Table 12

Antimicrobials Used in the Treatment of Specific Causes of Acute Diarrhoea

Cause	Drug(s) of choice[1]
Cholera[2,3]	Tetracycline Children – 50 mg/kg/day in 4 divided doses x 2 or 3 days Adults – 500 mg 4 times a day x 2 or 3 days
Shigella dysentery[2,4]	Ampicillin – 100 mg/kg/day in 4 divided doses x 5 days Trimethoprim (TMP) – Sulfamethoxazole (SMX) Children – TMP 10 mg/kg/day and SMX 50 mg/kg/day in two divided doses x 5 days Adults – TMP 160 mg and SMX 800 mg twice daily x 5 days
Acute intestinal amoebiasis	Metronidazole[5] Children – 30 mg/kg/day x 5-10 days Adults – 750 mg 3 times a day x 5-10 days

(table 12 Contd.)

Acute giardiasis	Metronidazole[5] Children – 15 mg/kg/day x 5 days Adults – 250 mg 3 times a day x 5 days

[1] All doses given are for oral administration unless otherwise indicated.
[2] Decision on selection of antibiotic for treatment should take into account frequency of resistance to antibiotics in the area.
[3] Antibiotic therapy is not essential for successful therapy but shortens duration of illness and excretion of organisms in severe cases.
[4] Antibiotic therapy is especially required in infants with persistent high fever.
[5] Tinidazole and ornidazole can also be used in accordance with the manufacturers' recommendations.
(WHO, A Manual for the Treatment Acute Diarrhoea p. 14).

7.3 Convulsions (seizures, fits)

- Febrile convulsions: Fever should be brought down as described in Section 7.2.
- Severe dehydration: Assess and manage as described in Section 5.3.
- Hypernatraemia: Patients may occasionally present with hypernatraemic dehydration. When it occurs it is usually in children less than one year of age. It is usually caused by inadequate fluid intake and/or by consumption of oral fluids containing an excessive amount of sugar. The osmotic effect of such solutions draws water into the bowel, aggravating the diarrhoea and causing hypernatraemia. One sign suggesting hypernatraemic dehydration is thirst in a patient who does not show the typical clinical picture of dehydration.
- Hypernatraemia (without dehydration) may also

occur in infants to whom ORS has been administered in largely excessive quantities, or after diarrhoea has stopped. If hypernatraemia is suspected, a very careful history of the fluids injested is essential.

- Puffiness of the eyes is a useful sign of overhydration. It is not a sign of hypernatraemia although, occasionally, this may also be present. When overhydration occurs, ORS solution should be stopped and only started again if diarrhoea continues and signs of dehydration reappear.

8. Fluids Used for Rehydration

8.1 Home Made Salt and Sugar Solution

The directions for preparing a solution of salt and sugar at home are contained in Appendix K.

Children under 2 years old should receive approximately 50-100 ml. (1/4 – 1/2 cup) of fluid after each loose stool, and older children should receive twice this amount. Adults should take as much as they want to drink.

8.2 ORS Packets Available in the AR Health Programme

GOP/UNHCR recommend that only 1 litre packets of ORS be stocked in BHUs. Sometimes packets for 1/2 litre are found in shops or bazaars. Health workers should be alerted to this when they visit homes and teach people how to make ORS solution.

Each health worker should be able to teach patients how to prepare ORS solution by demonstrating this at the BHU or in the home.

How to Prepare ORS Solution.

- Wash your hands.

- Measure one litre (or volume of water indicated on packet used) of clean drinking water into container. It is best to boil and cool the water, but if this is not possible, use the cleanest water available. You may filter water through a clean cloth. Use whatever clean container is available, such as jar, teapot or a bottle.

- Pour all the powder from one packet into the water and mix well until the powder is completely dissolved.

- Taste the solution so that you know what it tastes like.

- Fresh ORS solution should be mixed each day in a clean container. The container should be kept covered. Any solution remaining from the day before should be thrown away.

8.3 Solutions for Intravenous Infusion

A number of solutions are available for I.V. infusion; however, some do not contain appropriate or adequate amounts of the electrolytes required to correct the deficits found in dehydration associated with acute diarrhoea.

Two infusions, 5% Dextrose in Water and 5% Dextrose in Normal Saline, appear in the AR Health Programme Standard Drug List. Only the 5% Dextrose in Normal Saline solution should be used as I.V. infusion in cases of dehydration.

The 5% Dextrose in Normal Saline will not correct the acidosis and will not replace potassium losses.

The technique of administration of intravenous fluids can only be taught by practical demonstration by someone with experience. Intravenous therapy should be given only by trained persons. The following points are important:

Intravenous therapy can be given into any convenient vein. The most accessible veins are generally those in front of the elbow, on the back of the hand, at the ankle, in the neck, or in infants, on the side of the scalp. Incision to locate a vein is usually not necessary and should be avoided. In cases requiring rapid resuscitation, a needle may be introduced into the femoral vein where it must be held firmly in place and removed as soon as possible.

It is useful to mark intravenous fluid bottles at various levels with the times at which the fluid should have fallen to those levels. This allows easier monitoring of the rate of administration.

CHAPTER 15 Sanitation Guidelines

CHAPTER 15 Sanitation Guidelines

1. Objective

The overall objective of the Sanitation Programme is the establishment and maintenance of a province wide PDH/AR Sanitation Programme, designed to prevent the spread of illnesses caused by poor public health conditions, and to promote a safe, clean environment in the refugee villages.

2. Strategies

The concept of the Programme and the basic strategy is based on the following points:

(a) Performance of Sanitary Surveys for each refugee village. The information gathered will be used to design the individual sanitation programme for each refugee village, as the refugee public health problems vary from RV to RV.

(b) Provision of basic public health education to Afghan refugees regarding the interaction between disease transmission, public water supplies, washing and excreta disposal. This education will be given through planned community outreach visits to individual family residences.

(c) Inclusion of the Sanitation Programme in the day to day activities of the BHU as an integral part of the overall Preventive Health Care Programme.

(d) Improvement of coordination and communication between PDH/AR staff responsible for this Programme and agencies carrying out Afghan refugee water supply programmes.

(e) Assistance to Afghan refugees in the construction

of improved excreta disposal facilities in those refugee villages where it is necessary.

(f) Performance of malaria control activities in the refugee villages on a regularly scheduled and well planned basis in each province.

(g) Strengthening the PDH/AR staff through the application of training courses designed to improve the programme management at the provincial and district (FSMO) refugee village level.

3. Education

It is realized that providing appropriate sanitation facilities is not sufficient to improve the health of the Afghan refugees. Real progress can be achieved only if the people acquire knowledge about good sanitation practices, the skill to put them into action and the motivation to consistently use them.

As one effort in this direction, a pilot project is being carried out with Pakistani students in 184 rural primary schools near Islamabad. The goal of this project is to develop a programme for learning modules and water supply and sanitation facilities which can be replicated throughout Pakistan, including the refugee villages. The primary objective of this programme is training and not the construction of water supply and sanitation systems. The teachers will be trained in the sanitation/hygiene/vector control and basic health care disciplines. The children will be taught with learning modules and the curriculum will include such subjects as (1) personal hygiene, (2) water supply (all sources), storage and treatment, (3) safe/sanitary disposal of body wastes, (4) public health, (5) transmission of disease and (6) environmental control. These children will have access within the school grounds to safe drinking water and adequate sanitation facilities.

4. Description of Activities at the BHU

Programme duties in the BHU include:

- public health control,
- malaria control,
- environmental protection.

Under the existing PDH/AR organization the Malaria Supervisor/Sanitary Inspector is concerned with these duties.

As Malaria Control Guidelines are discussed in Chapter 11, please see that Chapter for details. In each district the programme duties for all refugee villages will be divided by the FSMO among the existing staff. A Sanitary Survey will be carried out for each refugee village by the responsible BHU staff member. The Sanitary Survey will be a formal written field investigation. After these are completed they will be reviewed by the FSMO (district level) and the Malaria/Sanitation Superintendent (provincial level). A plan of action for each refugee village will then be agreed upon and these will be carried out in the field.

4.1 Role of the Camp Sanitarian

In many camps, Afghan refugees or Pakistanis have been trained as Camp Sanitarians. The Sanitary Inspector must work closely with each camp Sanitarian to guide the work.

The Camp Sanitarian is responsible for the following activities:

- Motivation of refugees to construct latrines.
- Technical assistance to refugees in selecting sites and construction of latrines.
- Education in relation to construction, use and maintenance of latrines, and identification and removal of environmental hazards.

The role of the Sanitarians should include wider aspects of environmental sanitation than just latrine maintenance, and this should be reflected in their training. The curriculum should be revised in the light of experience with the first group and the needs in the RVs; it should include latrine maintenance, insect and pest control, water purification and quality control, drainage of waste water, rubbish disposal, food storage and, possibly, some aspects of communicable disease control.

4.2 Scope of the Sanitation Programme

The 1984 CDC survey of infant mortality and nutritional status among refugee children concluded that preventive health measures, rather than increase in food stuffs, were crucial for improving the health and well-being of refugee infants and children. Key among these preventive measures are improvements in sanitation (especially through construction of latrines); related education to promote use of latrines, and education, particularly of women, in personal and family hygiene including recognition and treatment of diarrhoeal disease.

It is assumed that improvements in health education and sanitation will contribute to reduction of morbidity and mortality from preventable, sanitation-related diseases.

The Sanitation Programme of each BHU should include the following activities.

- Teach and help refugees to construct latrines and otherwise to improve environmental sanitation.

- Motivate them to use and maintain latrines.

- Educate refugees, especially women, in simple preventive health measures related to decreasing diarrhoea and skin infections. These include hand

washing before and after toileting and before and after eating or preparing food; food hygiene; and controlling flies through proper use and maintenance of latrines and household environmental measures.

- Involve refugees in becoming responsible for maintaining a healthful environment-including elimination of stagnant water, open rubbish heaps and hazards such as broken bottles.

4.2.1 Distribution of Soap

Bars of soap may be distributed to each adult woman when she attends the BHU. The experience in some camps is that many women use soap mainly for laundry, not personal hygiene, primarily because soap is not routinely available. The intent is to encourage women to use soap for personal hygiene, especially after using the latrine and before preparing food. It is assumed that greater availability of soap will promote its future use.

For work with women, the Sanitary Inspector must involve the LHV.

4.2.2 Construction and maintenance of latrines

Ventilated Improved Pit Latrines (VIP latrines) are a suitable design for many but not all RVs. Sanitary Inspectors under the direction of PDH need to determine the appropriate design for a given RV. Technical assistance is available from UNHCR.

4.2.3 Other Environmental Hygiene

Sanitary Inspectors and Camp Sanitarians will teach men and boys about the benefits and means to improve environmental hygiene and safety, including proper disposal of rubbish, care

and maintenance of water supplies, segregation of animals from living spaces and so forth. Emphasis will depend on specific needs.

Camp wells should be tested periodically for presence of fecal coliform. The wells should be tested during initial operations and quarterly thereafter. This is especially important in areas where many latrine pits have been constructed. Contaminated wells must be sealed from use, but suitable, uncontaminated, alternative water sources must be identified for the refugees.

Basic Health Units should be provided with safe water supply and sanitation facilities. It is essential that the administrators of these facilities be trained in the use of sanitation facilities so that they are properly used by themselves and visitors. The Basic Health Units should set an example of good health practices for the community.

Men have considerable responsibility and authority for health care of their families, especially in relation to detecting conditions needing treatment, bringing children for health care and permitting women to seek care outside the home. The Sanitary Inspectors should, therefore, give formal and informal talks of the topics that relate to family hygiene. Talks should also be given to school teachers and school children and to shopkeepers.

The Medical Officer in charge of the Basic Health Unit (BHU) is also responsible to work with the Sanitary Inspectors (Malaria Supervisor or Sanitarian) to implement the activities for each refugee village as identified and agreed on after the Sanitary Survey. The Sanitary Inspectors (Malaria Supervisor or Sanitarian) need to be away from the BHU much of the time. They should be allowed to plan their own schedule based on out reach work to be done in the refugee villages. Sanitary Inspectors may need to be excused from other duties that were assigned by the Medical Officer prior to 1984.

5. Programme Organization

5.1 Provincial Level

The Project Director Health (PDH) is responsible for overall programme direction, implementation and financial control. The PDH authorizes training courses, payments for materials, equipment, staff and services as recommended by the Malaria/ Sanitation Superintendent.

The PDH is also responsible for the coordination of the programme activities with other Government, UN and other non-government national and international agencies, as required. The Malaria/Sanitation Superintendent (PDH/AR/ HQ office) has the following responsibilities:

- Coordination of the refugee village by village Sanitary Surveys.
- Evaluation of survey findings and establishment of individual refugee sanitation programmes.
- The preparation of, each year, a Plan of Action which includes:
  general description of activities,
  proposed budget,
  planned progress schedule.

- The scheduled implementation of the province wide programme.
- Content and scheduling of all training programmes.
- Required province wide record keeping and quarterly reporting.
- Contacts with other agencies undertaking related work, i.e potable water supply, service agencies.

5.2 District Level

The office of the FSMO is responsible for the day to day supervision of the village level programme in each refugee

village under his administrative control. The FSMO office is also responsible for the following activities:

- Completion of each refugee village Sanitary Survey form and submission to the office of the PDH/AR/HQ with specific recommendations for each RV sanitation programme.

- Provision for managerial and technical assistance to the Sanitation Inspectors in the refugee villages.

- The efficient operation of any latrine cover factories in the area under his administration which includes calling forward from PDH/AR/HQ materials, equipment as required, and paying the salaries of temporary labourers.

- District record keeping and quarterly reporting to the PDH/AR/HQ.

- Provision of materials and equipment to Sanitation inspectors in the refugee village as required.

6. Recording and Reporting

6.1 Refugee Villages Level

The Sanitation Inspector will fill out a monthly report and submit it to the Office of the FSMO each month.

6.2 District Level

The office of the FSMO receives monthly reports from the Sanitation Inspectors under the administration of that office. A quarterly District Report shall be sent to the PDH/AR/HQ which is a summary of activities and programme implementation for the previous quarter for all refugee villages. The FSMO will maintain a Sanitation file for each refugee village.

6.3 Provincial Level

The PDH/AR/HQ receives quarterly reports from the office of the FSMO. After receipts of all Quarterly Reports from each FSMO, the PDH/AR will issue a Summary Quarterly Report to all those concerned. i.e Provincial Health Dept. Commissioner Afghan Refugees (CAR), Chief Commissioner Afghan Refugees (CCAR), UNHCR and other implementating agencies.

7. Monitoring and Evaluation

Monitoring of the programme will be in accordance with the Progress Schedule prepared at the beginning of each year's Plan of Action. Both planned activities and their scheduled completion will be monitored by the PDH/AR/HQ.

FSMOs and Sanitation Inspectors should generally monitor and report on programme achievement in relation to the daily examination register at the BHU. The reduction of gastro-intestinal and skin illnesses needs particular attention.

At the end of the year the PDH/AR/HQ for each district will prepare an evaluation report for distribution to all concerned with feed back information to FSMOs, including recommended corrective action or adjustments.

8. Logistics

The necessary equipment and materials needed for programme implementation and management may vary between NWFP and Baluchistan. All required needs should be included for funding under the yearly Plan of Action Budget. This includes materials and equipment necessary to operate latrine cover factories and/or that requested by Sanitary Inspectors or FSMOs.

Procurement will be by the PDH/AR/HQ unless other arrange-

ments are agreed upon. Transport of materials and equipment should be through the NLC/CAR if available, or by private truck if no NLC vehicles are available.

9. Financing and Resources

The Sanitation Programme is an integral part of the overall Afghan Refugee Health Programme, as managed and implemented by the provincial government.

UNHCR provides most of the financing necessary to implement the AR Health Programme. Included in the UNHCR funding is staff salaries, purchases of durable goods, materials and equipment and provision of necessary services.

National and International Private Voluntary Organizations also provide assistance to the programme through three independent Sanitation projects. It is currently planned to phase out independent projects which are not part of the PDH/AR Sanitation Programme Plan of Operations, by the end of 1985, as the need for emergency assistance type of projects should no longer exist.

REFERENCES

Chief Commissioner for Afghan Refugees. *Handbook on Management of Afghan Refugees.* Islamabad: States and Frontier Regions Division, GOP. 1984 (Revised).

Christenson, Hanne. *Afghan Refugees in Pakistan: From Emergency towards Self-Reliance.* Geneva: U.N. Research Institute for Social Development. 1984.

Khan, Mushtaq A. and Hussain, Tajammal. *Supplementary Weaning Food Mixes.* Islamabad: Planning and Development Division, GOP and UNICEF. 1981.

Khan, Altaf-ur-Rehman and Elo, Olavi. *Afghan Refugees Health Programme.* Pakistan, 1984

O'Connor, Ronald W. (ed.). *Managing Health Systems in Developing Areas: Experiences from Afghanistan.* Lexington, Mass. (U.S.A): Lexington Books. 1980.

Protein-Calorie Advisory Group of the United Nations System. *A Guide to Food and Health Relief Operations for Disasters.* New York: United Nations. 1977.

Simmonds, Stephanie and Vaughan, Patrick (eds.). *Refugee Community Health Care.* Oxford University Press. 1983.

Toman, D. *Tuberculosis Case-Finding and Chemotherapy Geneva:* WHO. 1979.

Tradition and Dynamism among Afghan Refugees: ILO Mission to Pakistan (Nov. 1982) on Income-Generating Activities for Afghan Refugees. Geneva: ILO; UNHCR. 1983.

UNHCR. *Handbook for Emergencies.* Geneva: UNHCR. December 1982.

Warner, David. *Where There is No Doctor* London.: The Macmillan Press Ltd. 1980.

WHO. *A Manual for the Treatment of Acute Diarrhoea* Geneva: WHO/CDD/SER 80 Rev. 1.

WHO. *Treatment and Prevention of Acute Diarrhoea: Guidelines for the Trainers of Health Workers.* Geneva: WHO. 1985.

The following materials of the GOP/UNHCR Afghan Refugees Health Programme were edited for incorporation in this booklet:

"Expanded Programme for Immunizations: Guidelines for Basic Health Units (Vaccinators)", January 1984.

"Malaria Control Plan of Operations", January 1984.

"Sanitation Programme for Afghan Refugees in Pakistan: Plan of Operations", March 1984.

"Tuberculosis Case Finding Manual", January 1984.

"Tuberculosis Control at Basic Health Unit (BHU)", January 1984.

"Tuberculosis Treatment Manual", January 1984.

GLOSSARY

ARPA	Afghan Refugee Programme Administration
BHU	Basic Health Unit
CDC	Centers for Disease Control (U.S.A.)
CCAR	Chief Commissioner for Afghan Refugees
CAR	Commissioner for Afghan Refugees
DDC	Diarrhoea Disease Control
DMS	Director Medical Services
EPI	Expanded Immunizations Programme
GOP	Government of Pakistan
ICRC	International Committee for the Red Cross
MCH	Maternal and Child Health
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PDH	Project Director Health
PVO	Private Voluntary Organization
RV	Refugee Village
SAFRON	States and Frontier Regions Division
UNHCR	United Nations High Commissioner for Refugees
VIP Latrines	Ventilated Improved Pit Latrines
WFP	World Food Programme