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**IMPLEMENTATION OF OPERATIONAL
FIELD TRIAL ON COMMUNITY-BASED
MALARIA CONTROL
IN WEST TIMOR, N.T.T. PROVINCE, INDONESIA**

by

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GLOSSARY

APBN	Central Operational Budget
Bali Pengobatan	Polyclinic
Binkesmas	Division of Community Health, MOH
Bupati	District Administrator(s)
Camat	Sub-district Administrators
CDC/MAL	Communicable Diseases Control/Malaria
CFT	Case Finding and Treatment
CFT/IBN	Case Finding and Treatment/ Impregnated Bed Nets
CHIPPS	Comprehensive Health Improvement Project-Province Specific
Dinkes	Health Service
Dokabu	District Medical Officer(s) of Health
Dokter Puskesmas	Health Center Medical Officer(s)
Dusun	Village Hamlet
Imam	Islamic Religious Leader
Kader	Village Health Volunteer
Kabupaten	District(s)
Kader Posyandu	Village Health Service Volunteer(s)
Kankanwil Depkes	Chief, Provincial Health Office
Kecamatan	Sub-district(s)
Kecamatan P.K.K.	Sub-district Voluntary Women's Welfare Organization

GLOSSARY cont.

Keluarga Besar	Senior Families
Kepala Desa	Village Head(s)
Kepala Guru	Head Teacher(s)
L.K.M.D. and L.M.D.	Village Community Resilience Committee (under Ministry of Interior)
MCP	Malaria Control Program
MOH	Ministry of Health
N.T.T. Province	Nusa Tenggara (South-East) Timor Province
PKMD	Village Community Health Development Program
P2KTPI	Health Planning Bureau, CHIPPS Project
Fokja - 4 P.K.K.	Health Group, Voluntary Women's Welfare Organization
Posyandu	Voluntary Village Health Service Post
Puskesmas	Health Center(s)
Puskesmas Pembantu	Sub-health Center(s)
R.K. and R.T.	Heads of Village Hamlets/Sub-hamlets
T.T.S.	Timor Tengah (central); Utara (north)
T.T.U.	Timor Tengah (central) Selatan (south)
Wasor Malaria Kabupaten	District Malaria Assistant

EXECUTIVE SUMMARY

This trial is indeed a vital health exercise for formulating a self-sustaining community-based malaria control program appropriate to meet the specific needs of Outer Island situations. It is particularly appropriate in the context of maintenance of gains achieved at great cost, as in the case of Timor Malaria Control Project. Very likely it may trail blaze many a future study in realizing community involved malaria control efforts. The findings could well lead to replication of similar or modified versions pertinent to local conditions on Timor Island and elsewhere.

Coming under the aegis of CHIPPS, the Project has generated and energized multidirectional provincial and local initiatives, sectoral and intersectoral, toward instituting the much desired but elusive proposition of malaria control through active participation of recipient populations.

Taking note of the approach of the National Health System in the provision of primary health care through Posyandu (Voluntary Village Health Service), the trial attempts to investigate utilization of Kader Posyandu (Village Health Service Volunteers) in case finding and treatment (CFT) of malaria. In part, it also attempts to include selective provision of insecticide impregnated bed nets, in addition to Kader malaria service, and investigate the extent of interruption of malaria transmission likely to result. A third aspect relates to the respective Puskesmas (Health Centers) and concerns investigation of overall malaria incidence in their areas of coverage in order to reflect the findings on Kader served communities. The last mentioned will now include provision of radical treatment to and epidemiological investigation of positive malaria cases identified to benefit from the microscopic findings.

An urgent felt need of program officials, especially at the provincial level, was the development of a coherent Plan of Action encompassing all aspects of the trial in specific terms to facilitate project implementation. The determinant areas included: (1) specific objectives and methodologies to be applied to achieve them; (2) identifying component activities and subactivities; (3) designing recording and reporting forms for field activities and formats for data analysis; (4) monitoring and evaluating performance and results; (5) developing orientation, training and educational programs for each category involved; (6) developing work plans and implementation plans; (7) organizational and administrative responsibilities; (8) providing needed assistance; and (9) recasting the budget. Hence, considerable attention of the consultant had to be devoted to fulfill these needs. Besides referral to documents outlining proposals for the trial (Drs. Lacey, Warren, Lada and Arbani),

the skills and experiences of various specialists from the province and the center were utilized and each aspect discussed and finalized.

Likewise, the component activities and subactivities of each concerned area were discussed and determined. These included: (1) Kader-based case finding, treatment, recording, and referral services; (2) prospective involvement of communities in other malaria control efforts in due course; (3) Kader monitoring and supervisory activities as well as laboratory and case management activities of the Puskesmas; (4) entomological activities of assigned teams and supervisory responsibility of the province; (5) diagnostic microscopy, training, recording and reporting and supervisory responsibility of the provincial technician; (6) epidemiological service in respect to positive cases identified by the periphery and the province; and (7) level responsibilities in regard to recording and reporting, data analysis and evaluation, problem resolution and management.

The implementation process started with a series of group discussions at the provincial level that led to an orientation program for Dokabu (District Health Officers) on February 4. A tentative selection of trial areas was made and an official request communicated (February 5) to the concerned Bupati (District Administrators) for local acceptance and support to the Project. This was followed by the visit of a team including the consultant (February 4-11) to brief, discuss and finalize arrangements with Health Officials as well as the Bupati, Camat (Sub-District Administrators) and village leaders in the three selected Kabupaten. Staff requirements and other needs of the peripheral services were assessed and solutions determined.

Training programs were scheduled and course contents developed through consultative meetings, referral to documents and seeking advice from central and provincial experts. The Doktor Puskesmas being the focal point for community participation and Kader service, special attention was paid to stress primary health care and the group dynamic approach including demonstration and role playing for community education, guided by specialists. Toward the end of the course (February 14-18), the Doktor Puskesmas were given guidance to jointly develop curricula for these educational programs. The training courses for the field laboratory and entomology staff were held separately, but during the same period (February 18-21), and assisted by central and provincial officials.

Preparations for community education and Kader training went ahead and included: (1) reviewing and testing training materials and incorporating corrections where feasible; (2) designing, reviewing, revising and translating recording and reporting formats relating to Kader service and Puskesmas activities; (3) contacting village leaders to arrange recruitment of Kader

Posyandu wherever needed; and (4) agreeing on training and activity schedules. At one stage, it was considered possible to go through the Kader training program in all trial villages between February 22-24, but owing to causes beyond control, the program was later modified. Starting on February 24, the community education and Kader training programs concluded on February 29 in all but three villages, scheduled for completion three days later. The core group formed into three teams to support one Kabupaten each and assist with these activities. The consultant participated on one team until February 27.

Having ensured requisite supplies, the implementation of field activities by Kader Posyandu was effective March 1 as planned in most of the 15 trial villages, and March 4 in the rest. Likewise, activities at the institutional level started in all four Puskesmas on March 1. The fortnightly field activities of monitoring and supervising Kader service will begin appropriately timed to the next Posyandu service day in respect to each Puskesmas. In regard to the bed net trial, work and supervisory schedules for each of the three teams had already been drawn up, and house surveys and entomological investigations completed in some areas and ongoing in others. The bed nets had been received, deltamethrin treatment had commenced and distribution lists were readied. This part of the trial will be operational by mid-March, as planned.

The Kankanwil Depkes (Chief, Provincial Health Office) has appointed a committee to oversee the operational field trial. Among other things, he has agreed to assign it the responsibility of data analysis and evaluation, on a monthly basis, to assess the progress made, ascertain bottlenecks and suggest remedies. The compilation of field data will be done on appointed days by four field supervisors, each visiting one Puskesmas once a month for this purpose. The committee will also review the field situation together with the four Doktor Puskesmas and the three Dokabu once in two months or so to determine problems encountered and ways and means of solving them.

The few constraints of importance requiring speedy resolution relate to availability of a laboratory technician for malaria microscopy; transportation support to field supervisors, entomological and laboratory field teams; budget needs; life of the project. Now that the Puskesmas activities have started, the flow of blood films will begin and accumulate. Until a suitable person becomes available, the films have to be sent to the central laboratory for correct reading of results and delays will, therefore, be inevitable as regards this activity. The supervisors, for instance Mr. Sujud, as well as the field entomology teams will need motor vehicles to fulfil their tasks on assigned schedules, uninterrupted. The laboratory field teams, one in each of the four Puskesmas, will require four motorcycles, instead of three as contemplated, to ensure visiting

the Kader for monitoring, record collection and supply provision twice a month. Several items of foreseen and unforeseen expenditure emerged even during the single month of preparation for Project implementation. For instance, (1) presence of central level officials required for planning, programming, and training; (2) travel costs for counterparts and others to accompany consultants; and (3) enlargement of educational and training efforts to suit local situations. These issues appear to need some in-depth analysis and appraisal. In view of the delayed implementation and delays likely in the start up of certain component activities (e.g., microscopy), the period of stabilization could possibly be prolonged, in competition as it were with other intensive field operations. Perhaps it may be worthwhile examining the prospective life of the project at this stage rather than later to ensure quality efforts and performance.

The Kakanwil Depkes appears keen on studying the multifaceted societal, ethnic, cultural and human aspects that relate to receiving positive and favorable attitudinal and behavioral responses toward generating a spread of malaria control program through active and sustained voluntary efforts of the communities as a long-term proposition. This would constitute, by itself, a broad spectral study of a wider perspective and deeper insight, involving several specialties in human sciences besides malariology. Policies and resources permitting, it may be worthwhile attempting to develop the philosophy and design a small-scale study appropriate to the local situation.

Thanks to all concerned, the consultant was gratified and elated to work toward the development of community-based malaria control on the Island of Timor that had emerged in the wake of the Timor Malaria Control Project with which he was associated from the beginning.

I. PLAN OF ACTION

A. Introduction

The goal of the Timor Malaria Control Project, jointly sponsored by GOI and USAID and launched in the early 1980s, was to improve significantly the health status and productive potential of the rural poor on Timor Island. The Project purpose was to develop a self-sustaining control program to reduce malaria prevalence in priority areas to 2% or less.

Upon completion of the Project, it was envisaged that limited spraying would be conducted by the health services and a management system enabling the health personnel and communities to plan, implement and maintain an effective malaria control program put in place.

Nearing the stage of completion of the Project in 1987, the major concern related to maintenance of the gains wherever achieved on the one hand and revision of strategies to cope with areas needing further progress, on the other. In the context of maintaining the successes achieved through organized malaria control operations and reaching the program goal of community-based malaria control efforts, a team of USAID consultants together with MOH and provincial officials designed, developed, and documented the following proposals for the operational field trial:

- Feasibility of Using Community-Based Malaria Control in West Timor, Indonesia (Lacey and Warren)
- Proposals for Operational Field Trial to Control Malaria: Document No. 6298 (Lacey and Warren); Document No. 6628 (Lada, Arbani, et al.)

Appropriately, the trial was included as part and parcel of CHIPPS Project on West Timor, N.T.T. Province. In line with the Project aspirations and realistic field situations, certain aspects of the trial elements were reconsidered by the provincial and central levels on a consultative basis and minor modifications introduced as deemed proper.

B. Objectives

1. Investigate the utilization of Kader Posyandu (Village Health Service Volunteers), in selected villages, in case finding, treatment and recording of clinically diagnosed malaria as attributable to chills and fever.

2. Investigate the efficacy of insecticide impregnated bed nets in interrupting malaria transmission in some of the selected villages covered by Kader-based malaria case finding and treatment service.
3. Conduct parallel investigation of the microscopic results of blood films taken from fever cases, chills, and fever cases, and control group of afebrile cases attending the respective Puskesmas (Health Centers) that cover these selected Kader service villages.

II. TRIAL AREAS

The operational field trial, in respect to Kader-based case finding and treatment of malaria, will be implemented in 15 villages. In three of the 15 Kader malaria service villages, the insecticide impregnated bed net trial (CFT-IBN) will be implemented; in each instance, another Kader service village will also be selected for control study. The four Puskesmas covering these trial villages will be involved in case finding of malaria, blood filming and case management procedures, besides supporting the Kader-based malaria control efforts. The reading of microscopic results will be undertaken by the province to ensure accuracy of results. Aspects relating to epidemiological investigation of identified malaria cases and remedial actions as warranted will be handled by the province in coordination with the peripheral health services.

A. Criteria for Selection of Trial Areas

- Kabupaten and Kecamatan administrators are willing to actively participate in the field trial.
- The degree of malaria prevalence in eligible areas is low to moderate from where spraying has been withdrawn.
- The complement of Puskesmas staff is complete and they are motivated and willing to actively participate in the trial.
- The villages selected are accessible in all weather conditions and located not too far from the main unit of Puskesmas.
- Posyandu service is rendered by Puskesmas at Stratum I level (the best of three levels rendered) in all the selected villages.
- Local administrators are willing to consider augmentation of Kader Posyandu as needed.

B. Kabupaten, Kecamatan and Puskesmas Determined as Largely Satisfying these Criteria

<u>Kabupaten/Code</u>	<u>Kecamatan</u>	<u>Puskesmas</u>
Kupang/K.P.G.	Kupang Tengah Fatulieu	Baumata Camplong

<u>Kabupaten/Code</u>	<u>Kecamatan</u>	<u>Puskesmas</u>
Timor Tengah Selatan/T.T.S.	Amanuban Tengah	Niki-Niki
Timor Tengah Utara/T.T.U.	Insana	Oelolok

C. Villages Found Suitable for Implementing the CFT and CFT/IBN Operations

<u>Puskesmas/Code</u>	<u>CFT Village/Code</u>	<u>CFT-IBN Village/Code</u>
Baumata/PBT	a. Kuaklalo/Ko b. Naimata/NM c. Oeltua/OT	d. Noelbaki/NB e. Oebelo/OB
Camplong/PCP		a. Benu A/BNB b. Benu B/BNB
Niki-Niki/PNK	a. Bone/BO b. Sopo/SP c. Niki 2 Un/NU	d. Neke A/NEA e. Neke B/NEB
Oelolok/POL	a. Manunain A/MA b. Manunain B/MB c. Letmafo/LF	

D. Distribution of Villages, Hamlets, Population and Kader Posyandu

<u>Puskesmas</u>	<u>Village</u>	<u>Hamlet</u>	<u>Population</u>	<u>Posyandu</u>
Baumata	a. Kuaklalo	3	339	15
	b. Naimata	5	938	15
	c. Oeltua	5	1,563	20
	d. Noelbaki	5	2,103	20
	e. <u>Oelbesi</u>	<u>5</u>	<u>1,931</u>	<u>20</u>
Subtotal	5	23	4,034	90
Camplong	a. Benu A	2	656	20
	b. <u>Benu B</u>	<u>3</u>	<u>1,479</u>	<u>20</u>
Subtotal	2	5	2,135	40
Niki 2	a. Bone	2	1,312	15
	b. Sopo	2	938	15
	c. Niki 2 Un	2	714	15
	d. Neke A	2	1,394	13
	e. <u>Neke B</u>	<u>2</u>	<u>1,097</u>	<u>12</u>
Subtotal	5	10	5,455	70

<u>Puskesmas</u>	<u>Village</u>	<u>Hamlet</u>	<u>Population</u>	<u>Posyandu</u>
Oelolok	a. Manunain A	2	1,044	20
	b. Manunain B	3	1,685	20
	c. <u>Letmafc</u>	<u>4</u>	<u>1,561</u>	<u>20</u>
	3	9	4,290	60
Total	15	47	15,914	260

E. Maps of Trial Areas

A map of West Timor illustrating the Kabupaten and Kecamatan where the operational field trial will be implemented, and one each of the Kabupaten chosen denoting the Puskesmas and the CFT/CFT-IBN trial villages are furnished in Annex 1.

III. METHODS

A. Community Education on Malaria Control

Community education is an absolute prerequisite for initiating self-help services for malaria control. It is essential to effectively prepare the villagers, especially the leaders, to receive and become involved in the Kader-based malaria control efforts.

The village leadership will comprise the Kepala Desa (Village Head), Section Leaders of L.K.M.D. and L.M.D. (Village Resilience Committee), R.K. and R.T. (Heads of Village Hamlets), Pokja-4 P.K.K. (Women's Voluntary Health Group), Village Priest/Imam, Kepala Guru (Head Teacher) and Keluarga Besar (Senior Families).

The Camat Kecamatan (Sub-district Administrator), the P.K.K. representative and the Doktor Puskesmas (HC Medical Officer) will constitute the core group to lead the process of community education. The Doktor Puskesmas will be the focal point for conducting community education on malaria control.

The primary purpose of community education is to enable the people to identify their major health problems, recognize that fever is a significant health problem and that malaria is one of the primary causes of fever.

It is essential that they know about malaria as a disease, its symptoms, how it is transmitted by vector mosquitoes, mosquito breeding sites, vulnerable population groups and malaria control efforts.

The method of malaria case finding through chills and fever, and its treatment by chloroquine therapy by the Village Kader Posyandu need to be clearly indicated and matched with the information already conveyed on malaria and its control.

The leaders have to be enthused in determining the Kader requirement for their village and be convinced of the need for augmentation, if found necessary. For service coverage beyond 20-25 families per Kader will be impractical.

Any program change in respect of Kader service will need a review session, dialogue and discussion. A review session once a year, mainly through direct discussion by the villager's themselves, especially by the Kader, is also important.

As the Kader-based case finding and treatment service takes root and gets firmly established, generation of other community based malaria control efforts can be considered. These efforts can relate to simple drainage of small-water collections, filling-up of pits and hollows, weekly removal of sand-bars thrown-up by wave action against channel outlets to the sea, introduction of larvivorous fish into water collections, removal of algae from impoundments. Of course, the community must be effectively prepared to actively participate in these efforts. At that point of time, it will also be necessary to tap the resources of teachers and school children, through a well planned school health program, for their support and active participation.

B. Case Finding and Treatment of Malaria by Kader Posyandu

The development of Kader Posyandu needs as careful and effective preparation as in respect to community education, perhaps more. The backdrop of enlisted community support, too, is important. It is, therefore, beneficial to let the community education program precede the one for Kader training.

The training efforts have to be so designed as to be adequate but confined to essentials. Unnecessary elaborations have to be avoided in order not to confuse the issues or dilute the efforts. The explanations offered should be simple, straight forward and expressed well, preferably in the local tongue. Thus, it will be a good plan to get a local employee, such as the Puskesmas laboratory staff member who is intimately involved in Kader service anyway and usually well versed in the local language, to ensure a two-way flow of communication and interpretation.

The Kader service is simply limited in scope and covers the families assigned to each. The expectation, although minimal, is quite specific. Essentially, the Kadets have to be well trained:

- To recognize clinical diagnosis of malaria by the occurrence primarily of chills and fevers.
- To treat each clinically diagnosed malaria case by administering chloroquine for three consecutive days in the Kader's presence.
- To refer seriously ill cases or fevers that recur within a week after treatment to Puskesmas for special care.
- To record basic information concerning cases found and treated or referred to Puskesmas.

It is essential that the Kader Posyandu feel encouraged and become confident to effectively deliver the service tasks assigned. Adequate training, proper guidance and frequent follow-up are the methods to be employed to achieve these goals. The techniques of dialogue, discussion and demonstration using appropriate training materials on hand, group discussions and role play are valuable tools for training. The chart designed in respect to Kader service, "Guidance for Kader Posyandu in Case Finding of Chills and Fever and Treatment" (Annex 2), emphasizes the main symptom of malaria while also mentioning associated symptoms and outlines the dosage and method of chloroquine treatment by age-group and day of drug administration on the front face. The reverse face of the chart indicates the types of seriously ill and recurring fever cases that ought to be referred to the Puskesmas. The chart should be patiently explained for proper recognition and understanding of issues involved. The "Report on Case Finding of Chills and Fever and Treatment by Kader Posyandu" (Annex 3), and the "Report on Referral of Seriously Ill and Recurring Fever Cases to Puskesmas by Kader Posyandu" (Annex 4) relate to recording of basic information on cases dealt with. Sample record forms should be asked to be filled individually during role play so that errors committed can be corrected.

Ensuring supplies of guidance charts, recording formats, carbon paper and other requisite during training session and chloroquine prior to start of service are imperative. The proposed periodic visits to Kader Posyandu by Puskesmas staff, once on the monthly Posyandu service day and once again two weeks later to monitor and assist with their activities, collect recorded reports and replenish supplies have to be discussed to determine workable schedules. The intention of collecting blood films from chills and fevers identified by the Kader on Posyandu service days by Puskesmas staff should also be adequately conveyed. The Kader Posyandu and the village leaders have to be informed that the Puskesmas can be contacted at any time in case of emergencies arising from Kader malaria service.

C. Insecticide Impregnated Bed Nets for Malaria Control

Obtaining some degree of personal protection through usage of mosquito net is a simple and feasible self-help measure of avoidance of mosquito bites indoors. Should the bed net be also treated with an effective residual insecticide, the protection is enhanced through interruption of malaria transmission to a significant extent. Thus, the reach of community-based malaria control will indeed be further enhanced if the Kader service of case finding and treatment of malaria is coupled with usage of insecticide impregnated bed nets.

In view of ease of local availability, the insecticide chosen for the trial is deltamethrin, a pyrethroid that has been proven effective. Deltamethrin treated bed nets retain the residual insecticidal activity for a considerable length of time. To cope with field conditions, however, the bed nets will be treated at the beginning, mid-point and toward the end of the trial period. The procedure for impregnation of bed nets with deltamethrin is detailed in Annex 5.

Three of the 15 Kader-based case finding and treatment service villages will be chosen for the bed net trial while three others appropriately selected for control study. Technical observations in the trial and control villages will primarily relate to the assigned series of entomological investigations besides data on malaria incidence and case management. The cooperation and assistance of village leaders as well as householders will be essential, particularly in regard to conducting periodically scheduled dusk to dawn entomological investigations without hindrance.

Deltamethrin impregnated nylon bed nets in three sizes--single, double and triple -- will be distributed to each household in the three trial villages. For this purpose, house surveys will be conducted in the villages to determine the number of sleep-in beds, by size, used by each of the families. In order to obtain good results, a planned program of information and education will precede the bed net distribution to stress on the proper use, utilization and care of the treated nets. The field entomology teams will follow-up on these aspects during their periodic visits to the villages.

D. Case Finding and Treatment of Malaria, Follow-Up Actions, and Support to Kader Malaria Service by Puskesmas

The delivery of health care in a Kecamatan is rendered by a single Puskesmas if it is of moderate size (e.g., Insana) or by two if thickly populated (e.g., Kupang Tengah). The number of villages served by a Puskesmas may thus vary, for instance, from ten (Baumata) or less, to 26 (Niki-Niki) or more. A Puskesmas comprises a main unit, where the medical and most paramedical staff and facilities are located, and two or more Puskesmas Pembantu (Sub-Health Centers) manned by one or two staff members. Although studies have determined that the sphere of attraction of the main unit is about 30% of the population of the Kecamatan it serves, in view of availability of technical skills and facilities, the involvement of the Puskesmas will be limited to its main unit for the purpose of this field trial. The staff primarily involved will be the Doktor Puskesmas and the microscopist/assistant microscopist.

The investigations will be directed toward case finding of malaria not only as related to incidence of chills and fevers, as in the case of Kader Posyandu, but also in terms of overall fever incidence from all causes and a control group of afebrile cases. The case finding procedures will not be limited to clinical diagnosis of malaria, but will include confirmatory diagnosis through microscopic examination of blood films obtained from these cases. Blood films will be taken from all chills and fevers, all other fever cases and a sample of afebrile cases among daily attendance of outpatients. The chills and fever cases will be given the standard three-day regimen of chloroquine treatment starting at the time of blood filming.

Blood films will be taken by the Puskesmas laboratory staff at the outpatient clinic, stained, and given a code number on a daily basis. Also, on every monthly Posyandu service day in the respective trial villages, the laboratory staff will take blood films from chills and fever cases identified by the Kader on that day. The particulars of blood films obtained will be recorded on the format "Report on Blood Films Collected in Puskesmas, Microscopic Findings and Follow-up Actions" (Annex 6). The records will be maintained by the Puskesmas and categorized according to the source of blood films (chills and fever, fever, afebrile condition), trial villages (CFT/CFT-IBN), and other non-trial villages covered, and period of activity. The Puskesmas data will be collected and compiled once a month by a visiting provincial team for analysis and review.

Reading of microscopic results will be done at the provincial level. To enable speedy action, the Puskesmas will forward the stained blood films together with copies of relevant reports periodically as stipulated. Upon receipt of provincial microscopic findings, positive cases will be promptly administered standard radical treatment regimen by the Puskesmas and the fact recorded on the reporting format and followed up.

The Doktor Puskesmas will be the focal point for community education and training and development of Kader-based malaria control efforts. Together with Doktor Puskesmas, the Puskesmas laboratory staff will be the prime movers in monitoring Kader malaria service and providing overall assistance to Kader Posyandu, on a bi-weekly basis. The records collected from each of the Kader will be compiled by the Puskesmas in terms of each of the trial villages, by CFT/CFT-IBN category.

IV. COMPONENT ACTIVITIES

The operational activities pertaining to the field trial on community-based malaria control involve (1) case finding and treatment of malaria by Kader Posyandu and Puskesmas (CFT operations); (2) management of Kader malaria service; (3) entomological assessment of deltamethrin impregnated bed net usage in selected areas of Kader malaria service (CFT-IBN operations); (4) training of health personnel, community education and Kader training; and (5) data analysis, review and evaluation.

A. Case Finding and Treatment of Malaria

There are two facets to case finding and treatment operations. One deals with case finding and treatment of malaria by Kader Posyandu and the other with parallel activities by Puskesmas with the added elements of confirmatory microscopic diagnosis of malaria and radical treatment of positive malaria cases.

1. CFT Operations by Kader Posyandu

Kader Posyandu will involve themselves in clinical diagnosis of malaria based on occurrence of the major symptom of chills and fever. The treatment regimen will be administration of chloroquine for three consecutive days. Cases of chills and fever identified will be recorded on the formats provided. Seriously ill patients or fevers that recur within a week of treatment will be referred to Puskesmas, with the red card filled in, for special care.

A guidance chart has been designed (Annex 2) to enable Kader Posyandu to recognize chills and fever and associated symptoms of malaria and chloroquine administration by day of treatment and dosage by age-group, with the notations that the tablets should be consumed by the patient in presence of the Kader and that the tablets should not be given on empty stomach. On the reverse face of the chart, guidance is given regarding types of cases to be referred to Puskesmas.

Simplified report forms have also been designed for the Kader to record cases found and treated (Annex 3) and referred to Puskesmas (Annex 4).

Besides resident service, the Kader will also participate in Posyandu service every month. On those days, should any chills and fever cases be identified, the Kader will let the Puskesmas microscopist, who will be present that day, to take blood films.

It is not the responsibility of Kader Posyandu to deal with non-residents or those passing through. Such cases should be asked to visit Puskesmas or other institutions.

2. CFT Operations by Puskesmas

Since the microscopists will be required to handle a heavy load of laboratory work in Puskesmas as well as deal with Kader malaria service in the field, the single microscopist in the Puskesmas will be augmented by an additional staff member, either by diversion from the Kabupaten health services or temporary assignment. Thus, an assistant microscopist will be available in each of the four Puskesmas involved.

The microscopists will assist the Doktor Puskesmas and para-medical staff in blood filming of all chills and fever cases and fever cases attending outpatient clinics on a daily basis. In respect to afebrile cases, they will blood film the first ten cases attending Mondays, Wednesdays, and Fridays; should attendance on those days be less than ten, the activity will be limited to the number attending. Also, on Posyandu service days, blood films will be taken by the microscopists from chills and fever cases identified by the Kader.

It will be essential to ensure high quality of blood films and staining in order that the reading of results can be accurate. There should be no time-lag between blood filming and staining. The information on blood films collected should be properly recorded on the format designed for the purpose (Annex 6). The microslides collected and the reports recorded are to be forwarded to the provincial microscopist every Monday and Thursday without fail. If the target days happen to be holidays, the dispatch will be made the following day.

The procedure for code numbering microslides will be in terms of the source of blood film, Puskesmas generating it, or the CFT/CFT-IBN village concerned and date of collection. Blood films obtained from fever cases, chills and fever cases and afebrile cases will be categorized by the Roman numerals I, II, and III, by date of collection. The serial number of slides collected on a particular day will be denoted by the Arabic numerals 1, 2, 3 and so on, under the proper category of blood film. The Puskesmas or the trial village will be indicated by the appropriate coded initials (see Section II-3 for details). For example, the third slide collected from a fever case on March 1, in Puskesmas Baumata will be coded as PBT/I/3; the first slide

1.3.88

from a chills and fever case collected during Posyandu service day on March 5 in Benu A village of Puskesmas Camplong will be coded as PCP/BNA/II/1 and so forth.

5.3.88

All chills and fever group of cases blood filmed will be given the three-day regimen of chloroquine treatment, as in the case of Kader Posyandu. Upon communication of results by the provincial microscopist, those cases identified as positive will be given the standard three-day regimen (for P. falciparum infection) or five-day regimen (for P. vivax infection) of radical treatment, as the case may be, and the fact recorded on the report form (Annex 6), and followed up.

The Puskesmas will be primarily responsible for management of Kader malaria service, effectively assisted by the Kabupaten and provincial health services. The core group will comprise the Doktor Puskesmas and microscopists. Community education and Kader training will be conducted by this group as well as monitoring, supervising, and assisting Kader malaria service. Either the Doktor Puskesmas or microscopist will always be present on the monthly Posyandu service day to support the Kader in all required areas. In between two Posyandu service days, the microscopist will visit the Kader to monitor service rendered, collect records, replenish supplies and assist in improving quality of performance.

B. Entomological Assessment of IBN Operations

Household surveys will be initially carried out in the trial and control villages to determine the number of houses including field huts per main village and each of its hamlets, the number of families living in each household, number of sleep-in beds per family, the size of bedsteads, population and other basic information.

Deltamethrin impregnated bed nets will be distributed to each of the households in the three trial villages. One net will be issued for each bed in use according to the size determined--single, double or triple. During the life of the Project, the bed nets will be impregnated three times -- at the beginning, mid-point and toward the end. The procedure and precautions for impregnating bed nets with deltamethrin (Annex 5) should be strictly followed and observed. Entomological field staff will educate the householders on the proper care, use and utilization of the bed nets distributed and assess the results from time to time. As a follow-up of the justification made to the village leaders and householders in the control villages regarding the reasons for nonprovision of bed nets, the field staff should reconvince the population as and when necessary.

As per standard entomological procedures followed by the MCP, six insect collectors will be locally employed to cover each of the three trial and the three control villages. Investigations will be carried out, three inside and three outside of six separate houses and the same teams will continue to work inside and outside. The night collections will be made from dusk to

dawn, and three nights spent every month in each of the three groups of trial and control villages. On the basis of the lunar calendar, the same period of time will be fixed for investigating each group of the targeted villages (e.g., full moon day), 10 days earlier and 10 days later for the trial village, and two days after full moon day, eight days before and 12 days after full moon for the control village.

Some of the collectors should be asked to be allowed to be inside the houses to carry out night activities. Assistance of and support from the village leaders will be absolutely essential for this purpose. Catches will be separated by the hour and collector and identified by species, particularly in respect to biting collections. Indoor biting and resting collections will be made for 45 minutes and 10 minutes respectively, each hour. The outdoor biting and resting collections will also be similarly carried out. Every two hours, resting collections will be made for 10 minutes around and outside target houses.

Each of the three groups of trial and control villages will be covered by an assigned team of assistant entomologist and a field assistant who will be responsible for monitoring and supervising the activities in situ. The assistant entomologist will identify and dissect captures hourly to determine parity rates among the vector mosquitoes and continue to work the next day as needed. He will also be responsible for testing survival rate of vector mosquitoes resting on impregnated bed nets. In addition, he will carry out bioassay using test cones supplied by WHO. The standard exposure will be for one hour with a sample of 20 vector mosquitoes with a survival rate of 24 hours. Observations will be made in three of the targeted six houses, cones placed on the side and top of bed nets. Two cones will be employed as control placed on the wall of the house veranda, outside. Observations will be continued periodically until vector density is high enough to proceed with.

C. Briefing, Orientation and Training at Various Levels

Training of the health service's personnel in order to enhance their motivation, understanding and knowledge of the operational field trial and effectively prepare the communities concerned to willingly and actively involve themselves in community-based malaria control efforts is of paramount importance.

The techniques of training will be varied to suit the needs of implementation and management processes. Thus, the Dokabu at the intermediary supervisory level will be specifically oriented in their areas of responsibilities, such as coordination with various levels and services, total support to be given to the Puskesmas in their operational efforts and Kabupatens' own involvement with the field trial in respect of entomological

assessment of IBN operation and epidemiological investigation of positive cases. The Puskesmas being the focal point for implementation and management of community-based malaria control efforts and performing parallel activities of case finding, blood filming and case management, training efforts will be concentrated to vigorously develop the Doktor Puskesmas and the laboratory staff. Toward supporting the bed net trial, the Kabupaten entomology staff will be specially trained, too.

1. Orientation of Dokabu

Dokabu will have to be oriented on proposals for the field trial, operations and activities identified, targets set and goals to be reached, roles and responsibilities of each of the levels involved and future prospects. Orientation should be spread over the areas of coordination with the provincial and field health services besides administrative services at the district and sub-district levels; provision of guidance, assistance and multiple support to the Puskesmas in their various field efforts; direct involvement in conducting annual malariometric surveys, entomological and epidemiological investigations in the trial areas; and identifying and assisting in solving problems as they arise.

Sessions proposed for briefing of Bupati, Camat and village leaders, training of Doktor Puskesmas and laboratory staff, Kabupaten entomology staff, community education and Kader training are subjects to be discussed with Dokabu for their inputs and suggestions.

The need for augmentation of Puskesmas laboratory staff and Kabupaten entomology staff, by diversion if possible or short-term assignment if necessary, should be stressed to vouchsafe efficiency of field operations.

2. Briefing of Bupati, Camat and Village Leaders

It is essential that officials of the district and sub-district administrative services, as well as village heads and leaders of voluntary groups, be appropriately briefed well in advance of implementation of the field trial in order to obtain adequate back-up and sustained support.

The intent and purpose of community-based malaria control efforts, criteria and selection processes to be applied, the roles of local administrative services, village leaders and voluntary groups, responsibilities of Puskesmas and peripheral health services in operational implementation, the requirement of facilities, strengthening of Posyandu service and development of Kader service, and augmentation of Kader Posyandu in selected villages should it be found necessary will be the areas for in-depth discussions.

The importance of dynamic participation, involvement and commitment of village leaders, Kader Posyandu and voluntary health groups, especially the P.K.K., and vigorous administrative support should be particularly brought home in order that community efforts can be sustained.

3. Training of Doktor Puskesmas

Since the quality of performance of CFT and CFT-IBN operations will largely depend on the techniques of implementation by the Doktor Puskesmas, they should be specifically and adequately trained through multidisciplinary exposure. The thrust should be in the areas of community involvement and participation, community education, methods and techniques of communication, and dealing with voluntary health and welfare groups. Therefore, the expertise should be chosen among sectoral as well as intersectoral specialists.

The training should start with an outline of the origin of community-based malaria control in West Timor projected for implementation as part of the provincial CHIPPS Project. The objectives, methodologies and component activities of CFT and CFT-IBN operations and parallel Puskesmas services should be presented in detail.

The course content should particularly embrace and emphasize the following areas: primary health care/PKMD; PKMD/Posyandu; dialogue and demonstration; group discussion and guidance for conducting group discussion; role play and its importance; proper use of training materials on hand and innovating others; evolving a plan of action for developing community education and Kader training and preparation of curricula; recording and reporting; monitoring, supervision and assessment.

4. Community Education and Training of Kader Posyandu

The principles of community education and training of Kader Posyandu are more or less the same except that Kader training will be in-depth. The core group involved will be the Kepala Desa, Kecamatan P.K.K. representative and Doktor Puskesmas. However, the Doktor Puskesmas will be the focal point for conducting the educational and training programs.

Among the tools to be used will be the training materials developed -- posters, booklets, flip charts and projection slides. Laminated guidance chart for case finding and treatment and referral of seriously ill and recurring fevers to Puskesmas and recording and reporting formats should be specifically used for Kader training.

All the methods and techniques learned, especially group discussion and role play, should be appropriately employed. Examples and real life situations when cited will be of great value. The participants should be stimulated enough to ask questions and raise doubts and any ambiguity fully cleared before closure of the sessions. Kader Posyandu ought to fill in the recording forms during role play so that errors noted are corrected and probable variations visualized, discussed and clarified.

The diagnosis and treatment of malaria should be patiently and painstakingly explained, as also the types of cases to be referred to the Puskesmas to ensure that all issues involved are precisely recognized and understood.

While community education sessions can be concluded in about two hours or so, the Kader training sessions may be prolonged even beyond four or five hours. Hence, it will be best to schedule these programs on different days. It may also be necessary to work out a voluntary arrangement for feeding Kader Posyandu on the training day. The present plan is to briefly retrain the Kader for a second time two to three weeks later, if required.

Preferably on the training day Kader Posyandu should be provided with an initial supply of training materials to enable fruitful discussions with prospective patients, guidance chart for reference, recording forms for filling in and a stock of chloroquine for treatment.

5. Training of Puskesmas Microscopists

The responsibilities devolving on the Puskesmas microscopists are considerable. Besides performance of activities of blood filming, staining, recording and reporting, they are also called upon to assist with and monitor Kader malaria service. Thus, they have to be specially trained to handle these operations efficiently.

In the context of CFT operations, the need for blood filming of all fever cases, all chills and fever cases and a sample of afebrile cases attending the Puskesmas, and chills and fevers identified by the Kader on Posyandu service days should be highlighted. The importance of microscopic diagnosis of malaria and, therefore, the need for special care in observing proper techniques for filming and staining of microslides should be particularly emphasized.

Preparation of microslides, techniques of blood filming, staining and drying, code numbering of slides according to categorization of blood films as from fevers, chills and fevers and afebrile conditions and place and date of filming, proper

recording of information (Annex 6), packing and dispatch of blood films together with recorded reports to the provincial microscopist and stocking of laboratory equipment and materials required will be the other areas of training to be imparted.

Briefing on the principles of community efforts for malaria control, especially case finding and treatment of malaria by Kader Posyandu, monthly Posyandu service, and motivating Kader Posyandu, village leaders and voluntary health groups will be necessary to invigorate their involvement with these aspects of CFT operations.

The training should also include facets of assistance and support to be given to the Kader, monitoring Kader malaria service, collection Kader records pertaining to CFT and referrals and replenishing supplies every fortnight at their residential locations, blood filming of chills and fever cases identified by the Kader on Posyandu service days and communication of results.

6. Training of Assistants to Kabupaten Entomologists

In view of the requirement of intensive entomological investigations in the three bed net trial villages and the three control villages and augmentation of existing personnel through the provision of one field assistant per Kabupaten, the staff should be adequately oriented and trained to meet the demands of this trial.

The provincial and peripheral entomology personnel should be briefed on community-based malaria control efforts, especially the interplay between CFT and CFT-IBN operations. The purpose of employing deltamethrin impregnated bed nets and the basis of entomological assessment to be carried out, particularly the dusk to dawn activities, and specific periodicities to be maintained at all times in the study and control villages should be stressed. Standard techniques to be adopted for gathering indoor and outdoor entomological data, techniques of night collections including determination of biting and resting densities, vector identification and dissection, bioassay and evaluation will be the areas of exposure, besides field training.

The procedure for deltamethrin impregnation of bed nets and precautions to be observed (Annex 5), the pattern of distribution of bed nets to families in accordance with household survey findings and education of householders on the proper care, use and utilization of bed nets will also be included as briefing and discussion points.

D. Microscopic Examination of Blood Films by Province

The blood films collected by Puskesmas from various categories of cases and stained and recorded will be forwarded

every Monday and Thursday by private bus service from Oelolok (T.T.U.), Niki-Niki (T.T.S.) and Camplong (K.P.G.), and by motorcycle from Baumata (K.P.G.), to the provincial microscopist in Kupang. He will make necessary arrangements to have them collected and brought over to the laboratory on those days at appointed times and simultaneously dispatch batches of microslides and other supplies to the Puskesmas together with the findings of earlier microscopic examination.

He will be responsible for the prompt and accurate examination of blood films received, and communicating the results (Annex 6). He will also comment on the quality of blood films and staining, deficiencies of recording and reporting, shortcomings of packing and forwarding and delayed receipts and provide proper guidance and advice to the Puskesmas.

Should the quantum of blood films received be rather excessive at any time, the order of priority should be examination of blood films from chills and fever, fever and afebrile condition. Nonetheless, the reasons for such a contingency should be analyzed, reviewed and resolved. Conversely, if fewer films are forthcoming, the pertinent causes should be looked into and matters set right.

The provincial microscopist will periodically visit the Puskesmas to review his observations and findings on laboratory and recording procedures followed, examine issues such as suspected prevalence of chloroquine resistant falciparum malaria and guide the field staff.

He will also be responsible to impart training to the microscopists at the provincial and peripheral levels in order that the quality of their performance be precisely improved and their confidence level significantly enhanced. The type of training will be on-the-job and intensively conducted to enable the microscopists to reach the stage at which they can be depended upon to independently and accurately deal with the demands of microscopy.

Regarding suspect situations identified by the Puskesmas, he will undertake testing procedure to determine presence of chloroquine resistant falciparum malaria.

In addition, he will be responsible for coordination with the CDC-MAL of the provincial, and peripheral levels on the one hand and the MCP, on the other as regards laboratory activities of the Project.

E. Malariometric Survey

A malariometric survey will be initially undertaken in the tentatively proposed trial villages during November/December 1987 by a central team in coordination with the provincial and

peripheral health services. Microscopic examination of blood films will be carried out by the central MCP laboratory and results communicated to the province.

The next annual malariometric survey in concerned villages will be carried out during the period January-February 1989 by the central team. Since the provincial microscopist will be in position in 1988, the results can be read by the province itself as regards the 1989 survey.

F. Epidemiological Investigation

Inasmuch as the cleared zones are still surrounded by areas of residual malaria foci or high case incidence in spots and in order that advantage can be derived from the planned activity of microscopic diagnosis of malaria, the provincial authorities have arrived at the conclusion that it will be beneficial to introduce the elements of radical treatment of positive cases as well as case investigation to highlight issues of epidemiological importance to the malaria program in West Timor.

Radical treatment of positive cases is a requisite function of the Puskesmas anyway and not anticipated to overload its activities. The responsibility for preliminary epidemiological investigation will be that of the Wasor Kabupaten and not the Doktor Puskesmas. Follow-up investigations will be carried out by the provincial staff and will be limited to specific and critical situations of epidemiological significance.

The format designed (Annex 7) attempts to gather information regarding the sources of infection, occurrence patterns, local situations, family situations, attitudes and behavior, sleeping practices, seasonal avocations, self-medication and movement patterns within and without the province.

G. Data Analysis, Assessment and Review

A lot of information will be generated as a result of the field activities of community-based CFT and CFT-IBN operations, Puskesmas based operations as well as Kabupaten and provincial-based entomological assessment and case investigation and follow-up actions.

Relevant information regarding case finding and treatment of malaria, and referral of seriously ill cases or fevers recurring within a week of treatment will be recorded by Kader Posyandu on the formats designed (Annexes 3 and 4, respectively). The original report sheets will be collected by the Puskesmas microscopists every two weeks, leaving the duplicates with the Kader them-selves, and filed in the Puskesmas, village-wise and Kader-wise.

Information on blood films collected in Puskesmas from fever cases, chills and fever cases and afebrile conditions as well as chills and fever cases identified by the Kader on monthly Posyandu service days will be recorded by the microscopists on the format designed (Annex 6), by source of blood film, location and date and filed in the Puskesmas by category, place, and month.

Recordings of entomological data by the assigned field teams and their reports will directly reach the province. The Puskesmas will not, therefore, be involved in this activity. The recording formats will be the same as those prescribed for the MCP and followed everywhere. A copy of the monthly consolidated data will be forwarded to the Sub-Directorate of Entomology-CDC and EH for analysis and review and observations and comments.

The Puskesmas cannot be called upon to handle more than recording of field information in view of its multiple commitments and limited capabilities. Thus, it has been decided that the responsibility for compiling and consolidating the data besides data analysis and review will be assigned to the Provincial Action and Development Committee itself.

Each member of the Committee will visit one of the four Puskesmas once a month for a day or two, between the 15th and 20th of the month, to accomplish the task of compiling and consolidating the field data gathered by Puskesmas. The Wasor Malaria Kabupaten concerned will assist with the Committee member in this activity.

The formats designed in this connection are the following: "Consolidated Report on Case Finding of Chills and Fever and Chloroquine Treatment by Kader Posyandu" (Annex 8); "Consolidated Report on Referral of Seriously Ill and Recurring Fever Cases to Puskesmas by Kader Posyandu" (Annex 9); "Consolidated Report on Blood Films Collected by Puskesmas Staff from Chills and Fever Found by Kader" (Annex 10); "Consolidated Report on Blood Films Collected in Puskesmas from Fevers, Chills and Fever and Afebrile Cases, Microscopic Findings and Treatment Given" (Annex 11); "Consolidated Report on Blood Films Collected from Chills and Fever Among Attendance at Puskesmas from Trial and Other Villages and Microscopic Findings" (Annex 12).

Field data thus compiled and consolidated will be reviewed by the entire Committee and analyzed and evaluated every month. It is essential that a summary of the monthly findings be communicated to the MCP-CDC and EH and P2KTPI. It is equally essential that comments and recommendations be communicated to the respective Puskesmas for necessary action. Constraints and problems identified should be brought to the notice of the Principal Investigator for speedy resolution.

V. ORGANIZATION

In view of the enormous importance of the operational field trial on community-based malaria control toward achieving the goal of the Timor Malaria Control Project on the one hand and determining alternative avenues for management of MCP especially in the Outer Islands, on the other, and in order that provision of expert assistance to the province is continual, the Directorate General of CDC and EH of the MOH, through the Sub-Directorates of Malaria and Entomology, will be fully involved with the study, right from the beginning, together with the N.T.T. provincial health authorities.

A. Central Level Involvement

The scope of the central level involvement, particularly that of the Sub-Directorate of Malaria, will be:

- To coordinate with USAID in regard to overall assistance and support to the operational field trial.
- To organize expert assistance needed in specialties, such as malariology, entomology, parasitology, community health, community and health education, assessment and evaluation.
- To assist in providing technical advice and guidance in project formulation, planning, programming, monitoring, supervision, data analysis and evaluation, execution and management.
- To assist in procuring supplies of technical equipment and materials and in the provision of limited operational budget (APBN) for certain aspects of the field trial.

B. Provincial Level Involvement

The Provincial Health Office, N.T.T., will be the institution responsible for the overall management of the operational field trial in West Timor, implemented through the CHIPPS Project, and supported by USAID.

Other provincial components involved in the field operations will be the CDC-Malaria/Entomology, Binkemas, Health and Community Education and Administrative Divisions of the Health Office and Health Services.

The peripheral components involved will be the Kabupaten health services of Kupang, T.T.S. and T.T.U. besides the Puskesmas of Baumata and Camplong in Kupang, Niki-Niki in T.T.S. and Oelolok in T.T.U.

The Provincial Investigation Team will be composed of the following officials:

Principal Investigator: Dr. Derwin J. Lada, SKM
Chief, Provincial Health Office and Health Services

Co-Investigator: Dr. Servas Parreira, MPH
CHIPPS Project Officer, Provincial Health Office

The Team will be assisted by an Action and Development Committee that will oversee, monitor and evaluate the progress of the operational field trial and advise the Principal Investigator in upgrading program performance. The following officials will constitute the Committee:

Chairman: Dr. Agus Berek, KaBid. PKPP, Kanwil Depkes

Vice Chairman: Dr. Titus Nenobais, MPH
Kep. Sub. Dinas P2M, Din. Kes.

Members: Drs. Sujad Tarkojosopuro, Konsultan, USAID
Mrs. Frans Pello, SKM, Kasi Pengamatan, Kanwil Depkes
Mr. Abuseri Muhtar, SKM, Kasi, P2M, Din. Kes.

Guidance, assistance and support will be drawn from a core group in the MOH primarily from the CDC and EH and P2KTPI, and also from such services as Binkesmas and Health Education, as required.

C. Provincial and Peripheral Level Responsibilities

Defining and interpreting policies, coordination with the MOH and the provincial and district administrative and other services, implementation of field trial through the peripheral health services, monitoring and evaluation, review and resolution of problems, provision of technical advice, guidance and field supervision to the Kabupaten and Puskesmas, orientation and training of health personnel, logistic, supply, fiscal and other support will constitute the responsibilities of the provincial level.

Coordination with the Kabupaten and Kecamatan administrative services and voluntary community groups; coordinating the various implementation processes; providing guidance, assistance and supervision to Puskesmas besides staff, supply and logistic support; assisting with entomological investigations in CFT-IBN trial villages; carrying out annual malarimetric surveys in CFT

and CFT-IBN villages; conducting epidemiological investigation in respect to positive case occurrence; and identifying and assisting in solving problems as they arise will be the overall responsibilities of the Kabupaten health services.

Community education and training of Kader Posyandu; coordination with the Camat, Kepala Desa, RW and RT, village committees and voluntary groups; implementation of the field activities of CFT and CFT-IBN operations besides Puskesmas related activities of case finding, blood filming and case management; assisting with Kader Posyandu and monitoring and supervising Kader malaria service; recording and reporting, including forwarding case reports of Kader Posyandu and blood films collected as prescribed, will comprise the responsibilities of the Puskesmas.

VI. PROJECT ASSESSMENT

In accordance with the CHIPPS Project proposals, the operational field trial was planned for a start on January 1, 1988. Although training materials had been prepared and printed by December 1987 by the MCP and the malariometric surveys by the central team carried out by that time, project implementation got delayed for a variety of reasons.

The consultant started his assignment in Jakarta on January 25, 1988 and reached Kupang on January 27. By the time he left Kupang on February 28, preparations for implementation of the field trial were concluded and implementation of the training programs completed. Thus, the Project was poised for undertaking CFT operations on March 1 in 12 of the 15 trial villages and on March 4 in the other three. Implementation of IBN operations had been planned for mid-March.

A. Training Programs Implemented

1. Orientation of Dokabu

The Dokabu of Kabupaten Kupang, T.T.S. and T.T.U. were invited on February 4 to attend an orientation session at Kupang. The session was presided over by the Chief of the Provincial Health Office. The participants were the CHIPPS Project Officer, Chief of CDC, Health Services and Staff Officers Malaria, Health Education and Budget Development.

The Sub-Directors of Malaria and Entomology, CDC-EH, and USAID consultants assisted in developing the course content. They too participated in the orientation session.

The background and basis for the proposals for the field trial were narrated and the activities to be performed by the peripheral health services elaborated. Group discussions ensued, doubts cleared, consensus reached and the responsibilities of each level decided upon. The training materials on hand were scrutinized and their proper use considered. Community education, Kader training and avenues for briefing district administrators were discussed.

2. Briefing of Bupati, Camat and Village Leaders

Immediately following orientation of the Dokabu, a planned program for briefing the District and Sub-District Administrators and village leaders was undertaken from February 7-14. The Bupati of Kabupaten T.T.U., T.T.S. and Kupang, and the Camat of Kecamatan Insana, Miomafo Timur, Amanuban Tengah, Kupang Tengah and Kupang Barat were met to acquaint them on the intent and purpose of the trial to generate community-based malaria control

efforts and finalize selection of trial areas in accordance with the criteria developed. Wide-ranging discussions were held on the various implementation processes envisaged, involvement and commitment necessary and active participation and support required.

Thereafter, visits were made to the Puskesmas involved to ascertain staff position and staff motivation, facilities available, overall situation including malaria incidence and status of control operation and ability to effectively handle the field trial. The Doktor Puskesmas and staff were briefed on the objectives of the trial and methods and techniques to be applied.

The villages contemplated for the trial were also visited to gather basic information, look into the situation of Kader Posyandu and performance of Posyandu service, contact the village leaders, members of committees and voluntary groups. They too were briefed and the likelihood of their serious involvement and commitment assessed.

3. Training of Doktor Puskesmas

Training of the Doktor Puskesmas was carefully planned and the services of experts sought and received from the center and the province, in health and other specialties. The fields of expertise included malariology, entomology, parasitology, health education, community education, community development, communication and group dynamics and women's and children's welfare.

Among these experts, a core group was identified to determine areas of training and formulate a training plan and develop hand outs for the trainees. Not only was training in respect to parallel Puskesmas operations stressed, but also developing the Doktor Puskesmas in successfully conducting community education programs.

Those invited were the Doktor Puskesmas from Baumata, Camplong, Niki-Niki and Oelolok. The training course was held between February 15-18 at Kupang. The areas of exposure were those as planned. The end of each series was followed by a question and answer session and group discussions. Panel discussions were held at the end of each day to stress vital aspects. The implementation program was dealt with during the plenary session of the final day.

4. Community Education and Training of Kader Posyandu

At the outset, it was planned to complete the community education and Kader training programs in all the selected villages between February 22-24. However, owing to local situations as ascertained from village leaders and prior commit-

ments of Doktor Puskesmas, the programs were rescheduled and completed in 12 villages by February 29, and by March 3 in the remaining three.

Of the two Puskesmas in Kabupaten Kupang, in Baumata, training sessions were conducted in the villages of Oeltua on February 25 and Naimata on February 27, and planned for Kuaklalo on March 1, Noelbaki on March 2 and Oebelo on March 3. In Camp-long, the villages of Benu A and Benu B were covered on February 25 and February 29, respectively.

The programs were carried out in the villages of Puskesmas Niki-Niki, Kabupaten T.T.S., as follows: Niki 2 Un-February 24, Sopo-February 25, Bone-February 27, and Neke A/Neke B-February 29.

As regards to Puskesmas Oelolok in Kabupaten T.T.U., the villages of Manunain A, Manunain B and Letmafo were covered on February 25, 26 and 27, respectively.

A group of provincial officials and USAID consultants formed into three field teams to support the Doktor Puskesmas in their training efforts in each of the three Kabupaten.

5. Training of Puskesmas Microscopists and Assistants to Kabupaten Entomologists

Training courses for the field laboratory and entomology staff were held separately, but during the same period (February 18-21), assisted by central officials and USAID consultants.

The importance of confirmatory microscopic diagnosis of malaria among Puskesmas attendance and recording and reporting of cases were stressed, and the techniques and methods to be followed elaborated and demonstrated. Monitoring Kader malaria service twice in a month and assisting the Kader Posyandu on the various facets of their service activities were further stressed.

In regard to the entomological field assistants, the purpose of employing insecticide impregnated bed nets and the requirement of intensive investigations in the trial and control villages, and the interplay between the CFT and CFT-IBN operations were the major areas of exposure. The various procedures to be adopted and the techniques to be applied were explained and demonstrated in detail. The practical training included night collection of vectors, identification of species and gland and gut dissections.

B. Assessment

Certain major constraints were noticed at the time of preparation for project implementation during February that could

perhaps delay the implementation processes and prolong the period of project stabilization.

One such is the nonavailability of an experienced technician for accurate reading of microscopic results of blood films that will be generated by CFT operations and efficient management of peripheral laboratory activities. Until a suitable person becomes available, the accumulating blood films will have to be forwarded to the MCP laboratory for correct findings and delays will, therefore, be inevitable in this regard.

Another refers to the ability and willingness of the provincial and peripheral level managers to meet the demands of logistic and transportation support required by field supervisors, entomological and other staff. The field supervisors, for instance Messrs. Sujud, Abuseri, and Frans, and the entomological field teams will need motor vehicles to fulfill their tasks on assigned schedules, uninterrupted. The Puskesmas field teams will require four motorcycles to promptly dispatch blood films collected to the province twice a week, and visit Kader Posyandu for monitoring CFT activities, collecting Kader records and replenish supplies twice a month.

Yet another constraint relates to budget provisions. Several items of foreseen and unforeseen expenditure were seen emerging even during the single month of preparation for Project implementation, such as travel costs for central level officials for planning, programming and training and counter-parts to accompany consultants, enhancement of educational and training efforts to suit local situations and so forth.

These issues appear to need in-depth analysis and appraisal. In view of the delayed implementation of the Project, and delays likely to result in the start up of certain component activities, e.g., microscopy, the period of project stabilization could possibly be prolonged. In these circumstances, perhaps it may be worthwhile examining the prospective life of the Project at this stage rather than later to ensure quality efforts and quality performance.

C. Special Study

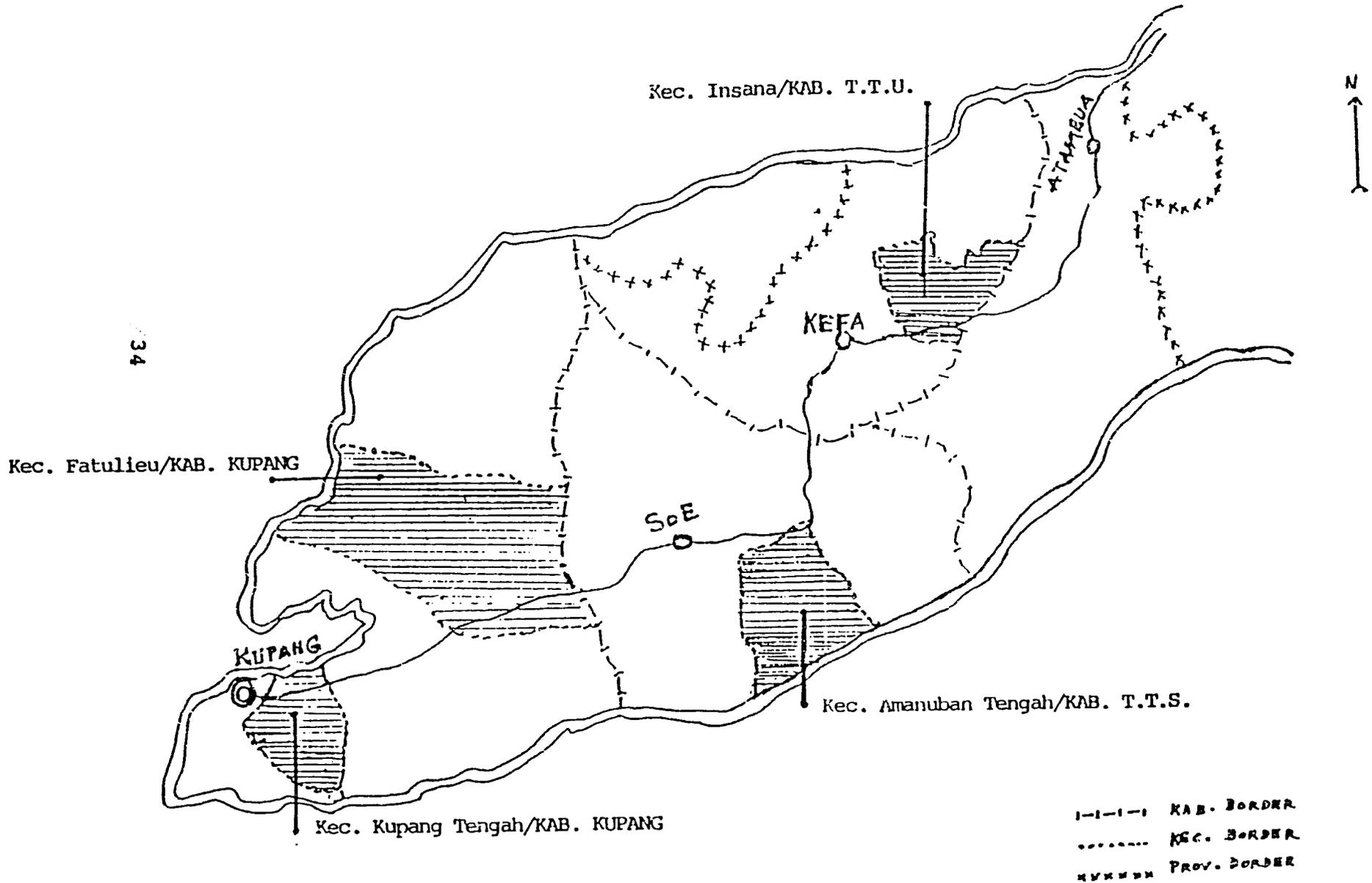
The Chief of the Provincial Health Office appears keen on studying the multifaceted societal, cultural, and ecological aspects that relate to receiving positive and favorable attitudinal and behavioral responses toward generating a malaria control program through active and sustained community efforts, as a long-term proposition. By itself, this will constitute a broad spectral study of a wider perspective and deeper insight, involving specialties in human sciences besides

malariology. Policies and resources permitting, it may be worthwhile attempting to develop the philosophy and design a small-scale study appropriate to local situations.

ANNEX 1

OPERATIONAL FIELD TRIAL ON COMMUNITY-BASED MALARIA CONTROL

Field Trial Area, By Kabupaten and Kecamatan, West Timor



ANNEX 1 cont.

Field Trial Area, By Kecamatan and Desa, Kabupaten Kupang

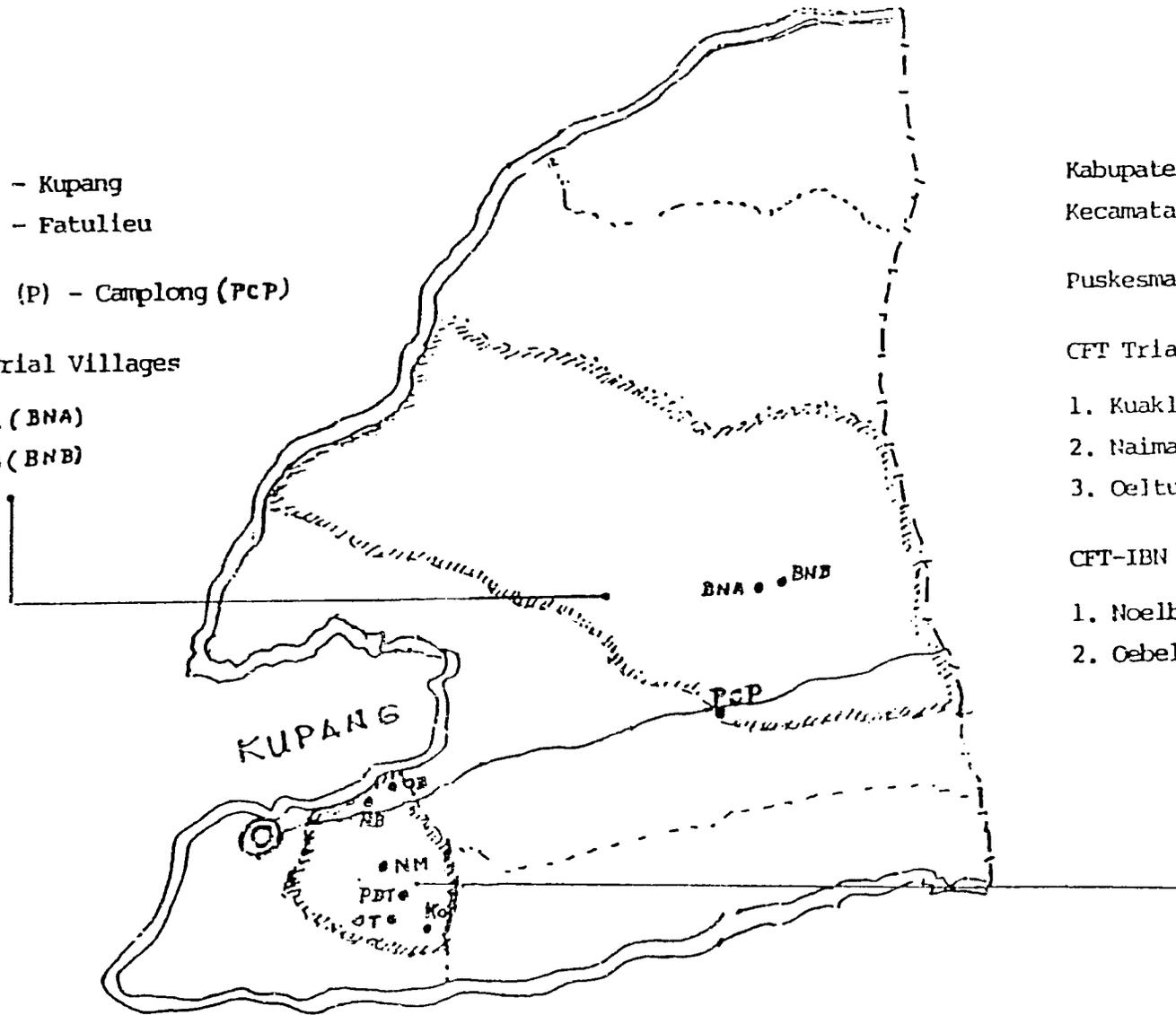
35

Kabupaten - Kupang
Kecamatan - Fatulieu

Puskesmas (P) - Camplong (PCP)

CFT-IBN Trial Villages

1. Benu A (BNA)
2. Benu B (BNB)



Kabupaten - Kupang
Kecamatan - Kupang Tengah

Puskesmas (P) - Baumata (PBT)

CFT Trial Villages :

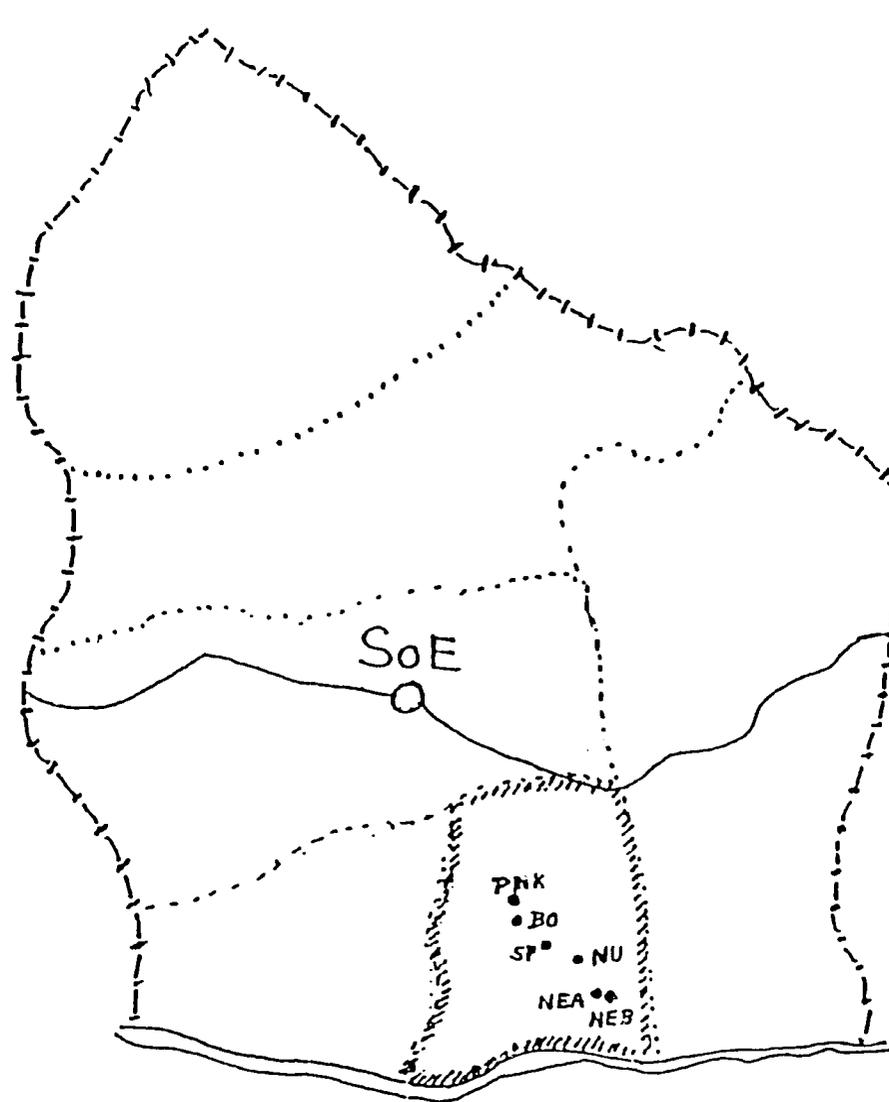
1. Kuaklalo (KO)
2. Naimata (NM)
3. Oeltua (OT)

CFT-IBN Trial/Control Villages :

1. Noelbaki (NB)
2. Cebelo (OB)

ANNEX 1 cont.

Field Trial Area, By Kecamatan and Desa, Kabupaten T.T.S.



Kabupaten - T.T.S.

Kecamatan - Amanuban Tengah

Puskesmas (P) - Niki Niki (PNK)

CFT Trial Villages :

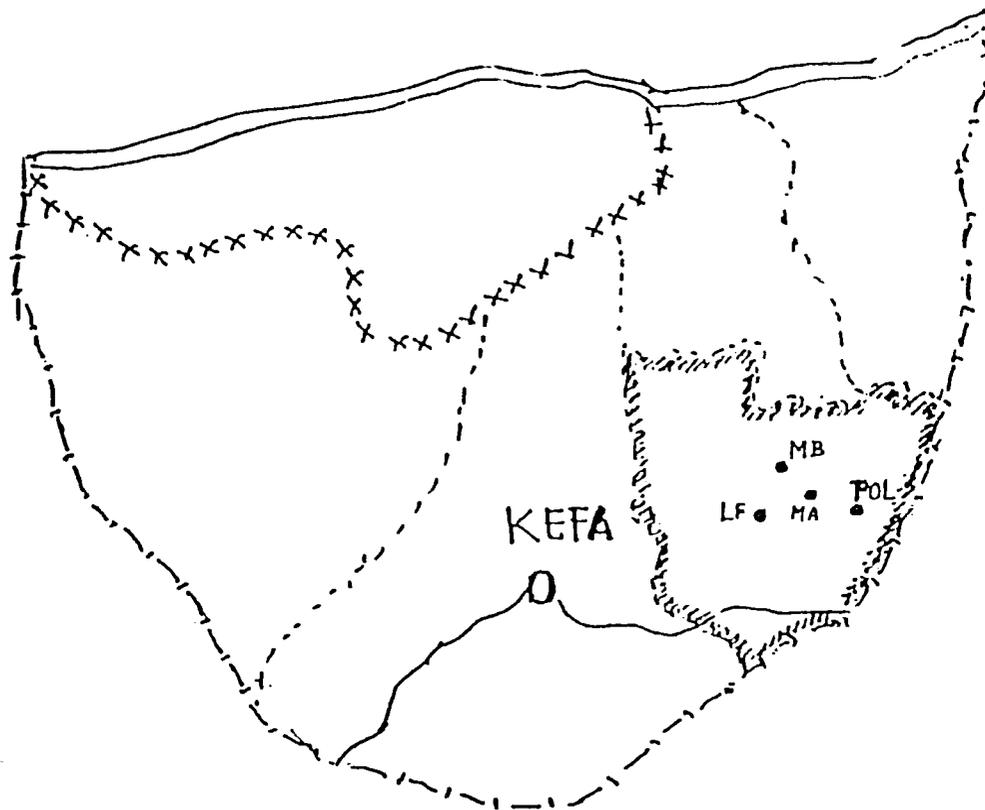
1. Bone (BO)
2. Sopo (SP)
3. Niki Niki Un (NU)

CFT-IBN Trial/Control Villages :

1. Neke A (NEA)
2. Neke B (NEB)

ANNEX 1 cont.

Field Trial Area, By Kecamatan and Desa, Kabupaten T.T.U.



Kabupaten - T.T.U.

Kecamatan - Insana

Puskesmas (P) - aelolak (POL)

CFT Trial Villages :

1. Manunain A (MA)
2. Manunain B (MB)
3. Letmafo (LF)

ANNEX 2

GUIDANCE FOR KADER POSYANDU
IN CASE FINDING OF CHILLS AND FEVER AND TREATMENT

MAIN SYMPTOM OF MALARIA

CHILLS & FEVER

Associated Symotoms of Malaria

Headache and Backache, Nausea and Vomiting,
Profuse Sweating, Feeling of Exhaustion,
Repeated Fever Attacks

DOSAGE AND METHOD OF CHLOROQUINE ADMINISTRATION
FOR TREATMENT OF CHILLS & FEVER

Chloroquine Administration/ Day of Treatment	: Tot. No. of Tab. Per Day By Age Group, in Yrs.				
	0 - 1	1 - 4	5 - 9	10 - 14	> 15 Yrs.
Day ONE (Swallowed in presence of Kader)	$\frac{1}{2}$	1	2	3	4
Day TWO (Swallowed in presence of Kader)	$\frac{1}{2}$	1	2	3	4
Day THREE (Swallowed in presence of Kader)	$\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{2}$	2

PLEASE DO NOT ADMINISTER CHLOROQUINE ON EMPTY STOMACH

Please See Next Page

ANNEX 2 cont.

CAUTION TO KADER POSYANDU

I. IF THE NATURE OF THE COMPLAINT IS AS FOLLOWS, PLEASE REFER PATIENT TO PUSKESMAS IMMEDIATELY, WITH THE RED CARD FILLED IN :

1. Fever Patient Brought to Kader is SERIOUSLY ILL with symptoms such as DROWSINESS, LOSS OF CONSCIOUSNESS, DELIRIUM OR CONVULSION.

2. After Starting Chloroquine Treatment for Chills & Fever IF FEVER WORSENS OR PATIENT BECOMES SERIOUSLY ILL.

II. If the complaint is as follows, please urge the patient to visit Puskesmas for further treatment, with the Red Card filled in :

After Completion of Chloroquine Treatment for Chills & Fever, if the fever recurs within a week's time.

IBU/BAPAK KADER POSYANDU,
THANK YOU FOR YOUR ACTIVE PARTICIPATION.

ANNEX 4

REPORT ON REFERRAL OF SERIOUSLY ILL
AND RECURRING FEVER CASES TO PUSKESMAS
BY KADER POSYANDU

KABUPATEN PUSKESMAS

Name of Desa Name of Dusun

Name of Posyandu Name of Kader

Date of Recording

1. Name of Patient

2. Age Year/Month (Tick mark)

3. Sex. Male/Female (Tick mark)

4. Name of Head of Family

5. IF THE NATURE OF COMPLAINT IS AS FOLLOWS, PLEASE REFER
PATIENT TO PUSKESMAS IMMEDIATELY, WITH THIS RED CARD
FILLED IN :

- a. Fever patient brought is SERIOUSLY ILL with symptoms such as DROWSINESS, LOSS OF CONSCIOUSNESS, DELIRIUM or CONVULSION.
- b. After starting chloroquine treatment for chills and fever, IF FEVER WORSENS OR PATIENT BECOMES SERIOUSLY ILL.

6. If the complaint is as follows, please urge the patient to visit Puskesmas for further treatment, with this red card filled in :

After completion of chloroquine treatment for chills and fever, if the fever recurs within a week's time.

IBU/BAPAK KADER, THANK YOU FOR YOUR ACTIVE PARTICIPATION

1. Date of receipt of this record at the Puskesmas

2. Follow-up action by Puskesmas

.....

ANNEX 5

PROCEDURE FOR IMPREGNATION OF BED NETS WITH DELTAMETHRIN

The procedure for impregnation of the nylon bed nets provided for use in the trial villages comprise the following steps :

- Calculation of the area of bed net.
- Calculation of the amount of technical grade deltamethrin needed at a dosage of 25 milligrams of active ingredient per square meter of bed net area.
- Calculation of the amount of water needed just adequate to saturate the bed net with deltamethrin
- Technique of soaking the bed net in deltamethrin solution and drying.

1. The bed nets are provided in three sizes - single, double and triple :

Net size	Length	Height	Width	Color
Single	230 cm	260 cm	90 cm	Red
Double	230 cm	260 cm	135 cm	Blue
Triple	230 cm	260 cm	160 cm	Green

The area of bed net is calculated as, length x height x 2 sides plus width x height x 2 sides plus length x width x 1 top. Thus calculated, the area of bed net, by size, will be :

Single - 18.7 m² Double - 22.1 m² Triple - 24.0 m²

2. The amount of technical grade deltamethrin needed per net is calculated as, area in m² x 25 mg of active ingredient per m². Based on this, the amount of 2.5 % Emulsion Concentrate of deltamethrin needed is calculated as, grams of technical grade deltamethrin required x 100 -- 2.5. Thus calculated, the amount of deltamethrin, supplied as 2.5 % E.C., needed per bed net will work out to be :

Single - 18.7 ml Double - 22.1 ml Triple - 24.0 ml

3. The amount of water needed, just enough to saturate the bed net with a spread of deltamethrin but without a run off of the solution, has been determined for each of the three sizes, as under :

Net size	Amount of Water Needed	Average/m ² area
Single	280 ml	15 ml
Double	331 ml	15 ml
Triple	360 ml	15 ml

ANNEX 5 cont.

4. Soaking of bed net in deltamethrin emulsion is done in such a way as not to waste the fluid by using an excess amount or losing any by way of drip off from the soaked net.

This is accomplished by using a plastic bag into which the emulsion is poured and the net inserted. After closing the plastic bag the net is gently pressed in order that the emulsion spreads through to all parts of the net. The treated net is then removed and laid on the plastic bag to dry since hanging the nylon net will lead to drip off of emulsion. The bag can be used to store and dispatch the net to the field.

5. The amount of deltamethrin 2.5 % E.C. required to treat 100 bed nets, once, will be :

Single - 1.57 liters	Double - 2.31 liters
Triple - 2.9 liters.	

Since treatment has been recommended at the start, mid-point and end of project period, the amount required for three applications for 100 bed nets will be :

Single - 5.61 liters	Double - 6.63 liters
Triple - 7.2 liters	

The quantity of deltamethrin 2.5 % E.C. made available will be adequate to meet the requirement.

6. Safety precautions are necessary in regard to the storage, handling, distribution, dilution and usage of deltamethrin. The process of impregnation of bed nets, disposal of empty cans, cleansing of containers and materials used also need care and caution.

At the provincial warehouse, a single person should be made responsible to deal with the insecticide. Should a can be found leaky, the contents should be emptied into another container, the wet area thoroughly cleaned and mops and can properly disposed of.

Only the assistant entomologist in charge should handle the dilution of the concentrate, fill in the bags and attend to the kneading of bed nets. He will be assisted by his insect collectors. Gloves and masks should be used during these exercises. In no case should any material be cleaned in ponds or other water collections and channels or other water courses.

ANNEX 6

REPORT ON BLOOD FILMS COLLECTED IN PUSKESMAS,
MICROSCOPIC FINDINGS AND FOLLOW-UP ACTIONS

Blood Film coll. from : FEVER/CHILLS & FEVER/AFEBRILE PT.
(Tick mark against category reported on)

KABUPATEN PUSKESMAS

Date of Coll. Bl. Film Serial No. Bl. Film

1. Name of Patient
2. Age Year/Month (Tick mark)
3. Sex. Male/Female (Tick mark)
4. Name of Head of Family
5. Name of Desa 6. Name of Dusun
7. Number of nights spent away from Dusun, if any,
during the past two weeks nights.
If so, where ?
8. Has patient been using Bed Net ? Regularly/Irregularly/No
9. Is the present complaint a Recurrence of Fever within one
week of completion of Chloroquine Treatment ?
Yes/No (Tick mark answer)
If so, Treatment administered
10. Drug Treatment given at the time of blood filming:
Chloroquine days tablets.
11. Result of microscopic examination of blood film by Provin-
ce : Positive/Negative (Tick mark result).
12. If positive, underline species and note forms found :
P.falciparum/ P.vivax/ P.malariae/ Mx.infection.
Forms : R/T/S/G

ANNEX 6 cont.

13. Radical Treatment given by Puskesmas when positive blood result communicated by Province :
Parasite Species
Chloroquine ... days tablets.
Primaquine days tablets.
14. If positive, result of investigation by Kabupaten/Province:
Indigenous/Imported/Unclassified (Tick mark finding).
15. If indigenous, have more than two or three cases occurred in same place within a period of 2/3 weeks ? Yes/No
If Yes, likely cause of recent transmission
16. If imported, likely source/s of infection
.....
17. Result of entomological investigation
.....

-
- Note
1. Items 1 to 10 will be filled in by Puskesmas and furnished to Province.
 2. Items 11 and 12 will be filled in by the Province, in Red Ink.
 3. The laboratory results should be communicated to the Puskesmas, promptly if positive, to enable Puskesmas to administer radical treatment without delay.
 4. Copies of positive results should be communicated to Kabupaten/Provincial CDC/MAL division.
 5. Action should be taken by Puskesmas on item 13 as soon as information is received from the Province.
 6. Items 14, 15 and 16 will be filled in by the Provincial CDC/MAL division.
 7. The Kabupaten will carry out the primary investigation and the Province, confirmatory investigation, as stipulated.

ANNEX 7

REPORT ON EPIDEMIOLOGICAL INVESTIGATION OF
IDENTIFIED POSITIVE CASE

KABUPATEN KECAMATAN PUSKESMAS

Desa/Dusun affected

Date Blood Film collected/Serial No.:

Date exam. by Province/Species-Forms Identified :

Investigation by Kabupaten : Date/By whom ?

Investigation by Province : Date/By whom ?

1. Name of Person found positive Age ...Sex ...
2. Name of Head of Family
3. Duration of Fever/Chills & Fever/ Afebrile Condition ...
4. Did same person suffer from Fever/Chills & Fever, before ?
Yes/No If Yes : When ? Where ?
5. Number of nights spent away from Dusun, two weeks before
illness nights If so : Where ?
6. Did any guest arrive home or in neighborhood before illness ?
Yes/No. If Yes : When ? From where ?
7. What are usual sleeping habits of family members ?
Early to bed/Late to bed; Early to rise/Late to rise.
8. Is any family member accustomed to sleeping in field hut ?
Yes/No. If Yes : During what season ? .. How frequently ? ...
9. When any family member suffers from Fever or Chills &
Fever, does he/she visit Puskesmas, Puskesmas Pembantu,
Balai Pengobatan ? Always/Sometimes/Rarely.
If attending institution, When ? Soon after illness/
After some delay/When illness becomes serious.

ANNEX 7 cont.

10. When suffering from Fever or Chills and Fever, do family members resort to self-medication with anti-malaria drugs ?
Yes/No. If Yes : How frequently ? Always/Sometimes.
Commonly used drug ? ... No. tablets used/each episode ?
11. Does the family resort to traditional medicine whenever anyone becomes ill, before visiting Puskesmas etc. ?
Always/Sometimes/Never.
12. Has the affected person been using Bed Net ? Regularly/
Not Regularly/Never.
13. Does any member of the affected family or part of the family or entire family seasonally migrate to outside areas in search of employment, agricultural operations, other avocations ? Yes/No.
If Yes : Which seasons ? Where ?
What purpose ? How long each time ?
14. Has any member of the family been visiting other islands or other areas in Timor for fishing, trading, project work etc., during the past year or more ? Yes/No.
If Yes : Where ? What purpose ?
How frequently ? How long each time ?
15. Findings of Kabupaten Investigator : Indigenons/ Imported.
If imported : Possible source/s of infection ?
16. Confirmatory Findings of Provincial Investigator : ...
.....
17. Justification for any Remedical Action, if warranted :
.....

ANNEX 8

CONSOLIDATED REPORT ON CASE FINDING
OF CHILLS AND FEVER AND CHLOROQUINE TREATMENT
BY KADER POSYANDU

Kabupaten Kecamatan Puskesmas

Reporting Period : Month /Year

CODE	Cases of Chills & Fever Found										Fever Duration Days		No. Nights Away 2		No. Using Bed Nets		No. Days Chloro- quine Irt. Given								
	NAME	No.	Sex	Age-Group in Years							When Case Reported		Weeks Before Illness												
TRIAL	Kdr.																								
VILLAGE	Posy.	No.	M	F	0-1	1-4	5-9	10-14	15 & >	1	2	3	4	5	7 & >	No.	Where Spent	Reg.	Not Reg.	Never	3	2	1	None	
CFT																									
1.																									
2.																									
3.																									
Sub-Total:																									
CFT-IBN																									
1.																									
2.																									
(Control):																									
Sub-Total:																									
Total																									

CFT - Case Finding & Treatment Kdr.Posy. - Kader Posyandu Reg. - Regularly Irt. - Treatment
 CFT-IBN - Case Finding & Treatment and Usage of Impregnated Bed Net Not.Reg.- Not Regularly

ANNEX 9

CONSOLIDATED REPORT ON REFERRAL OF SERIOUSLY ILL
AND RECURRING FEVER CASES TO PUSKESMAS
BY KADER POSYANDU

Kabupaten..... Kecamatan Puskesmas.....

Reporting Period : Month / Year

CODE	No.	Chills & Fever	No. of Referrals to Puskesmas			Follow-up Action by Puskesmas on Referral Cases													
			Straight Referral	Condition Worsening	Recurrence of Fever	Serious Illness				Worsening Condition				Recurring Fever		Chloroq. Resist.			
N A M E	Kdr.	Found By	of Serious Illness	During Treatment	Within 1 week of Treatment	No.	No.	Par.	Trt.	No.	No.	Par.	Trt.	No.	No.	Par.	Trt.	Suspected	None
TRIAL	Posy./	Kdr.				BF.	Pos.	Sp.	Given	BF.	Pos.	Sp.	Given	BF.	Pos.	Sp.	Given		
VILLAGE	Vill.																		
CFT																			
1.																			
2.																			
3.																			
Sub-Total:																			
CFT-IBN																			
1.																			
2.																			
(Control)																			
Sub-Total:																			
Total																			

CFT - Case Finding & Treatment
CFT-IBN - Case Finding & Treatment and Usage of Impregnated Bed Net

Kdr.Posy. - Kader Posyandu
Vill - Villages

BF. - Blood Film
Pos. - Positive
Par.Sp. - Parasite Species

Trt. - Treatment
Chloroq.Resist. - Chloroquine Resistant
P.falciparum

ANNEX 10

CONSOLIDATED REPORT ON BLOOD FILMS
COLLECTED BY PUSKESMAS STAFF FROM CHILLS AND FEVER
FOUND BY KADER POSYANDU

(on monthly Posyandu days in trial villages
and microscopic findings)

Kabupaten Kecamatan Puskesmas

Reporting Period : Month / Year

CODE NAME TRIAL VILLAGE	Tot.No. Kdr.Posy./ Village	Tot.No. C&F Found During Month	Tot.No. C&F Treated During Month	No. Posyandu Days Held This Month	No. C&F Found By Kader on Posyandu Days	No. BF. Coll.By Pus. From Kdr. Cases	Microscopic Findings					No.Pos. Given Radical Treatment By Puskesmas
							No. Pos.	Pf	Pv	Pm	Mx	
CFT												
1.												
2.												
3.												
Sub-Total												
CFT-IBN												
1.												
2.												
(Control)												
Sub-Total												
Total												

CFT - Case Finding & Treatment
CFT-IBN - Case Finding & Treatment and
Usage of Impregnated Bed Net

Tot.No. - Total Number
Kdr.Posy. - Kader Posyandu
C&F - Chills & Fever

BF. Coll. - Blood Film Collected
No.Pos. - Number Positive
Pus. - Puskesmas

Pf. - P.falciparum
Pv. - P.vivax
Pm. - P.malariae
Mx. - Mixed Infection

ANNEX 11

CONSOLIDATED REPORT ON BLOOD FILMS COLLECTED
IN PUSKESMAS FROM FEVER, CHILLS AND FEVER, AND
AFEBRILE CASES, MICROSCOPIC FINDINGS AND TREATMENT GIVEN

Reporting Period : Month / Year

KAB./ CODE NAME PUSKES.	Blood Films From Fevers				Blood Films From Chills & Fevers				Blood Films From Afebrile Cases				No. Cases Treated	
	Microscopic Findings				Microscopic Findings				Microscopic Findings					
	No. BF.	No. Coll.	Parasite Species	No. Pos.	No. BF.	No. Coll.	Parasite Species	No. Pos.	No. BF.	No. Coll.	Parasite Species	No. Pos.		
		Pf. Pv. Pm. Mx.				Pf. Pv. Pm. Mx.				Pf. Pv. Pm. Mx.		3-day Chloro- quine Trt. for Chill & Fevers	3/5 day Radical Trt. for Positive Cases	
K.P.G.														
1. PBT														
2. PCP														
Sub-Total:														
T.T.S.														
1. PNK														
Sub-Total:														
T.T.U.														
1. POL														
Sub-Total:														
Total														

KAB. - Kabupaten
K.P.G. - Kupang
T.T.S. - Timor Tengah Selatan
T.T.U. - Timor Tengah Utara

PUSKES - Puskesmas (P)
PBT - P. Baumata
PCP - P. Camplong
PNK - P. Niki Niki
POL - P. Delolok

BF.Coll. - Blood Film
Collected
No.Pos. - Number Positive

Pf. - P. falciparum
Pv. - P. vivax
Pa. - P. malariae
Mx. - Mixed Infection

Standard Chloroquine-
Primaquine Trt. :
3-day regimen for Pf.
5-day regimen for Pv./Pa./Mx.

ANNEX 12

CONSOLIDATED REPORT ON BLOOD FILMS COLLECTED
FROM CHILLS AND FEVER AMONG ATTENDANCE AT PUSKESMAS
FROM TRIAL AND OTHER VILLAGES AND MICROSCOPIC FINDINGS

Reporting Period : Month / Year

KAB./ CODE NAME PUSKES.	Tot. No. BF. Coll.	Tot.No. Villages Contributing BF. Collected	CFI/CFI-IBN Trial Villages						Other Villages in Puskesmas Area							
			No. BF. Collected	No. Villages Involved	No. Pos.	Parasite Species				No. BF. Collected	No. Villages. Involved	No. Pos.	Parasite Species			
						Pf	Pv	Pa	Mx				Pf	Pv	Pa	Mx
K.P.G.																
1. PBT																
2. PCP																
Sub-Total:																
T.T.S.																
1. PNK																
Sub-Total:																
T.T.U.																
1. POL																
Sub-Total:																
TOTAL																

KAB. - Kabupaten
K.P.G. - Kupang
T.T.S. - Timor Tengah Selatan
T.T.U. - Timor Tengah Utara

PUSKES
PBT - P. Baumata
PCP - P. Camplong
PNK - P. Niki Niki
POL - P. Delolok

BF. Coll. - Blood Films Collected
No. Pos. - Number Positive

Pf. - P. falciparum
Pv. - P. vivax
Pa. - P. malariae
Mx. - Mixed Infection