	Gastro-intestinal disturbances (T) Arthralgia with swelling of one or more joints (attack of "gout") (Z)

Action: Check to determine if the patient has understood the prescription and is taking the proper dosage. Make sure that TB treatment is continued. Prescribe medications for symptoms, for example, aspirin for arthralgia.

Major Side Effects

Drug Involved		Major Side Effects
Streptomycin	(S)	Hepatitis-transient (H,R,Z,T,E)
Isoniazid	(H)	Peripheral Neuropathy (H)
Rifampicine	(R)	Skin reaction (H,R,E,T)
Pyrazinamide	(Z)	Vestibular damage in infants and elders (S)
Ethambutol	(E)	Optic neuritis (E) Renal failure (R,E,S) Generalized hypersensitivity (all drugs)

Action: For patients with jaundice, check the dosage of each drug swallowed and shift the treatment from the Short Course Regime to the Standard Treatment Regime. Maintain the Standard Treatment Regime (H: 5 mg/kg). Determine if other family members have jaundice and if so, request that they come to the BHU.

Other Major Side effects:

In the event that other major side effects develop, the TB treatment must be stopped immediately. The M O will decide further action (hospital referral).

3.15 Antituberculosis Drugs and Pregnancy

The only drug which must not be administered during pregnancy is streptomycin, at the 7th, 8th, and 9th month.

3.16 Antituberculosis Drugs and Breast Feeding

Antituberculosis drugs given to the mother affected by tuberculosis can protect the breast-fed child.
Note: Streptomycin is not absorbed by the gut.

3.17 Detection of Relapses

Patients who have successfully completed TB treatment will not receive any active follow-up. These patients must be warned that in case the "Chest Symptoms" re-appear he/she must return to the local BHU for consultation. Detection of relapses thus follows the original case-finding procedure (see TB Case Finding).

3.18 Vaccination of Children

Children under ten years of age living in contact with TB patients and without BCG scars must receive BCG vaccination.

4. Health Education

Tuberculosis is a very contagious disease if not treated. Health workers should tell people the ways that TB infections can be reduced. They can do this informally, at the clinic or during home visits, in talks with people at the bazaars or in schools, or in formal health education talks, for example, those that may be scheduled at mosques. Some points that should be included are:

- Only complete and daily use of prescribed TB drugs

cures TB patients and stops infection from spreading.

- Children should receive BCG vaccination.
- Everyone, especially the children, should eat sufficient nutritious food.
- TB is spread by air when a person coughs.
- The person who has TB should be careful not to cough around children especially when eating or sleeping.
- A person with TB should be careful to cover the mouth when coughing and should never spit on the floor of the home.
- Take a child to the BHU at the first suspicion of TB or if the child has a cough that lasts more than 2 weeks.
- A person who has been treated fully for TB and is cured, cannot spread the disease.

5. Job Descriptions for TB Control

5.1 Basic Health Unit Level

The responsibilities and tasks of the Medical Officer, Malaria Supervisor, Vaccinator, Dispensarist, Lady Health Visitor and Sanitarian are as follows:

Medical Officer

Case-finding among patients with chronic respiratory symptoms.

Case-finding among symptomatic contacts of patients with positive sputum smears.

Trace patients with positive sputum smears who are lost before starting the treatment.

Administer regular chemotherapy, trace those patients who default.

Follow-up of patients with positive sputum smears who are under treatment by regularly carrying out sputum smears.

Complete the TB Treatment Cards, TB Register, Transfer Forms and Monthly Reports.

Supervise completion of the B.H.U. Sputum Register.

Maintain and supply the smear kits.

Brief the next Medical Officer in charge when transferred to another place.

Malaria Supervisor and Vaccinator

Collect three sputum samples per each patient using the proper methods.

Trace patients lost before they have provided three sputum specimens.

Register patients on the B.H.U. Sputum Register.

Smear and fix sputum specimens.

Complete and send Dispatch Lists.

Send slides to the field laboratory for staining and reading.

Check that all the sputum specimens are examined and the results sent back to the B.H.U. in one week

Dispensarist

Distribute drugs weekly, twice a month or in a daily supervised treatment.

Motivate patients to return for regular treatment.

Keep separate TB Treatment Cards of defaulters for proper action.

Up-date the TB Register under MO supervision.

File X-Rays.

Lady Health Visitor/Sanitarian

Trace defaulters.

Motivate defaulters during home visits.

Supervise home treatment of female patients.

5.2 **Laboratory Level**

Microscopist:

Fix sputums.

Stain and examine slides.

Send sputum specimens for culture and sensitivity test to referral laboratory.

Report results on Laboratory Register and Dispatch List.

Maintain the laboratory.

Ask the FSMO for a supply of chemicals and laboratory equipment.

Control the quality of smearing activity in the B.H.U.

Retrain the Malaria Supervisors and Vaccinators to smear slides in the B.H.U.

Train new Malaria Supervisors and Vaccinators to smear slides in the B.H.U.

Collect, in proper boxes, all positive and all negative slides separately for supervision.

Malaria Inspector/E.P.I. Supervisor

Properly transport slides, sputum cups and Dispatch Lists between B.H.U. and laboratory.

Inform the FSMO about Malaria Supervisors and EPI Vaccinators who need retraining to prepare sputum smears.

CHAPTER 11 Malaria Control Guidelines

1. BACKGROUND

1.1 Transmission of Malaria Among Refugees

1.2 Malaria in Pakistan

1.3 Malaria Control in Pakistan and in the Refugee Villages

1.4 Malaria Among Refugees

2. MALARIA CONTROL PROGRAMME OBJECTIVES

3. STRATEGIES

4. ORGANIZATION OF MALARIA CONTROL AT THE FIELD LEVEL

5. CASE DETECTION AND SURVEILLANCE

5.1 Passive Case Detection

5.2 Active Case Detection

6. LABORATORIES

7. TREATMENT OF MALARIA

7.1 Standard Regime

7.2 Scheme of Treatment

8.1 ENVIRONMENTAL CONTROL

9. REPORTING AND RECORDING

10. LOGISTIC SUPPORT

CHAPTER 11 Malaria Control Guidelines

1. Background

1.1 Transmission of Malaria Among Refugees

The risk of acquiring malaria is high for the refugee population due to individual and environmental conditions. Although malaria is rather widely spread in Afghanistan, many of the refugees come from areas of low incidence of the disease. As a result very few of them have acquired immunity against malaria. Many of the refugees move freely around Pakistan and are exposed to malaria in areas where the disease is prevalent.

In terms of the environment, the majority of refugee villages are located in Pakistan where the incidence of malaria is high. The environmental changes caused by refugee villages also may favour mosquito breeding. Ponds of stagnant water in depressions where soil has been removed for construction of Katcha houses and improper drainage of waste water create favourable conditions for breeding.

1.2 Malaria in Pakistan

Plasmodium vivax has been the most frequent agent of malaria in the northern areas where refugees are located. Plasmodium falciparum, however, is frequent in the southern part of Pakistan and also in Baluchistan. Falciparum malaria has tended to spread toward the north; this is partly facilitated by population movements over the country. There is no evidence of chloroquine resistant malaria in Afghanistan refugee areas at this time, although this does exist in South-east Punjab. If chloroquine resistant malaria appeared, UNHCR would notify all BHUs and other agencies concerned.

1.3 Malaria Control in Pakistan and in the Refugee Villages

Malaria control in Pakistan has been undertaken through

a separate health programme. Recently, the Government's Primary Health Care development policy has been to integrate malaria control into general health services where malaria is being treated. Recommendations made in 1983 on conducting the Pakistan Government's Malaria Control efforts form the basis for malaria control in refugee villages as well.

Malaria control in refugee villages is integrated in the Refugee Health Programme. The provincial Project Directors Health for Afghan Refugees are responsible for malaria control, supported by the provincial malaria control authorities.

1.4 Malaria Among Refugees

Statistical information on malaria among Afghan refugees is scarce. However, the available figures indicate a high incidence of malaria possibly exceeding the incidence experienced by local Pakistani population.

The prevalence of malaria was studied in August 1984. Blood specimens were collected from a sample of refugees in Quetta and Chaman districts in Baluchistan, and in four camps of Peshawar District in NWFP. The Quetta/Chaman results were that of a total of 400 slides, 7 were positive (1.75%). For Peshawar, there was a considerable variation in prevalence from camp to camp, with Azakhel having a low 2.1% positive, and Badaber having a high of 10.69%. The average rate for Peshawar District was 5.5%. All slides were positive for Plasmodium vivax only. No Plasmodium falciparum was found.

Based on malaria slide examination in GOP/UNHCR laboratories in NWFP for 1984, there was a slide positivity rate of 15.05; 115,874 slides were examined, and 18,859 were found to be malaria positive.

It is possible that the positivity rates do not reflect accurately

the prevalence of malaria in the population. This is because most samples may have been collected from people who presented themselves at the BHU with malaria symptoms, and whose blood samples were then taken. (The Passive Case Detection method). It may be that Active Case Detection, in which malaria supervisors tour the villages to take samples from the population as a whole, would show a lower slide positivity rate and thus indicate a lower prevalence. Despite this possibility, RVs and their surroundings are considered by the GOP to be one of the priority areas for malaria control.

2. Malaria Control Programme Objectives

The objectives established for the GOP programme guide the AR Health Programme in Malaria Control activities. These include:

Achieving less than 0.5 cases per 1,000 persons per year. To achieve this, an immediate aim could be to decrease the cases occuring by 10% per year until the goal is reached.

All provinces, districts, and other units should base their malaria control activities on the local epidemiological and entomological situation, and be responsible for meeting the above national goal.

3. Strategies

The following strategies are used to control malaria:

- The malaria control programme has been established as one of the priority programmes within the AR Health Programme.

- Laboratory facilities have been established to permit passive and active case detection. Their activities include slide collection, transport and prompt reporting of results to BHUs.

- A surveillance and referral system has been set up with the federal and provincial malaria control programmes.

- A standard treatment regimen has been established. Drugs are being provided to BHUs for treatment of malaria.

- It is the responsibility of the MO to ensure that the refugee community becomes involved in malaria control in the framework of the Primary Health Care Programme. Proper health education about malaria and its control should be established.

4. Organization of Malaria Control at the Field Level

The FSMOs are in charge of one or more laboratories for malaria and TB control in their area. They make arrangements, in collaboration with the BHUs, for regular transport of slides and results between the BHUs and the laboratories to facilitate prompt diagnosis and accurate treatment of malaria. The laboratories are technically supported and their quality of work checked by the provincial malaria laboratories.

The MOs in charge of the BHUs are responsible for malaria control in the refugee villages. Malaria Supervisors and other BHU staff have duties in malaria control, including Active and Passive Case Detection, surveillance, preparing slides for laboratory, spraying, and other environmental measures. Treatment of malaria cases is mainly the task of the Medical Officer, Dispenser and Lady Health Visitor.

5. Case Detection and Surveillance

5.1 Passive Case Detection

Passive Case Detection (PCD) is the main system for surveillance. PCD takes place in all Basic Health Units.

A slide of every suspected malaria case attending the Basic Health Unit will be prepared by the Malaria Supervisor or another member of BHU staff trained to prepare slides. Slides will be transported daily or at frequent intervals to the laboratory. Treatment of suspected cases will be started according to the standard regime, after taking blood for the slide.

5.2 Active Case Detection

Active Case Detection (ACD) will be established in all BHUs. Malaria Supervisors will prepare a schedule of their weekly tours in the Refugee Villages for collecting blood specimens for laboratory examination. As in PCD the time between collecting slides and reporting the results from the laboratory back to the BHU should be reduced to a minimum. The Malaria Supervisors must obtain a minimum of 50 slides per week from March through November.

Places to collect blood slides include, for example, schools or the BHU when mothers and children attend the MCH activities. The LHVs and Midwives who are in charge of the activity, in collaboration with the Malaria Supervisor, should collect the slides and administer the treatment if necessary.

Periodic mass blood surveys may be necessary for determining the proportion of a symptomatic malaria infection among AR. These surveys will be planned and implemented in collaboration with the provincial malaria control authorities.

Beginning in July 1985, a pre-spray survey on the prevalence of malaria was established. Surveys will be carried out twice annually, once in July prior to each spraying of insecticide and again in October/November after spraying. The Malaria Supervisor is responsible for organizing the pre- and post spray surveys.

6. Laboratories

One or more laboratories are being established for malaria and TB control in each district under FSMO's. A list for NWFP and Baluchistan appears in Appendix H. Guidelines for laboratory methods, equipment and staff training have been developed in collaboration with the TB control programme. Technical control of the quality of the laboratories is exercised by the provincial malaria control laboratory. Reagents and materials for the laboratory are provided by the Project Director Health/AR, his Deputy and the FSMO. Staff of the laboratory include laboratory technician(s) and microscopist(s). BHU staff will be trained periodically in preparation of slides for laboratory examination.

The FSMOs in collaboration with the Medical Officers in charge of BHUs are responsible for arranging transport of slides from BHUs to the laboratories and timely return of results from laboratories back to the BHUs. The time interval between taking the specimen for laboratory examination and receiving the results from the laboratory should not exceed two to three days.

7. Treatment of Malaria

7.1 Standard regimen:

7.1.1 Presumptive treatment:

Every person suspected of having malaria attending the BHU, after a blood specimen has been taken for laboratory examination, is given a single dose of chloroquine – 10 mg. base/kg body weight.

7.1.2 Treatment of Vivax and Falciparum Malaria:

If laboratory results show either P. vivax or P. falciparum the presumptive treatment of chloroquine 10 mg base/kg given in all suspected cases is not sufficient

Every confirmed case of vivax and falciparum malaria must be given radical treatment which is a combination of chloroquine and primaquine administered as follows:

Treatment for P. Vivax

Chloroquine: Total dose – 25 mg base/kg. body weight given over 48 hours

Distribution of Total Dose
10 mg/kg at time of diagnosis – 0 hours
5 mg/kg at 6 hours
5 mg/kg at 12 hours
5 mg/kg at 48 hours

Primaquine: Total Dose – 0.25 mg base/kg body weight daily for 5 days

Distribution of Total Dose
0.25 mg/kg on Day 1
0.25 mg/kg on Day 2
0.25 mg/kg on Day 3
0.25 mg/kg on Day 4
0.25 mg/kg on Day 5

Treatment for P. Falciparum

Chloroquine: Total Dose – 25 mg. base/kg body weight given over 48 hours

Distribution of Total Dose
10 mg/kg at time of diagnosis – 0 hours
5 mg/kg at 6 hours
5 mg/kg at 12 hours
5 mg/kg at 48 hours

Primaquine: Total Dose – 0.25 mg base/kg body weight daily for 3 days

Distribution of Total Dose
0.25 mg/kg on Day 1
0.25 mg/kg on Day 2
0.25 mg/kg on Day 3

Children below 1 year and pregnant women in the first trimester should not be given primaquine.

Note: Since primaquine has not been readily available in the market, steps are being taken to ensure its availability in BHUs in collaboration with the federal malaria control programme and WHO.

Treatment and follow up of P. falciparum infections is to be given a high priority. It is most important to remind the patient to return for a follow-up blood smear examination should symptoms recur within a month after radical treatment. Should a repeat blood smear be positive again for falciparum malaria within this time, infection with a chloroquine resistant strain should be suspected, although none has been found in the RV areas. In such an event, the provincial malaria control programme staff should be notified and a second course of radical treatment should be given with close follow-up of the patient for the next month or the in-vivo test could be tried by a responsible officer.

7.2 Scheme of Treatment

Suspect malaria (fever and chills):
Take blood sample for smear, carry out presumptive treatment:
Chloroquine 10 mg/kg (one dose)

Blood smear negative: No	Smear P. vivax positive: Chloroquine 25 mg base/kg	Smear P. falciparum pos.: Radical treatment: Chloroquine

further treatment	body weight over 48 hours and primaquine 0.25 mg base/kg body weight daily x 5 days	25 mg base/kg body weight over 48 hours, Primaquine 0.25 mg base/kg body weight daily for 3 days P. falciparum positive smear a month after radical treatment: Suspect resistant strain. Repeat radical treatment. Inform FSMO, PDH/AR, and Malaria Control Programme.

8. Environmental Control

Environmental Control is based on control of breeding places and on residual spray of the dwellings. Control of breeding places consists of filling and draining of stagnant water pools and of applying larvicides for chemical control. Residual spraying and larviciding take place during the transmission period April through November. The PDH/AR, his Deputy and the FSMOs are responsible for drawing control plans and for distributing equipment and chemicals.

The Medical Officer in charge of the BHU, along with Malaria Supervisors on his staff, is responsible for implementing the residual spraying and larviciding programmes twice during the transmission period, according to the plan prepared by PDH and FSMO.

The Medical Officer is also in charge of other environmental health measures which will be implemented in collaboration with the sanitation activities in the RVs. Regular BHU staff and labourers are expected to participate in all malaria control activities. Short term labourers will be employed from among the refugees.

Safety precautions as specified by the provincial malaria control programme will be followed. These include supplying the spraymen with protective clothing and soap. Insecticide to be used will be procured at the advice of the regular malaria control programme. Safety of insecticide will be secured by toxicity testing of all insecticide left over from previous year's spraying.

Of prime importance is the retraining of spraymen and their supervisors in scheduled, structured training sessions. Emphasis should be given during the training to the early recognition of the clinical signs of personal protection requirements.

The Project Director Health is responsible for ensuring, prior to the spray operations, that each spray squad is provided with all the recommended safety gear including 2 sets of uniforms per sprayman (temporary spraymen working for less than 2 weeks should be issued one set of uniforms.); and all spray pumps have been inspected to ensure proper functioning.

Should evidence of intoxication appear, the supervisor is required to not only administer the treatment promptly but also notify his superior and follow the patient until recovery.

9. Reporting and Recording

Reports on malaria control include:

- **Malaria Register** (from AR 16)

  The Malaria Register form is used to register all suspected cases for whom a slide has been sent to the laboratory. The form must be completed after the return of results. (In the future the same form will be used for sending TB sputum specimens as well.)

- **Family record** (form AR 1)

  All information in regard to the family's or individual's health is entered in his Family Record at the BHU. Each member of the family has a page in the record book (booklet).

- **Report on Malaria Control** (form AR 15)

  The Report on Malaria Control is a monthly report of malaria control activities in a BHU, submitted through FSMO to the PDH/AR.

  Other forms/records/registers used by provincial malaria control programmes may be used but with caution to avoid overloading the BHU with routine statistical work. Copies of all monthly reports should be sent to provincial malaria control programmes.

10. Logistic Support

Malaria control is integrated in the overall Afghan Refugee Programme. Materials, equipment, drugs and insecticides are provided by the Government with financial assistance from UNHCR within the overall budget. Salaries of Malaria Supervisors and laboratory staff are included in the same budget. Logistics support is provided by using the vehicles available with Project Directors Health/AR, with FSMOs or at BHUs.

CHAPTER 12 Expanded Programme for Immunizations (EPI) Guidelines

1. DESCRIPTION OF EPI

    1.1 Immunization Schedules

    1.2 Side Effects and Contraindications

2. COLD CHAIN

    2.1 Obtaining Vaccines

    2.2 Maintaining Equipment

    2.3 Maintaining Vaccines

3. ORGANISING EPI AT BHU

    3.1 Immunization Sessions

    3.2 Activities at Immunization Sites

    3.3 Cleaning and Sterilizing Equipment

    3.4 Educating Parents

    3.5 Screening and Recording

    3.6 Preparing Equipment and Vaccine

    3.7 Administering Vaccines

    3.8 Follow-up Activities

    3.9 Recording Vaccine Usage

    3.10 Reporting

Chapter 12: Expanded Programme for Immunizations (EPI) Guidelines

1. Description of Expanded Programme for Immunizations

1.1 The Expanded Programme for Immunizations (EPI) provides immunizations to protect against:

- Measles
- Diphtheria
- Polio
- Pertussis
- Tetanus
- Tuberculosis

All children less than 5 years of age should be immunized against these six diseases. Children under 12 may be immunized if they have no BCG scar. Immunization should be started and given as early in life as possible following the Regular Immunization Schedule(See Table 8).

1.2 Side effects and Contraindications

DPT or DT vaccines can cause fever 12 or more hours after injection for approximately 1 day. Aspirin can be given to control the fever.

Measles vaccine on occasion causes a fever and/or a measles-like rash 12-16 days after the injection. A child with this rash does not infect others and the rash will clear in 3 days.

BCG vaccines will normally produce a 1-2 cm sore or ulcer at the injection site. The sore should be kept clean but not bandaged. As a result of this ulcer a small scar is expected. In up to 10% of children after BCG vaccine is given, tender swollen nodes in the arm-pit will occur which last several days. Contraindications to vaccinations have in general been

Table 8

Regular Immunization Schedule

	Age					
Vaccine	Birth	6 Weeks	10 Weeks	14 Weeks	9 months	18 months
BCG	1st dose					
DPT		1st dose	2nd dose	3rd dose		Booster
OPV	1st dose	2nd dose	3rd dose	4th dose		Booster
MEASLES					1st dose	
TT	All women 15-45 years: 2 doses + booster dose during later pregnancy					

BCG = Tuberculosis vaccine (1 dose complete)
DPT = Diptheria, Pertussis (whooping cough) and Tetanus (vaccination) (3 doses complete)
DT = Diphtheria, Tetanus (2 doses complete)
OPV = Oral Polio Vaccine (4 doses complete)
TT = Tetanus Toxoid (vaccine) (2 doses complete)
Measles = (1 dose complete)

overemphasised, and many children who should have been immunized have not been. The only children who should not be immunized are those who are seriously ill.

Malnutrition should never be considered a contraindication to immunizations. In fact, malnourished children are even more susceptable to serious disease and death than well-fed children, so it is especially important that they be vaccinated.

A fever and/or other illness is not a contraindication to receiving any of the vaccines.

2. Cold Chain

- Cold chain refers to obtaining and maintaining vaccines, maintaining equipment, and handling vaccines during immunization sessions, in order to preserve their effectiveness. It is important to remember that:

- All vaccines are destroyed by temperatures greater than 8 degrees Celsius. Use cold boxes, vaccine carriers, ice packs.

- Measles and OPV vaccines must be stored frozen at - 20 degree C. When thawed and held at +4 to +8 degrees C, both can be used for 30 days. Measles and OPV can be refrozen.

- Measles and BCG vaccines are destroyed by sunlight. Use cold boxes, vaccine carrier, cloth or paper cover.

- Measles and BCG vaccines must be reconstituted with a diluent just prior to giving the injection. The diluent must be cold (+4 to +8 degree C) when added to the dried vaccine. A warm diluent will destroy the vaccine.

- Reconstituted BCG vaccine is viable for 1 hour at environmental temperature and 3-4 hours at 4 degree C. After these times, discard the vaccine.

- Reconstituted measles vaccines should be used within one hour and kept cool after reconstitution.

The risks of cold chain failure are greatest at the vaccinator level. For this reason a vaccinator is the most important link in the cold chain. He is the individual who actually administers vaccines – either in health facilities or through outreach activities. His primary responsibilities are:

1. Obtain vaccines
2. Maintain equipment
3. Maintain vaccines

Each of these responsibilities is described in detail below.

2.1 Obtaining Vaccines

In most instances, the vaccinator will collect vaccines from the FSMO/District EPI store. Before he collects the vaccines he must:

- Estimate the amount of vaccine needed. This number will usually be based on previous experience. However, if the vaccinations are scheduled for the first time, base the estimate on the number of mothers and children living in the area. Always be sure estimates are generous. It is better to have too much vaccine than not enough.

- Make sure there is enough cold chain equipment to store the vaccine to be collected.

When collecting the vaccines, the vaccinator must:

- Check that the types and amounts of vaccine and diluent are the same as he estimated.
- Check that the expiration date on each vial of vaccine has not passed.
- If the date has passed do not accept the vaccines unless specifically instructed to do so by his supervisor.
- Pack the vaccine and the diluent into the cold chain container quickly but properly.
- Keep vaccines containers in the shade as much as possible.
- Take vaccine diluent to the BHU using the shortest route and cover the distance quickly, but safely.

2.2 Maintaining equipment

Vaccines and diluent taken from the cold storage can be

kept cold for several days if packed properly in well insulated cold chain containers. Three types of cold chain containers are available for use. They are:

A cold box,
A vaccine container,
A flask.

These containers are designed to keep cold air inside and to prevent warm air from entering. When you place vaccines in a cold chain container, you are protecting them from the heat.

Ice packs are used to keep vaccines cool in a cold chain container. The checklists on the following pages describe how to use the containers and the ice packs.

2.2.1 Cold Box

Use to:
Collect large quantities of vaccines from EPI store. Transport large quantities of vaccines by vehicles to BHU.

To Pack:
Place fully frozen ice packs side by side against the inside walls and floor of the cold box.

Stack vaccine and diluent in the box.

Place plastic foam or packing material between DPT (DT), TT vaccines and the ice to prevent vaccine from becoming frozen.

The large steel ice pack fixed under the lid of the cold box covers the vaccine and diluent so the vaccine is completely surrounded by ice packs. Remember to freeze and fix the large under-lid pack.

Place a small bag of ice blocks on top of the ice packs. These ice blocks will be used to keep vaccines cool during vaccination sessions.

Secure lid tightly.

To keep in good condition when not in use:

Leave the lid open after each use so that the inside will have a chance to dry out.

Examine inside and outside surfaces after each use for cracks repair immediately.

Check that the rubber seal around the lid is not broken, if so replace it immediately.

Adjust the tension on the latches so that the lid closes tightly.

To monitor temperature:

For cold boxes or carriers with a cold life of one week which are being used in the field, dial thermometers are provided. The temperature will rise at approximately 1 to 1.5 degree C per hour after the ice has melted and this warning gives 5 hours or so after the ice has melted in which to find more frozen icepacks.

2.2.2 Vaccine carrier and Flask

Use to:
Collect small quantities of vaccine from EPI store or from cold box.

Transport small quantities of vaccine

Carry vaccine for only one day.