The importance of Passive Case Detection (PCD) was well recognized right from the beginning of the program. Due to social, technical, operational and administrative problems, implementation efforts to establish PCD were not so effective. The issue of the inabilities to set up PCD remains, and still is very sensitive. Because of this, the issue is being taken up at large scale once again. There is, however, recognition that a network of voluntary collaborators (VC) for PCD may be established and made to function effectively in Pakistan. In fact many of the critical elements necessary for development of an effective VC system are already present. These include:

1. An established MCP with trained field and laboratory personnel.
2. Most rural residents are familiar with the symptoms of malaria and realize that drug treatment is necessary to cure infection.
3. Rural residents have become accustomed to having blood smears taken during the 20 years the MCP has been operational.
4. There is evidence of community spirit and willingness to participate in community activities among rural residents.
5. Road and communication system is available.

The obstacles which must be overcome are:

1. Because of the purdah system, it may be difficult to enlist some women to serve as VC and to convince others to visit the VC.
2. Tribal/subtribal/family allegiances and attitudes may have a negative influence on how a given VC functions.
3. Morale of MCP workers is very low due to a variety of causes.
4. There is both a lack of discipline and of a sense of responsibility by many MCP field workers.
5. Supervision of field workers is inadequate and supervisory personnel have come to accept poor work habits.
6. Many MCP workers have pre-conceived negative attitudes about PCD and volunteer workers which make it difficult to give the VC network a fair trial in Pakistan.
7. The general health services seem to feel that malaria is not their responsibility and consequently are reluctant to participate fully in an enlarged PCD network.

In spite of the value of VC in PCD, in malaria surveillance as being demonstrated in Latin American countries, it should be recognized that to achieve an effective PCD system requires considerable time. Until the PCD System becomes more efficient, the Pakistan MCP should not discontinue their Active Case Detection (ACD) activities. Every possible effort should be made to get the most out of both forms of malaria surveillance.

Introduction

Accurate epidemiologic data is essential to the successful planning of malaria control activities and the efficient utilization of available resources. Most malaria control programs use a combination of two basic forms of malaria surveillance to collect epidemiologic data – ACD and PCD. In ACD, a malaria worker seeks out with, if needed, door to door visit, and takes bloodsmears from persons with symptoms suggestive of malaria. In PCD, a surveillance post is established in a given location and persons with symptoms suggestive of malaria are encouraged to visit the post for a diagnostic bloodsmear. In both cases it is common practice to administer a one-dose, presumptive treatment for malaria to alleviate symptoms before the result of the bloodsmear is known.

Both ACD and PCD have their advantages and disadvantages. As a result, most malaria control programs use a combination of the two methods to obtain as complete a picture as possible of the malaria situation in their country.

Perhaps the most successful PCD system ever developed for malaria surveillance has been the VC Network of Latin America. This network is made up of unpaid community volunteers who are trained by the malaria worker to take thick bloodsmears and administer a presumptive treatment for malaria to febrile patients who visit them. Although the VC Network was first established more than 25 years ago as a means of monitoring the progress of malaria eradication from the Americas, it has now become the major form of malaria surveillance and antimalarial drug administration for most Latin American malaria control programs.

Previous External Reviews of the MCP Pakistan, have commented on the need for strengthening and broadening its surveillance activities which, until recently, have relied almost totally on ACD. Recommendations have included:

1. Establish an effective PCD system.

2. Expand PCD by attaching malaria workers to government health facilities.
3. Modify surveillance activities of ACD worker to include PCD, special surveys and case treatment and followup.

4. Promote community participation in MCP activities.

5. Implement use of VC.

As yet, none of these recommendations has been implemented successfully. Development of an effective VC program would contribute significantly to the implementation of the above mentioned recommendations.

Central Objective

1. Promote community involvement in malaria case detection and treatment through voluntary collaboration program.

Overview

This project will use voluntary workers specifically from medics and paramedics, selected by the MCP supervisors in rural areas of two districts of Punjab, and two districts of the Sind province. These volunteers will work under the guidance and support of malaria (CDC) supervisors. A total of five supervisors in each study district will be responsible to recruit and train a total of 25 VCs, (5 VC/supervisor i.e. 100 in two provinces) and monitor their work. A group of 3-5 villages comparatively smaller in the sub-sector with no health institution will be prepared for the project. One or two VC may be raised in each village according to size of population. In case of two VCs in one village, voluntary collaborator fever reporting (VCFR) posts should be well away from each other to serve an equal size of inhabitants.

20 Supervisors selected for the project (5 from each of the four districts) will be trained for about one week.

A suggested quota is for each VC to take 60 smears per month (2 smears/day). Thus 36,000 suspected malaria cases will be screened by the VCs during 6 month implementation period in all the four districts.

If the 6 month trial is successful, the second stage will involve expansion of the project to include other pilot districts in each of the provinces with the ultimate goal of establishing VCFR posts through malarious areas of Pakistan with particular attention to those areas not yet covered by a primary health facility. Motivational efforts by supervisors will include visiting rural homes, attending their festive celebrations and village meetings. Arranging group discussions and workshops regarding malaria control in their village.

The priority objective of this project is to create public interest and bring in community participation and commitment in malaria control program by reaching a maximum number of people to teach them the importance of early detection and prompt treatment of malaria.
The structure and mechanism of this project emphasizes:

1. Disseminating awareness in rural community regarding malaria diagnosis and treatment.

2. Providing services through community voluntary workers in non-institutional (VC's home) situations.

3. Some grateful patients could be perspective volunteers for the work of malaria control in their community.

Methods

All aspects of this project will be co-ordinated between the USAID and Directorate of Malaria Control (DOMC), Ministry of Health, GOP. The collaborating agencies, provincial malaria control departments/district health services will be requested to provide one co-ordinator each to assist in the establishment and implementation of VC program in their provinces. A major requirement for coordination is to accept the central objective and adhere to the program indicated in this protocol once it is finalized and approved. The Federal Co-ordinator will be nominated by the Director, DOMC.

Composition of the team

Each district team will be composed of following members:

1. District Coordinator (to be appointed), Team Leader

2. One MS/CDC Officer

3. One AMS/CDC Inspector

4. Five malaria (CDC) supervisors

5. One microscopist/lab. technician of the concerned Rural Health Center (RHC) assigned to examine the blood smears from this team.

6. The district coordinating team will ensure prompt collection of blood slides from VCPR post to the laboratories at least once a week. A protocol defining the selection of VCs is presented in Annex A.

Each team member will be provided with the training prior to implementation of this project

1. A condensed 3 day course for the team leaders on:
   - Method of selection of VCs.
   - Standardized supervision along the line of management of VC program
   - Continuing education of VCs
   - Public Relationing
2. A formal 1 week training course for malaria (CDC) supervisors, AMS (CDC inspector), MS (CDC officer) including field demonstration will be imparted preferably at provincial headquarters by provincial headquarters authorities in collaboration with national/USAID experts.

Guidelines for the training of VCs is included in Annex B.

The course will include in-depth training of the methods to be used in selection, training and supervision of VCs. Maximum time will be devoted to the training of supervisory personnel in the methods to be used in the evaluation of the PCD network and the supervision of the Supervisors. A protocol providing suggestions on the supervision of Supervisors is presented in Annex C. During this course, an attempt will be made to instill "esprit de corps" in the project workers and the feeling that the success of the project will depend mainly on them. The course will be given as soon as possible so as to standardize methods.

3. Following the 1 week course (as mentioned above), a 2 week period of on-the-job intensive supervision will be given to each Malaria Supervisor by the AMS (CDC inspector), MS (CDC officer), and/or district team leader. The purpose of this period of close field supervision is to ensure that the Supervisors are adhering to the techniques they learned during the course. After that, supervision can be reduced steadily. When VC-supervisor system is fully operational, supervision of the supervisors must be continued at least on a once/month basis.

4. After six months of initial successful trial period a team comprising of National, USAID and W.H.O. malaria experts will assess the project and give further suggestions/recommendations after going through the problems/hinderances faced by the project during the implementation. Further extension of the project will depend upon the recommendations made by the above team.

Incentives

1. Since VCs will receive no salary, they will be offered some incentive(s) to motivate them. These incentives will not be in the form of cash, nor will they be so attractive that competition will develop between villagers to become VCs. Some of the incentives are spelled out below:

   a. Diplomas (multicolored and eye-catching) acknowledging the invaluable assistance of the VC in the national effort to control malaria. The diplomas will be signed by the Secretary Health/DHS of the province and the Director DOMC.

   b. Identification cards (with photographs) stating that the bearer is an authorized Voluntary Collaborator of the MCP.

   c. Letter from Provincial Secretary Health stating that the bearer of the identification card mentioned in "b" and his immediate family are entitled to preferential treatment at government health
facilities. A copy of this letter with an explanatory cover letter will be sent to the incharges of all hospitals, and other health facilities in the province.

Note: Regardless of the incentive or incentives, it is important that they be made available as soon as possible so as not to lose the interest of the VCs who have been and are being selected.

Perhaps the greatest single incentive for most VCs is the enthusiasm generated by the regular visits of the Malaria/CDC Supervisor and other MCP personnel or visitors. This, and the honor that VC feels at being singled out from among his neighbors to collaborate with the MCP is sufficient motivation for many people, particularly, if the MCP personnel visiting the VC go out of their way to congratulate him on a job well done and stress repeatedly the important role he is playing in the nationwide effort to combat and control malaria. The same message will be repeated to his neighbors whenever the occasion arises.

2. a. The success of the trial will mainly depend on the actual performance of executers i.e. malaria/CDC supervisor. This is only possible when they are given a workable plan of action and they are properly supervised. On the spot guidance by the higher supervisory staff will ensure the proper implementation of the scheme. For this purpose a letter from DOMC will be initiated to the concerned quarters to ensure proper supervision to the staff and to provide facilities to the staff within the framework of rules and regulations.

b. The respective provincial Deputy Director, CDC/Malaria will ensure that the district supervisory staff is mobile.

For the successful implementation of this trial, discipline is of paramount importance and the defaulters will be severely dealt with as per Government Servants Disciplinary Rules. The three most serious infractions are:

1. Falsification of data in any form (e.g. taking multiple bloodsmears from a single patient; recording bloodsmears taken by MCP worker as VC bloodsmears, etc).

2. Failure to comply with established work hours and the Work Plan.

3. Personal use of materials or vehicles supplied by the MCP.

Ongoing Evaluation of Pilot Trial

Each trial area should keep a monthly record of the activity of all VC posts. A draft format for this record is shown in Annex D.

All district team leaders should submit a monthly report of the progress of the VC Project in their district to provincial coordinator who in turn
will submit consolidated report to the federal coordinator. A draft format for the report is shown in Annex G. This report be postmarked no later than the 10th of the month following the reporting period in the district and 15th of the month in the province and should include partial data as of the last day of the previous month and complete data for the month before that.

At the end of the calendar year a summary of the trial results should be prepared by each district team leader using a similar format and submitted to the DOMC through their provincial coordinator (draft format on Annex B-D).
PROTOCOL

Selection of VC

The selection of a new VC is the single most important activity of the Malaria/CDC Supervisor in this trial. If the selection is successful, the VC will be readily accepted by the residents of the community and visited on a regular basis by febrile patients seeking anti-malaria treatment. On the other hand, if the selection is unsuccessful, the Malaria (CDC) Supervisor will have to invest additional time supervising and retraining the VC or may even have to repeat the selection to find a more appropriate person.

A VC may need to be selected in several different situations:

1. when the MCP decides to establish a new VC post in a community;
2. when the former Volunteer decides to discontinue or abandons as VC;
3. when the former Volunteer is planning to move away from the community;
4. when the Supervisor observes such serious problems in a VC post that he feels a change is necessary (for example, when a VC is giving away medications without taking blood smears or filling out the patient report forms or when no patients have visited the post for more than three months).

The selection process described below is one in which the residents of the community play the major role in the selection of a VC; the Supervisor's input is to determine which of the candidates best fits the criteria he is looking for.

Population Under One VC:

Initially, a single VC will be responsible for covering approximately 1000 population. But it is suggested that when program progresses, lesser population should be covered by a VC to make him more efficient and effective.

Ideally a VC, male or female, should have four basic qualities besides knowing how to read and write:

1. shows interest in accepting the job;
2. be at home most of the time;
3. has another person in the house who can help take care of patients in his/her absence;
4. be well-liked and respected in the community;
5. has enough time to spare for this job.

The selection consists of two parts which should be carried out in the following order:

1. Quest of a person having above qualities through interviews and visits to the families of the community.

2. Discussions with the local influential/leaders about that person.

A. Interview with the Residents

As it is decided that VCs will be, preferably, from medics and para medics, the malaria supervisor will prepare a list of all such persons in a community. He will visit all these persons and explain his viewpoints regarding the importance of VCFR posts to fight against the menace of Malaria. In these meetings he will use his influence and relations developed during his service period in the area.

For these meetings/interviews the malaria (CDC) Supervisor will express his views according to the circumstances. However, for his guidance some material is depicted below which will help him to convey/express his viewpoints.

B. Discussions with Local Influentials/Leaders

The major purpose of this phase of the selection is to inform local authorities such as the Khateeb and the school teacher that there is going to be a change in the current VC or that the MCP has decided to establish a new post in the community. The Supervisor should describe the type of person he is looking for and ask these individuals to provide him with names of some possible candidates.

As it is known to everybody, malaria is a very common problem in this area. Unfortunately, the MCP does not have enough workers to visit each community as frequently as we would like, so we need to find someone in this village who can collaborate with us by taking bloodsmears and administering antimalaria medicine to people. That is the reason for my visit today. If I choose the new VC, he might not be the sort of person you or your family would want to visit when you are ill. To avoid that, I am visiting most of the families here in the community to ask them who they think would make the best VC.

We are looking for a certain type of person:

a. The VC should be a person who stays at home most of the time, because if you have fever or chills, you would not want to visit his house 2 or 3 times in order to be treated;

b. If possible, there needs to be someone living in the same house with the VC who can help him take blood samples and give out
the antimalarial medicine. That way, if one of them has to go out for a while, the other will still be around to take care of any patients who might visit them;

c. The VC should be the sort of person who enjoys helping his neighbors and doing favors for them because he does not receive any salary for his work with the malaria service;

d. Finally, the VC and his family should be well-liked and respected by their neighbors.

You can help me pick the best possible person by thinking of the families you know in the community and telling me which one you think would be most suitable for this job.

The Supervisor should also take advantage of the visit to the candidate's house to describe in detail to him and his family the activities and responsibilities of a VC in order to see if they show any interest in the job. Persons who respond to this description by giving excuses as to why they cannot volunteer to serve as VC should be eliminated immediately from consideration. On the other hand, a voluntary offer to serve as VC by one of the candidates should weigh heavily in the final decision as to the most acceptable candidate. If it is unclear whether the candidate would be interested in serving as VC, the Supervisor can close his interview by asking, "what would you say if, after finishing my visits to the other houses, I come back here and told you that your family had been recommended by your neighbors as the best persons to serve as VC in this community"?

After visiting eight to ten houses and obtaining a list of several suitable candidates, the Supervisor should start making a comparison between them by explaining to each informant that several good candidates have been recommended and asking him which one he would prefer as VC. This can be done by asking questions such as:

a. "Which of these persons would you and your family prefer to visit if they become ill? Why?" (Reasons such as "They live closer to us", or "They are my relatives", are not acceptable and an additional reason should be sought.)

b. "Which of these persons is more likely to be at home if you should want to visit him?" "Why?"

c. "Which of these families is more popular with their neighbors?" "Why?"

d. "Which of these families is the most active in community affairs?"

The results of this comparison should be recorded so as to help the Supervisor in his final decision.
The responsibility for making the final decision in the selection of a VC lies entirely with the Supervisor. Even in those cases in which a candidate receives a majority of the votes, the Supervisor may eliminate him if, in his opinion, he does not meet all the necessary requirements.

After making his decision, the Supervisor should then revisit the selected candidate to explain again the responsibilities involved in being a VC and describe the manner in which they are selected. This explanation should include the fact that the VC does not receive any salary for his services. In asking a candidate if he is willing to collaborate with the MCP, it is extremely important that he does not exert pressure on the candidate to accept the job. If the candidate does accept, a convenient time should be chosen to begin his training. If the candidate does not accept, the Supervisor should visit the best one of the remaining candidates and request their collaboration.

In this way he may find some persons ready to cooperate in his mission. Before making the final selection he will interview the key persons of the village to get the best person out of the lot. However, before taking a final decision he will have to keep the following points in mind:

a. The VC should have a keen interest in the welfare of the community.

b. The VC post preferably will be in a central place.

c. In the case of more than one VC posts in a village, they should be well distributed among the population.

d. The selected VC must be neutral regarding party policies and well behaved, being influential person will further add to his qualifications.

Once the final selection is made, vast publicity will be given through mosque loudspeakers, public meetings and personal visits to the families.
ANNEX B

PROTOCOL

Training of VC

The training of a VC should be carried out by the Malaria/CDC Supervisor who selected him and will be responsible for his day-to-day supervision. This helps to create a closer working relationship between the VC and the Supervisor and will generally result in a higher level of performance by the VC.

The training should be carried out in a quiet, relaxed atmosphere. It should be done at the VC's convenience and at a time of the day when he will not be disturbed or have other things on his mind. The Supervisor should strive to be patient and understanding throughout the training period and should remember that he is dealing with a volunteer—not a paid employee of the MCP.

The initial training of a new VC, generally, takes from eight to ten hours. Experience has shown that it is best to divide this training into four; two to three hour sessions, so as not to tire out the VC. Further, training can then be provided as needed to the VC in special sessions or during the Supervisor's regular supervisory visits to the FR post.

The training consists of seven steps which should be carried out in the following order:

1. Description of malaria and MCP.
2. Description of patient report form.
3. Practice in technique of making thick and thin blood smear.
4. Description of patient-VC relationship.
5. Description of presumptive drug dosages and administration.
6. Practice of #2 through #5 with several febrile patients.
7. Referral of patients (if needed) to nearest health facility with a medical officer on duty.

A. Fever Case Report Form - (EVA/M3-0)

A standardized patient report form should be available for use by all FR posts. It should include all the following information:

1. Code number of VCFR post
2. Number of slide (patient)
3. Full name of patient
4. Age
5. Sex
6. Name of responsible adult in the case of a minor
7. Address of patient
8. Number of chloroquine tablets administered
9. Location of VCFR post
10. Date (day, month and year)
The Supervisor should review with the VC each one of the items on the Fever Case Report Form. In particular, he should concentrate on questions which tend to cause problems and explain why each one is important.

1. Each VCFR post should be given a code number which distinguishes it from all the other posts.

2. Each patient treated by a VCFR post should be given a serial number.

3. Age refers to age at last birthday and is very important for determining correct chloroquine dosage.

4. The patient's address refers to his usual home address - not the address (location) of the VCFR post.

5. The patient's address and his (her) father's name are important in locating patients whose bloodsmears are positive for radical treatment. (In case of a female patient who is married, her husband name and address is required to be written.)

B. Taking Bloodsmears

This is generally the most difficult aspect of the training of a new VC so the Supervisor should be prepared to invest as much time as necessary to assure that the VC is well trained. A VC who is not proficient in taking bloodsmears will never be successful.

Experience has shown that it is best if the training is taken step by step:

1. Proper cleaning of microscope slides before use; holding the slides from edges.

2. Practice in holding the lancet and the movement involved in the fingerprick. It may be helpful here for the VC to practice using the lancet on a lemon or an orange which have rinds and presents about the same amount of resistance to pricking as a human finger.

3. Proper positioning of patient and correct way to hold patient's hand for finger pricks. If possible, bloodsmears should be taken from the patient's non-dominant hand (i.e. left hand for right-handed persons) and from a finger such as the fourth (or ring) finger which is less frequently used in day-to-day activities. Furthermore, the fingerpricks is best taken from the side of the finger at a point about halfway between the base and tip of the finger nail. This area is less sensitive and generally has less buildup of callus. (This is well shown through figures in Annex F.)
4. Practice of the movements involved in making thick and thin bloodsmears and their proper positioning on the slide.

5. Demonstration by Supervisor of fingerprick and preparation of thick and thin bloodsmear using two or three members of VC's family/villagers (volunteers).

6. Practice by VC of fingerpricks and bloodsmear technique on the Supervisor.

7. Practice by VC of entire procedure on several members of his family or neighbors. In most cases, a sizeable crowd of children will gather around the training site and they should be told that price of admission to the spectacle is a fingerprick and bloodsmear. The more opportunity the VC has for practice, the more proficient he will become. If possible, eight to ten bloodsmears should be taken during the first day's training session.

The VC should be taught to cover the bloodsmear as soon as it is taken to prevent dust or flies from settling on it. When the thin smear is dry, it should be labelled with the VCFR code number and the slide (patient) number to avoid confusion with other slides. A simple but effective labelling system consists of dividing the thin smear into three with two straight lines and writing the VCFR code number above and the slide (patient) number below, while beneath it the date of taking blood smear be put with lead pencil. (Please see Annex F.)

The bloodsmear should always be taken before administering treatment, otherwise a patient who has already received his medication may be tempted to refuse the bloodsmear.

C. Presumptive Drug Dosage and Administration

All VCs should be provided with a written form which clearly spells out the presumptive chloroquine dosage for different age groups. All drugs must be taken in the VC's presence. Under no circumstances should patients be given medication to take home with them because there is no assurance that the drugs will be correctly taken. Patients should be encouraged to take the tablets with a large quantity of water, preferably of milk. It is important to note that tablets should not be taken on empty stomach since this will generally enhance gastric upset.

For children who cannot swallow the tablets, the VC should be shown how to crush the tablet using two spoons and to mix the powder with sugar and a small amount of milk/water. Then with the child's mother or father holding him/her firmly, the child's nose should be occluded and the spoon introduced into his mouth until material is swallowed.

If a patient vomits the chloroquine immediately after taking it, the VC should be instructed to repeat the dose after some time.
At this stage it is usually best to terminate the first training session so as not to tire out the VC. The following day the Supervisor should try to find six to eight febrile patients in the locality and bring them to the VC post so that the VC can practice the entire procedure with each of them. These slides can be submitted as the first slides taken by the VC.

The VC should be supplied with a complete malaria kit including all of the materials he will need to carry out his duties:

1. Clean blood slides
2. Cotton
3. Alcohol (spirit)
4. Lancets
5. Chloroquine tablets
6. Fever Case Report Forms
7. Pencil (lead)
8. Ball Point (blue)
9. Field slide box
10. Tissue paper role
11. Inspection book
12. Clip board
14. Cotton string

These material should be stored in a Malaria Kit provided by the MCP.

Lastly, an attractive sign should be designed and made to be displayed prominently in front of the VC's house indicating that the house is a VCPR post for malaria detection.
ANNEX C

PROTOCOL

Supervision of VC by CDC/Malaria Supervisor

A Malaria/CDC Supervisor should visit each of his VC for supervisory visits at least once every month; however, during the initial six months of this Project, supervisory visits should ideally be made once a week. However, the supervisor must arrange for pickup of blood smears for transport to a laboratory on a weekly basis. These visits to the VCFR posts serve several important purposes:

1) allow the Supervisor to judge the level of performance of the VC and his (her) assistant(s) and if any problem crops up, it can be rectified or even the person can be retrained;

2) give the Supervisor an opportunity to record patient data and replenish the VC with materials;

3) allow the Supervisor to judge the attitude of the residents of the village towards the VCFR post; and,

4) provide the Supervisor with an opportunity to educate the local residents about the services of the VC and the goals of the MCP.

The supervisory visits to a VCFR post involve 3 steps which should be carried out as follows:

1. A visit to the local authorities to inform them of the Supervisor's presence in the community and the purpose of his visit.

2. A visit to the house of the VC.

3. House visits to an established number of families in the community. The number of houses to be visited will vary from area to area depending on how scattered the houses are. An average of 10-20 houses for each VCFR post visited is probably an appropriate number, since each visit will take considerably longer than the traditional ACD house visits.

Visit to Local Authorities:

As soon as the Supervisor arrives in a community he should inform the local authorities of his presence and the reason for his visit. This helps to maintain a good working relationship with the authorities and to get good cooperation and coordination from the inhabitants and leaders of the locality.

Visit to the House of the VC:

The visit to the home of the VC should take approximately one hour, however, in the case of very active VC who treat large numbers of
patients each month, 1 to 1-1/2 hours may be required to check and tabulate all of the VC's data and replenish the supply of the post. The activities involved in the visit to the VC's house should be carried out in the following order:

1. An informal conversation with the VC and his (her) family members.

2. Review of the patient records since the Supervisor's previous visit and a tabulation of the patient data.

3. Resupply VCF post with chloroquine tablets, lancets, cotton, alcohol and patient report forms, and make sure all equipment is in working order. (While carrying out #2 and #3, the Supervisor should continue talking with the VC and his (her) assistants and commenting on, or questioning them, about aspects of their work).

4. Preparation of a note describing the location of the houses the Supervisor plans to visit in the community.

5. The Supervisor should provide and leave a sketch map of the concerned locality with the local VC in order to facilitate the visits of any other malaria staff.

On arriving at the VC's house, the Supervisor should spend 5 to 10 minutes talking informally with the VC and his (her) family about any subject that might be of interest to them, for example, what they've been doing since his last visit or what's been going on in the community. If possible, the Supervisor should ask by name about members of the family who are not present or who were ill or away from home when he last visited the community. The purpose of this conversation is to establish a close working relationship with the VC, his (her) assistant(s) and other family members and to indicate to them that they are important to the Supervisor and the MCP, not just as volunteer workers but as friends and co-workers. This serves to increase the importance of the VC's work in his own eyes and his prestige within the community.

The Supervisor should then ask the VC for his (her) malaria kit and for a place where he can sit down and review the patient report forms and replace any materials which are lacking. If the VC has something else to do, there is no need for him to stand around waiting for the Supervisor to finish, but he should be told that if any questions arise he may call on him for help.

The Supervisor should follow a set sequence when examining the VC's malaria kit. Not only does this save time but it also reduces the possibility of errors. The following sequence has been provided as the most efficient:

1. Check the numbering of the patient report forms for missing or repeated numbers;
2. Check data in patient report forms for accuracy and completeness;

3. Count chloroquine tablets and compare number used since last visit with balance remaining in kit;

4. Resolve any doubts about data in patient report forms by speaking with VC and/or his (her) assistant(s);

5. Tabulate data on patient report forms;

6. Resupply kit with materials.

Any errors or missing data in the patient report forms should be marked with a small red check. When finished the Supervisor should question the VC or one of his (her) assistant(s) about the doubtful data. This should be done as tactfully as possible, so that the VC will understand the importance of complete and accurate data but will not feel hurt or discouraged that a few small errors were found. As part of the teaching process, it is preferable, if the VC corrects his own errors rather than the Supervisor correcting them for him because in this way, it is less likely that the same error will be made again in the future.

Using the chloroquine dosages recorded on the patient report forms, the Supervisor should calculate the number of chloroquine tablets used since his last visit and compare that count with the balance left in the VC's malaria kit. A shortage of tablets suggests that patients are being treated without taking blood smears or recording patient data. The Supervisor should question the VC about any discrepancies in order to stress the importance of correct medication of each patient.

Next, the Supervisor should tabulate the data on patients treated by the VC since his last visit and enter the totals in his notebook. The tabulation includes a division of patients by age and sex, as well as by the results of the bloodsmear (P. vivax, P. falciparum, mixed infections, and negative). A format for the table to be used by Supervisors to record this data is shown in EVA-M-3A, B, C.

The Supervisor should resupply the VC with sufficient chloroquine and other materials to last until his next visit. The amount of these materials he leaves should be based on the average monthly consumption of the post during the preceding 2 to 3 months. Before leaving the VC's house, the Supervisor should leave a brief note in the VC's kit describing the location of the houses he plans to visit in the community. In this way, a supervisory officer or visitor looking for the Supervisor can locate him without wasting time.

During his conversation with the VC, the Supervisor should intersperse questions about various aspects of the VC's work. The answers he receives will help to determine if the VC understands all aspects of his job or if he needs further training. Several examples of possible questions are given below:
1. What's the best way to give chloroquine tablets to a very small child who can't swallow them whole?

2. How many chloroquine tablets would you give to a child who is 7 years old? 12 years old? etc.

3. What would you do if a pregnant woman or a woman who is breastfeeding comes here asking for medicine?

4. What would you do if someone asks to take their medicine home with them?

5. What should you do when a patient vomits the chloroquine tablets after taking them?

**House Visits:**

The house visits the Supervisor makes within the community serve five purposes:

1. Acquaintance with the inhabitants of the village;

2. To evaluate the level of performance of the VCFR post from the point of view of the residents;

3. To inform the residents of the existence and services provided by the VCFR post;

4. To educate the residents of the community about malaria and the activities of the MCP;

5. To carry out ACD/or his other malaria routine duties.

The Supervisor should visit an established number of houses for each VCFR post in a community. In communities with only one VCFR post, the houses should be selected from all sectors of the community. In communities with 2 or more VCs the houses should be chosen from the sector surrounding the VC's house. The Malaria Supervisor should avoid revisiting houses a second time until all the houses in the community have been visited at least once. For this reason, it is helpful to follow a sketch map of the locality and to make a mark on the map each time a house is visited. In this way it is hoped that during a 6 to 9 month period, most if not all, of the houses in the community will be visited.

In each house, he visits, the Supervisor should introduce himself and explain the reasons for his visit. He should then attempt to find out how many family members have had chills and/or fever in the last several months and where they sought treatment. If one of the family members visited the VCFR post, he should be questioned to determine the nature of the treatment he received, e.g.:

1. Who took care of you when you went to the VC's house?
2. What time of the day did you go? Did you have to wait long?

3. Did he take a blood smear?

4. How many pills did he give you? Did you take the pills there or bring them home with you?

5. Did you find out the results of the blood smear? How? What was it? How many days did the treatment last?

6. How do you feel after taking pills?

If someone in the family has had chills and/or fever and thought he had malaria but did not visit the VC, he should be questioned to determine the reason.

The Supervisor should then ask if anyone in the family currently has a fever or chills. When this question is asked after rapport has been established with the informant, he is much more likely to give a truthful response.

Before leaving the house, the Supervisor should be sure that the informant at least knows the following information about the VC:

1. That the VC does not earn any salary, so patients should try to visit him (her) at a convenient time - not at mealtimes or late in the evening.

2. That the medicine the VC has, is only good for malaria and not for other illnesses.

3. That the tablets have to be taken in the VC's house so that the VC can keep track of the dosage. Patients should not ask to take the medicine home with them.

4. Once the blood smear result is positive (i.e. if the patient has malaria), the Supervisor, at his earliest and without loosing much time, revisits the locality and administers radical treatment to the patient with the positive blood smear and make a follow-up also.

When the Supervisor finishes his house-to-house visits, he should return to the VC's house and leave a detailed note with any recommendations he has in the VC's notebook. Before saying goodbye he should read what he has written to the VC.

If the VC's house is closed when the Supervisor visits, he will have to move on to the next scheduled VC post and return later to talk with the VC, review his records and replenish the supply to the post with materials.
<table>
<thead>
<tr>
<th>No.</th>
<th>Date of Birth</th>
<th>Age</th>
<th>Sex</th>
<th>Type of Fever</th>
<th>Duration</th>
<th>No. of Cases</th>
<th>Name of Person</th>
<th>Name of Family</th>
<th>Age</th>
<th>Fever</th>
<th>Other Info</th>
<th>Nickname</th>
<th>Family Name</th>
<th>Date</th>
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*Note: The table and diagram are related to fever cases and household information.*
Government of __________________
Health Department

Consolidated Fever Case Reports
for the month of ________ 19

Malaria/CDC Supervisor ____________________ Subsector/U.C./BHU ____________
Locality ____________ VCPRP No. ____________ Tehsil ____________

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>G. Total</th>
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<tr>
<td></td>
<td>Slides</td>
<td>Pv</td>
<td>Pf</td>
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<tr>
<td>0 - 11 M</td>
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<td>12 - 23 M</td>
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Government of ________________
Health Department

Consolidated Month-wise Records 19

Total F.R. Posts ____________  Population ____________

Malaria/CDC Supervisor ________________

<table>
<thead>
<tr>
<th>Month</th>
<th>Classification of Species</th>
<th>Total</th>
<th>SPR</th>
<th>API</th>
<th>BER</th>
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<tr>
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<td>Slides</td>
<td>Pv</td>
<td>Pf</td>
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Government of __________________
Health Department

Daily Work Plan of Malaria/CDC Supervisor for the Month _____________ 19

Name ___________________________ Subsector/U.C./BHC _____________

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<thead>
<tr>
<th>Date</th>
<th>Locality Name</th>
<th>Purpose</th>
<th>Visit</th>
<th>F.R.</th>
<th>Name</th>
<th>No. of houses visited</th>
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ACD, GR, APCD Spray etc.
PROTOCOL

Supervision of Malaria (CDC) Supervisor
by CDC Inspector/AMS and Higher Echelon

The supervision of a Supervisor by an Inspector or other
Superiors is one of the most difficult but important activities involved
in the establishment and maintenance of a successful VC network. Without
close and constant supervision, both the work of the Supervisor, and
ultimately, the performance of his VC will suffer.

The supervision is a continuous process which lasts as long as
the Supervisor serves in that capacity in the MCP. The goals of the
supervision are two-fold:

1. To determine if the Supervisor is carrying out his work in
   accordance with the guidelines and procedures laid down by
   the MCP.

2. To attempt to improve by any means possible the level of
   performance of both the Supervisor and his VCs.

Although a Supervisor may be supervised by a variety of
individuals including AMS, MI, MS, DMCO, Assistant DHO and DHO, the
person responsible for the day-to-day supervision of a Malaria/CDC
Supervisor is usually the AMS/CDC Inspector. Therefore, for the purpose
of this protocol, it will be assumed the Supervisor is an Inspector, but
it should be remembered that the principles given here apply equally
well to any individual involved in the supervision.

The supervision of a Supervisor may take two forms:

1. Direct supervision in which the AMS/CDC Inspector observes
   and corrects the work of the Supervisor in person; and,

2. Indirect supervision in which the AMS/CDC Inspector
   evaluates the quality of the Supervisor's work through a
   review of his records and reports and by a personal visit
   to one or more localities already visited by the Supervisor.

Ideally, the AMS/CDC Inspector's activities should be planned in
such a way that he spends one day in each week (5 days in a month) in the
trial area. He will visit two Malaria/CDC Supervisors in one day; one
for direct supervision and second for indirect supervision. However, he
will spend more time for direct supervision. In this way each of the
Supervisors will be visited approximately twice in a month. Once for
direct supervision and once for indirect supervision. However, he should
complete his office work side by side so that he can plan activities,
bring his records up to date, and review the records and reports of his
Supervisors.
Direct Supervision

The direct supervision of a Supervisor should be carried out no less frequently than once a month; otherwise the performance of both the Supervisor and his VC posts will suffer. The Inspector should begin his supervision when the Supervisor first arrives in a locality in the morning and should continue for more than half of his time with the Supervisor. In this way he will have the opportunity to observe and evaluate all aspects of his work.

The visits of the Inspector will be programmed by the first working day of the month so that visitors, the higher supervisory staff, will be able to locate him without difficulty in any given day. It is a must that Supervisor is unaware ahead of the exact date of the Inspector's visit.

Direct supervision consists of four steps which should be carried out in the following order:

1. Observation
2. Correction and Instruction
3. Evaluation
4. Approval

These four steps may be repeated many times during a single day of supervision, each time focusing on a different aspect of the Supervisor's work.

1. Observation: During these observation stage, the Inspector should observe the Supervisor's work carefully without interrupting or disturbing his concentration. The goal of this stage of the supervision is to identify specific areas of the Supervisor's activities which either need improvement or are being well done and should be complimented and reinforced. In particular, the Inspector should focus on the following aspects of the Supervisor's activities:

   1. Does the supervisor follow the recommended sequence of activities in his visit to the locality and the VC/FR post(s) in that locality?
   2. Does the Supervisor complete each of his activities in an appropriate amount of time?
   3. How does the Supervisor interact with the local authorities, the VC and the other persons he visits in the locality?
   4. When the Supervisor finishes his visit to a VC/FR post, does he leave the VC and his assistant(s) well-trained and well-supplied with materials?
   5. Does the Supervisor follow the recommended procedures for ACD or other duties assigned to him in the locality?
6. When the Supervisor finishes his house-to-house visits in the locality, have the residents been adequately informed of the location and services of the VCFR post?

7. Is the Supervisor successful in identifying and resolving problems which might affect the performance of the VC or his acceptance by the community?

8. Does the Supervisor demonstrate creativity and personal initiative in his day-to-day activities, i.e. does he seek new or different ways to increase the efficiency of his work and improve the performance of his VCFR posts?

The Inspector should make notes of his observations and comments so that the next time he visits the Supervisor he can continue his supervision in an uninterrupted fashion. Experience has shown that the best way to do this is with the use of a checklist which includes the key points to be noted during the supervision. An example is shown in Annex G. One of these checklists should be filled out each time the Inspector supervises a Supervisor, preferably towards the end of the work day when the Inspector has seen enough of the Supervisor's work to be able to adequately judge his level of performance.

2. **Correction and Instruction:** After the Inspector has had the opportunity to observe the Supervisor's work for a period of time, he should pass to the next stage of the supervision - the correction and instruction. Before starting, the Inspector should make it clear to the Supervisor that the sole purpose of his comments is to improve his performance and that of his VC. Every possible effort should be made to avoid hurting the Supervisor's feelings. For this reason, it is preferable to look for a quiet spot where the Inspector and the Supervisor can talk without being disturbed or overheard. The Inspector should also remember that it is much easier to accept criticism if it is combined with a positive comment or compliment about some aspect of his work that the Supervisor is doing well.

The Supervisor's errors should be pointed out in a clear, concise and non-accusatory fashion. No matter how many faults he has observed, it is best to focus initially on just one or two of the most important ones so as to be sure the Supervisor understands and has the opportunity to correct these errors before mentioning others. It is particularly helpful if the Inspector can provide examples of the error he observed and suggest one or more ways it might be corrected. When visitors are present, especially persons who are not employees of the MCP, corrections should be kept to a minimum. The Inspector will always have an opportunity later to discuss his observations with the Supervisor.

3. **Evaluation:** When the Inspector is confident that the Supervisor understands the nature of his error and how to go about correcting it, they should return to work and the Supervisor be given the opportunity to put into practice what he has learned. The Inspector should observe him carefully to determine whether his work has improved or not. If the Supervisor shows improvement, the Inspector should compliment him, return
to the observation stage and continue following the Supervisor's work. On the other hand, if the Supervisor did not understand or was unable to correct his error, the Inspector should once again take him aside and explain what he is doing wrong. It may be helpful at this point for the Inspector to demonstrate personally what he is trying to explain. Then, they should return to work so that the Supervisor can demonstrate what he has learned.

4. Approval: The final step in the direct supervision is to compliment the Supervisor on having improved the quality of his work. Even if only minimal improvement was noted, it is worthwhile mentioning it so as to encourage him to keep trying. In such cases, it is also best to intersperse comments about what the Supervisor is doing well with comments about aspects of his work that still need improvement.

The series of four steps which make up the direct supervision will normally be repeated many times during a single day of supervision, each time focusing on a different aspect of the Supervisor's work.

Indirect Supervision

Indirect supervision may take two forms:

1. Supervision at the office level
2. Supervision in the field

Supervision at the office level consists of a careful review of the records kept by the Supervisor to make sure they are accurate and complete in all respects. If the Inspector notes any errors, he should point out how to correct them and how to avoid similar errors in the future when he next visits the Supervisor in the field.

The second form of indirect supervision involves a repetition of the work carried out by the Supervisor in the field to determine if it has been done correctly. The Inspector should revisit one or more VCFS posts already visited by the Supervisor. During these visits, he should try to determine if the VC's data have been correctly recorded and tabulated, if his equipment is in satisfactory condition and the post well-stocked with materials, and if the VC and his assistant(s) are properly trained and understand all aspects of their work. Then the Inspector should visit 10-15 houses in the locality to see if the residents are well-informed about the VCFS post and the services provided there. If the Inspector encounters problems with one of the VCFS post, he visits, he should discuss them with the Supervisor on his next visit. If everything is in order, he should congratulate the Supervisor on a job well done.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is Malaria?</td>
<td>Malaria is a sickness caused by small parasites who live in human blood and cannot be seen through naked eye in the blood drop but cause illness and affect greatly the human health.</td>
</tr>
<tr>
<td>Why is malaria important?</td>
<td>Malaria is important because it destroys red blood cells as it grows. It is just like a person bleeding. As he loses blood he becomes weaker and if he loses too much blood, he may die. The malaria parasite can cause the same loss of blood making people infected with malaria very weak and unable to work and if left untreated, may finally kill that person.</td>
</tr>
<tr>
<td>How does malaria spread?</td>
<td>The malaria parasite is passed from one person to another by a special (she) mosquito. When a mosquito bites a person suffering from malaria, the mosquito sucks up the blood with malaria parasite in it and when the same mosquito goes and bites another person who does not have malaria, the mosquito will inject some of the parasites into the blood of the new healthy victim while sucking blood.</td>
</tr>
<tr>
<td>What are the symptoms of malaria?</td>
<td>The symptoms of malaria are similar to many other different kinds of sicknesses such as malaise, fever, headache, body aches, loss of appetite and shaking chills, nausea, vomiting. Of these, the shaking chills are the most typical. The chilly sensation in malaria is often described as bed shaking or teeth rattling type because it is very severe and often times is so violent that the patient's bed shakes.</td>
</tr>
<tr>
<td>How can we be sure the sickness is malaria</td>
<td>The only sure way to tell that a sickness is due to malaria is to make a blood smear and send it to a laboratory where specialists are trained to find the parasites in the blood. For this reason, the examination of a blood smear is very essential for its confirmation.</td>
</tr>
<tr>
<td>Why is it important to make sure the sickness is due to malaria?</td>
<td>Different types of sicknesses are treated differently. For malaria, there are specific treatments which will kill the malaria parasite. Drugs given for any other ailment may not cure malaria disease and hence will not be effective against the malaria parasite. Only malaria drugs will be effective against the malaria parasite.</td>
</tr>
</tbody>
</table>

**Malaria Control**

There are different methods to control malaria. It is important to understand that how these methods work, and under what conditions or circumstances a specific method should be applied.
The way malaria spreads in a village may be compared to a wheel (cycle). A particular female mosquito picks up malaria parasites from a sick (infected) person and transmits it to a healthy person who, as a result, becomes sick. This wheel (cycle) continues and malaria cases go on multiplying. As long as the wheel (circle) is intact, it will work. If it is broken down, it will not work. Similarly, in the malaria wheel, if any part is broken down by killing the very mosquitoes which spread malaria or by destroying the parasites in the human blood, the malaria wheel will not work and malaria can not spread further in a village.

The control of malaria in Pakistan is the responsibility of the health department throughout the country. The malaria (CDC) supervisor is the field representative of that program.

Methods Used in Malaria Control

1. House spraying with an insecticide:

To cut down the density of malaria spreading mosquitoes, the inside of the houses are generally sprayed with an insecticide once or twice per year in areas with high potentials of malaria fever. When a mosquito rests on a wall which has been sprayed, it will pick up particles of insecticide. If the mosquito rests on a wall long enough and picks up sufficient insecticide, it will die from the poisoning of the insecticide.

House spraying is carried out during the time of the year when the number of mosquitoes is highest. It is important for villagers to know why it is necessary to spray houses in order that they cooperate with the spraymen by permitting them to come into the house and by assisting them in the removal of household effects, eating and cooking utensils and food from each room before it is sprayed. The only way this method of malaria control will work effectively if the insecticide is let remain on the wall for certain months. Therefore, the villagers should be told that if they wipe off the insecticide or paint over it, the method will not work.
2. **Methods to Destroy the parasite:**

Malaria parasites can be killed by malaria drugs, but before malaria drug is prescribed, it is important to first find out if the sickness is due to malaria which is only possible by the examination of a blood smear. To use this method of malaria control successfully, the community members must know when they have malaria and where to go to get their blood examined and also to receive treatment. By serving as a collaborator with the malaria control staff, you are providing a very useful service to the provincial health department as well as to your neighbors.

**Method of Smear Making:**

1. Fill out Form EVA-M/3

2. Take out 2 clean glass slides from the packet. Always hold the slides from the edges and never touch the flat sides of the slide.

3. Select a finger, usually the 4th (ring) finger of the left hand, and clean with cotton moistened with the spirit. Next, dry the finger tip by wiping with a piece of dry and clean cotton.

4. Hold the finger firmly between your thumb and forefinger and puncture the finger with the lancet at a point marked with an X.
5. Wipe the first drop of blood with a piece of dry and clean cotton.

6. Squeeze the finger gently with your thumb and forefinger until a small drop of blood comes out.

7. Take the slide with your other hand holding it by the edge and just touch the drop of blood near one end of the slide. In this way take 2 to 4 drops near to each other.

8. Put the slide with the blood on the table. Pick up the second slide by the edge and using one of its corners, spread out the drop of blood in rectangular or circular form. This is thick smear i.e. having many layers of blood.

9. Take the same slide used for spreading the blood and collect a small drop of blood on the end of the slide.

10. Touch the blood at the end of the slide to the slide with the thick smear.
Steps to take immediately after making the blood smear include:

1. Protect from flies while the blood is still wet by putting the blood slide upside down inside the field slide box and closing the lid. If the wet blood smear is left outside, flies will suck away the blood.

2. Protect the blood smear from heat. Make sure the field slide box is not in direct sunlight. When the blood smear is exposed to too much heat, the blood is cooked (fried) and can no longer be of help for specialists for the detection (or finding) of malaria parasite.

3. The blood smears will be collected by a malaria worker on a periodic basis such as once/week.

Completion of the reporting form EVA/M-3:

4. Patient's age in years, and sex.

5. Date when smear was made.

6. No. of tablets (with name) of malaria drug given.

7. Date of onset of fever.

Administration of Treatment

After the taking of the blood smear, you will give the treatment. The number of tablets of the malaria drug (chloroquine 150 mg base) you will give, will depend on the age of the patient.

<table>
<thead>
<tr>
<th>Patient's age</th>
<th>1-11 months</th>
<th>12-24 months</th>
<th>3-4 years</th>
<th>5-6 years</th>
<th>7-14 years</th>
<th>15+ years</th>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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</table>

Tablets 150 mg base
Steps to take immediately after making the blood smear include:

1. Protect from flies while the blood is still wet by putting the blood slide upside down inside the field slide box and closing the lid. If the wet blood smear is left outside, flies will suck away the blood.

2. Protect the blood smear from heat. Make sure the field slide box is not in direct sunlight. When the blood smear is exposed to too much heat, the blood is cooked (fried) and can no longer be of help for specialists for the detection (or finding) of malaria parasite.

3. The blood smears will be collected by a malaria worker on a periodic basis such as once/week.

Completion of the reporting form EVA-M-3:

1. Your voluntary collaborator Fever Case Reporting VCPR Post No.

2. The slide serial No.

3. The patient's name including father's name and address.

4. Patient's age in years, and sex.

5. Date when smear was made.

6. No. of tablets (with name) of malaria drug given.

7. Date of onset of fever.

Administration of Treatment

After the taking of the blood smear, you will give the treatment. The number of tablets of the malaria drug (chloroquine 150 mg base) you will give, will depend on the age of the patient.

<table>
<thead>
<tr>
<th>Patient's age</th>
<th>Tablets</th>
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<tbody>
<tr>
<td>1-11 months</td>
<td>1/4</td>
</tr>
<tr>
<td>12-24 months</td>
<td>1/2</td>
</tr>
<tr>
<td>3-4 years</td>
<td>1</td>
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<tr>
<td>5-6 years</td>
<td>2</td>
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<tr>
<td>7-14 years</td>
<td>3</td>
</tr>
<tr>
<td>15+ years</td>
<td>4</td>
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</table>
Precautions

In giving the treatment, the following precautions are essential:

1. The malaria drug must be taken before the patient leaves the VCFR post.

2. The drug should be given after the patient has eaten some food. Ask the patient to swallow the tablets preferably with milk.

3. For young children who cannot swallow the drug in solid form, the drug must be crushed with a spoon and some sugar water added to it and then administered with a spoon.

4. If the patient vomits the drug immediately or within 15 minutes after taking, repeat the dose after a while.

5. The patient should be told that if the illness was due to malaria, he would feel better within 2-3 days.

6. If the blood smear turns to be positive for malaria, the malaria worker will be responsible for radical of the patient and will visit him for full treatment days to wipe out the infection completely.

Referal of Patients

Occasionally, a patient comes in who is so sick that he should be referred to the nearest medical facility.

1. Someone who is unconscious.

2. Someone too weak to walk by himself.

3. Someone unable to retain the medication because of continuous vomiting.

4. Someone with comatose and subnormal temperature or cold and with feeble pulse position.
Government of ____________________
Health Department

Volunteer Collaborator Pilot Trial
Supervision of Malaria/CDC Supervisor

Name of Malaria/CDC Supervisor: ____________________ Date: ________
District: ____________  Locality: ____________  F.R. Post: ________

Supervision carried out by: _________________________________________

A. Supervisor

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<tr>
<th></th>
<th>Work Plan complete and left in designated location</th>
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<tr>
<th></th>
<th>Equipment complete and in satisfactory condition</th>
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<tr>
<th></th>
<th>Well dressed</th>
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<th>Complies with Work Plan**</th>
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<th>Complies with established work hours</th>
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<tr>
<th></th>
<th>Maintains good relations with community leaders</th>
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<tr>
<th></th>
<th>Follows correct sequence of activities in locality</th>
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<thead>
<tr>
<th></th>
<th>Follows correct sequence of activities during visit of FR post</th>
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<td>8</td>
<td></td>
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<thead>
<tr>
<th></th>
<th>Has good working relationship with VC</th>
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<thead>
<tr>
<th></th>
<th>Records and analyses data from EVA-M-3-0</th>
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<td>10</td>
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<thead>
<tr>
<th></th>
<th>Verifies correct usage of anti-malaria drugs by VC</th>
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<td>11</td>
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<thead>
<tr>
<th></th>
<th>Tactfully corrects VC's errors</th>
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<td>12</td>
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<thead>
<tr>
<th></th>
<th>Leaves notice with VC of location of house-to-house visits within community</th>
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<td>13</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Leaves VC well supplied with materials</th>
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<td>14</td>
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<table>
<thead>
<tr>
<th></th>
<th>Follows established guidelines in ACD and other field activities assigned to him</th>
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<tbody>
<tr>
<td>15</td>
<td></td>
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<thead>
<tr>
<th></th>
<th>Advises residents of existence and purpose of the post</th>
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<tbody>
<tr>
<td>16</td>
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<table>
<thead>
<tr>
<th></th>
<th>Makes required number of house-to-house visits in community</th>
<th></th>
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<tbody>
<tr>
<td>17</td>
<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Records findings/observations in VC's notebook before leaving locality</th>
<th></th>
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<tbody>
<tr>
<td>18</td>
<td></td>
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B. Volunteer Collaborator

<table>
<thead>
<tr>
<th></th>
<th>Understands all aspects of work</th>
<th></th>
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<tbody>
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<td></td>
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<table>
<thead>
<tr>
<th></th>
<th>Well known in community</th>
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<tr>
<td>2</td>
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<table>
<thead>
<tr>
<th></th>
<th>Well liked in community</th>
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<tr>
<td>3</td>
<td></td>
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</table>

Unable to

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<tr>
<th></th>
<th>Yes</th>
<th>No*</th>
<th>judge</th>
</tr>
</thead>
</table>

* Comments on reverse
** Example enclosed
4. Bloodsmears of satisfactory quality
5. Data in patient report forms accurate and complete
6. Assistant VC in household
7. Shows interest/enthusiasm in job

<table>
<thead>
<tr>
<th>Unable to</th>
<th>Yes</th>
<th>No*</th>
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</table>

C. Locality

1. VC post justified in locality
2. VC post well located in locality
3. Should additional VC post be installed in locality?

<table>
<thead>
<tr>
<th>Unable to</th>
<th>Yes</th>
<th>No*</th>
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</table>

Signature: ________________________________

* Comments on reverse
Government of 
Health Department

Voluntary Collaborator Pilot Trial
Monthly Report Form

period Covered by Report: 1, ________ 198 to 31, ________ 198
Province: __________________
District: __________________
Name of Reporting Officer: __________________

<table>
<thead>
<tr>
<th>Month Covered</th>
<th>(Previous month)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>by this report*</td>
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</tbody>
</table>

1. Total No. of VCFR posts (last day of month)
   a. No. of new VCFR posts installed
   b. No. of VCFR posts eliminated
   c. No. of VCFR posts transferred

2. Total No. of bloodsmears taken by VC

3. Mean no. bloodsmears/VC

4. Population of Trial area

5. Monthly blood examination rate
   (No. bloodsmears)
   (Population )

6. No. bloodsmears + for P. vivax
7. No. bloodsmears + for P. falciparum
8. No. bloodsmears + for mixed infections
9. Total No. bloodsmears +
10. SPR

11. Radical treatments initiated
12. Radical treatments completed
13. % completed

* Indicate with an asterisk data which is incomplete

1. What problem have you encountered in selection of VC? Solution?
2. What problems have you encountered in training of VC? Solution?

3. Has high turnover of VC been a problem? Reasons? Suggestions to reduce turnover?

4. Are current procedures for supervision of VC by Supervisors adequate? Comments?

5. Have VCFR posts, Supervisors in your district experienced shortages of materials/equipment? Reasons? Solutions?

6. Additional comments?
7. The general health services seem to feel that malaria is not their responsibility and consequently are reluctant to participate fully in an enlarged PCD network.

In spite of the value of VC and PCD in malaria surveillance, as being demonstrated in Latin American countries, it should be recognized that to achieve an effective PCD system requires considerable time. Until the PCD System becomes more efficient, the Pakistan MCP should not discontinue their Active Case Detection (ACD) activities. Every possible effort should be made to get the most out of both forms of malaria surveillance.

Introduction

Accurate epidemiologic data is essential to the successful planning of malaria control activities and the efficient utilization of available resources. Most malaria control programs use a combination of two basic forms of malaria surveillance to collect epidemiologic data - Active Case Detection (ACD) and PCD. In ACD, a malaria worker seeks out with, if needed, door to door visit, and takes bloodsmears from persons with symptoms suggestive of malaria. In PCD, a surveillance post is established in a given location and persons with symptoms suggestive of malaria are encouraged to visit the post for a diagnostic bloodsmear. In both cases it is common practice to administer a one-dose, presumptive treatment for malaria to alleviate symptoms before the result of the bloodsmear is known.

Both ACD and PCD have their advantages and disadvantages. As a result, most malaria control programs use a combination of the two methods to obtain as complete a picture as possible of the malaria situation in their country.

Perhaps the most successful PCD system ever developed for malaria surveillance has been the VC Network of Latin America. This network is made up of unpaid community volunteers who are trained by the malaria worker to take thick bloodsmears and administer a presumptive treatment for malaria to febrile patients who visit them. Although the VC Network was first established more than 25 years ago as a means of monitoring the progress of malaria eradication from the Americas, it has now become the major form of malaria surveillance and antimalarial drug administration for most Latin American malaria control programs.

Previous External Reviews of the MCP Pakistan, have commented on the need for strengthening and broadening its surveillance activities which, until recently, have relied almost totally on ACD. Recommendations have included:

1. Establish an effective PCD system.
2. Expand PCD by attaching malaria workers to government health facilities.
3. Modify surveillance activities of ACD worker to include PCD, special surveys and case treatment and followup.
4. Promote community participation in MCP activities.
5. Implement use of VC.

As yet, none of these recommendations has been implemented successfully. Development of an effective VC program would contribute significantly to the implementation of the above mentioned recommendations.

Central Objective

To promote community involvement in malaria case detection and treatment through voluntary collaboration program.

Overview

This project will use voluntary workers specifically from medics and paramedics, selected by the MCP supervisors in rural areas of two districts of Punjab, and two districts of the Sind province. These volunteers will work under the guidance and support of malaria (CDC) supervisors. A total of five supervisors in each study district will be responsible to recruit and train a total of 25 VCs, (5 VC/supervisor i.e. 100 in two provinces) and monitor their work. A group of 3-5 villages comparatively smaller in the sub-sector with no health institution will be prepared for the project. One or two Voluntary Collaborators (VC) may be raised in each village according to size of population. In case of two VCs in one village, voluntary collaborator fever reporting (VCFR) posts should be well away from each other to serve an equal size of inhabitants.

20 Supervisors selected for the project (5 from each of the four districts) will be trained for about one week.

A suggested quota is for each VC to take 60 smears per month (2 smears/day). Thus 36,000 suspected malaria cases will be screened by the VCs during 6 month implementation period in all the four districts.

If the 6 month trial is successful, the second stage will involve expansion of the project to include other pilot districts in each of the provinces with the ultimate goal of establishing VCFR posts through malarious areas of Pakistan with particular attention to those areas not yet covered by a primary health facility. Motivational efforts by supervisors will include visiting rural homes, attending their festive celebrations and village meetings. Arranging group discussions and workshops regarding malaria control in their village.

The priority objective of this project is to create public interest and bring in community participation and commitment in malaria control program by reaching a maximum number of people to teach them the importance of early detection and prompt treatment of malaria.
2. A formal 1 week training course for malaria (CDC) supervisors, AMS (CDC inspector), MS (CDC officer) including field demonstration will be imparted preferably at provincial headquarters by provincial headquarters authorities in collaboration with national/USAID experts.

Guidelines for the training of VCs is included in Annex B.

The course will include in-depth training of the methods to be used in selection, training and supervision of VCs. Maximum time will be devoted to the training of supervisory personnel in the methods to be used in the evaluation of the PCD network and the supervision of the Supervisors. A protocol providing suggestions on the supervision of Supervisors is presented in Annex C. During this course, an attempt will be made to instill "esprit de corps" in the project workers and the feeling that the success of the project will depend mainly on them. The course will be given as soon as possible so as to standardize methods.

3. Following the 1 week course (as mentioned above), a 2 week period of on-the-job intensive supervision will be given to each Malaria Supervisor by the AMS (CDC inspector), MS (CDC officer), and/or district team leader. The purpose of this period of close field supervision is to ensure that the Supervisors are adhering to the techniques they learned during the course. After that, supervision can be reduced steadily. When VC-supervisor system is fully operational, supervision of the supervisors must be continued at least on a once/month basis.

4. After six months of initial successful trial period a team comprising of National, USAID and W.H.O. malaria experts will assess the project and give further suggestions/recommendations after going through the problems/hinderances faced by the project during the implementation. Further extension of the project will depend upon the recommendations made by the above team.

Incentives

1. Since VCs will receive no salary, they will be offered some incentive(s) to motivate them. These incentives will not be in the form of cash, nor will they be so attractive that competition will develop between villagers to become VCs. Some of the incentives are spelled out below:

   a. Diplomas (multicolored and eye-catching) acknowledging the invaluable assistance of the VC in the national effort to control malaria. The diplomas will be signed by the Secretary Health/DHS of the province and the Director DOMC.

   b. Identification cards (with photographs) stating that the bearer is an authorized Voluntary Collaborator of the MCP.

   c. Letter from Provincial Secretary Health stating that the bearer of the identification card mentioned in "b" and his immediate family are entitled to preferential treatment at government health
Voluntary Collaborator Case Detection Network
Monthly Production of Bloodsmears and Malaria Case Detection

District: ____________________________
Year: _______

<table>
<thead>
<tr>
<th>VC Code No.</th>
<th>Locality</th>
<th>Name of VC</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
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