of WHO Regional Sanitary Engineer and Entomologist, the operation was planned and initially executed. A thorough evaluation of the operation could not, however, be made. The total population covered under larviciding was about 24,000.

2. Surveillance

- 2.1 The surveillance activities were carried out more or less according to the Plan of Action. The frequency of ACD rounds were increased in some of the Units of Kapilvastu, Rupendehi and Jhapa Districts as well as in road and canal projects

areas. A malaria check-post at Kakarvita, situated on eastern Nepal border with India, was very effectively manned. However, the workload of blood slides prevented repetition of MBS in certain areas.

- 2.2 Slide collections through Passive Case Detection (PCD) sources remained insignificant throughout the year.

3. Treatment

- 3.1 Efforts were made to provide radical treatment to all malaria cases detected. Barring a few instances, treatment was given as expeditiously as possible under the circumstances.
- 3.2 Three round of Mass Drug Administration (MDA) was carried out in the Asuraina Unit of Rupendehi District covering a population of 10,000. Due to ineffective supervision during the operation the impact of this MDA was not up to the expectations. However, only a single round of MDA in a Unit covering a population of about 9,000 in the Jhapa District under very strict supervision during the month of September produced very good results (116 cases between September - December 1975 as against 913 during the last four months of the previous year).

4. Laboratory Services

- 4.1 The decentralization of the laboratory services virtually took effect from August. However, the new system was not fully stabilized by the end of 1975.

5. Problems

- 5.1 Effective supervision especially by the NHQ/Regional/District staff is not being done properly and effectively.
- 5.2 Necessary NMEO instructions/guidance/help are not being provided in time to the various echelons so that the work activities can proceed as planned.
- 5.3 Availability of spraymen/foremen with the existing fixed remuneration are becoming difficult to recruit, train and retain which causes serious field problems.

- 5.4 Movements of population from hills to plain and vice versa and also to and from the Eastern states of India are causing serious operational problems.
- 5.5 Daily out-puts of slide examination are considerably affected due to the lab. technicians' excessive leave of absence.

E. Integrated Activities of NMEO into the Health Services including working activities, planning, operations and evaluation

The Team visited the integrated Districts of Kaski, Bara and Parsa and in the limited time available, endeavored to evaluate the malaria status and to identify technical and administrative problems both to NMEO and the Basic Health Services. Previous reports outline in detail the HMG Policy and achievements regarding the integration of NMEO into the basic health services and a comprehensive evaluation was carried out by a HMG/AID/WHO team in January/February 1974. Thus the present Team made no attempt at an in-depth study but present here an overall impression of the situation based upon statistics and information provided during the visit.

The timing of integration varied between Bara and Kaski Districts which were fully integrated by April 1972 and Parsa District which officially was integrated in July 1974, but in fact the district office was established in October 1974.

The epidemiological picture in the three integrated districts should not be interpreted only in terms of positive cases found, as this is dependent upon the number of patients screened, which in 1975 was lower than in previous years. The statistics indicate that in 1975 transmission commenced early in the season indicating the presence of a sizeable reservoir of untreated parasite carriers. Intensive case detection, timely radical treatment and case follow-up throughout the year, and especially during the non-transmission season (October-February) would produce the epidemiological picture seen in 1973 in Bara District. That is to say late onset of transmission, and a short, sharp transmission period. The present picture therefore is cause for considerable concern during this year and prompt remedial measures are essential.

The team is fully aware that the problems revealed during this evaluation are well known and that efforts are being made to overcome them. However, the malaria situation in these areas is such that the integrated services cannot adequately contain the disease. In some localities it has reached the NMEO

criteria (API 0.5%) for the reintroduction of regular spray rounds, in keeping with the NMEC efforts in the rest of the country. It is very apparent that the Basic Health Services (BHS) is unable to carry out the required remedial measures of focal spraying and regular spraying through lack of adequate budgetary provision, personnel and transportation. Similarly the NMEC, at the present time, is also not adequately funded or supplied to carry out these remedial measures in the integrated areas because it was not planned for and at the time of integration the NMEC resources were reduced accordingly. In other words, there has been no contingency planning. However, it must be said that it is unrealistic to expect the Basic Health Services to be able to carry out regular spraying operations more effectively and more economically in 6 districts than the NMEC which is carrying out the same activity in the rest of the country.

In these integrated districts the surveillance coverage is generally not sufficient, especially the PCD screening. However, the case detection aspect is functioning, but timely radical treatment and case investigation is not. The case investigation workload has occupied the time of the AHW(P) to the extent that there is very little supervisory activity and malaria cases are either not being investigated promptly or not at all. Laboratory services needs to be maintained at a very high level of efficiency with adequate supervision.

Numerous administrative difficulties involving budget, supplies and personnel exist and require urgent attention. The key man in the integrated areas is the Civil Surgeon and persons filling such a post should be relieved of clinical responsibilities to ensure adequate field supervision of the integrated operations, and more time devoted to the administrative difficulties of such an operation. It is through the Civil Surgeon that the NMEC can maintain improved coordination at the operational level to the advantage of the Basic Health Services and NMEC.

Careful and gradual phased integration of a complex vertical program like malaria, offers the best prospects for success. The basic organization needs to be established, staffed, adequately budgeted including a contingency plan, and functioning, before the program begins to be phased in. Otherwise economic gains already achieved may well be lost. Before integration a high level of passive case detection could be developed by the screening of all fever cases attending outpatient clinics at the various health institutions and Health Posts. The laboratory capability can also be developed to a high degree of efficiency. Case investigation, radical treatment and finally house visiting can be built on top of this in an orderly fashion, with the appropriate expansion of the Health Services.

In these six districts already integrated, containment and eventual reduction of the disease incidence can now best be brought about by sharing the responsibilities for the malaria activities between the NMEO and the Basic Health Services in a joint coordinated effort. However, it must be emphasized that appropriate and adequate funding must be provided as a priority to both NMEO and the Basic Health Services to enable their respective activities to be effectively carried out.

The Team anticipates that the future integration of NMEO districts into the Basic Health Services will be carried out gradually and effectively along the lines developed in the 1975 Project Formulation for Basic Health Services.

F. A Review of the NMEO Activities and the Epidemiological Situation in the Eastern Hills

The special situation in the eastern hills was studied by the Team, which visited Okhaldhunga, Diktel, Bhojpur and Rumjatar. In this area there is a considerable movement of the population from the hills to the valleys and to the northeastern states of India.

As a result of the brief study of the districts visited the Team had the impression that in a significant portion of the operational area there is little or no transmission whilst the remainder transmission is occurring in pockets associated with specific ecological conditions conducive to vector breeding. Furthermore, the villages generally consist of scattered houses often at different levels along the hillsides.

Approximately 60-70% of the cases detected in this area are imported from outside Nepal and amongst this group more than 50% have P. falciparum infectious and 70% live outside the operational area. Thus, radical treatment and follow-up is really not possible although it is attempted. In Okhaldhunga during 1975 more than 20% of non-indigenous cases remained untraced.

Many of the imported cases are entering through the Kakarvita border check-post it is estimated that 52 to 55% of cases P. falciparum and 8.3% of all persons checked in 1975 were parasite carriers. Thus, effective control at this check-post would offer some protection to the population from P. falciparum, reduce the chances of a 4-aminoquinolone resistant strain of P. falciparum becoming established in the country and reduce the vulnerability in the eastern hills. Careful consideration should therefore be given to three possibilities:

1. That immediate blood examinations be conducted at the check-post and appropriate on-the-spot radical treatment be given to all positive cases found, using a single dose radical treatment in the case of P. falciparum.
2. That a single dose presumptive/radical treatment be given to all persons from whom blood smears are taken.
3. That a single dose presumptive/radical treatment be given only to suspected positive cases, based upon history of fever.

The first alternative is difficult because migrants arrive in large groups, the second is very expensive, and the third is less expensive but may not be as effective. The migrants are often unable to provide an exact address, many never arrive at the locality originally indicated and they invariably stop overnight on their way to the eastern hills. Thus many parasite carriers are probably lost within the country although precise statistics are not available.

The Team was aware of a lack of entomological data for this area and felt that this was needed in order to make a sound judgement as to the effects of and the need for residual spraying, particularly since it costs more than three times as much to spray in the hills than in the terai.

III. Review of Present Program Policy and Planning

A. Policy

Support for a national malaria program is based primarily on the broad based national health objectives of reducing morbidity and mortality so as to facilitate the economic and social development of Nepal. This objective has its origin in both national and health sector priority planning areas.

The planned malaria activities of the NMEC meet over-all national objectives by: (1) increasing improved working conditions for agriculture development in formerly malarious areas; (2) maintaining a healthy work force to produce crops and materials required by the nation; and (3) allowing the malarious regions of the country to take their rightful place in the regional development schemes of the country.

The activities of the NMEO also relate directly to the health policy concerns of the Ministry of Health in meeting their priority objectives for control and eradication of malaria.

The objectives of the MEB and the NMEO are focused on the control of malaria to a level where it is no longer a public health problem and to facilitate the orderly development of basic health services in Nepal.

In quantified technical terms the present objectives call for the interruption of the rising endemicity of malaria and the reduction of its incidence to 0.5 Annual Parasite Incidence (API) based on an API calculated from all the reported cases minus the imported cases from abroad. For Nepal country-wide, the 0.5 API standard translate to an incidence level where the annual number of detected cases under a stabilized surveillance mechanism should not exceed 3,000 cases and with an adequate response mechanism in place to effectively handle this level of incidence. The Team feels that this objective is practical and will provide the maximum benefit for the smallest cost.

B. Planning

The NMEO is guided in its over-all long term program direction by the Project Formulation Plan (Plan of Operations) which is detailed each year through annual Plans of Action. During the period of June-July, 1975 a revised Project Formulation Paper (Plan of Operations) was prepared by the HMG with the assistance of WHO. The draft of this Project Formulation Paper is before the concerned officials in the Health Ministry and is ready for presentation to other approving authorities. This Project Formulation Paper was approved in principle by the MEB on October 7, 1975 at its 134th meeting. It is extremely important, in the view of the Team, that this document be finalized and officially approved in order that orderly planning be carried out to meet the agreed objectives. The Team was informed that modifications for 1976 in the financial plan of this Project Formulation will be necessary due to 1976 funding problems within UNDP and efforts are now being made to adjust individual donor contributions. This effort to provide adequate funding support should be intensified by HMG in order that proper agreements can be made and the Project Formulation document officially approved by HMG and the World Health Organization.

The NMEO Plan of Action for 1975-1976 was prepared and approved by the MEB on May 7, 1975. It is through this document that firm operational plans can be authorized, prepared and put into effect. The Team was impressed with the quality of this document and congratulates the MEB on its planning efforts.

The Situation Analysis Team - 1976 believes the planning documents for supporting the malaria control activities is in accord with both national and health development policy. There are clear and direct line output values to the activities of the NMEO which support and assist in the accomplishment of both these objectives in Nepal. The Team believes that it is extremely important that proper, planned and adequate support be given to the NMEO in order that this organization can meet its responsibility in the attainment of national objectives.

IV. Recommendations

A. Administrative

1. The Team recommends that the Project Formulation Paper for malaria be finalized and approved by the concerned HMG officers.
2. The final approval of this document by higher HMG authorities require that the contributions of the various assisting agencies be carefully coordinated in order that these funds provide timely and adequate assistance support. The Team recommends that this action be carried out as promptly as possible to avoid any time lags in the planned program.
3. The Team supports the 1975/76 NMEO Plan of Action target of providing a Senior Administrative Officer and an experienced Fiscal Officer to the program, as soon as possible.
4. The yearly preparation of the NMEO Plan of Action should proceed on schedule and it is suggested that work begin immediately for the 1976/77 program. The Regional Officers and District Officers workplans and budgets should form the basis of the national Plan of Action. In other words, to plan from the bottom up and not from the top down.

5. The Team recommends that clarification of the roles of the Regional Offices to the District Offices and the District Offices to the Regional Offices be carefully documented and organized, so that each of these administrative units has a clear organizational framework of program responsibilities. Immediate steps should be taken to update the current procedural manual, or better, to prepare and issue a new revised manual and regulations reflecting current administrative requirements.
6. Training for administrative personnel is badly needed. The findings of the Situation Analysis Teams in the field indicated that well over the 80% of the storeman and accounting personnel have had no formal training. In addition senior personnel such as Regional and District Officers require training in broad management principles including supervision. The Team recommends that courses and seminars be organized and held for these personnel with the employment of management instructors as appropriate.
7. Both Regional and District Officers should routinely check inventory, fiscal and personnel attendance records whenever they are reviewing districts records as well as other administrative operations.
8. Consideration should be given to area differentials in spraymen's pay where a district has much higher competitive wage scales for unskilled labor.
9. A system of correspondence control should be installed at least in Regional Offices to follow up long delayed correspondence and requisitions.
10. All key management personnel both in Headquarters and field should train an understudy to carry out his duties in his absence or transfer.
11. Regions should be permitted to shift up to 10% of funds from one code to another (except personnel) without requesting Headquarters approval beforehand to the extent permitted by HMG regulations. Regions should have the authority to allow transfer of up to 10% from one code to another for the District (except personnel). Headquarters could be informed after the fact and appropriate funding records changed.

12. A system of "management audit" should be initiated. This would involve the review in the field of management problems in Region, District or Unit periodically (twice a year). The Management Specialist would report his finding to the Regional or District offices and advise proper action. The management audit could be assigned to the new Sr. administrative officer or the internal auditor could be retrained to add administrative expertise to his fiscal knowledge.
13. A current review of transport needs should be made to determine the placement of newly imported vehicles. The situation of transport needs in different parts of the country may have changed since the last survey. For example, transport is critical in the Western Region (Nawal Parasi and Kapilvastu) and Central Region (Mahotari District).
14. The establishment of Repair and Maintenance facilities in the Regional Headquarters should be considered to keep current and new vehicles on the road. Consideration should also be given to have major repairs for NMEO vehicles at Headquarters performed in the combined vehicle facility. It is also recommended that a complete training program for preventive maintenance be given to all drivers.
15. In the Far West District of Dang-Deokhuri the area covered by the District office is too large for proper management. The Team recommends that a sub-District Office be established at Ghoraha to cover the area in the Deokhuri Valley and, more importantly, the M.R.M. Road Project as this project is causing malaria problems for the entire area.
16. Supervision from the intermediate level should be strengthened by revising the existing Travel and Daily allowances.
17. The lost man days due to leave should be reduced to a minimum during the period July to October (the period of high transmission in Nepal).

B. Operational

Recommendations

- 6.1 Considering the need to make supervision more effective, it is recommended that all the supervisory staff must be induced to remain out actually in the field (operational areas) for a period of time every month. Introduction of a form to be filled in after each such supervisory trip may be considered.

- 6.2 The timely availability of supply and equipment necessary for field operations must be ensured.
- 6.3 All the procedure laid down in the current parasitological operational manual must be followed by the SMA/MAs of the regional laboratories.
- 6.4 Taking into consideration the approved general strategy of the program two rounds of spraying may be considered in all common positive villages in formerly hypoendemic area.
- 6.5 Mass Drug Administration (MDA) in the common positive villages (most active foci) may be considered for the NMEO field program.
- 6.6 Taking into consideration the higher percentage of Mass Blood Survey slides and low positivity rates, it is recommended that the slides collected during the MBS should be from the fever cases and children. During the MBS priority should be given to the children with or without fever specially in the villages where active transmission of malaria is suspected.
- 6.7 Increased activity in health education work is urged in all aspects of the work. More contact between NMEO field officers with key community leaders is in order. Every NMEO worker is a health educator and should take this responsibility seriously.

C. Technical

1. Entomological studies should be concentrated on the India bordering Terai areas where A. annularis or some other species is playing the role of vector.
2. The Team made the following technical recommendations regarding the Eastern Hills activity of the NMEO:
 - a. That a careful analysis is made of the epidemiological situation in those localities of the Eastern Hills at present subject to a regular May/June spray cycle with the objective of determining:
 - i) those villages with a level of transmission equal to or greater than 0.5/1000, and precisely where transmission is occurring (inside or outside the village);

- ii) the precise transmission season;
- iii) the level of existing surveillance activities and;
- iv) the receptivity existing in the remaining villages of the sprayed locality, based upon simple considerations of the ecological conditions suitable to support the principal vector and/or the demonstrated presence of the vector.

The outcome of this recommendation should be selective regular spraying at an appropriate time relative to the known transmission period only in those villages with an API greater than or equal to 0.5/1000, and in those remaining villages of the same locality which have a high receptivity and malariogenic potential.

- b. That a special, in depth, long term entomological study be conducted in the Eastern Hills with external assistance over no less than one entire year, in selected villages where transmission is continuing to determine:
 - i) the precise anopheline fauna;
 - ii) the vectorial capacity of the principal, secondary and suspected vectors;
 - iii) the seasonal variation of the vectorial capacities of the vectors studies;
 - iv) the level of vectorial capacity associated with transmission in this area;
 - v) the present bionomics of the principal vector in sprayed and unsprayed villages;
 - vi) the effects of spraying on the vectorial capacity of the vectors;
 - vii) the susceptibility of the principal vector to DDT and;
 - viii) whether residual spraying is effective and recommendation concerning alternative measures to be adopted.

- c. That a brief study be carried out at the Kakarvita check-post to determine the percentage of P. falciparum cases passing through, the percentage of cases that are lost, the approximate areas to which the migrants are returning and the feasibility of conducting on the spot blood examinations using the rapid staining technique of JSB or Field, and of giving immediate radical treatment.
- d. That in the eastern hills only, those positive cases of P. falciparum that are traced and found to be residing outside of the operational area should be given a single dose radical treatment using 1000 mgms. of sulphadoxine, 50 mgms. pyrimethamine and 45 mgms. primaquine (adult dose).

D. Recommendations for NMEO Districts already Integrated

1. That all regular spraying activities should be the responsibility of the NMEO, and focal spraying until such time as the Basic Health Services can participate without jeopardising surveillance activities.
2. That an adequate budget and personnel be urgently allocated to the NMEO for immediate spraying activities in integrated districts and that this allotment may be utilized for no other purpose.
3. That NMEO in preparing its annual Plan of Action should include the integrated areas and plan accordingly.
4. That an amendment to the Plan of Operations be prepared to incorporate the activities in the integrated districts into the work plan and budget of NMEO.
5. That to enable NMEO to implement prompt remedial measures in integrated districts it is essential that accurate up to date statistical information on the epidemiological situation be supplied by the Basic Health Services on a regular monthly basis.
6. That close liaison be established between the District Health Office and the Regional Malaria Office, through the Civil Surgeon to ensure timely reporting and prompt implementation of remedial measures in the integrated districts.

7. That close liaison and cooperation be maintained between the Basic Health Services and NMEO at all levels.
8. That effective active, passive and activated passive, case detection in the integrated areas continues to be the responsibility of the Basic Health Services. This should be accomplished through adequately staffed, equipped and supervised laboratories and should include timely radical treatment, case investigation and monthly follow up of positive cases for a minimum of 12 months.
9. That the Basic Health Services must be adequately budgeted to provide the necessary personnel, equipment and supplies to carry out the responsibilities in recommendation 3.
10. That surveillance activities in the integrated districts be promptly improved qualitatively and quantitatively.
11. That directives be given to all Health Posts to screen all fever cases and that adequate staff be made available to cope with the timely examination of increased numbers of slides and the radical treatment, investigation and follow up of additional cases detected.
12. That the administrative difficulties in the integrated districts, of outstanding and insufficient TA/DA funds, the appointment of permanent staff and insufficient budget, should be resolved on a priority basis.

V. Note of Appreciation

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