

PN-18-393
95565

**STUDY OF IMPLEMENTATION AND UTILIZATION OF STANDARD
TREATMENT GUIDELINES FOR ACUTE RESPIRATORY INFECTIONS AND
BLOOD IN STOOLS IN SINDH, PAKISTAN**



PRIMARY HEALTH CARE PROJECT

**SPONSORED BY THE GOVERNMENT OF PAKISTAN AND THE UNITED STATES
AGENCY FOR INTERNATIONAL DEVELOPMENT**



**STUDY OF IMPLEMENTATION AND UTILIZATION OF STANDARD
TREATMENT GUIDELINES FOR ACUTE RESPIRATORY INFECTIONS AND
BLOOD IN STOOLS IN SINDH, PAKISTAN**

Study conducted by:

Dr. Arjumand Faisal M.B.,B.S., M.C.P.S., M.P.H.
Dr. Shahid Shafi M.B.,B.S.
Dr. Umar Khalil Mian M.B.,B.S.

Study sponsored by:

Primary Health Care Project # 391-0475
United States Agency for International Development
Mission to Pakistan, Islamabad - Pakistan
and
Federal Basic Health Services Cell
Ministry of Health
Government of Pakistan, Islamabad

February - May 1990

PRINTED AT PANGRAPHICS (PVT) LTD., ISLAMABAD.

TABLE OF CONTENTS

EXECUTIVE SUMMARY		
I.	BACKGROUND	1
II.	PURPOSE OF THE STUDY	4
III.	SIGNIFICANCE OF THE STUDY	7
IV.	METHODOLOGY	8
V.	FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	12
A.	CURRENT KNOWLEDGE, BELIEFS AND PRACTICES OF THE MOs REGARDING ARI	12
	i) Knowledge of MOs regarding guidelines:	
	ii) History Taking and Physical Examination:	
	iii) Drug use	
	iv) Advise to parents for Home Care in ARI	
B.	ORIENTATION WORKSHOP	18
C.	INFORMATION SYSTEM - Information Generation and Recording.	20
D.	DISSEMINATION OF KNOWLEDGE TO PERIPHERY	21
E.	PROBLEMS PERCEIVED BY THE MOs IN THE USE OF THE CURRENT GUIDELINES.	22
F.	CURRENT PRACTICES OF MOs FOR USE IN FUTURE GUIDELINES	24
	i) Regarding management of common upper respiratory infections like, Acute Otitis Media and Tonsillitis:	
	ii) Other practices of MOs in relation to ARI	
G.	BLOOD IN STOOLS	27
VI.	LIMITATIONS OF THE STUDY	31
VII.	APPENDIX	33
A.	STANDARD INTRODUCTION OF THE STUDY FOR INTERVIEWEES	34
B.	QUESTIONNAIRES	35
C.	STANDARD TREATMENT GUIDELINES	40
D.	COMPANION TO THE STANDARD TREATMENT GUIDELINES	43
E.	MONITORING FORMS	47
F.	DISTRICT WISE QUARTERLY REPORTS	51
G.	OBSERVATIONS AT HEALTH CENTERS AND MOs COMMENTS	55
H.	LETTER OF INTRODUCTION ABOUT THE STUDY BY THE PROJECT DIRECTOR, PRIMARY HEALTH CARE, SINDH, FOR DISTRICT HEALTH OFFICERS.	91
I.	LETTER OF INTRODUCTION ABOUT THE STUDY BY THE DISTRICT HEALTH OFFICERS FOR THE MEDICAL OFFICERS.	92
J.	LETTER OF APPROVAL OF THE REPORT BY FEDERAL BASIC HEALTH SERVICES CELL	96
K.	COMMENTS OF THE NATIONAL PROGRAMME MANAGER ARI ON THE DRAFT REPORT MANAGER	97
L.	LIST OF ABBREVIATIONS	98
VIII.	REFERENCES	100
IX.	ACKNOWLEDGEMENTS	101

EXECUTIVE SUMMARY

Government of Pakistan (GOP) started the Primary Health Care (PHC) Project in 1982 with financial assistance from the United States Agency for International Development (USAID) to improve the coverage and quality of health services in Pakistan. The mid term evaluation of the PHC project in 1985 recommended that more efforts should be directed to the public health priorities listed in the Sixth Five-Year plan to improve quality of services. As a result, a trial monitoring system to improve health services management and health information regarding PHC, and standard treatment guidelines for improving case management in terms of diagnosis, treatment and counselling, were initiated. The monitoring system and guidelines are to be revised and updated on the basis of field experience and new scientific developments. The guidelines for 6 life threatening conditions were developed on the basis of current scientific knowledge and WHO's recommendations, adapted for Pakistan, taking into account the resource constraints. For example, the first line antibiotic recommended for use in Moderate ARI and Blood in Stools is Cotrimoxazole. This was selected because several studies have shown that it is effective in these conditions, its simple dose schedule increases the compliance and it is inexpensive. These guidelines outlined standard management for control of diarrheal diseases and acute respiratory infections in children under 5 years of age, expanded program of immunizations, tuberculosis, malaria and nutrition. The guidelines were introduced in the last quarter of 1988. Currently more than 300 centers are participating in the monitoring system in all 4 provinces. Monthly reporting has been regular from Sindh and NWFP. In Sindh it includes 123 Health centers (Basic Health Units and Rural Health Centers) in 4 districts.

Analysis of quarterly reports from Sindh revealed reporting of a very high percentage of "Moderate ARI"(70-90%) and of "Blood in Stools" (20-25%) of all diarrhoeal cases in children, where as expected frequencies are 20-30% and around 10-15% respectively.

To introduce the guidelines, medical officers (MOs) attend 2 or 3 day orientation sessions on the use of the guidelines and monitoring forms. The guidelines of ARI and Blood in Stools list a set of signs and symptoms to help classify the disease and recommend minimum treatment algorithms and counselling.

Purpose of the study

1. To identify the factors leading to reporting, from Sindh, of a high frequency of Moderate ARI, and to document current treatment practices.
2. To identify the factors leading to reporting, from Sindh, of a high frequency of Blood in Stools, and to document current treatment practices.

3. To establish the current practices of MOs regarding common upper respiratory infections which are seldom fatal and thus were not included in the initial guidelines such as acute Otitis Media and Tonsillitis.
4. To make recommendations for development or modification of guidelines, for improving their correct utilization, and for overall management of monitoring system.

Most significant feature of the study is that it provides an assessment of the extent to which the MOs follow the guidelines and their reasons for noncompliance, thus helping in the development of training programmes.

The purpose of the study was not to assess the effectiveness of Standard Treatment Guidelines or the monitoring system. Hence, no attempt was made to analyze their impact on health services.

Methodology

The study protocol was developed in consultation with authorities of Ministry of Health, National Institute of Health, Basic Health Services Cell of Government of Sindh and Pakistan, National ARI Manager, USAID, PRITECH, WHO and UNICEF. The survey, consisting of an observational checklist and MO interview, was carried out after pre testing. It was conducted over six weeks in 25 health centers in four districts of Sindh which were participating in the monitoring system. Centers were selected on the basis of ARI patient frequency and orientation of the MO regarding the guidelines.

The current classification of ARI was changed since Jan. 1990 from Mild, Moderate and Severe ARI to No Pneumonia, Pneumonia and Severe Pneumonia respectively, classification criteria being the same. The discrepancy which prompted the study was identified in the data reported before Jan. 1990. Thus, in the study, the classification used for ARI is Mild, Moderate and Severe ARI.

Data was analyzed quantitatively and qualitatively. The results are given below.

Key Findings

25 centers were visited, each for one full working day, and 63 patients of ARI and 5 patients with Blood in Stools were observed, who presented as outpatients that day.

Regarding ARI:

1. In majority of the patients, history consisted of asking for cough or difficulty in breathing only and physical examination was limited to auscultation of chest over clothes. Two differentiating features in physical examination necessary to classify ARI, i.e, the respiratory rate and chest indrawings, were only conducted by 2 MOs in 3 out of 65 patients observed.
2. Only a minority of MOs had the knowledge of classifying ARI as Moderate or Severe as specified by the guidelines, though 21 of the 25 MOs had attended one workshop in the last 12 months and 12 of them had attended a second workshop for update.
3. Advice for home care was given to parents of only 1 out of 63 patients (2 %) observed.
4. Only 7 MOs (28 %) considered the guidelines consistent with their medical knowledge.
5. 14 MOs (56 %) felt that antibiotics besides Cotrimoxazole should be incorporated in the guidelines, while 21 (88 %) acknowledged prescribing antibiotics besides the guidelines. The reasons mentioned included ineffectiveness of Cotrimoxazole, ineffectiveness of oral antibiotics, impression of emerging resistance and patients who had already used Cotrimoxazole without benefit. 8 MOs (32 %) were prescribing antibiotics prophylactically in Mild ARI. Most commonly prescribed alternate antibiotics were Ampicillin, Penicillin, Amoxicillin, Ampiclox (Ampicillin + Cloxacillin) and Oxytetracycline.
6. 24 MOs (96 %) mentioned atleast one problem with the guidelines. The major problems perceived by them were: choice of treatment limited to only one antibiotic (14 MOs, 56 %); poor credibility of MOs at BHUs and RHCs as guidelines were not implemented at larger government hospitals (11 MOs, 44 %); and, patients demand injections (11 MOs, 44 %).
7. Latest version of the guidelines in use since January 1990 (No Pneumonia, Pneumonia, Severe Pneumonia) were only present in three centers, while 4 centers did not have any version of the guidelines. The remaining 18 centers had older versions of the guidelines using four classifications. Therefore no center had the version classifying ARI as Mild, Moderate and Severe, which was put in to use since June 1988.
8. At 4 centers (16 %), patients were not registered prior to encounter with the MO. Also, at 7 centers (28 %), information about classification and treatment of patients was not entered in the OPD register soon after the encounter of patients with the MO.

9. Cotrimoxazole was out of stock in only 3 of the 25 centers (12 %) on the day of the visit.
10. Of the 25 MOs interviewed, 5 did not give their opinion of the orientation workshop. Of the remainder 20, more than half (13) considered the orientation workshops to be adequate, while 7 felt that the guidelines were imposed upon them in those sessions.

Regarding Blood in Stools:

1. 22 MOs (88 %) were using indications besides presence of blood in stools to prescribe antibiotics. Common alternate indications included Diarrhea persisting for > 3 days, presence of fever, presence of mucus in stools, severe diarrhea and simultaneous presence of other infections.
2. 18 of the 22 MOs (82 %) acknowledged prescribing antibiotics besides Cotrimoxazole, most common being Metronidazole.

Conclusions

Regarding the current practices of MOs for management of ARI patients:

1. Only a small number of MOs are practicing the recommendations of the guidelines, and even a smaller number understand the classification criteria of ARI. Thus the reported figures of Mild ARI, Moderate ARI and Severe ARI are not likely to be valid and therefore, cannot reflect the true disease pattern seen at the health centers.
2. Although all the MOs interviewed had participated in at least one workshop, and 11 of them less than 12 months ago, the orientation did not reflect in their practice. The use of antibiotics is irrational and substantially more than the recommendations of the guidelines. One-third of the MOs are using antibiotics prophylactically in Mild ARI. The actual magnitude of the use cannot be determined as information regarding the antibiotics prescribed or used besides Cotrimoxazole is not generated by the monitoring system. The choice of antibiotics is also questionable, for example Tetracycline is being used in children under five. Causes include inaccurate knowledge of the MOs, their lack of understanding of rationale behind the recommended drugs and lack of confidence in Cotrimoxazole..
3. Health education to parents for home care in ARI concerning adequate nutrition, breast feeding, hydration and timely referral to the health center are seriously lacking.
4. Majority of the MOs mentioned that they prescribed injections on "patient demand".

5. The current practices for diagnosing and managing the common upper respiratory infections of Acute Otitis Media and Acute Tonsillitis in children under five are diverse.
6. Although it has been demonstrated clearly by several studies that malnutrition adversely affects the prognosis in ARI, little attention is given to nutritional status of ARI patients. Overlooking this variable in a country like Pakistan is critical.

Regarding the knowledge of ARI guidelines in MOs:

1. The MOs' knowledge was found to be inconsistent with the current scientific knowledge incorporated in the guidelines. The explanations could be:
 - a. Inappropriate or outdated teaching at undergraduate level and during the housejob/internship.
 - b. Weak mechanism of update of knowledge after graduation.
 - c. Inadequate dissemination of scientific developments to the periphery of the health system.
2. Since the majority do not have confidence in the guidelines, it is unlikely that the MOs would implement the guidelines without reservations.
3. There appears to be a general consensus among the MOs about the need of incorporating other antibiotics in the guidelines in addition to Cotrimoxazole. However, it is also obvious that the choice of alternatives is varied and irrational.
4. The supervisors role in improving the MOs understanding of the guidelines after the orientation workshop and distributing updating guidelines was not clear.

Regarding the recommended drug:

1. Cotrimoxazole is the antibiotic recommended by the guidelines as it has proven effectiveness, low cost and better compliance because of simple dose schedule. Its supply to the majority of the centers has improved considerably since the introduction of monitoring system. Only 3 (12%) of the centers were found without Cotrimoxazole on the day of the visit.

Regarding the information system:

1. The information on ARI and Blood in Stools generated from the monitoring system does not reflect the true disease pattern because:
 - a. Only a small number of MOs are practicing the recommendations of the guidelines in history taking and physical examination, and even a smaller number understand the classification criteria of ARI.
 - b. At some centers, patients are not registered till after encounter with the MO. Some of these patients may be lost if they decide not to take medications from the center.
 - c. Recording disease classification and treatment in the OPD register is often delayed, sometimes even for days.
 - d. Information is transcribed from OPD slip to OPD register by mid-level workers.

Regarding the dissemination of knowledge to periphery:

1. Scientific developments which led to modifications of the guidelines reach the peripheries of the health system very sluggishly, resulting in confusion regarding the appropriate classification and monitoring of the diseases. The role of supervisor in disseminating new information needs strengthening.

Regarding the practices of MOs for management of Blood in Stools:

1. Though 19 MOs did not acknowledge any problems with the current guidelines, incorrect use of the guidelines was apparent as 22 MOs mentioned other indications besides the presence of blood in stools to prescribe antibiotics in diarrhea, most common being presence of fever and diarrhea persistent for > 3 days.
2. Presence of blood being the differentiating factor for use of antibiotics, but the need for acutal confirmation of blood in stool has not been advocated in the guidelines. This may be one reason why the MOs do not make any attempt to confirm it.

Recommendations

- 1. To improve the faith, understanding and practices of the MOs regarding the guidelines:**
 - a. The degree of implementation of the guidelines depends upon the knowledge, attitudes, beliefs and practices of the MOs since they are the implementors. Thus it is critical that the MOs understand the guidelines well and appreciate its significance for delivery of appropriate health care, utilizing the available resources efficiently, under the given constraints. The current methodology being used for orientation workshops should be reviewed in detail to identify areas of weaknesses, as these workshops constitute the foundation of understanding of the guidelines and monitoring system. The areas of communication gap between the participants and facilitators, and their reasons, should be identified and rectified.**
 - b. The rationale of using suggested antibiotics and its importance in regular and adequate supply, safety and better case management need more attention and discussion in greater detail with the MO's during the workshop. Prophylactic treatment is not cost-efficient and can spread drug-resistance. This issue needs emphasis in training sessions.**
 - c. The reasons for MOs concern about limitation of using Cotrimoxazole alone and irrational use of other antibiotics should be further explored.**
 - d. District Health Officers (DHO's), Assitant District Officers (ADHO's), Field Supervisory Medical Officers (FSMO's), Tehsil Health Officers (THO's) and Management Analysts (MA's) should play a more active role to ensure MO's understanding and belief in the guidelines. This could be achieved during regular supervisory visits or monthly meeting of the district medical officers.**
 - e. A cost effective system for continuing education of MOs in service should be developed. For example, circulation of ARI News, Dialogue on Diarrhea, Technical Literature Update could be initiated at regular interval with updated scientific information on case management and status report of PHC activities generated from observation and monitoring system.**
 - f. Effective visual aids should be developed to support the standard treatment guidelines to encourage the MO's to follow the recommendations.**
 - g. MO's should be encouraged in developing better rapport with the patients. The confidence of the clients in their care provider can immensely decrease the 'patient demand' for drugs and injections.**

- h. To avoid misclassification of upper respiratory tract infections, either separate guidelines be developed for them or the present guidelines be modified to include them with clarity.

2. To improve the reliability and validity of data:

- a. As the supervisory officers like DHOs, ADHOs, FSMOs, THOs, and MAs should highlight to the medical officers the need for generating accurate data through the monitoring system for epidemiological conclusions leading to better administration and case management. This could be achieved during supervisory visits, monthly meeting or in the orientation workshop with the help of real life examples.
- b. The utilization of monitoring systems information by the DHO, for example in redistribution and supply of drugs to the health centers may generate the MO's interest in the system. This may lead to better understanding of the system and may encourage MOs to take a concerned approach in recording and reporting process.
- c. All patients should be registered before the encounter with the MO. The MO 's should legibly write specific diagnosis in the OPD slip that could be transcribed into the OPD register without error.
- d. The information from the OPD slip should be recorded in the OPD register without delay, as immediate clarifications can be obtained as and when required. This job should be performed by trained personnel.

3. To improve dissemination of knowledge to periphery:

- a. Mechanisms should be developed of promptly updating the guidelines when they are modified, and orienting the MOs in their use.
- b. Effective visual aids should be developed, and updated as necessary, to sustain the knowledge of guidelines in peripheral health units and encourage the MOs to use them.

4. To improve the management of Blood in Stools:

- a. Orientation of the MOs should be strengthened in classification, terminology, indications for antibiotics use and choice of antibiotics.

- b. Local patterns of pathogens, specially parasites, should be studied to give recommendation for use of alternate antibiotic in patients with Blood in Stools.**
- c. Methods of confirming presence of blood in stools should be incorporated in the guidelines.**

I. BACKGROUND

Primary Health Care (PHC) project was started in 1982-83 by Ministry of Health, Government of Pakistan (GOP) and funded by United States Agency for International Development (USAID), Pakistan to improve the coverage and quality of health services in Pakistan. In 1985, USAID and GOP conducted a mid-term evaluation of the project. Among the recommendations were a narrower focus upon priority problems identified in the Sixth Five-Year plan and improved supervision and management of health care facilities. As a result, a trial monitoring system to improve health services management and health information regarding PHC, and standard treatment guidelines for improving case management in terms of diagnosis, treatment and counselling, were initiated. Priority was given to prevalent life threatening conditions in Pakistan. Standard treatment guidelines for medical officers (MOs) were developed with local authorities and World Health Organization (WHO) for the following priority services: control of diarrheal diseases and acute respiratory infections in children under five years age; expanded program of immunization (EPI); tuberculosis; malaria; and nutrition. These guidelines were tested for clarity and practicality by PHC staff in a total of 35 centers in all four provinces for 18 months. These guidelines were then adapted to reflect specific conditions in Pakistan, taking into account the resource constraints, and to include changes made as a result of recent research and WHO recommendations for assessment of dehydration and case management of diarrhea and acute respiratory infections. The monitoring system was implemented to give regular management and health information regarding PHC services, including the guidelines, to the local, provincial and federal health authorities.

The implementation of these guidelines began in last quarter of 1988 at 35 Basic Health Units and Rural Health Centers in selected districts where health authorities were interested in participating.

A two to three day workshop is conducted for supervisors and medical officers to orient them to the guidelines and the monitoring system. It consists of discussion on the understanding and use of these six guidelines and explanation and practice in the use of the monitoring forms (see appendix C, D and E). Management Analysts are responsible for follow up. In Sindh, there are currently two Management Analysts, each responsible for two districts. They visit each health center in their respective districts approximately thrice a year to help the MOs in resolving practical problems in implementation of the guidelines and monitoring system using examples seen at the health centers. Another opportunity to follow up the orientation is provided in the monthly meetings at district level, attended by the DHO, ADHO and all MOs. The agenda for these meetings is decided by the participants, depending on the existing problems. A third opportunity is provided when the DHOs and ADHOs visit the health centers in their districts for administrative purposes.

Currently 300 health centers (as of March 1, 1990) are participating in the monitoring system for the Primary Health Care. Monthly reporting has been regular from Sindh and NWFP. Reporting from Punjab is irregular,

while there has been very limited reporting from Balochistan. In Sindh, monitoring is being conducted in four districts: Khairpur, Sukkur, Tharparkar and Thatta, consisting of 134 health centers. From these, medical officers of 123 centers are reporting regularly. In NWFP monitoring is being conducted in 51 centers but the majority of these centers are being managed by mid level workers.

The analysis of these reports from Sindh revealed two interesting pieces of information concerning patients under five years of age seen at the centers:

1. Reporting of a very high percentage (70%-90%) of "Moderate ARI" (please refer to guidelines for ARI given in appendix C) in patients with cough and difficulty in breathing.
2. Reporting of a very high percentage (upto 25%) of Blood in Stools (please refer to guidelines for Diarrhea given in appendix C) in patients with diarrhea.

Of all cases of ARI, the incidence of mild, moderate and severe ARI are expected to be in proportions of 60%-70%, 20%-30% and 5% or less respectively. The incidence of blood in stools in cases of diarrhea is expected to be about 7%-8% in population and less than 15% in hospitals.

These findings generated from the monitoring system were discussed with Dr. Michael Merson (Director of ARI and CDD, WHO Geneva) who then initiated the thought of studying the possible causes of this discrepancy. Office of Health, Population and Nutrition (HPN), USAID has thus decided to study the utilization and implementation of the guidelines regarding ARI and blood in stools.

The guidelines list a set of signs and symptoms which the medical officers should look for in children under five presenting with cough or difficulty in breathing. The two most important of these, for differentiation of moderate ARI from mild ARI, are the respiratory rate and chest indrawings. If the respiratory rate is more than 50 per minute, the patient should be classified as moderate ARI and treated with antibiotics, first line being Cotrimoxazole. Chest indrawings indicate severe ARI which should be referred immediately to the hospital for admission after the first dose of intramuscular Benzylpenicillin. It is important to establish if the patient is under two months of age, as the management of such patients is different. Similarly, current guidelines for acute diarrhea recommend that blood in stools should be treated with antibiotics (Cotrimoxazole), in addition to ORS.

The possible explanations for reporting of a high percentage of moderate ARI and Blood in Stools from PHC monitoring in Sindh could include the following:

1. The medical officers are classifying most ARI cases as "moderate" and some diarrhea cases as dysentery to justify the use of antibiotics, because:
 - a. the patients demand it.
 - b. some respiratory infections, particularly upper respiratory tract infections such as Otitis Media, Tonsillitis and Pharyngitis, requiring antibiotics are classified in moderate ARI. These are not classified in the guidelines because the initial guidelines concentrated on life threatening conditions in young children.
 - c. the antibiotics are being misused and have to be accounted for.

2. The medical officers are not following the guidelines because:
 - a. they are not adequately oriented in the use of the guidelines.
 - b. they do not agree that the recommended treatment is appropriate for patient management and believe that mild cases should be given antibiotics.
 - c. they believe in prophylactic use of antibiotics for ARI.
 - d. they do not understand them.
 - e. they do not follow recommended history taking or examination.

3. In cases of Blood in Stools, MOs are recording attendant's diagnosis and attendant's may simply answer "yes" when asked about Blood in stools.

4. The medical officers do not record the classification in the register.

5. The parents only bring their children to the centers when the infection is more advanced or when blood appears in the stools, thus creating a selection bias.

II. PURPOSE OF THE STUDY

Goal 1

To identify the factors leading to reporting, from Basic Health Units and Rural Health Centers in Sindh, of a high frequency of Moderate ARI.

Objectives:

- 1.1 To establish whether the MOs understand the standard treatment guidelines.
- 1.2 To document if the current practices of MOs in history taking and physical examination are consistent with the guidelines.
- 1.3 To establish if the classification of disease and treatment is consistent with the guidelines.
- 1.4 To document the alternate treatments given by the MOs.
- 1.5 To document if the classification is being recorded in the register at the time of encounter with the patient.
- 1.6 To establish if the MOs are using antibiotics on patients' demands.
- 1.7 To establish if MOs are classifying Acute Otitis Media, Tonsillitis and Bronchitis into Moderate ARI.
- 1.8 To establish if MOs are using antibiotics for prophylaxis in mild ARI.
- 1.9 To establish if the MOs feel that the guidelines are consistent with their medical knowledge.
- 1.10 To document if the guidelines are present at the center and are used by the MOs.

Goal 2

To identify the factors leading to reporting, from Basic Health Units and Rural Health Centers in Sindh, of a high frequency of Blood in Stools in cases of diarrhea.

Objectives:

- 2.1 To establish whether the MOs understand standard treatment guidelines for blood in stools in cases of diarrhea.
- 2.2 To record the practices of MOs in assessing and confirming presence of blood in stools.
- 2.3 To establish if the classification of blood in stools and treatment is consistent with the guidelines.
- 2.4 To document the alternate treatments given by the MOs.
- 2.5 To document if the classification is being recorded in the register at the time of encounter with the patient.
- 2.6 To establish if the MOs are using antibiotics on patients' demands.
- 2.7 To establish if the MOs feel that the guidelines are consistent with their medical knowledge.
- 2.8 To document if the guidelines are present at the center and are used by the MOs.

Goal 3

To establish the current practices of MOs regarding the following objectives for use in formulation of future guidelines (as requested by National Programme Manager ARI and PRITECH).

Objectives:

- 3.1 **Diagnosis and management of ARI, with regards to:**
 - a. Problems with current guidelines
 - b. Nutritional status of the patients
 - c. Feeding difficulties
 - d. Duration and degree of fever
 - e. Presence of ear and other upper respiratory infections and illnesses

- 3.2 **Diagnosis and management of:**
 - a. Acute Otitis Media
 - b. Tonsillitis

3.3 Diagnosis and management of Blood in Stools, with regards to:

- a. Problems with current guidelines
- b. Confirming blood in stools by probing into history.
- c. Gross examination of stools

Goal 4

To make recommendations for development or modification of guidelines for improving their correct utilization, and for overall management of monitoring system in Primary Health Care Project/Child Survival Project in Pakistan, specially in:

- a. National ARI Program in Pakistan.
- b. Dysentery component of control of Diarrheal Disease Program in Pakistan.

This will be accomplished by achieving the above three goals.

III. SIGNIFICANCE OF THE STUDY

1. This study has identified the deficiencies, operational flaws and problems in the use of current guidelines of ARI and Diarrhea management for Blood in Stools being used by the PHC project, thus will assist in improving the monitoring and supervisory systems.
2. It provides an assessment of the extent to which the MOs follow the guidelines and their reasons for noncompliance thus will help in improving the training programmes.
3. The results should affect the formulation and implementation of national guidelines for management of ARI, and also in improving diarrheal disease management guidelines regarding Blood in stools.
4. The results provide a basis for focusing the attention on education for rationalization of drug use within the provincial health departments.
5. The recommendations are likely to improve efforts in increasing the accuracy of disease reporting thus providing the government with better epidemiological data on disease patterns, which could improve the health planning.
6. Many other countries are also in the process of formulation or implementation of guidelines on control of ARI and diarrheal diseases. They are likely to face similar discrepancy in reporting as being observed in Pakistan now. This study has identified the problems in implementation and monitoring of such guidelines, thus will help the other countries to consider such issues in planning their programs.

IV. METHODOLOGY

The office of Health, Population and Nutrition, USAID designated Dr. Arjumand Faisal to conduct the study. Two physicians, Dr. Umar Khalil Mian and Dr. Shahid Shafi, who have background in health services assessment in rural Sindh, were contracted to form a team. The study was conducted from February to May 1990.

Study protocol was developed in Islamabad by Drs. Faisal, Mian and Shafi, in consultation with the following experts:

1. Dr. Zafar Ahmed, Deputy Director General, Basic Health Services Cell (BHSC), Ministry of Health, Government of Pakistan.
2. Dr. Sajjan Memon, Director Health Services, Government of Sindh.
3. Dr. Mushtaq A. Khan, National Programme Manager (ARI).
4. Dr. Harold Campbell, Office of ARI, WHO Geneva.
5. Dr. Peter Crippen, WHO EMRO.
6. Dr. Sawat Ramaboot Hanafi, Control of Diarrheal Diseases (CDD) advisor/ARI coordinator, WHO Pakistan.
7. Col. M. Akram Khan, National Project Manager, EPI/CDD, National Institute of Health.
8. Ms. Lucia Ferraz-Tabor, Country Representative, PRITECH/Pakistan.
9. Dr. Rik Peeperkorn, Program Officer ARI, UNICEF/Pakistan.
10. Ms. Nancy Limprecht, Information Specialist, PHC Project, BHSC, Islamabad.
11. Dr. Tara Upreti, Training Advisor, PHC Project, BHSC.
12. Dr. Heather W. Goldman, Deputy Chief of HPN, USAID.

A pretest for the observational checklist and MO interview was conducted by Drs. Mian and Shafi to finalize the study protocol. It was conducted in four health centers, two each in NWFP and Sindh. These centers were selected using the same criteria as for study sample. Appropriate changes in the wording of certain questions of the MO interview were made accordingly, to make them less threatening to the MO.

Field work began after the approval of the study design by Dr. Sajjan Memon, Director Health Services, Sindh. The field work was conducted by Dr. Shahid Shafi.

The survey was conducted in four districts of Sindh participating in the PHC monitoring system. It consisted of unannounced visits to a sample of health centers. All the four District Health Officers (DHOs) were earlier informed by Dr. Hingorjo, Project Director, Primary Health Care, Sindh, about the study (copy of his letter to the DHOs is included as appendix H). In every district the investigator visited the DHO or ADHO, before

starting the survey, to explain the study briefly. In addition to the names of MOs in each center, a general letter of introduction for every BHU and RHC in the district were collected from the respective DHOs, to be presented to the MOs at the time of the visit to the center (copy of the letter is attached as appendix I). Whether the MOs of the sampled centers had been oriented in the use of the guidelines was confirmed by the list of participants of various orientation workshops, which was earlier obtained from the project director. The information regarding MOs planning to go on leave was also collected to plan the survey in an efficient manner. Since the visits to the health centers were planned to be unannounced, the names of the centers to be visited were not revealed to the DHO and he was also requested not to let the MOs know about the study.

The investigator spent one full working day at each center with the medical officer. The observations were recorded on the checklist (see study methods and appendix B) and at the end of OPD, interview of the MO was conducted (see study methods and appendix B). Field note of the center visited was recorded daily using computer software wordperfect 5.0 (see analysis). "Data" analysis and report writing was done in Islamabad in about four weeks by Drs. Umar Khalil Mian and Shahid Shafi, under supervision of Dr. Arjumand Faisal.

SAMPLING

Currently the PHC standard treatment guidelines have been introduced at 134 health centers in Sindh. The centers managed by MOs, who had been oriented in the use of these guidelines and which reported atleast three cases of ARI per day, on an average, on quarterly reports of Jan. to Sep. 1989, were selected. These reports indicated that there was no seasonal variability in cases of ARI and Dysentery. These centers were then organized in a descending order of reported percentage of moderate ARI as available in the latest reports, i.e, Jan. to Sept. 1989. Initially the plan was to visit the top thirty centers for a sample size of approximately 25% of the total centers participating in the monitoring system in Sindh. However, because of law and order situation in Sindh, the survey was delayed and since the information being generated was consistent from center to center, it was felt that decreasing the sample size would save time without affecting the quality of data. Hence the sample size was decreased to 25. Same centers were sampled also for treatment practices of Blood in Stools because the centers reporting high numbers of ARI patients, in general, also see a larger number of total patients, increasing the possibility of encountering patients with Blood in Stools. In addition, logistic reasons, i.e. constraints of time, distances and manpower did not allow for a separate sample of health centers for treatment of Blood in Stools.

STUDY METHOD

There were two components of the study:

1. An observational study of the MOs for patients presenting at the center. Variables for all the nine guidelines were included but the focus was on ARI and Blood in Stools. Actual examination of the

patients to interpret medical officer's (MO) findings, diagnosis and treatment was not performed as it might have affected the MO's normal practice, thus creating a bias in the results.

The observations regarding patient management were recorded on a checklist to evaluate:

a. If the practices of MOs were consistent with the recommended guidelines for management of ARI/Blood in Stools, by systematically evaluating the variables in:

- o History taking
- o Physical examination
- o Classification of disease
- o Treatment
- o Availability of required equipment

b. the current practices of MOs in management of ARI with respect to:

- o Nutritional status of the patient
- o Feeding during illness
- o Presence of ear infection
- o Degree and Duration of fever

c. the current practices of MOs in management of Blood in Stools with respect to:

- o Establishment of presence of blood in stools through proper history.
- o Gross examination of stools

2. **Interview of MOs.** This component provided a qualitative assessment of understanding and attitudes of MOs regarding guidelines for ARI and Blood in Stools. It also pinpointed the problems faced by the MOs in using these guidelines and disease classification.

TIME FRAME

Feb. weeks 3-4	Planning
Mar. weeks 1-4	Data Collection
Apr. week 1-2	Data Collection
Apr. weeks 3-4	Data analysis and report writing
May week 1	Review of Draft report
May week 2	Final report

ANALYSIS

The analysis was recorded using computer software Lotus 123 and Wordperfect 5.0. The names of the health centers and medical officers interviewed are kept confidential. The data from the observational study has been analyzed both quantitatively and qualitatively, whereas the MOs interview has only been analyzed qualitatively.

It should be mentioned here that the current classification of ARI was changed since Jan. 1990 from Mild, Moderate and Severe ARI to No Pneumonia, Pneumonia and Severe Pneumonia respectively, classification criteria being the same. The discrepancy which prompted the study was identified in the data reported before Jan. 1990. Thus, in the study, the classification used for ARI is Mild, Moderate and Severe ARI.

The analysis was begun as soon as the data collection commenced. Every evening, Dr. Shahid Shafi wrote up his fieldnotes regarding the health center visited that day.

At the end of field survey, these fieldnotes were reviewed and their information was divided into three files:

1. Field work file, which contains materials on the process used in conducting the field survey. This includes step-by-step procedures used in collecting information, personal experiences, feelings and observations of the researcher himself. This file has helped in writing the final report's section on research methodologies.
2. Background file, which contains information about people, places, organizations, documents and so forth.
3. Analytic file, which includes the analysis of the data to reveal main themes, impressions and statements of facts. It also includes explanations, speculations and hypotheses about the research problem. This file has helped in writing the final report's section on results and discussion.

The data obtained from the observational checklist was stored on Lotus 123 files and was analyzed using simple manual computations.

V. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

- A. CURRENT KNOWLEDGE, BELIEFS AND PRACTICES OF THE MOs REGARDING ARI
 - i) Knowledge of MOs regarding guidelines
 - ii) History Taking and Physical Examination
 - iii) Drug use
 - iv) Advise to parents for Home Care in ARI
- B. ORIENTATION WORKSHOP
- C. INFORMATION SYSTEM - Information Generation and Recording
- D. DISSEMINATION OF KNOWLEDGE TO PERIPHERY
- E. PROBLEMS PERCEIVED BY THE MOs IN THE USE OF THE CURRENT GUIDELINES
- F. CURRENT PRACTICES OF MOs FOR USE IN FUTURE GUIDELINES
 - i) Regarding management of common upper respiratory infections like Acute Otitis Media and Tonsillitis
 - ii) Other practices of MOs in relation to ARI
- G. BLOOD IN STOOLS

A. CURRENT KNOWLEDGE, BELIEFS AND PRACTICES OF THE MOs REGARDING ARI

i) Knowledge of MOs regarding guidelines:

The knowledge of MOs regarding current guidelines of ARI was assessed through the interview. As was mentioned in the methodology, though the current classification which was started in January 1990 classifies ARI as No Pneumonia, Pneumonia and Severe Pneumonia, the classification criteria are the same as those for Mild ARI, Moderate ARI and Severe ARI respectively. The guidelines recommend that ARI should be classified as Moderate in patient from 2 months to 5 years age if respiratory rate is more than 50 per minutes, and as Severe ARI if chest indrawings (subcostal recessions) are present. In patients under 2 months, respiratory rate should be more than 60 per minute to classify as Moderate ARI and chest indrawings must be severe to classify as

Severe ARI. Following table presents the status of this knowledge in MOs:

Differentiating Features in the Guidelines to classify ARI	MOs understanding the significance (n = 25)	
	no.	% age
Patients 2 months to 5 years: Respiratory rate 50/min or more Chest indrawings	6	24 %
	3	12 %
Patients under 2 months: Respiratory rate 60/min or more Severe chest indrawings	3	12 %
	0	0

MOs were asked direct question in the interview if they felt that the guidelines were consistent with their medical knowledge. The responses are tabulated below:

MOs' comments regarding their medical knowledge	MOs (n = 25)	
	no.	% age
Guidelines consistent with knowledge	7	28%
Guideline inconsistent with knowledge	15	60%
Response could not be established	3	12%

This table reveals that the medical knowledge of atleast 60 % of MOs was not consistent with the current scientific information incorporated in the guidelines. These 60 % of MOs showed lack of confidence in the guidelines.

ii) History Taking and Physical Examination:

The current practices of MOs in history taking and physical examination are given in the table below. The table shows the number of patients in whom the MOs followed the recommendations of the guidelines. If some information was already known to the MO, e.g. age of patients was mostly written on the OPD slips, or if the patient volunteered some information without the MO's inquiry, it was not included in the total number of patients for that function. Whether the MO evaluated the patient for chest indrawings or not could not be ascertained with observation alone and there was no other method to ascertain it without alerting the MO about the specific focus of observation. Therefore exposure of the chest, a step necessary to observe indrawings, was

taken equivalent to having observed indrawings. Increasing sensitivity at the cost of specificity, thus over estimating the function performed. Similarly, the use of stethoscope was considered an indirect indicator of auscultation for wheeze.

Actions recommended by the guidelines in history and physical examination	Action performed	Patient seen #	%Action performed
Age confirmed	5	17	30%
Cough/Difficult breathing	60	60	100%
Ear pain/discharge	0	59	0
Inability to drink	0	63	0
Convulsions	0	63	0
Severe drowsiness	0	63	0
Awake+quiet for R/R*	7	63	11
R/R not counted	55	63	87
R/R counted for < 1 min	8	63	13
R/R counted for 1 min	0	63	0
Chest exposed	8	61	13
Throat examined	0	63	0
Stethoscope used	47	63	75

Of the 17 patients whose age was not known, the MOs asked for it in only 5 patients. As seen in the table above, inquiry in history of ARI patients would consist of asking for cough or difficulty in breathing only, and auscultation of chest, mostly over clothes, would comprise the physical examination. Two main differentiating features in physical examination necessary to classify ARI, i.e, the respiratory rate and chest indrawings, were only conducted by 2 MOs in 3 out of 63 patients observed.

Here it will be worthwhile to briefly point out the status of the equipment needed to perform the required physical examination at the 25 centers:

Equipment (n = 25)	Present	Absent
Watch with seconds hand	23	2
Torch	16	9
Tongue Depressor	21	4
Stethoscope	23	2

iii) Drug use

Most of the MOs raised this subject as an issue. As will be mentioned below, majority of the MOs (14 out of 25 or 56 %) felt that antibiotics besides Cotrimoxazole should be incorporated in the guidelines. Typically, an MO gives two prescriptions to the patients, one for the drugs from the health center and the other for drugs from the market. Only those drugs were recorded in the OPD register that were issued from the center. No recorded

information is available about the drugs prescribed for purchase from market.

Though the monthly monitoring reports reveal the use of antibiotics besides Cotrimoxazole in only 1 % of cases of Moderate ARI, 21 MOs (84 %) acknowledged prescribing antibiotics besides the recommendations of the guidelines. The alternate antibiotics being prescribed were:

Antibiotics prescribed by the MOs besides Cotrimoxazole	# MOs (n = 21)
Ampicillin	8
Penicillin	7
Amoxicillin	6
Ampicillin+Cloxacillin (Ampiclox*)	5
Erythromycin	3
Oxytetracycline	2

Velosef*, Gentamicin, Chloramphenicol, Vibramycin*, Cephalexin, Augmentin*, were mentioned by one MO each.

* indicates trade names.

It should be noted that 2 MOs mentioned prescribing a tetracycline to children. 8 MOs felt that antibiotics should be used in Mild ARI prophylactically. 2 of them mentioned such use only if the patients were coming from distant villages with poor chances of follow up. Other indications mentioned by MOs for use of antibiotics besides the recommendations of the guidelines were:

Indications, besides recommendations, used by MOs to prescribe antibiotics	# MOs (n = 21)
Prophylaxis in Mild ARI	8
Presence of fever	6
Patients' demands	3
Presence of cough	3
Mild ARI lasting more than 1 to 2 days	3
Tonsillitis	2

iv) Advise to parents for Home Care in ARI

It is very important to note that health education to parents for home care was only given to 1 of the 63 patients of ARI observed (2 %).

Conclusions

1. Since the majority do not have confidence in the guidelines, it is unlikely that the MOs would use the guidelines. As only a small number of MOs are practicing the recommendations of the guidelines, and even a smaller number understand the classification criteria of ARI, the diagnosis is likely to vary from patient to patient and therefore unreliable. The reported figures of Mild ARI, Moderate ARI and Severe ARI are therefore not valid and they do not reflect the true disease pattern seen at the health centers.
2. The MOs' knowledge is inconsistent with the current scientific knowledge incorporated in the guidelines. The explanations could be:
 - a. Inappropriate or outdated teaching at undergraduate level and during the housejob/internship.
 - b. Weak mechanisms of update of knowledge after graduation or rigid beliefs that drugs must be used for every illness.
 - c. Inadequate dissemination of scientific developments to the periphery of the health system.
 - d. MOs' lack of faith in usefulness of the guidelines.
3. There is excessive and irrational use of antibiotics (21 MOs out of 25) substantially more than the recommendations of the guidelines. One-third of the MOs are using antibiotics prophylactically in Mild ARI. This is contrary to the spirit in which the guidelines were developed. The actual magnitude of antibiotic use cannot be determined as information regarding the antibiotics prescribed or used besides Cotrimoxazole is not being generated by the monitoring system. Further, no attempt was made to review the "outside prescription" of the MOs.
4. There appears to be a general consensus among the MOs about the need of incorporating other antibiotics in the guidelines in addition to Cotrimoxazole. However, it is also obvious that the choice of alternatives is varied, irrational and questionable. For example, Tetracyclines, which are contraindicated in children under eight years age, are being prescribed for children under five. This not only shows their deficient knowledge but also their lack of understanding of rationale behind the recommended drugs and lack of confidence in Cotrimoxazole. This is in spite of the fact that the supply of Cotrimoxazole to the majority of the centers has improved considerably since the introduction of monitoring system, and only three centers were without Cotrimoxazole on the day of the visit.
5. Health education to parents for home care in ARI concerning adequate nutrition, breast feeding, hydration and timely referral to the hospital are seriously lacking.

Recommendations

1. The degree of implementation of the guidelines depends upon the knowledge, attitudes, beliefs and practices of the MOs since they are the implementors. Thus it is critical that MOs understand the guidelines well and appreciate its significance for delivery of appropriate health care, utilizing the available resources efficiently under the given constraints. The supervisors, i.e, DHOs, ADHOs, THOs, FSMOs and MAs, should play a more positive role to ensure MOs' understanding and faith in the guidelines. This could be achieved during regular supervisory visits of these supervisors or during the monthly meeting of the district's MOs in the DHO office for the PHC project.
2. To influence the undergraduate medical curriculum and teaching, workshops should be arranged for the teachers in medical education to continuously revise and incorporate scientific developments of commonly prevalent diseases in the country. An example is provided by one MO who learnt about the importance of ORT, Immunization, Breast feeding and Nutrition during the housejob and thus found the guidelines acceptable. Similar suggestions were also given in the Mid term evaluation of PHC project.
3. To improve the orientation of the MOs. Recommendations have been incorporated with those of the orientation workshop.
4. A cost effective system to ensure continuing education of MOs in service should be developed. This was also recommended in the Mid term evaluation of PHC project. For example, circulation of ARI News, Dialogue on Diarrhea, Technical Literature Update. A District Health Newsletter should be initiated for circulation at regular intervals. This can provide the updated scientific information on case management and status report of PHC activities generated from observations and the monitoring system, clarify confusion and promote better understanding.
5. The rationale of using suggested antibiotics and its importance in regular and adequate supply, safety and better case management need more attention and discussion in greater detail with the MOs during the workshop.
6. The reasons for MOs concern about limitations of using Cotrimoxazole alone should be explored. In particular, the apprehension about emerging microbiologic resistance (as discussed elsewhere) needs further research. It may be reasonable to start exploration of alternate antibiotics, should the need is felt for future use.
7. Enhanced utilization of information generated by the monitoring system by the DHO, for example, in redistribution and supply of drugs to the health centers, is likely to generate the MOs' interest in the system. This may lead to better understanding of the usefulness of the system and may inspire MOs to take concerned approach in recording and reporting procedures.

8. Importance of health education for home care advice to parents in ARI needs more emphasis during the orientation workshops. In addition, other methods for patient education may be devised. For example, Leaflets, similar to the ones for ORS use, may be prepared for distribution to the parents for home management in ARI.

B. ORIENTATION WORKSHOP

No. of Orientation workshops attended	# MOs (n=25)	1988	1989
Once only	13	4	9
Twice	12	12	12

MOs who attended the workshop twice, did so once in 1988 and again in 1989

The study was designed to assess the performance of only those MOs who were oriented in the use of guidelines. Of the 25 MOs interviewed, 21 had attended atleast one workshop within the last 12 months.

The opinion of MOs regarding the workshops is as follows:

Opinion of MOs regarding the Orientation workshops	# MOs (n = 25)
Imposed on the MOs	7
Good learning experience	6
Satisfactory	5
Frequency should be increased	2
No comments	5

Less than half (11) of the MOs considered the workshops to be adequate. 7 MOs (28 %) felt that the guidelines were imposed upon them. Two reasons were mentioned were:

1. The communication was mostly one way during the orientation workshops, from facilitators to participants.
2. Some of the MOs commented that they recommended changes in the guidelines during the pretest in Sindh health facilities but their comments were not incorporated in the final version of the guidelines.
3. One-fifth of the MOs interviewed refrained from giving any comments on the orientation workshops.

Conclusion

1. Although all the MOs interviewed had participated in at least one orientation workshop, and 11 of them less than 12 months ago, the orientation did not reflect in their practice, as mentioned in earlier sections. It can be inferred from the comments of the MOs that there is some deficit in the structure or content of presentation and interaction between participants and facilitators.
2. With around half of the MOs (11) dissatisfied with the orientation workshop, the guidelines are unlikely to be implemented with reliability and accuracy.
3. It appears that supervisors (DHOs, ADHOs, THOs, FSMOs, MAs) have not focused their attention to understand the perceptions of the MOs regarding the guidelines.

Recommendations

1. Current methodology being used for orientation workshops should be reviewed in detail to identify areas of weaknesses, as these workshops constitute the foundation of understanding of the guidelines and monitoring approach. In particular, the location of workshops should be reviewed. Hospital or health center-based orientation alongwith clinical practice may be more useful than hotel-based orientation.
2. If possible, the frequency of workshops should be revised to ensure rapid dissemination of scientific knowledge to the peripheries of the health system and ensuring its sustenance by a more active role to be played by the supervisors to ensure MO's understanding of the guidelines.
3. The communication gap between the participants and facilitators, and their reasons, should be identified and rectified.
4. The reasons for indifferent attitude of MOs towards the workshops should be explored. It is essential to convince the MOs of the importance of PHC and its components as the only method of ensuring adequate health coverage in a country like Pakistan.
5. Involvement of senior professionals, eg, faculty of teaching hospitals, as facilitators, as being done for diarrhea training, will increase the authenticity of the guidelines for the participants.
6. Currently these workshops represent the major communication link between the planners and implementers. Other methods of enhancing this communication should be explored. One possibility is a regular newsletter, as mentioned earlier.

C. INFORMATION SYSTEM - Information Generation and Recording.

Patient registration practices at the centers visited were as follows:

Registration of patients	# centers (n=25)
Prior to encounter with the MO	21
Not prior to encounter with the MO	4

At 4 centers, the patients were walking into the OPD without prior registration. MO would write the diagnosis and prescription on a plain piece of paper. Sometimes only treatment is written on the OPD slip. The patient was then expected to go to the dispenser who would record the information in the OPD register and dispense the medications.

At none of the centers were the MOs recording the classification and treatment in the OPD register at the time of encounter with the patient. This responsibility was delegated to the medical/health technician or the dispenser, who would copy this from the OPD slip. In cases where the diagnosis was not written on the OPD slip, the transcriber would infer it on the basis of the treatment. These MTs/HTs were not well versed with English, the language of communication in monitoring system.

Few MOs commented that they classified any case of ARI who was given antibiotics as Moderate ARI.

The time lag between the encounter with the patient and recording of his diseases classification and treatment in the OPD register was as follows:

Recording of patients' disease classification and treatment	# centers (n = 25)
Soon after encounter of MO and patient	18
At the end of the day	5
Not till several days later	2

Conclusions

1. If the patients are not registered till after encounter with the MO, some of them may be lost if they decide not to take medications from the center.

2. There are chances of information being lost if it is not recorded soon after encounter of patient and the MO. Major errors in recording diagnosis and its classification are likely to occur frequently if the diagnoses are inferred on the basis of prescriptions. Thus, the reliability and validity of data so gathered is questionable. The current practice is exposing the data to possible biases of the MO or the transcriber.
3. The reliability of the data is further decreased by the fact that sometimes the classification is according to the treatment given to the patients, instead of the converse.

Recommendations

1. Efforts should be made to register all patients before the encounter with the MO.
2. The MOs should legibly write specific diagnosis with classification in the OPD slip which could be easily transcribed into the OPD register without error.
3. If language is a problem for MTs/HTs, the OPD register and instructions for its use could be translated into Urdu.
4. A system should be developed to record the information from the OPD slip to the OPD register without delay, as immediate classification can be obtained as and when necessary. This job should not be performed by untrained personnel.

These efforts could help in generating reliable and valid data for epidemiological conclusions leading to improved case management and administration.

D. DISSEMINATION OF KNOWLEDGE TO PERIPHERY

Availability and utilization of the guidelines at the centers	# centers (n = 25)
Guidelines present at the center	21
Visually accessible to the MO	19
Guidelines consulted during practice	0

It is important to mention here that of the 21 centers where guidelines were present, only 3 had the latest version, i.e, No Pneumonia, Pneumonia, Severe Pneumonia, which has been in place since January 1990. These were photocopies on A4 size. None of the centers had the version classifying ARI as Mild, Moderate and Severe, which was put into use since June 1988. Among the rest, classification of ARI was Mild, Moderate, Severe and Very Severe in 17 centers, and was Upper RTI and Lower RTI in one. All of these were displayed as hand written charts.

One of the reasons mentioned by the MOs was that initially they used to prepare hand made charts of the guidelines. Since the guidelines changed frequently, they gave up this practice.

Conclusion

1. The utilization of charts illustrating the guidelines is deficient. One of the reasons for poor sustenance of knowledge in the periphery could be lack of updating the visual aids of the guidelines, i.e, the wall charts.
2. Recent scientific developments resulting in modifications of the guidelines reach the peripheries of the health system very sluggishly, resulting in confusion regarding the classification and monitoring of the diseases.

Recommendation

1. Mechanisms should be developed of promptly updating the guidelines when they are modified, and orienting the MOs in their use.
2. Effective visual aids should be developed to support and sustain the knowledge of guidelines in peripheral health units and encourage the MOs to use them.

E. PROBLEMS PERCEIVED BY THE MOs IN THE USE OF THE CURRENT GUIDELINES.

The MOs elaborated on the problems they faced with the guidelines, which were:

Problems with the current guidelines, as mentioned by the MOs	# MOs (n = 25)
Only Cotrimoxazole is allowed	14
Poor credibility of MOs, as guidelines only implemented at BHUs & RHCs	11
Patients demand injections	11
Referral is very difficult	5
Frequent modifications	4
Guidelines are too time consuming	3
No problems	1

14 MOs (56%) believe that the recommendation of using only one antibiotic in cases of Moderate ARI in

unacceptable practice. They recommended incorporation of alternate antibiotics. The reasons mentioned include ineffectiveness of Cotrimoxazole, ineffectiveness of oral antibiotics, impression of emerging resistance and for patients who had already used Cotrimoxazole without benefit.

11 MOs (44%) felt that since the guidelines are being implemented only at BHUs and RHCs, whereas all other government health facilities, specially teaching hospitals, are not using them, including specialists, it created doubts in their minds regarding its validity. Private practitioners also were not following the guidelines. They felt that it was difficult to gain patient's confidence with only one type of treatment at all facilities.

11 MOs (44%) commented that it is a local belief that injections are the most effective remedies. They remarked that some patients discarded oral drugs when prescribed. This pushed the MOs to either prescribe injections from the market or use vitamin injections from the center to gain patients' acceptance.

5 MOs (20%) stated that it was very difficult to refer serious cases. They mentioned that problems encountered in referring patients included the cost and time implications, questionable quality of care at the referred center, no mechanism of follow up of referrals and lack of a system to facilitate travelling and care at referred center. One MO mentioned that when referred, the patients assumed incompetence on part of the MO, instead of realizing the lack of services needed for such cases.

Conclusions

1. There appears to be reluctance on the part of MOs to change the patients' belief that they cannot get well without injections.
2. More than half the MOs expressed a desire to include other antibiotics besides Cotrimoxazole. This clearly shows that they fail to understand the rationale for its selection, i.e, effectiveness, low cost and simple dose regimen increasing compliance.
3. Another factor contributing to poor faith of MOs in guidelines identified here is implementation of guidelines at peripheral health facilities only.
4. Inadequate system of referral and lack of appropriate facilities does not encourage the MOs and the patients to implement the guidelines fully.

Recommendations

1. Doctors in the health centers should play a more positive role in developing rapport with the patients. the confidence of the clients in the care provider can immensely influence the situation.

2. Efforts should be made to improve the acceptability of the standard treatment guidelines in the community by increasing community participation in the PHC project. Village health committees or other forums should be utilized for this purpose, and to improve awareness regarding harmful effects of some of the current beliefs in the community.
3. Efforts should be made to promote the use of scientific practices incorporated in the guidelines in all other health institutions, in addition to BHUs and RHCs, specially teaching hospitals, and by specialists and private practitioners, as suggested earlier. Also, the importance of disseminating scientific knowledge in the health system, specially the MOs, is emphasized again, as elaborated earlier.
4. The problem of referring patients should be studied in detail to develop a system whereby the referral is convenient and beneficial to the patient, and he/she is sent back to the referring MO for follow up.

E. CURRENT PRACTICES OF MOs FOR USE IN FUTURE GUIDELINES

i) Regarding management of common upper respiratory infections like, Acute Otitis Media and Tonsillitis:

This information was collected primarily to establish the baseline to help in development of guidelines for classification and treatment for these diseases in future.

Acute Otitis Media:

Most common symptoms used by the MOs for diagnosis of Acute Otitis Media (AOM) were ear discharge (23 MOs) and ear pain (10 MOs). 3 MOs did not use either of the two. Other signs and symptoms used by one or two individual MOs were fever, red throat, deafness, tugging at ear, swelling at ear, nodes in the neck, runny nose and cranky child. Only one MO claimed to use auroscope, which was confirmed during observation. It must be mentioned here that BHUs and RHCs are not provided with auroscopes at present.

For management of AOM, 13 MOs used Cotrimoxazole alone, whereas in all, 23 were using it in a variety of combination with other antibiotics. Only one MO mentioned local care with cleansing and drying. Other antibiotics used were as follows:

Antibiotics prescribed by the MOs, besides Cotrimoxazole	# MOs (n = 23)
Ampicillin+Cloxacillin (*Ampiclox)	5
Amoxicillin	4
Ampicillin	4
Erythromycin	3
Local antibiotic drops	2
Inj. Penicillin	1
Inj. Chloramphenicol	1
Metronidazole	1
None, if discharge < 2 weeks	1

Acute Tonsillitis:

Only one MO was using the combination of pus in tonsils with enlarged lymph nodes in the neck for diagnosis of Tonsillitis. Most commonly used signs and symptoms to diagnose Tonsillitis were Enlarged tonsils (15 MOs), with pain in the throat (13 MOs) and red tonsils (10 MOs). Other indicators used included fever (7 MOs), Nodes in the neck (5 MOs), Pus in the tonsils (4 MOs) and cough (3 MOs). None mentioned tenderness of nodes in the neck. It must be remembered that the most commonly used indicators, i.e, enlargement, redness and pain, also occur commonly in viral infections.

For management of Tonsillitis, Cotrimoxazole was used by 19 MOs, of which 8 were using it alone, while 11 were using it in combination with other antibiotics. Other antibiotics used were as follows:

Antibiotics prescribed by the MOs, besides Cotrimoxazole	# MOs (n = 19)
Erythromycin	7
Amoxicillin	6
Ampicillin+Cloxacillin (*Ampiclox)	5
Inj. Penicillin	5
Ampicillin	3
Vibramycin*	3
Oxytetracycline	1
Inj. Streptomycin	1

Classification of these infections by the MOs:

One hypothesis for over reporting of Moderate ARI was classification of other common respiratory infections

requiring antibiotics as Moderate ARI. The table below reveals that majority of MOs classify two common respiratory tract infection requiring antibiotics as Moderate ARI.

Other common respiratory infections classified as Moderate ARI	# MOs (n=25)
Acute Otitis Media	15
Tonsillitis	17

ii) **Other practices of MOs in relation to ARI**

Information was collected regarding certain aspects of diagnosis and management of ARI which are not included in the current guidelines.

Assessment of ARI patients:	Patients (n = 63)	
	#	%
History and physical examination		
Degree of fever	6	10%
Duration of fever	9	14%
Feeding difficulties	0	0
Nutritional assessment:		
Growth chart consultation	0	0
Weight checked	0	0
Auroscope used	1	2%

As mentioned earlier, currently the BHUs and RHCs are not supplied with auroscopes. One MO who used it had acquired it from his personal sources.

Conclusions

1. The current practices for diagnosing and managing these common childhood illnesses are diverse.
2. These two common upper respiratory infections requiring antibiotics were not classified in the guidelines because the initial guidelines were meant for life threatening diseases only. To justify the use of antibiotics, MOs are classifying them as Moderate ARI.

3. It is good to note that the degree or duration of fever was considered important in only a small number of patients, as none of these are proven to adversely effect the course of ARI. However, as noted in an earlier section, almost 25 % of MOs (6 out of 25) acknowledged using it as an indication for prescribing antibiotics in ARI.
4. It has been demonstrated clearly by several studies that malnutrition adversely affects the prognosis in ARI. Overlooking this critical variable in a country like Pakistan, where malnutrition is highly prevalent, may result in increased morbidity and mortality.
5. The current practice of MOs regarding use of auroscope to diagnose Otitis Media cannot be used to draw conclusions because currently the BHUs and RHCs are not equipped with auroscopes.

Recommendations

1. To avoid misclassification of these common upper respiratory infections and to prevent diverse and irrational treatment, either separate guidelines should be developed for these diseases or the current ARI guidelines should be modified to include them.
2. The nutritional assessment of the patient and its corresponding management should be incorporated in the ARI guidelines.
3. The likelihood of providing auroscopes to the MOs in BHUs and RHCs, and their maintenance, should be explored as otoscopy is more sensitive and specific method of diagnosing Otitis Media than ear pain alone.
4. Again the need of orienting the MOs appropriately in various aspects of ARI, including presence of fever, is emphasized.

G. BLOOD IN STOOLS

Only five patients with Blood in Stools were observed during the survey. The conclusion drawn from the observational checklist should be viewed with caution because of the small sample size. The results are given below.

Of the 5 patients with blood in stools observed, the MOs asked for presence of blood in 3 patients, while the other 2 volunteered the information.

During the interview, the MOs acknowledged the use of antibiotics in diarrhea, as given below:

Indications used by MOs to prescribe antibiotics in Diarrhea	# MOs (n = 25)
Only presence of Blood in Stools	3
Other indications:	22
Diarrhea persisting for > 3 days	8
Presence of fever	7
Presence of mucus in stools	3
Severe diarrhea	3
Simultaneous presence of other infections, eg, ARI	7

Other indications mentioned only by one MO each were foul smelling stools, rice-water stools, presence of cramps, diarrhea not responding to ORS, diarrhea requiring I/V fluids and "unhygienic" living conditions.

One MO admitted using antibiotics in all cases of diarrhea.

18 MOs acknowledged prescribing antibiotics other than Cotrimoxazole. These included:

Antibiotics prescribed by the MOs, besides Cotrimoxazole	# MOs (n = 18)
Metronidazole	14
Ampicillin	3
Nalidixic Acid	2
Furoxane *	2

Tetracycline, Ampiclox, Kefzol, Vibramycin, Furazole, Combantrin, Zentel, Diiodoquin, Chloramphenicol, Terramycin, Penicillin, Metronidazole injection were mentioned once.

Some MOs were using combinations of the above. One MO denied having seen even a single patient with blood in stools. The alternate treatment used by two MOs could not be established as they were reluctant to reply. None of the MOs acknowledged using antibiotics in diarrhea on patients demands.

As seen in ARI, none of the MO was recording the classification in the register at the time of encounter with the patient. As mentioned in the section about problems with the study, it was not possible to determine the classification and treatment given to the five patients observed. However, indirect evidence from the OPD register

and interview suggests that 7 MOs were classifying Blood in stools as Blood in Stools, Dysentery or Amoebic Dysentery.

Of the 25 MOs interviewed, 15 felt that the guidelines for blood in stools were not consistent with their medical knowledge, 7 felt these were consistent, and 3 MOs were noncommittal.

Hand written charts of the guideline were seen at the centers.

Presence and utilization of guidelines in the centers	# centers (n = 5)
Guidelines present at center	4
Visually accessible to the MO	3
Guidelines consulted during practice	0

Following problems, with current guidelines for the management of Blood in Stools, were mentioned by the MOs:

Problems with the current guidelines, as mentioned by the MOs	# MOs (n = 25)
Only Cotrimoxazole is allowed	4
Patients demand injections	1
Guidelines are "useless"	1
None	19

Information about current practice of MOs were collected for use in future developments of guidelines.

Practice of MOs to confirm presence of blood in stools	# MOs (n = 5)
By probing into history	0
Confirming with a witness to blood	0
Gross examination of stools	0

Conclusions

1. Though 19 MOs did not acknowledge any problems with the current guidelines, inadequate understanding of the guidelines was reflected by:
 - a. 18 MOs mentioning the use of antibiotics besides Cotrimoxazole.

- b. 22 MOs mentioning other indications besides the presence of blood in stools to prescribe antibiotics in diarrhea, most common being presence of fever and diarrhea persistent for > 3 days.
- 2. Presence of blood being the differentiating factor for use of antibiotics, but the need for confirmation of blood in stools has not been advocated in the current guidelines. This may be one reason why the MOs do not make any attempt to confirm it.
- 3. Metronidazole appears to be most commonly prescribed in cases of Blood in Stools, alongwith Cotrimoxazole, It is the drug of choice for amoebic dysentery, having a similar presentation as bacillary dysentery with blood in stools.
- 4. The information reported may be unreliable or not valid, because:
 - a. As seen with ARI classification, there are chances of information being lost or incorrectly recorded when it is transcribed from the OPD slip to the OPD register by untrained personnel, specially if it is not done soon after encounter of patient with the MO or if the MO does not write clearly and specifically.
 - b. There seems to be some confusion regarding terminology used for recording these cases. If all the categories used are not aggregated in the monitoring form under "Blood in Stools", the information may be lost.

Recommendations

- 1. Orientation of the MOs should be strengthened in classification, terminology, indications for antibiotics use and choice of antibiotics.
- 2. Methods of confirming presence of blood in stools should be incorporated in the guidelines.
- 3. Local patterns of pathogens specially parasites should be studied to give recommendation for use of alternate antibiotic in patients with Blood in Stools.

VI. LIMITATIONS OF THE STUDY DESIGN AND METHODOLOGY

In general, no major problems with the study design that could skew the results, bias the information or affect the validity of this report was identified during and after the survey. The wordings of some questions in the interview needed to be modified slightly according to the situation and individual MOs.

An important limitation of the study was that since the study design was observational, no attempt was made to actively seek information regarding treatment of individual patients observed and functional status of the equipment present, as it could have affected the normal practice of the MOs. Thus, indirect evidence based on the MO interview and OPD register was used to deduce the practices of MOs regarding classification and treatment.

Some minor problems faced were following:

1. The MOs of two districts were informed of the study visit before hand by the DHO office, despite requests to the DHOs that the study design required the visits to be unannounced. However, we do not feel that it has effected the data in any significant manner, because the target area was masked from the DHOs too. It was also felt that most MOs and DHOs treated the study as an evaluation of their work. Hence it may be inferred that the MOs were at their best performance during the visit.
2. In cases of RHCs, it was rarely possible to interview any MO besides the MO I/C, because he would receive the investigator and insist on staying with him. In one center, MO I/C was interviewed whereas the observations were done on another MO, because MO I/C himself did not see any patients under five.
3. In some centers more than one MO were using the same room for OPD. Other MOs sometimes tried to influence the answers of the MO being interviewed but only the responses of interviewee were recorded.
4. In the MO interview no direct question was stated to assess if the MOs felt that the guidelines were consistent with their medical knowledge, and if they use antibiotics prophylactically in Mild ARI, for fear of antagonizing the MOs. However, as the MOs commented on these without reservations, direct questions were asked from the third center onwards.

5. **Only five patients with Blood in Stools were observed during the survey. The conclusion drawn from the observational checklist should be viewed with caution because of the small sample size.**

VII. APPENDICES

- A. STANDARD INTRODUCTION OF THE STUDY FOR INTERVIEWEES**
- B. QUESTIONNAIRES**
- C. STANDARD TREATMENT GUIDELINES**
- D. COMPANION TO THE STANDARD TREATMENT GUIDELINES**
- E. MONITORING FORMS**
- F. DISTRICT WISE QUARTERLY REPORTS**
- G. OBSERVATIONS AT HEALTH CENTERS AND MOs COMMENTS**
- H. LETTER OF INTRODUCTION ABOUT THE STUDY BY THE PROJECT DIRECTOR, PRIMARY HEALTH CARE, SINDH, FOR DISTRICT HEALTH OFFICERS**
- I. LETTER OF INTRODUCTION ABOUT THE STUDY BY THE DISTRICT HEALTH OFFICERS FOR THE MEDICAL OFFICERS**
- J. LETTER OF APPROVAL OF THE REPORT BY BASIC HEALTH SERVICES CELL, MINISTRY OF HEALTH, GOVERNMENT OF PAKISTAN**
- K. COMMENTS OF THE NATIONAL PROGRAMME MANAGER (ARI) ON THE DRAFT REPORT**
- L. LIST OF ABBREVIATIONS**

Standard introduction of the study for all MOs

"I am Dr. Shahid Shafi working for Basic Health Services cell and USAID. You have been participating in primary health care project for several months now, including the use of standard treatment guidelines for six major diseases. I am here to collect your feedback about these guidelines. We are particularly interested in problems that you face in implementing these guidelines, your opinion of them and your suggestions for further improvement. I will appreciate if you could spare few minutes for an interview at the end of your OPD to help me clarify some information. Meanwhile I would like to sit with you in the OPD and observe the variety of patients. If you have any queries I will be glad to clarify them".

QUESTIONNAIRES

PHC OBSERVATIONAL CHECKLIST

(Please tick for YES, and X for NO)

Facility open (MO present)

A. ACUTE RESPIRATORY INFECTIONS

Patient 1 2 3 4 5

History taking

- H1. Age of the patient
(<2 months>, >5 years)
- H2. Presence of cough or
Difficulty in breathing
- H3. Ear pain or discharge
- H4. Inability to drink
- H5. Convulsions
- H6. Severe drowsiness
- H7. Degree of fever
- H8. Duration of fever
- H9. Feeding difficulties
- H10. Growth chart

Physical examination

- P1. Respiratory rate
 - a. patient awake and quiet
 - b. breath counting:
 - None
 - < 1 min
 - = or > 1 min

- P2. Chest exposed
(to observe chest indrawings)
- P3. Throat examination
- P4. Stethoscope used

- P5. Temperature checked
- P6. Weight
- P7. Auroscope used

Diagnosis

- D1. Classification entered

Treatment

- T1. Antibiotic usage:

- Cotrimoxazole only
- Other antibiotic only
- Both or other multiple antibiotics

Record names of antibiotics if possible

- T2. Cotrimoxazole available
- T3. Record all other available antibiotics
- T4. For severe pneumonia only:
 - a. Referral
(Record referral method)
 - b. I/M antibiotics administered

- T5. Advice for Home care

Functional equipment:

- F1. Watch with a seconds hand
- F2. Stethoscope
- F3. Torch *
- F4. Tongue depressor *
- F5. Thermometer *
- F6. Auroscope *
- F7. Weighing machine *

Guidelines:

- G1.
 - a. Present at the center
 - b. Visually accessible
 - c. Consulted during practice

* information for new guideline

B. BLOOD IN STOOLS

History taking Inquired for:

- H1. Blood in stools
- H2. Further probing

H3. Confirmation by witness from attendants

H4. Stool available for gross examination.

Physical Examination

P1. Gross examination of stools

Diagnosis

D1. Classification entered

Treatment

T1. Medications:

None

Cotrimoxazole only

Other antibiotic only

Both or other multiple antibiotics

Record names of antibiotics if possible

Guidelines

- G1. a. Present at the center
- b. Visually accessible
- c. Consulted during practice

MEDICAL OFFICERS (MOs) INTERVIEW

- Q1. Have you been oriented for the standard treatment guidelines? Yes No
Date of orientation.....
Comments.....
- Q2. Were you satisfied with the orientation? Yes No
Comments.....
- Q3. Which guideline is most useful/least useful for patient management?.....
- Q4. What are the problems that you have faced in using ARI guidelines?.....
- Q5,Q6,Q7. How do you differentiate between Mild, Moderate and Severe ARI ?
- Q8a. There must have been circumstances where you had to use antibiotics besides the recommendations of the guidelines ? What were they.....
- Q8b. Do you feel that the guidelines can differentiate between ARI patients who need antibiotics and those who do not.....
- Q9. How do the following conditions present, where do you classify, and in your experience, which drugs have you seen to be effective:
Acute Otitis Media
Tonsillitis
- Q10. What are the problems that you have faced in using guidelines for blood in stools.....
- Q11. How do you establish the presence of blood in stools through the history ?
- Q12a, Q12b. In your experience, have you seen cases of diarrhea which required antibiotics, even when there was no blood in the stools ?".
- Q13. Do you assess the nutritional status of the child ? Y/N
If yes, how.....
- Q14. Do you establish that the child is immunized ? Y/N
If yes, how.....

Q15. What are the major problems faced in diagnosing TB.....

Q16. In which febrile conditions you do not use Chloroquine.....

Q17. Any comments.....

Ministry of Health, Special Education & Social Welfare
Government of Pakistan

STANDARD TREATMENT FOR ALL LOOSE OR WATERY STOOLS (DIARRHOEA/DYSENTERY)

FOR ALL CHILDREN

who visit a health facility
for loose or watery stools:

TREAT CHILD ACCORDING TO THE TABLE BELOW.

DEGREE OF DEHYDRATION	AGE OF CHILD		
	Up to 4-6 months (exclusively breastfed)		More than 4-6 months (partially breastfed)
NONE (No visible sign of dehydration)	• Breastfeed more often.		<ul style="list-style-type: none"> • Breastfeed more often. • Give more fluids such as rice water, lassi and plain water. • Continue soft foods such as khichri, yogurt and mashed banana.
MILD TO MODERATE	0-11 MONTHS	1-4 YEARS	5 YEARS & OVER
	First 4-6 hours ORS 200-600 ml or 1/4-1/2 seer.	First 4-6 hours ORS 600-800 ml or 1/2-3/4 seer.	First 4-6 hours ORS 1 to 2 litres or 1 to 2 seers.
	10-20 ml ORS per kilogram body weight per hour		
SEVERE	First 4-6 hours 400-750 ml Ringers Lactate intravenous (25 ml/kg/hr).	First 4-6 hours 1-1.5 litres Ringers Lactate intravenous (30 ml/kg/hr).	First 4-6 hours 2 litres Ringers Lactate intravenous (30 ml/kg/hr).
	Then ORS as above	Then ORS as above	Then ORS as above
MAINTENANCE	1/2 large cup (100 ml) ORS or other fluids per stool	1 large cup (200 ml) ORS or other fluids per stool	2 large cups ORS or other fluids per stool
	CONTINUE FEEDING THE CHILD OFTEN. IF CHILD WANTS MORE WATER, GIVE IT.		

- Observe parent prepare and feed ORS in the facility.
- Do not give antidiarrhoeal drugs. They are dangerous and contraindicated by WHO.
- If child vomits, wait 10 minutes and then give small amounts of ORS slowly.
- After 4-6 hours, reassess the child using the assessment chart, then choose the suitable treatment.
- ★ *For Bloody Stools: Give ORS and Cotrimoxazole (5 mg TMP/kg/dose, twice daily for 5 days). If child is not better in 48 hours, refer to hospital.*
- ★ *If the child is above 2 years of age and comes from a community where confirmed cholera cases are currently occurring, suspect cholera and give oral tetracycline (50 mg/kg/day in four divided doses for three days) after the child is rehydrated. Tetracycline is not recommended for routine use in children under 8 years of age.*

EXPLAIN TO PARENT AND ENSURE THAT PARENT UNDERSTANDS THAT:

- Child should return to center or physician if (i) the child shows any sign of dehydration, or (ii) the child does not improve, or (iii) diarrhoea lasts more than 2-3 days.
- Child should continue to breastfeed often.
- Child should drink more liquids than usual.
- Child should continue eating soft foods like yogurt, khichri, mashed banana, etc. 5 to 7 times a day.
- After diarrhoea stops, child should eat one extra meal each day for two weeks.

GIVE PARENT TWO ORS PACKETS TO TAKE HOME TO CONTINUE TREATMENT.

STANDARD TREATMENT FOR ACUTE RESPIRATORY TRACT INFECTION (A.R.I) IN CHILDREN UNDER 5 YEARS

ANY CHILD WITH ACUTE URTI SHOULD:

1. BE EVALUATED FOR SEVERITY OF INFECTION AND TREATED ACCORDING TO THE TABLE BELOW.
2. MOTHER BE INSTRUCTED/ADVISED TO CONTINUE BREAST FEEDING AND TO GIVE FOODS AND LIQUIDS. IF CHILD CANNOT SUCK, MOTHER SHOULD BE INSTRUCTED TO FEED BREAST MILK WITH CUP AND SPOON.
3. MOTHER BE INSTRUCTED TO INCREASE FEEDING DURING THE WEEK AFTER THE ILLNESS. RETURN IF CHILD STARTS TO BREATHE FAST, UNABLE TO DRINK OR NOT GETTING BETTER.
4. DO NOT GIVE COUGH SUPPRESSANTS, MUCOLYTICS, ANTI HISTAMINE, THEY ARE NOT EFFECTIVE, AND THEY MAY BE HARMFUL.

***ANY CHILD UNDER TWO MONTHS WITH RESPIRATORY RATE MORE THAN 60/MIN, CHEST INDRAWING, GRUNTING OR ANY TWO SHOULD BE GIVEN IMMEDIATE DOSE OF BENZYL-PENICILLIN (50,000 U/KG) 1/M AND GENTAMYCIN (2.5 MG/KG) 1/M AND URGENTLY REFERRED TO HOSPITAL HAVING OXYGEN FACILITY.

INFECTION	SYMPTOMS	MANAGEMENT
MILD ARI	- COUGH OR - BLOCKED RUNNY NOSE OR - RED THROAT - FEVER MAY OR MAY NOT BE PRESENT - R/R LESS THAN 50/MIN	<u>MANAGE AT HOME</u> - PARACETAMOL FOR HIGH FEVER MORE THAN 101F - PLENTY OF FLUIDS - HUMIDITY - COUGH MIXTURE (WHO FORMULA)
MODERATE ARI	- R/R MORE THAN 50/MIN - RED EAR DRUM OR EAR DISCHARGE OR - PURULENT PHARYNGITIS WITH LARGE TENDER LYMPH NODES OR - EXUDATIVE TONSILLITIS	<u>MANAGE AT RHC/HOME</u> - COTRIMOXAZOLE x 5 DAYS 2-11 MONTHS; HALF TSP (2.5 ML) 1-5 YEARS; 1 TSP (5 ML) - FLUIDS - PARACETAMOL FOR HIGH FEVER MORE THAN 101F - KEEP THE EAR CLEAN
SEVERE ARI	- R/R MORE THAN 70/MIN - COUGH WITH CHEST INDRAWING (NO WHEEZE) OR - COUGH WITH GRUNTING SOUND - CYANOSIS OR - UNABLE TO DRINK OR - APNOETIC ATTACKS OR - CONVULSION/DROWZINESS/DEHYDRATION	<u>URGENTLY REFER TO HOSPITAL FOR ADMISSION</u> AFTER GIVING INITIAL DOSE OF CHLORAMPHENICOL (25 MG/KG/DOSE) I/V OR ORALLY

NOTES:

- COTRIMOXAZOLE SYRUP = SULPHA 200 MG + TMP 40 MG IN 5 ML (1 TSP)
- I/V HYDRATION SHOULD BE AVOIDED EXCEPT IN CASE OF SHOCK

*** BRONCHODILATORS: USE IN CHILDREN WITH WHEEZE OVER 1 YEAR OF AGE, CRAL SALBUTAMOL (0.1 MG/KG) 8 HOURLY.

Ministry of Health, Special Education & Social Welfare
Government of Pakistan

STANDARD TREATMENT FOR COUGH OR DIFFICULT BREATHING (SUSPECTED PNEUMONIA) IN CHILDREN UNDER 5 YEARS OF AGE

FOR ALL CHILDREN WHO VISIT A HEALTH FACILITY WITH COUGH OR DIFFICULT BREATHING:

1. Evaluate severity of infection and treat according to the table below.
2. If child UNDER TWO MONTHS has a RESPIRATORY RATE more than 60/min. OR SEVERE CHEST INDRAWING, immediately give an intramuscular dose of benzylpenicillin (50,000 U/kg) and gentamycin (2.5 mg/kg) and URGENTLY REFER TO HOSPITAL HAVING OXYGEN FACILITY. KEEP NEONATES WARM.

TREATMENT FOR ACUTE RESPIRATORY INFECTIONS (ARI) IN CHILDREN UNDER 5 YEARS

INFECTION	SYMPTOMS	MANAGEMENT
NO PNEUMONIA (cough or cold)	Cough with R/R less than 50 breaths/minute with no chest indrawing	MANAGE AT HOME Paracetamol for fever higher than 101°F/38.5°C Give more fluids
	Red throat	Cough mixture without antihistamine, alcohol OR codeine
	Blocked or runny nose	Explain home care to parents
	Ear discharge or pain	See guidelines for ear problems
PNEUMONIA	Cough with R/R 50 breaths/minute or more with no chest indrawing	MANAGE AT HEALTH FACILITY AND HOME Cotrimoxazole: Twice a day for 5 days Children: 2-11 months — 5.0 ml 1-4 years — 10.0 ml Paracetamol for fever higher than 101°F/38.5°C Give more fluids Explain home care to parents
SEVERE PNEUMONIA OR OTHER SEVERE DISEASE	Cough with chest indrawing Not able to drink Stridor in a calm child Convulsions or severe drowsiness	URGENTLY REFER TO HOSPITAL FOR ADMISSION after giving initial intramuscular dose of benzylpenicillin (50,000 U/kg)

NOTES

- Measure Respiratory Rate (R/R) in a CALM CHILD
- COTRIMOXAZOLE SYRUP = Sulpha 200 mg + TMP 40 mg in 5 ml
(ASSESS RESPONSE TO TREATMENT ON DAY TWO)
- IV hydration should be avoided except in case of shock
- For wheezing, manage as above. Use ORAL SALBUTAMOL (0.1 mg/kg/dose) 3 times a day if no signs of severe disease and R/R is less than 50

EXPLAIN TO PARENTS:

1. To continue breastfeeding. If child cannot suck, feed expressed breastmilk with cup and spoon.
2. To give plenty of fluids and frequent small meals.
3. To increase feeding during the week following the illness.
4. To take child to a hospital immediately if child starts to breathe fast, is unable to drink, or is not getting better.

COMPANION TO THE STANDARD TREATMENT GUIDELINES

ANTIBIOTIC USE FOR BLOODY STOOL

If there is a blood in the stool, suspect dysentery and treat with Cotrimoxazole as recommended.

If diarrhoea has been persistent (over 2 weeks) refer for stool exam and more through diagnosis. At this you may suspect amoebiasis, giardiasis, worms, etc. If amoebiasis or giardiasis is suspected, and confirmed on microscopic examination of stool then treat accordingly as recommended.

Remember: Indiscriminate use of antibiotics may, in fact, increase resistance to some disease - causing organisms.

ACUTE RESPIRATORY TRACT INFECTIONS

1. WHY REFER UNDER 2 MONTHS OLD INFANTS WITH RR > 60

Most of the deaths from A.R.I are caused by Pneumonia. Out of the 14 - 15 million children under 5 years of age who die each year, 4 million die of ARI (about one quarter of all child deaths) and 2/3rds of those under 5 children are infants in the rural areas of developing countries. So in severe Pneumonia cases especially there is an urgent need for admission and intensive, carefully monitored therapy.

2. WHY NO ANTIBIOTIC FOR MILD ARI

Most cases of mild ARI are viral. They do not require antibiotic therapy. They will get better by themselves. Unnecessary and excessive use of antibiotics will develop resistance in patients.

COUGH

Cough is a very common symptom. Many children have atleast mild cough for a significant part of the first year of life. Clearly, they should not all be given antibiotics. This would be expensive, wasteful and would encourage the emergence of bacteria resistant to antibiotics.

WHEEZE

The first episode of wheezing in a child under 12 month is usually caused by bronchiolitis which is the viral infection of bronchioli and should not be treated with antibiotics.

COLD

Antibiotic therapy for the common cold is ineffective and wasteful. Widespread use of antibiotics will lead to the emergence of bacteria resistant to antibiotics.

SORE THROAT

Red throat in the young (under 5 years) is usually caused by viral infection. Most sore-throats get better by themselves, without antibiotics.

3. WHY RESPIRATORY RATE IS AN INDICATION OF THE NEED FOR ANTIBIOTICS IN A CHILD WITH COUGH

According to WHO material, studies conducted recently world-wide indicate that tachypnoea was the best clinical predictor of pneumonia, and a history of rapid breathing was almost as good as actually counting the respiratory rate. Nasal flaring, intercostal recession, cyanosis, grunting and failure to feed may all occur in severe pneumonia. A child with any of these signs certainly needs injectable antibiotics and referral, but tachypnoea should indicate the need for antibiotics before these other signs develop.

Certain signs should not be used to decide whether to give antibiotics to a child with cough. Fever was not a good indication of the presence of pneumonia in these studies. Children with viral infections often have a high temperature, while many children with bacterial pneumonia do not have fever. Toxic appearance is a rather vague sign and was inferior to tachypnoea as an index of pneumonia in both studies. The presence of purulent sputum is a very poor sign in young children because they swallow their sputum rather than spit it out. Crepitations are difficult to hear in small children and they are not the most reliable sign even for doctors skilled in the use of a stethoscope.

At this time, the presence of tachypnoea (over 50 breaths per minute) or a history of rapid breathing appear to be the best predictors of the need for antibiotic therapy in a child with cough.

To count accurately how fast a child is breathing, he should be awake and quiet. This may seem difficult to achieve, but the necessary skill can be learned with practice.

4. WHY COTRIMOXAZOLE TO TREAT MODERATE ARI

Lung aspirate studies of children with Pneumonia have shown that the causative bacteria are usually S. Pneumonia, H. Influenza and S. Aureus. Cotrimoxazole is effective against all these three microorganisms. As compared to Procaine Penicillin and Ampicillin which are the other drugs effective against H. Influenza and S. Pneumonia, Cotrimoxazole is more effective, less toxic, cheaper and an easily available drug. Cotrimoxazole also has the advantage of being effective against Chlamydia and Pneumocystis which may also be important causes of Pneumonia in infants.

5. **WHY NOT CO-TRIMOXAZOLE BELOW 2 MONTHS OF AGE**

Co-trimoxazole is not recommended below the age of 2 months because Sulphamethoxazole may cause liver damage and agranulocytosis.

6. **WHY REFER SEVERE ARI CASES TO HOSPITAL**

Sever cases of ARI require close supervision on a 24-hour basis, oxygen, and other monitoring and diagnostic capabilities generally not available at rural health facilities. Referral is, therefore, preferred for the safety of the patient and convenience of the doctor.

7. **WHY CHLORAMPHENICOL FOR REFERRAL (SEVERE) ARI CASES**

Chloramphenicol is recommended as the drug of choice for use in very severe cases of Pneumonia. It is recommended for those cases because of the need for a broad coverage antibiotic. It should be used (as a full treatment) to treat very severe Pneumonia only in the hospital because of the risk of fatal agranulocytosis. In a severely ill patient, the risk of agranulocytosis (less than 1 in 20,000) is acceptable. For referral purposes, an initial dose for severe patients is acceptable to help prevent their condition from worsening before arrival at the referral hospital.

Chloramphenicol should not be used in infants under two months of age because of its tendency to accumulate in the blood due to the inability of the immature liver to break it down which results in circulatory failure, cyanosis and abdominal distension.

8. **WHY BENZYL PENICILLIN AND GENTAMICIN IN CHILDREN UNDER 2 MONTHS OF AGE**

Antibiotic coverage for coverage for cases of neonatal Pneumonia should be broad-based to include coverage for gram negative enteric organisms (E. Coli and Klebsiella), Staphylococcus Aureus and group B-Streptococcus. In order to accomplish such broad-based coverage in < 2 months aged children, the combination of Benzyl Penicillin and gentamicin should be substituted for the use of Chloramphenicol or Cotrimoxazole.

9. **WHY I/V HYDRATION SHOULD BE AVOIDED EXCEPT IN CASE OF SHOCK**

Children with Pneumonia may secrete more antidiuretic hormone than normal. They easily become overloaded with I/V fluid which can cause Pulmonary Edema and contribute to respiratory failure.

MONTHLY REPORTING FORM

District: _____ Center: _____

Month: _____ Year: _____

1. UTILIZATION

Centre Outreach

Total:		
Children under 5 yrs:		
Women 15 - 45 yrs:		

(From all centre registers without duplication)

Total non-EPI field visits

planned	made
---------	------

Staff attended deliveries:

2. ALL LOOSE OR WATERY STOOLS IN CHILDREN UNDER 5 YRS. [DIARRHOEA]

-- degree of dehydration --
None/Mild Mod. Severe

Seen:			
*Fed ORS:			
Feeding advice:			
IV Fluids:			
*Cotrimoxazole:			
Other drugs:			
*Antidiarrhoeals:			

Number of cases in children under 5 years with:

<input type="text"/>	Blood in stool
<input type="text"/>	Other infection

3. IMMUNIZATIONS

Monthly Target for vaccinating children (pop. X .037/12)

<input type="text"/>	DPT1	GIVEN TO CHILDREN UNDER 1 YEAR
<input type="text"/>	DPT3	
<input type="text"/>	Measles	

Monthly Target for TT (pop. X .045/12)

TT2 or booster given to PREGNANT WOMEN

Monthly Birth Rate (pop. X .04/12)

Total Registered Births in Catchment Area

EPI Catchment Area Population

4. FEVER WITHOUT OBVIOUS CAUSE

Total seen	No. of Patients		Average lag time	New cases falciparum
	Slides prepared	*Given chloroquin-cases		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

5. ARI IN CHILDREN UNDER 5 YRS.

Severe/
Mild Moderate Very Sev

Seen:			
*Given cotrimoxazole:			
Admitted:			
Referred:			

6. CHEST SYMPTOMS WITH COUGH OVER 2 WEEKS

No. of cases cough > 2 wks:	No. of patients		
	Seen	AFB	Referred
Registered TB patients:	Total	Treated	Defaulted
	<input type="text"/>	<input type="text"/>	<input type="text"/>

7. BOTTLEFED CHILDREN UNDER 6 MONTHS

Total Breastfeed advice:	0-3 mos.	4-6 mos.
	<input type="text"/>	<input type="text"/>
Cup/spoon advice:	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

*Report only the NUMBER of patients in each category who were treated with drugs/ORS available from the Centre.

8. SUPPLIES

	Quantity used this month	Number of days without	Enough until next official supply? (yes/no)
Cotrimoxazole	tab.		
" syrup	bot.		
B.Penicillin	vial		
Gentamycin	amp.		
Chloramphenicol	vial		
Chloroquine	tab.		
" syrup	bot.		
Primaquine	tab.		
ORS	pkt.		
Ringers Lactate	bot.		
INH	tab.		
Streptomycin	vial		
Thioacetazone	tab.		
Ethambutol	tab.		
Distilled water	ml.		
Giemsa stain	ml.		
Ziernelson	ml.		
Slides	no.		
Disposable Syringes	no.		
Reusable Syringes			
Reusable Needles			

9. VACCINES (INSUFFICIENT ONLY)

Vaccine	Days without

10. STAFFING POSITIONS:

	Sanctioned	Posted
MOIC		
MO		
WMO		
FHT		
MHT		
LHV		
Lab Tech Ass't		
Microscopist		
Dispenser		
Dai		
Vaccinator		
All Others		

11. Staff meetings held in month:

12.

MAJOR ISSUES DISCUSSED:	ACTIONS TAKEN:

Signature of MOIC or other: _____ Title: _____ Date: _____

Signature of Review Officer: _____ Title: _____ Date: _____

MONTHLY REPORTING FORM

District: _____ Centre: _____

Month: _____ Year: _____

1. UTILIZATION

	All Centre Visits	New Cases Centre	All Outreach Contacts	Total:	Non-EPI field visits planned	Non-EPI field visits made	All Staff Attended Deliveries
Total:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Children under 5 yrs:	<input type="text"/>	<input type="text"/>	<input type="text"/>	By LHV:	<input type="text"/>	<input type="text"/>	
Women 15-45 yrs:	<input type="text"/>	<input type="text"/>	<input type="text"/>	By HT:	<input type="text"/>	<input type="text"/>	
					By MO/WMO:	<input type="text"/>	<input type="text"/>

2. ALL DIARRHOEA / DYSENTERY IN CHILDREN UNDER 5 YRS.

	-- Degree of Dehydration --			Number of cases with Blood in stool
	None	Mild-Mod	Severe	
Seen:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
*Fed ORS:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
IV Fluids:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
*Cotrimoxazole:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Other antibiotics:	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Antidiarrhoeals:	<input type="text"/>	<input type="text"/>	<input type="text"/>	

Report here only those patients given antibiotics for the treatment of diarrhoea or dysentery.

3. IMMUNIZATIONS

<input type="text"/>	DPT1	GIVEN TO CHILDREN UNDER 1 YEAR	<input type="text"/>	TT2 or booster given to PREGNANT WOMEN
<input type="text"/>	DPT3		<input type="text"/>	Total Registered Births in Catchment Area
<input type="text"/>	Measles		<input type="text"/>	

4. FEVER WITHOUT OBVIOUS CAUSE

No. of Patients						New cases falciparum
Total seen	Slides prepared	*Given chloroquin	Positive cases	Average lag time		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

5. RESPIRATORY INFECTIONS IN CHILDREN UNDER 5 YRS.

	All Respiratory Infections in Children under 5 yrs			Number of Cases with Ear Discharge	
	No Pneumonia	Pneumonia	Severe Pneumonia	Acute <2 wks	Chronic >2 wks
Seen:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
*Cotrimoxazole:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other antibiotics:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Admitted:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Referred:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

6. CHEST SYMPTOMS WITH COUGH OVER 2 WEEKS

-----New Cases-----				
Suspected TB cough > 2 wks:	Seen	AFB	Referred	Registered
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
-----Confirmed Cases-----				
Registered TB patients:	Total	AFB	Treated	Defaulted
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

*Report only the NUMBER of patients in each category who were given drugs/ORS from the Centre.

7. NUTRITION OF CHILDREN UNDER 6 MO.

Total seen:
 Exclusively breast fed:

9. STAFFING POSITIONS:

	Posted	Days available this month
MOIC	<input type="text"/>	<input type="text"/>
MO	<input type="text"/>	<input type="text"/>
WMO	<input type="text"/>	<input type="text"/>
FHT	<input type="text"/>	<input type="text"/>
MHT	<input type="text"/>	<input type="text"/>
LHV	<input type="text"/>	<input type="text"/>
Lab Tech Ass't	<input type="text"/>	<input type="text"/>
Microscopist	<input type="text"/>	<input type="text"/>
Dispenser	<input type="text"/>	<input type="text"/>
Dai	<input type="text"/>	<input type="text"/>
Vaccinator	<input type="text"/>	<input type="text"/>
All Others	<input type="text"/>	<input type="text"/>

10. Number of days centre was open this month
11. Number of staff meetings held this month
12. Number of visits from DHO or AHO this month

8. SUPPLIES

	Quantity used this month	Number of days without	Balance at end of month
Cotrimoxazole	tab.	<input type="text"/>	<input type="text"/>
" syrup	bot.	<input type="text"/>	<input type="text"/>
B.Penicillin	vial	<input type="text"/>	<input type="text"/>
Gentamycin	amp.	<input type="text"/>	<input type="text"/>
Chloroquine	tab.	<input type="text"/>	<input type="text"/>
Primaquine	tab.	<input type="text"/>	<input type="text"/>
ORS	pkt.	<input type="text"/>	<input type="text"/>
Ringers Lactate	bot.	<input type="text"/>	<input type="text"/>
INH	tab.	<input type="text"/>	<input type="text"/>
Streptomycin	vial	<input type="text"/>	<input type="text"/>
Thioacetazone	tab.	<input type="text"/>	<input type="text"/>
Ethambutol	tab.	<input type="text"/>	<input type="text"/>
Distilled water	ml.	<input type="text"/>	<input type="text"/>
Giemsa stain	ml.	<input type="text"/>	<input type="text"/>
Zielsen	ml.	<input type="text"/>	<input type="text"/>
Slides	no.	<input type="text"/>	<input type="text"/>
Disposable Syringes	no.	<input type="text"/>	<input type="text"/>
Reusable Syringes		<input type="text"/>	<input type="text"/>
Reusable Needles		<input type="text"/>	<input type="text"/>

13.	MAJOR ISSUES DISCUSSED:	ACTIONS TAKEN:

Signature of MOIC or other: _____ Title: _____ Date: _____
 Signature of Review Officer: _____ Title: _____ Date: _____

APPENDIX F

DISTRICT: THATTA
REPORT

UTILIZATION:

Mo/Yr	Centre Total	% Centre CBA Women	% Centre Child <5	Outreach Total	%Outreach Women+Child	Patients per hr	Patients per hr/Dr.	Staff Attended Deliveries	No. Recs.
Q4/88	22764	25%	20%	16801	97%	2.8	1.5	77	(56)
Q1/89	28970	24%	24%	18474	94%	3.5	1.9	76	(57)
Q2/89	28849	29%	24%	15665	98%	3.4	1.7	81	(58)
Q3/89	34942	26%	22%	21112	83%	4.1	2.2	108	(58)

DIARRHOEA IN CHILDREN UNDER 5:

Mo/Yr	Total Cases	Inc. Rate	% Mild	% Mod	% Sev	% IV	% Given ORS	% Given Anti- diarr	% With Bloody Stool	% Given Cotrimox- azole	% Time w/o ORS	% Time w/o Ringers	Incor- rectly Treated
Q4/88	790	17%	64%	30%	5.4%	5.0%	96%	0%	12%	12%	1%	13%	2%
Q1/89	876	12%	64%	32%	2.6%	1.9%	97%	0%	16%	20%	1%	3%	2%
Q2/89	1126	15%	50%	45%	4.0%	4.4%	98%	0%	13%	18%	0%	3%	2%
Q3/89	1336	17%	47%	48%	3.9%	5.3%	99%	0%	14%	19%	1%	8%	1%

ARI IN CHILDREN UNDER FIVE:

Mo/Yr	Total Cases	Inc Rate	%Mild <5	%Mild Cotri- mox	%Mod	%Mod Cotri- mox	%Sev	%Sev Cotri- mox	% All Adm	% All Rfd	%Sev Adm/Rfd	% ARI Given Cotrim.	% Time w/o Cot tabs	% Time w/o Cot syr	% Time w/o B.P.	%Incor rectly Treated
Q4/88	1683	36%	17%	0%	81%	98%	1.3%	13%	.3%	.8%	90%	80%	2%	33%	1%	1%
Q1/89	2622	37%	13%	3%	84%	97%	1.7%	8%	.3%	1.0%	82%	82%	2%	10%	1%	3%
Q2/89	2265	31%	11%	3%	86%	99%	2.3%	13%	.4%	1.9%	100%	86%	2%	6%	0%	1%
Q3/89	2454	31%	14%	2%	82%	99%	2.6%	0%	.0%	2.6%	98%	82%	6%	13%	5%	0%

SUSPECTED MALARIA:

Mo/Yr	Total Cases	Inc Rate	%Given Chlor	%Slide Prep	Lag Time	All Pos Cases	%Slides Pos	All Falci Cases	%Pos Falci- parum	%Time w/o Chlor	%Time w/o Prima	%Time w/o Slides	Number Tabs per PUO
Q4/88	2215	9%	99%	82.4%		146	7.9%	104	71.2%	7%	46%	15%	4.3
Q1/89	1850	6%	102%	82.7%		103	6.7%	45	43.6%	2%	36%	3%	4.0
Q2/89	2389	8%	99%	92.0%		123	5.5%	93	75.6%	0%	39%	1%	3.8
Q3/89	3663	10%	99%	93.0%		210	6.1%	188	89.5%	0%	29%	2%	3.9

SUSPECTED TUBERCULOSIS:

Mo/Yr	Total Cases	Inc Rate	%AFB Prep	%Refrd cases	Regst cases per/ctr	Confirmed Treated	Cases Defaulted	%Time w/o INH	%Time w/o Strep	%Time w/o Thio	%Time w/o Etham
Q4/88	431	1.8%	36%	47%	18.2	45%	54%	0%	0%	41%	13%
Q1/89	477	1.6%	31%	38%	22.0	41%	57%	0%	0%	27%	12%
Q2/89	290	1.0%	32%	47%	18.3	30%	69%	1%	0%	17%	7%
Q3/89	229	.6%	39%	57%	22.4	34%	69%	1%	0%	10%	4%

EPI COVERAGE--PERCENTAGE OF TARGETS ACHIEVED:

Mo/Yr	DPT1	DPT3	Measles	TT2/Booster	Births Regstrd.
Q4/88	61%	54%	56%	12%	18%
Q1/89	72%	63%	59%	16%	15%
Q2/89	69%	72%	57%	18%	10%
Q3/89	54%	59%	63%	26%	11%

DISTRICT: SUKKUR
REPORT

UTILIZATION:

Mo/Yr	Centre Total	% Centre CBA Women	% Centre Child <5	Outreach Total	%Outreach Women+Child	Patients per hr	Patients per hr/Dr.	Staff Attended Deliveries	No. Recs.
Q4/88	26571	23%	21%	14879	98%	3.9	2.9	20	(47)
Q1/89	36310	19%	25%	14358	99%	4.6	2.9	70	(54)
Q2/89	30958	20%	26%	11040	98%	4.7	2.9	52	(45)
Q3/89	36342	23%	22%	11732	99%	4.9	3.4	27	(51)

DIARRHOEA IN CHILDREN UNDER 5:

Mo/Yr	Total Cases	Inc. Rate	% Mild	% Mod	% Sev	% IV	% Given ORS	% Given Anti-diarr	% With Bloody Stool	% Given Cotrimox-azole	% Time w/o ORS	% Time w/o Ringers	Incor-rectly Treated
Q4/88	943	16%	51%	45%	2.9%	1.5%	86%	3%	21%	47%	7%	72%	28%
Q1/89	1384	15%	66%	33%	.4%	.3%	94%	12%	21%	44%	6%	64%	24%
Q2/89	1357	16%	68%	29%	1.6%	.5%	91%	4%	24%	43%	4%	75%	8%
Q3/89	1299	16%	69%	29%	1.4%	.5%	90%	2%	23%	34%	8%	58%	6%

ARI IN CHILDREN UNDER FIVE:

Mo/Yr	Total Cases	Inc Rate <5	%Mild Cotri-mox	%Mild Cotri-mox	%Mod Cotri-mox	%Mod Cotri-mox	%Sev Cotri-mox	%Sev Cotri-mox	% All Adm	% All Rfd	%Sev Adm/Rfd	% ARI Given Cotrim.	% Time w/o Cot tabs	% Time w/o Cot syr	% Time w/o B.P.	%Incor-rectly Treated
Q4/88	2078	37%	28%	38%	69%	94%	1.8%	92%	.0%	1.6%	92%	78%	3%	24%	0%	16%
Q1/89	3767	41%	39%	49%	58%	99%	1.7%	76%	.1%	1.5%	95%	79%	4%	31%	1%	21%
Q2/89	3281	40%	24%	48%	73%	96%	2.1%	97%	.0%	3.8%	73%	85%	11%	24%	8%	16%
Q3/89	3311	41%	23%	29%	75%	99%	1.8%	93%	.0%	1.7%	93%	83%	4%	23%	7%	9%

SUSPECTED MALARIA:

Mo/Yr	Total Cases	Inc Rate	%Given Chlor	%Slide Prep	Lag Time	All Pos Cases	%Slides Pos	All Falci Cases	%Pos Falci-parum	%Time w/o Chlor	%Time w/o Prima	%Time w/o Slides	Number Tabs per PUO
Q4/88	5590	21%	100%	16.8%		50	5.3%	29	58.0%	0%	91%	60%	4.5
Q1/89	5767	15%	100%	45.6%		312	11.8%	61	19.5%	1%	85%	18%	4.0
Q2/89	2925	9%	82%	64.0%		177	9.4%	76	42.9%	13%	91%	5%	4.4
Q3/89	3420	9%	100%	67.4%		75	3.2%	26	34.6%	1%	84%	15%	3.7

SUSPECTED TUBERCULOSIS:

Mo/Yr	Total Cases	Inc Rate	%AFB Prep	%Refrd	Regst cases per/ctr	Confirmed Cases Treated	Confirmed Cases Defaulted	%Time w/o INH	%Time w/o Strep	%Time w/o Thio	%Time w/o Etham
Q4/88	203	.7%	20%	45%	8.6	52%	46%	14%	16%	19%	5%
Q1/89	355	.9%	21%	64%	4.8	77%	21%	1%	0%	7%	6%
Q2/89	212	.6%	45%	47%	6.0	56%	46%	8%	11%	8%	23%
Q3/89	363	1.0%	8%	32%	6.0	60%	38%	1%	1%	5%	14%

EPI COVERAGE--PERCENTAGE OF TARGETS ACHIEVED:

Mo/Yr	DPT1	DPT3	Measles	TT2/Booster	Births Regstrd.
Q4/88	116%	109%	102%	38%	12%
Q1/89	382%	357%	298%	127%	41%
Q2/89	172%	164%	181%	71%	16%
Q3/89	101%	111%	123%	55%	48%

DISTRICT: KHAIRPUR
REPORT

UTILIZATION:

Mo/Yr	Centre Total	% Centre CBA Women	% Centre Child <5	Outreach Total	%Outreach Women+Child	Patients per hr	Patients per hr/Dr.	Staff Attended Deliveries	No. Recs.
q4/88	58199	24%	24%	26746	97%	5.2	2.4	105	(77)
q1/89	75132	26%	26%	57145	88%	4.9	2.7	110	(105)
q2/89	89319	26%	26%	47736	99%	5.5	3.0	96	(111)
q3/89	100294	25%	24%	43836	98%	6.2	3.4	156	(111)

DIARRHOEA IN CHILDREN UNDER 5:

Mo/Yr	Total Cases	Inc. Rate	% Mild	% Mod	% Sev	% IV	% Given ORS	% Given Anti- diarr	% With Bloody Stool	% Given Cotrimox- azole	% Time w/o ORS	% Time w/o Ringers	Incor- rectly Treated
q4/88	2318	16%	61%	37%	.6%	.5%	98%	7%	25%	41%	2%	87%	10%
q1/89	3308	16%	54%	44%	.9%	.5%	99%	10%	20%	48%	0%	78%	13%
q2/89	4577	19%	54%	44%	1.1%	.6%	98%	6%	16%	36%	5%	74%	7%
q3/89	4262	17%	53%	44%	2.0%	2.0%	97%	1%	15%	34%	17%	18%	3%

ARI IN CHILDREN UNDER FIVE:

Mo/Yr	Total Cases	Inc Rate	%Mild <5	%Mild Cotri- mox	%Mod	%Mod Cotri- mox	%Sev	%Sev Cotri- mox	% All Adm	% All Rfd	%Sev Adm/Rfd	% ARI Given Cotrim.	% Time w/o Cot tabs	% Time w/o Cot syr	% Time w/o B.P.	%Incor- rectly Treated
q4/88	6203	43%	26%	43%	73%	99%	.6%	45%	.0%	.6%	75%	84%	2%	17%	0%	12%
q1/89	10205	51%	19%	26%	77%	96%	2.2%	40%	.0%	.8%	31%	83%	1%	7%	3%	8%
q2/89	11444	48%	19%	28%	79%	97%	1.1%	41%	.0%	.3%	35%	83%	1%	8%	3%	8%
q3/89	11172	44%	22%	4%	75%	96%	1.7%	38%	2.5%	.8%	51%	74%	3%	16%	8%	5%

SUSPECTED MALARIA:

Mo/Yr	Total Cases	Inc Rate	%Given Chlor	%Slide Prep	Lag Time	All Pos Cases	%Slides Pos	All Falci Cases	%Pos Falci- parum	%Time w/o Chlor	%Time w/o Prima	%Time w/o Slides	Number Tabs per PUO
q4/88	13125	22%	98%	39.5%		1215	23.4%	944	77.7%	5%	86%	39%	6.8
q1/89	12851	17%	99%	47.4%		689	11.3%	512	74.3%	0%	77%	8%	7.2
q2/89	17822	19%	99%	65.6%		1205	10.3%	974	80.8%	0%	77%	1%	5.1
q3/89	25503	25%	99%	78.3%		3581	17.9%	2815	78.6%	1%	40%	0%	4.5

SUSPECTED TUBERCULOSIS:

Mo/Yr	Total Cases	Inc Rate	%AFB Prep	%Refrd cases	Regst per/ctr	Confirmed Treated	Cases Defaulted	%Time w/o INH	%Time w/o Strep	%Time w/o Thio	%Time w/o Etham
q4/88	520	.8%	41%	38%	6.9	67%	31%	52%	15%	89%	55%
q1/89	800	1.0%	15%	70%	7.2	47%	27%	59%	9%	79%	63%
q2/89	1092	1.2%	26%	60%	5.9	57%	41%	55%	10%	69%	65%
q3/89	1003	1.0%	29%	69%	6.5	51%	48%	54%	13%	68%	65%

EPI COVERAGE--PERCENTAGE OF TARGETS ACHIEVED:

Mo/Yr	DPT1	DPT3	Measles	TT2/Booster	Births Regstrd.
q4/88	133%	156%	99%	33%	19%
q1/89	141%	100%	92%	25%	12%
q2/89	85%	88%	72%	25%	7%
q3/89	91%	88%	81%	38%	12%

DISTRICT: THARPARKAR
REPORT

UTILIZATION:

Mo/Yr	Centre Total	% Centre CBA Women	% Centre Child <5	Outreach Total	%Outreach Women+Child	Patients per hr	Patients per hr/Dr.	Staff Attended Deliveries	No. Recs.
Q4/88	54916	27%	19%	24257	99%	6.0	2.4	173	(63)
Q1/89	73667	28%	25%	22292	99%	6.9	2.8	189	(74)
Q2/89	77195	28%	25%	17290	98%	7.4	3.1	414	(72)
Q3/89	87369	26%	23%	21228	97%	7.9	3.6	236	(76)

DIARRHOEA IN CHILDREN UNDER 5:

Mo/Yr	Total Cases	Inc. Rate	% Mild	% Mod	% Sev	% IV	% Given ORS	% Given Anti- diarr	% With Bloody Stool	% Given Cotrimox- azole	% Time w/o ORS	% Time w/o Ringers	Incor- rectly Treated
Q4/88	1050	9%	66%	30%	2.9%	2.1%	87%	0%	20%	27%	0%	14%	2%
Q1/89	1462	7%	59%	38%	1.9%	1.9%	89%	0%	14%	26%	0%	12%	1%
Q2/89	1950	9%	62%	34%	3.2%	3.6%	94%	0%	13%	25%	0%	6%	2%
Q3/89	1872	9%	65%	31%	2.4%	2.8%	97%	0%	18%	26%	0%	4%	1%

ARI IN CHILDREN UNDER FIVE:

Mo/Yr	Total Cases	Inc Rate	%Mild <5	%Mild Cotri- mox	%Mod Cotri- mox	%Mod Cotri- mox	%Sev Cotri- mox	% All Adm	% All Rfd	%Sev Adm/Rfd	% ARI Given Cotrim.	% Time w/o Cot tabs	% Time w/o Cot syr	% Time w/o B.P.	%Incor rectly Treated	
Q4/88	4717	43%	12%	7%	86%	99%	1.2%	11%	.2%	.7%	83%	86%	0%	5%	0%	1%
Q1/89	7883	41%	12%	0%	85%	99%	2.4%	10%	.9%	.7%	67%	84%	1%	3%	5%	1%
Q2/89	6504	32%	14%	1%	83%	99%	2.5%	0%	1.0%	1.0%	82%	83%	1%	4%	1%	0%
Q3/89	7186	35%	17%	0%	79%	99%	2.9%	0%	.7%	1.9%	85%	78%	2%	3%	2%	0%

SUSPECTED MALARIA:

Mo/Yr	Total Cases	Inc Rate	%Given Chlor	%Slide Prep	Lag Time	All Pos Cases	%Slides Pos	All Falci Cases	%Pos Falci- parum	%Time w/o Chlor	%Time w/o Prima	%Time w/o Slides	Number Tabs per PUO
Q4/88	5303	9%	99%	87.9%		430	9.2%	291	67.6%	0%	55%	4%	4.8
Q1/89	3055	4%	100%	94.5%		102	3.5%	68	66.6%	0%	41%	4%	5.4
Q2/89	5395	6%	100%	87.1%		431	9.1%	171	39.6%	0%	36%	2%	4.1
Q3/89	10401	11%	99%	86.7%		851	9.4%	522	61.3%	0%	31%	6%	4.0

SUSPECTED TUBERCULOSIS:

Mo/Yr	Total Cases	Inc Rate	%AFB Prep	%Refrd cases per/ctr	Regst cases per/ctr	Confirmed Treated	Cases Defaulted	%Time w/o INH	%Time w/o Strep	%Time w/o Thio	%Time w/o Etham
Q4/88	735	1.3%	53%	27%	26.0	36%	63%	5%	0%	35%	8%
Q1/89	854	1.1%	47%	32%	24.1	40%	59%	7%	0%	31%	17%
Q2/89	823	1.0%	58%	29%	24.5	47%	55%	23%	1%	34%	7%
Q3/89	620	.7%	67%	40%	24.2	53%	45%	18%	1%	45%	4%

EPI COVERAGE--PERCENTAGE OF TARGETS ACHIEVED:

Mo/Yr	DPT1	DPT3	Measles	TT2/Booster	Births Regstrd.
Q4/88	100%	94%	80%	25%	26%
Q1/89	107%	86%	83%	29%	23%
Q2/89	117%	111%	106%	104%	25%
Q3/89	102%	97%	103%	41%	27%

OBSERVATIONS AT HEALTH CENTERS AND MOs COMMENTS

The description given in the following pages primarily consists of the observation of the researcher and comments of the medical officers interviewed. It deals with the information important to understand the working of the health system and the multitude of problems faced by the MOs, but was not part of the study objectives.

The identity of the health centers and the medical officers has been kept confidential, because the objective of the study was to identify the areas requiring strengthening and not to identify individuals with weaknesses.

A unique feature of one center visited was what was called its city clinic. Apparently a year ago there was an outbreak of meningitis in a nearby town which did not have any health facility. At that time on the demands of the locals, a clinic was established there managed by a male MO and a dispenser. Since then, the arrangement was continued as the city clinic. The city center referred all cases requiring laboratory tests to the center. All the drugs and other necessities were also supplied by the parent center.

HEALTH FACILITY # 01

This center was a very old center under going expansion. The center itself was very busy.

In this center with four MOs, MO I/C was the only one available during the visit. He had been posted there for more than 5 years. He was also conducting his private practice during working hours.

The other MO who worked in the morning was not oriented to the Primary Health Care program whereas the MO on night shift was. MO I/C tried to change their shifts mutually so that the oriented MO worked in the morning but this could not be achieved.

Some interesting observations were made in the center:

1. Atleast three inpatients were present, although the center was not yet ready to take inpatients. According to the MO those were acute emergency cases.
2. Majority of patients were demanding injections.
3. MO was writing prescription on two slips. One was for medications available from the center and other for drugs from the market. He would ask the patient for his choice.

4. There was heavy rush in the OPD. The patients were walking in the consultation-cum-waiting room without any registration slip. There was no queue. It was completely disorganized.
5. At the end of the visit it was noticed that the number of patients recorded in the OPD register was considerably less than the ones seen by the MO.
6. The assistant-cum-driver of the researcher observed that the compounder was charging Rs. 5 to 10 from every patient in the pharmacy, and in the two and a half hour that were spent at the center, he collected Rs. 160.

The MO made some interesting comments during the interview:

1. The indicators he was using to diagnosis Pneumonia were presence of breathlessness and "congestion" on auscultation.
2. There was a serious lack of staff, specially paramedics and WMO, seriously hampering the services.
3. Too many reports had to be written every month.
4. The workload on MO was heavy because of curative care, PHC, EPI, WFP and MCH activities.
5. Several agencies were involved in the district's health care system besides Government of Pakistan (GOP) and Government of Sindh (GOS). Many a time, their work was uncoordinated.
6. Motivated MOs have prepared charts of the standard treatment guidelines on their own as they were not provided to them.
7. Preventive care is emphasized but there isn't enough support in terms of budget, manpower, logistics, incentives and training. PHC program had been thrown in the field without any infrastructure.
8. Equipment were provided but there was no system to sustain them,i.e, no budget for operational expenses and maintenance, for example electricity generator, ambulance.
9. The system of reimbursing the expenses incurred in field work was very poor. It took several weeks and the reimbursement was not for total expenditure.
10. Sometimes the patients were overcharged but it was spend on the center itself.
11. MO I/C have very little control over the other MOs. This was specially true if the MO was senior than the MO I/C.

12. There are no incentives for MOs to promote preventive care. PHC MOs should be paid more.
13. Poor pay and little facilities forced the MOs to do private practice.
14. The MOs are too busy in curative services and their private practice to bother about PHC.
15. The orientation workshop was good learning but the discussion generated had little practical application. In addition, very little allowance was given, Rs. 200 for two days, which was equivalent to that of clerks and lower staff. It should at least be Rs. 500 for MOs.

HEALTH FACILITY # 02

There were five MOs. Two MOs lived on the premises. Two MOs posted there reported for one day to take charge and then went back to Karachi where they lived. All the other three ran the OPD in the morning. Evening and night cover was provided by the two MOs living on the premises. At 0945, none of the MOs had arrived. Two of them, including MO I/C arrived at the center at 1015. Third MO arrived at 1045.

The center was deserted in the morning. According to MO I/C this was because of the annual fair at a nearby shrine. In addition, he said, the patients arrive a little late in the day because most of them came from villages and it took them time to reach there. Patients attendance in OPD did increase after a little while.

The center itself was relatively clean but the wards appeared unkept. There was inpatient space for eight patients. Five female and one male patient were admitted. Operating room was converted into female ward.

The center had a lab technician who could perform Blood complete picture (CP), ESR, Urine analysis, Stool DR and sputum AFB. He also prepared slides for MP but could not read them. He was trained as lab technician two years ago for two months only. Subsequently he was given a week's training at TB sanatorium for AFB, but of the training only involved two days of actually looking at the slides. He was attempting to get transferred to his home town.

Some interesting observations were made at the center:

1. All the three MOs were using the same room for OPD.
2. There was another small room attached to the OPD which was used as examination room.

1. Again two prescriptions were being given to every patient as noted at HF # 01.
2. Patients were being admitted although the center was only equipped to take one MCH inpatient.
3. As in HF#01, patients were walking in the OPD without registration. Some of these could possibly be private patients.
4. Here again it was noticed that the patients demanded injections, and MO complied.
5. MO's technique for taking temperature was not appropriate.

The MO made some interesting comments during the interview:

1. He denied doing any private practice.
2. He felt that patients expected some drugs because they paid Rs 2.
3. In his experience, he had felt that Cotrimoxazole worked only in 60 to 70% of cases of ARI.
4. The criteria that he used for prescribing antibiotics in cases of ARI, was R/R >50, temp. >102, intercostal recessions and clinical judgement of severity.

HEALTH FACILITY # 04

The MO lived on the premises. He mentioned that the center was soon to be upgraded by the efforts of a local politician. New buildings were under construction for that purpose.

At 0945 hrs the MO had not arrived nor were there any patients.

The attendance of OPD was considerably less than what was expected from the monitoring reports. According to the MO it was because of the season. Apparently, since the region was arid, i.e, the source of water was rains, inhabitants moved to low lying areas during dry season and moved back up during rains. This seasonal migration affected the OPD attendance. Another reason that MO cited was that majority of the community were laborers working in larger cities closeby and their health coverage was provided by the employers. Thus very few people utilized the government's facility.

MT had some interesting things to tell about his job. According to him, he graduated in early eighties. At that

3. Some people approached the MO I/C to visit a patient at home nearby, but he refused.
4. One of the MOs continued to smoke during the OPD.
5. Several blood tests were ordered.
6. MO I/C was asking if the patients had received immunization. He never attempted to probe further about the dose, time lapse etc.

The MO interviewed made some interesting comments and observations during the interview:

1. His method of diagnosing Pneumonia was by presence of fever, cough, purulent sputum and crepts.
2. He thought that Penbritin and Amoxil were best for treating Lower respiratory tract infections (LRTI) whereas Cotrimoxazole was good for upper RTI (URTI).
3. The MO felt that the doctor was the best judge of the treatment needed to suit the needs of the patients because of his knowledge of medicine and understanding of community's perceptions. Hence the treatment should be left to the MOs. Standard treatment guidelines had only managed to restrict their working. These had been imposed on them. Their opinion about them was never asked. How could any one expect the MOs to follow the guidelines if they did not have any faith in them.
4. Different communities had different understanding of the disease process and a different expectation of the treatment required. How could the same guideline be applicable to all communities across the country.

HEALTH FACILITY # 03

The MO had been working here for last one and a half year. According to him, he was the one who made all the PHC charts and reports at that center for the first time, as the previous MO was not interested in them at all. His home town was about 3 hours drive, where he went every weekend. Hence the center could not provide health cover over the weekends.

The MO ran his private practice on the premises of the center, including inpatients for which he had constructed a shade.

Some interesting observations were made at the center:

time they were trained to manage the BHUs and provide curative services. They were also expected to act as a bridge between community and the health services by training and supervising the CHWs. They however had little field training in this regards. They were promised grade 14 and to become BHUs incharge. However, as things turned out, they were given grade 8 with no career structure. They were provided with little support for community involvement. Since the induction of MOs in BHUs, their role had been reduced to that of ordinary dispensers. In addition, the whole concept of MTs had been changed to HTs. The curriculum had been revised completely. Thus essentially, MTs trained earlier had been totally left out of the system with no future.

MO did not see any patient and two patients were entered on the register, seen and managed by the MT.

The MO made some interesting comments and observations during the interview:

1. Some people believed that Tetanus Toxoid given to pregnant women was actually a contraceptive, and hence refused to be immunized.
2. He felt that Cotrimoxazole always worked in Dysentery.
3. He said that MOs had little faith in the guidelines. But he also felt that the standard treatment guidelines had standardized the practice of medicine.
4. He raised the question that why the guidelines were not being followed at larger government hospitals? Why was the practice of consultants in pediatrics contrary to the guidelines, and why were they allowed to continue with it? The varying treatments confused the patients and decreased the credibility of MOs practicing the guidelines at BHUs and RHCs.
5. Again the patients demanded injections. Since it was not recommended by the guidelines, the patients were either refused or given a separate prescription for injections from the market.
6. He was referring patients to a nearby larger city, instead of the district headquarter hospital, because of convenience of transport towards that hospital.

HEALTH FACILITY # 05

There were seven MOs. MO I/C had been working there for more than 5 years. Two MOs were on leave. The MO interviewed was actually appointed as TB MO, but was oriented in PHC and worked as general MO in the morning OPD. Laboratory facilities available included Blood picture complete (CP), ESR, sputum AFB, Urine D/R. There was no technician for MP and slides were sent to Civil Hospital with the usual problems of reporting. An x-ray and a dental unit was provided to the center but had not been installed after several months.

The buildings had recently been expanded but were yet to be furnished. There were currently facilities for 10 inpatients.

Some interesting observations were made at the center:

1. No patient could be observed despite a very good attendance because the patients were diverted away from the MO attending the researcher.
2. In the OPD register the classification of ARI and Diarrhea were correctly recorded, and treatment was also according to the guidelines in majority of the cases.
3. Diagnosis of Amoebiasis was noted in the OPD register, treated with inj. Penicillin, Cotrimoxazole and Metronidazole.

The MO made some interesting comments during the interview:

1. He had noticed that diarrheal deaths were usually not due to dehydration but were caused by distention secondary to antidiarrheal.
2. The criteria that he was using to classify ARI was as follows:

Mild ARI was indicated by runny nose, mild cough, no fever. Fever >101F and crepitation in chest indicated Moderate ARI, whereas Severe ARI was diagnosed by R/R >50, chest indrawings and extensive crepitation in chest.
3. He had noticed that the cases of ARI were sensitive to Cotrimoxazole in fall but resistant in spring, and, on the other hand, were sensitive to Amoxil in spring and resistant to it in fall.
4. He said that mild ARI were not brought to the center. Parents usually brought their children to the center when it had progressed to moderate stage.

HEALTH FACILITY # 06

MO I/C had been there for more than five years. There were six MOs. One MO covered the night as MO I/C did not reside on premises. Two MOs were on leave.

The center was undergoing further extensions with more MOs to be appointed and increased inpatient strength.

Some interesting observations were made during the visit:

1. As soon as the researcher arrived, the MO I/C informed his staff of the arrival and asked them to prepare their respective registers for evaluation. Later, all the registers were shown which were being maintained.
2. It was noticed that MO I/C was cross checking the prescriptions of other MOs in OPD, apparently to make them consistent with the guidelines. He showed several prescriptions on which either the diagnosis or the treatment was not according to the PHC guidelines.
3. Again, two prescriptions were being written for every patient. The MO I/C explained that one was for drugs according to the guidelines, while second was for other drugs from the market.
4. An infant brought was being bottle fed. MO did not make any note of that nor did he try to educate the mother.
5. The OPD was only providing curative services though excellently maintained records of preventive care were shown too.
6. On the day of the visit, about 130 patients were seen in the OPD according to the OPD register. However for none of them the diagnosis or treatment was recorded. Similarly, the register entries were incomplete for several patients on previous days.
7. Following categories of ARI were found entered in the OPD register:

No pneumonia, Pneumonia, Moderate Pneumonia, Chest infection, Common cold, Bronchitis, Acute Pharyngitis, Ear infection.
8. Some interesting records in the OPD register were as follows:
 - a. Acute tonsillitis, treated with Sodamint, in addition to antibiotics.
 - b. Epistaxis, treated with Chloroquine.
 - c. Pneumonia, treated with Tetracycline.
9. Codeine based cough syrups were being used.

The MO made some interesting comments during the interview:

1. He recommended that government should only spend money on MOs who were willing to stay back and work in the villages, and not on those who were more eager to get transferred to larger hospitals. Trained MOs should be bonded for service.
2. He mentioned that one of the problems in implementation of guidelines were new MOs who were not oriented. In addition, because of frequent transfers, the oriented MOs were lost from the BHUs and RHCs.
3. He believed that vitamin supplements were essential for malnourished patients and hence should be supplied to the health centers.
4. He recommended that drug distribution from the DHO office to the health centers should be according to the patient load of the center.
5. To satisfy patients demanding injections, B complex injections were used. In addition, patients were demanding syrups too.
6. Only one MT was posted in his center against the vacancy of four males and four female MTs.
7. He gave following definitions of classification of ARI after consulting the guidelines:

Blocked or runny nose with R/R <50 indicated Mild ARI. Moderate was R/R >50, fever, increased pulse rate with some or no chest indrawings. Severe ARI was indicated by chest indrawings. Very severe ARI was indicated by chest indrawings, wheeze, fever and R/R >75.

HEALTH CENTER # 07

This center was situated far away from district headquarter. It was the only health post in that region covering several villages. The nearest larger facility was the hospital at a nearby industry, which had specialist services including surgery, radiology and laboratory.

The MO was not living on the premises. He wanted to be transferred to a hospital and do night duties so he

could do full time private practice, as it had earned him as much as Rs 800 a day.

Some interesting observations were made during the visit:

1. The MO was reading the new guidelines when the researcher reached the center.
2. He said he was going to be transferred to the taluka hospital within a week as his application was being supported by a politician.
3. He was labelling every case of itching as allergy and treating with antihistamines, including injections.
4. During my visit to the center, the chairman of the union council came to the OPD for fever and generalized aches and pains. He was given special treatment, eg. the thermometer was washed for him. He demanded injection for quick relief, and the MO, complied.
5. The MO volunteered some information about his practice. He was using polypharmacy for quick relief, including multiple injections.
6. The MO claimed to diagnose a case of moderate ARI just by the look of the patient. First case that was observed, the MO labelled him as moderate ARI as soon as he looked at him, without the examination.
7. Diagnosis and treatment for the day were not entered in the OPD register.
8. For some patients more than one diagnoses were recorded. These included Suspected malaria and Moderate ARI, Suspected malaria and Cough, Suspected malaria and Tonsillitis. For such cases, MO told that these were recorded twice on the monitoring form, under both diseases
10. Some interesting types of treatments recorded in the OPD register were as follows:

Moderate ARI, treated with Ampiclox.

Suspected Malaria with Cough, treated with Basoquin and Oxytetracycline (OTC).

Moderate ARI, treated with OTC.

The MO made some interesting comments during the interview:

1. His diagnosis of Pneumonia was by presence of crepitation and chest indrawing (intercostal).
2. He was the second MO who mentioned the popular belief of women regarding Tetanus Toxoid injections

being actually a contraceptive. He was hence giving it, most of the times, in disguise of treatment for some other illness.

3. A drop in patient attendance from about 75 per day to 25 since PHC guidelines had been introduced. As it imposed restrictions on the MOs and they could not satisfy the patients.
4. The MO felt that ORS was not useful in diarrhea. He used antidiarrheal and antibiotics in his private practice, which he could not practice at the government center because of the PHC guidelines and monitoring system.
5. When patients were referred according to the guidelines, they felt that the MO was sending them away because he himself did not know how to deal with their illness.
6. Blood in stools could be caused by several etiologies, not just bacillary dysentery. Thus he did not consider it correct to treat every case of bloody stools with Cotrimoxazole.
7. They were not given any conveyance or allowance to go to district headquarter to collect the monthly supply of drugs. The MOs had to pay the expenses themselves which at times cost upto Rs. 400 every month.
8. MO admitted to classifying every case of ARI as moderate who was given antibiotics. This meant that treatment given was being used to determine the classification, instead of classification being used to determine the treatment.

HEALTH FACILITY # 08

This health facility was situated near the taluka headquarter. Facilities were being expanded to increase the number of MOs from one and for inpatient care.

The MO had been there for more than a year. He had his private practice in a nearby town, but it was not working well. He felt that was due to his government job, as most of the patients from villages usually visited the doctors in the morning.

During the visit, a school health officer was encountered. He was a resident of the same village but posted at a school about two and a half hour drive by bus. Usually there was little to be done in the school. He had requested the DHO several times, but to no avail, for transfer to a BHU near his village which was being run by an MT because the MO posted there was living in Karachi.

Some interesting observations were made during the visit:

1. A case of Acute Severe Asthma presented during the visit. The MO asked him to get a blood test and a chest x-ray done.
2. The MO was extremely poor in history taking and physical examination, which was true for almost all the MOs.
3. A case of suspected Osteoarthritis in knee presented to the center. The skin over the knee was burned with hot iron to treat the pain. Apparently this practice was common in interior of Sindh.
4. Single largest category of diseases in the OPD register was FEVER.
5. Some interesting treatments as recorded in the OPD register were as follows:
Diarrhea, treated with Lomotil and Belladonna.
Dysentery, treated with inj. Penicillin and cap. Ampicillin.
Fever and Cough treated with Inj. Penicillin and cap. Ampicillin.
Fever treated with Penicillin and Cotrimoxazole.
6. The number of patients seen, as recorded in the OPD register, on the day of the visit was considerably less than average of the center.

The MO made some interesting comments during the interview:

1. He noted that ARI cases were seasonal, more when the weather changes.
2. In his experience, he had found that the best drug for treatment of Dysentery was Cidomycin injections.
3. The center had been working without the dispenser for almost a month. The previous dispenser left a month ago. Since then the MO himself was alone to do registration, dispensing medication, keeping accounts etc. Hence he had not been able to send in the reports.
4. He mentioned that paramedics were not adequately trained in PHC.
5. He also inquired, why the PHC guidelines were not being implemented at larger government hospitals. This discrepancy between government institutions effects the credibility of the BHUs and RHCs because the treatment that was denied to the patients in these center as being harmful according to the guidelines, was freely provided at these larger hospitals.

6. When the patients were refused antidiarrheal and antibiotic injections according to the guidelines, they believe that the MOs were selling drugs in the market.
7. Patients usually came to the center in a hurry to do other things.
8. Nearest hospital was the taluka hospital, but a nearby industry had a better hospital with a reliable laboratory, where he referred patients.
9. Whenever a patient was referred, he never returned to referring MO because he was kept and treated by the other doctor.
10. The MO had seen cases of Measles in children despite being immunized.
11. DHO office was still supplying antidiarrheal to the centers.

HEALTH FACILITY # 09

This center was situated about 45 minutes drive from district headquarter. There were two approaches to the village, the one was mostly dirt road whereas the other one was mostly metalled except for the last couple of kilometers. The center had a MO, a dispenser and a vaccinator. Most of the villages towards the metalled road side preferred to go to civil hospital directly, whereas those on the dirt road side just went to the local quacks instead of coming to the center because of poor access and lack of public transport. Thus majority of the patients utilizing the center were from the village itself where the center was located, which had a small population. This explained the poor attendance. The center was constructed by the efforts of a local politician.

The MO had been working at this center for more than one year and did private practice in a nearby larger village.

Contrary to the finding elsewhere, most of the patients came to OPD early in the morning and finished by 10 am. This was because only the local villagers utilized the facility.

Some interesting observation were made during the visit:

1. A mixture of Penicillin and Streptomycin was being used to treat most of the suspected infections.
2. Some interesting treatments were seen in the OPD register:

Mild ARI, treated with Cotrimoxazole.

Dysentery, treated with a combination of inj. Metronidazole, syp. Metronidazole and tab. Cotrimoxazole.

Mild ARI, treated with a combination of Cotrimoxazole and Erythromycin.

Moderate ARI, treated with OTC and Cotrimoxazole.

Moderate ARI, treated with Septran (Cotrimoxazole), Mactrim (another brand of Cotrimoxazole) and Ampicillin.

The MO made some interesting comments during the interview:

1. He was another MO who felt very strongly that everybody should follow the protocols including the private practitioners, specialists and larger hospitals. Only then would the patients get a consistent message. Currently, if the patients were refused certain treatment because of the protocols, they thought that MOs at government's BHUs and RHCs did not know how to treat, and would go to private practitioners or larger hospitals where they would get the treatment of their choice.
2. Patients demand for injections was again mentioned.
3. In this village people did not believe in ORS because several months ago a child with diarrhea, who was treated with ORS, died.
4. MO did not deal with medico-legal cases and referred them to civil hospital, because he had experienced that in such cases, both parties involved tried to get the report in their favor by forcing or threatening the MO.
5. MO had noticed that OPD attendance had dropped markedly since the introduction of guidelines.
6. MO thought that the guidelines were simply a problem. They had restricted the medical officers, the patients were not happy, and paperwork had increased considerably.
7. In this center also DHO office was still supplying antidiarrheal.

HEALTH FACILITY # 10

This center was situated near the district headquarter. The center itself was one of the earliest ones to start the PHC. It was a large center which had been further extended recently. There were nine MOs, five males and four females, one of the males was specially for TB only. All except one were oriented in PHC. However there was

acute shortage of furniture for the newly extended buildings. Currently there was just one OPD room for all male MOs and one for females. There were only three inpatient beds for males and two for females. There was an operation theatre with an operating table, but it was never used. A x-ray plant had recently been installed, after being there for almost three years, however there was no technician to run it. A dental chair was also installed and a dental surgeon was posted. There was a private x-ray unit in town. Nearest hospital was the civil hospital.

The MO I/C, who was observed and interviewed, had been there for about five years and was working as MO I/C since last four years.

Some interesting observations were made during the visit:

1. By 0930 hrs only the MO I/C had arrived.
2. He was poor in history taking and physical examination, like most other MOs.
3. It was observed that the MO did not examine the wounds of a trauma patient, and left them completely to the dispenser.
4. Again most patients were given two prescriptions.
5. MO I/C got his dispensers, vaccinators and lab technicians to talk about their problems, though they did not come up with anything significant.
6. ARI was recorded in the OPD register as follows: ARI only (No grade), ARI Moderate with Malaria, Otitis media, Sinusitis, ARI mild, ARI moderate.
7. Some interesting treatments were noted in the OPD register:

ARI Moderate was treated with Inj.Penicillin+Septran, Ampicillin only, Inj.Penicillin only.

ARI Mild was treated with Inj. Penicillin, Septran.

Otitis media was treated with Inj. Penicillin.

Dysentery was treated with Triclofos and Furoxane.

The MO made some interesting comments:

1. In addition to respiratory rate, he was using presence of fever and chest x-ray for diagnosis of Pneumonia

(Moderate ARI).

2. The MO admitted that more cases of ARI were reported as Moderate than Mild, because any Mild ARI that the MO's felt required antibiotics was classified as Moderate.
3. Contrary to other MOs, he felt that the attendance at his center had increased since the introduction of standard treatment guidelines.
4. Power failure were frequent, and generator broke down very often, thus making it difficult to maintain the cold chain for vaccines.
5. He mentioned that patients demanded syrups thus forcing the MOs to use antibiotics.

HEALTH FACILITY # 11

This center situated 45 min from the district headquarter.

There were three MOs. MO I/C was apparently on leave for the day when the center was visited. One MO had never attended any orientation session. The other MO was oriented in PHC guidelines. One MO primarily looked after the women and children whereas the other MO took care of adult males. The only laboratory test available was MP.

MO I/C was a resident of a larger town nearby, whereas the other two MOs belonged to the village. These two covered the center during nights and weekends. During such duties, they stayed home and when any case arrived the dispenser or MT on duty called them.

There were facilities for inpatients, three males and three females. Most of the serious cases however were referred to Civil hospital. Oxygen cylinder had been provided to the center since the last six months but were never used.

Some interesting observation were made during the visit:

1. He examined one patient and told the researcher that it was a case of Pneumonia because the R/R was > 50; however, counting of the R/R was not performed.
2. In OPD register, Otitis media, Tonsillitis and Bronchitis were recorded separate from ARI. There were several categories of Bronchitis in the OPD register: Bronchitis, Acute Bronchitis, Chronic Bronchitis,

Asthmatic Bronchitis.

3. Some interesting treatments were seen in the OPD register:

No Pneumonia (mild ARI) was treated with Cotrimoxazole.

Pneumonia (Moderate ARI) was treated with Ampicillin injections or Ampicillin syrup or Oxytetracycline.

Dysentery was treated with Metronidazole and Furazolidone.

Otitis media was treated with Ampicillin.

4. There were no entries in the OPD register for the day of the visit, although at least 20 patients were noted.
5. As was true for all other centers visited, the OPD register was being maintained by the MT.
9. Blood in stool was being recorded as Dysentery and Amoebic Dysentery, on clinical judgement and treated with Furazol and Metronidazole.

The MO made some interesting comments during the interview:

1. The criteria for diagnosing Pneumonia (Moderate ARI) was R/R of >50 and that of severe Pneumonia (Severe ARI) was R/R >60 and presence of wheeze.
2. In cases of dysentery, if Cotrimoxazole did not work, he used Inj. Ampicillin.
3. There had been limited impact of PHC on the health of the people because the contact of health personnel and the community was very brief and the people returned to their surroundings, about which health personnel could do very little.
4. The number of cases of Pneumonia (Moderate ARI) was higher than expected because patients usually came late when the disease had progressed from mild to moderate stage.
5. No facilities were available for checking hemoglobin and blood grouping for obstetric cases.
6. The guidelines changed very quickly.
7. There was a shortage of ORS packets and hence patient were just given advise for home made ORS solutions.

HEALTH FACILITY # 12

This center was situated about 45 min from district headquarter. The center had nine MOs, six males and three females. MO I/C was a very senior medical officer, who was observed and interviewed. Three MOs were newly appointed and hence were not oriented to PHC guidelines. According to MO I/C, weekly staff meeting were held in which the guidelines were discussed. In addition he also kept an eye on the diagnoses and treatments of other physicians. He said that he maintained the records himself (however, he was not able to read some of the entries of OPD register when his help was sought).

This center had the facilities to do Hemoglobin percentage, urine analysis, MP, sputum AFB and plain x-rays. It also had an ambulance with two drivers. The nearest largest hospital was the civil hospital.

Some interesting observations were made during the visit:

1. By 0955 hrs the MO I/C had not arrived at the center. He came about half an hour later.
2. MO I/C was not aware that one of his male MOs was not oriented in PHC.
3. On questioning his knowledge of the protocols appeared quite adequate, but his application was not consistent, i.e, he was not following it for every patient.
4. It was middle of the month and the store had run out of several antibiotics including Cotrimoxazole.
5. The inconsistency of MOs responses was most evidently manifest when at one point he said that he had not observed any peaks of malaria in his experience, while later he prescribed Primaquine on suspicion of malaria to a patient, arguing that it was because of peak season those days.
6. Both old and new classifications of ARI were being used.
7. Some interesting treatments were seen in the OPD register:
Moderate ARI was treated with Inj. Penicillin and oral Cotrimoxazole.

The MO made some interesting comments during the interview:

1. For old graduates like him, the teaching of PHC was very different from their learning at the medical college and then during the practice. Hence they found it difficult to implement.
2. Most patients presented with more than one infection, eg, Malaria and moderate ARI, requiring

treatment for both.

3. They were told to enter the beneficiaries of World Food Program on the OPD register without charging them. However when the auditors came, they demanded that fees should be charged for every entry made in the OPD register including those of WFP. Such inconsistencies of instruction created problems.
4. When patients demanded injections, he gave vitamin injections.
5. The guidelines had improved the treatment practices at the health centers.
6. Problems identified with the guidelines were presence of unoriented MOs, lack of infrastructure and support.
7. Chymoral was good for reabsorption of abscesses such as Perianal.
8. He had seen two types of Dysenteries: Acute, which were usually bacillary and responded to Cotrimoxazole; and, Chronic which were usually Amebic and required Combantrin, Zentel, Flagyl or other antihelminthics.
9. He had not seen any case of severe ARI in his three months there. He felt that was because such severely ill patients went directly to civil hospital.

HEALTH FACILITY # 13

This center was situated about two and a half hours drive from the district headquarter. The nearest largest facility was an RHC about few km away. The nearest large hospital was a taluka hospital, which was about one hours drive.

The MO had been here for more than one year. The center had a dispenser and a trained Dai. There was no MT or LHV. The center did not have any lab facilities.

Some interesting observation were made during the visit:

1. The MO appeared conscientious and concerned about the well being of the patients. He was taking time to elicit history and was performing a examination. He also had a functional ENT set and he was using the otoscope. He was friendly and comforting towards the patients and knew most of them and their

problems. On every patient under five he was inquiring for and advising about immunization, breast feeding and nutrition. He was the only MO who weighed a child and accompanied him to the room where the weighing machine was kept.

2. An attendant of a child with diarrhea had brought inj. Ampiclox with him and wanted to give it to the patient. The MO complied, but he advised them not to administer anymore injections.
3. Combined Diagnosis were seen, like suspected malaria and Pharyngitis, suspected malaria and Bronchitis.
4. Some interesting treatments were seen in the OPD register:

Pharyngitis treatment...OTC, Mactram, inj.Penicillin.
Mastoiditis treatment...inj.Penicillin.
Flu treatment... OTC.
Bronchitis treatment...inj. Penicillin + Mactram, Ampicillin + Inj.Penicillin.
Diarrhea treatment...Furoxane
5. Dexamethasone tablets were given to a patients with Tonsillitis and to another with Bronchitis.
6. The MO pointed out how one mother was using ORS. She was giving a spoonful of ORS with little bit of water periodically as if it was a medication.

MOs made some interesting comments :

1. Illiteracy and unhygienic living conditions were significant problems. Patients did not follow the instructions.
2. PHC protocols were different from his teaching in medical schools, but he considered them very useful.
3. Most patients came with more than one problems.
4. EPI vaccinators were supposed to go to the field every day and they maintained such records but the MO did not have any way of confirming it although the villagers told him that the vaccinators never came.
5. World Food Program was mostly used to gain favors.
6. He was diagnosing Pneumonia by fever, cough, congestion and R/R > 50 to 60.

HEALTH FACILITY # 14

This center was situated at a distance from the district headquarter. The closest larger hospital, where patients were referred to, was in the next district with driving time of about 2 hours.

The center had four medical officers. The MO I/C was helped in the morning OPD by the TB MO. The third MO was for evenings, from 2 pm to 8 pm. The Fourth MO had just come for one day to take charge and then had gone back to Karachi. There were two dispensers, one for the morning and another for the evening. There were four ward boys. Two of them were trained by the MO I/C to maintain OPD register and help the dispensers with dressings.

The MO had been I/C of this center for more than one year. He was trying to get transferred to Karachi.

Lab facilities available included HB %, ESR, MP, Sputum AFB, Urine sugar and albumin, Blood sugar by Glucometer. Reagents to measure blood urea and cholesterol were also present but the technician was not trained to do them. An x-ray machine was also present but no technician to run it. Twice a week, a radiographer from another center came to help there.

Some interesting observations were made during the visit:

1. A village elder, who had come for some personal problem, was advised for immunization of women and children of his village by the MO.

2. Some interesting treatments were noted in the OPD register:

Dysentery was treated with Inj. Penicillin, Metronidazole and Diiodoquin.

RTI was treated with Inj. Penicillin and Ampicillin. Other antibiotics used were Oxytetracycline, Cotrimoxazole and Penicillin.

Ear infection was treated with Inj. Penicillin.

Tonsillitis was treated with Inj. Penicillin and Oxytetracycline.

Otitis Media was treated with Inj. Penicillin.

The MO made some interesting comments and observations during the interview:

1. Shortage of paramedical staff hindered PHC implementation. All the vaccinators of the center went to the field every day. One of the ward boys was trained by the MO to give vaccines to children who came to the center.

2. Mostly males of the family brought the children to the center and they did not know much about the child such as his age, immunization status, diet.
3. The MO strongly suggested appointing female vaccinators in the field.
4. The MO observed that most ARI cases presented only when pneumonia had set in. Hence more cases of Moderate ARI were seen than Mild.

HEALTH FACILITY # 15

This center was situated about 2 hrs drive from the district headquarter. The nearest large hospital was the civil hospital. According to the MO, there were atleast five other health centers within a radius of five miles in that area thus decreasing the catchment population and OPD attendance of each of them.

The MO had been posted there recently. He had his private practice in the evenings.

The center had one MT, one dispenser and a vaccinator. The vaccinator was on leave as he was taking some exams. Only lab facilities available were for urine sugar and albumin by chemical methods.

The MT narrated his problems. He graduated in the early eighties. They were promised grade 14 and to become incharge of a BHU. In addition to clinical work, they were also required to motivate, select, train and supervise the CHWs. Instead they were given grade 9 and soon MOs were posted as BHU incharges. This reduced their position to that of a dispenser or dresser. In addition, there were no incentives for the field work, so he gradually gave it up. Now he merely worked as a clerk, dispenser and dresser. He also ran the OPD in MO's absence. He had his private clinic in his home village nearby. They had not yet been issued the certificates from the school although it had been almost 10 years since graduation, and hence they could not work anywhere else. Most of his class mates had quit the job.

Some interesting observations were made during the visit:

1. This MO too, was prescribing injections on patients' demands.
2. The center did not display the guidelines on the walls. MO said that it was because there were no boards to put them up on. He told me that some time ago there was a scheme to provide such boards where required on a self finance basis, initiated by the DHO. Every interested center was asked to deposit about Rs. 200 with the DHO. This center had done it several months ago from its budget but the boards

had not been provided as yet.

3. **Some interesting treatments were seen in the OPD register:**

Pneumonia was treated with Inj. Penicillin and Cotrimoxazole, and Ampicillin.

Diarrhea was treated with Furoxane, Metronidazole and Belladonna.

Dysentery was treated with Inj. Penicillin + Cotrimoxazole, Inj. Penicillin, Cotrimoxazole + Metronidazole together. Another case was given Belladonna, alongwith Inj. Penicillin and Metronidazole.

Dexamethasone was being used for Tonsillitis.

Some interesting comments were made by the MO during the interview:

1. **He recommended that orientation workshops should be held frequently.**
2. **Concerning the guidelines:**
 - a. **Nutrition guideline was least practical, because the patients simply could not afford to buy all those nutritious diets that were suggested.**
 - b. **Guidelines for Malaria and Diarrhea were most commonly used protocols because these disease were most common.**
4. **He told that patient attendance dropped soon after introduction of the guidelines but was increasing again.**
5. **He mentioned that patients now demanded ORS, but preferred the flavored ones, and immunizations.**
6. **He felt that the BHUs were not well equipped and well stocked to take care of all the medical need of the population.**
7. **He noted that people preferred to come to government's facilities as much as possible.**
8. **Patients demanded injections. He either gave them vitamin, or Penicillin if an antibiotic was required.**
9. **He acknowledged that if the antibiotic was given contrary to the recommendation, it was either not recorded or were prescribed from the market.**

10. Again, he pointed out that since the guidelines were not followed at larger hospitals, the patients had lost faith in smaller centers.
11. He had noted that Malaria was getting resistant to Chloroquine, except in its intravenous form.
12. He had also noticed that children were getting measles despite vaccination. He thought that it was due to poor cold chain because of frequent power failures and lack of enough ice. In addition, he felt that the vaccinators were not bothered about the coverage. He had known them to throw away the vaccines and prepare doctored records.
13. He admitted using antidiarrheal with ORS.
14. He mentioned that some people could not even afford two rupees for registration.

HEALTH FACILITY # 16

This center was about 1 hour drive from the district headquarter. The nearest large hospital was the civil hospital. An ambulance was available.

There were seven MOs. The MO I/C was recently appointed the incharge. Four MOs worked in the morning, one MO in the evening and two at night. All had their private practices, and all were oriented in PHC.

This was a large center with OPD attendance in excess of 100 per day. There were inpatient facility for about 11 beds. MO I/C also conducted major surgery, including Vesicolithotomy, Herniorrhaphy, Hydrocelectomy, Hemorrhoidectomy and Open Prostatectomy. In adults, spinal anesthesia was used, whereas in children, open ether was used. For transfusion, blood was arranged from a blood bank in a town about 30 km away.

Laboratory facilities available included hemoglobin percentage, ESR, urine sugar and albumin, AFB, MP.

Some interesting observations were made during the visit:

1. MO was not asking for blood in stools in cases of diarrhea. this practice was noted at most of the centers.
2. Some interesting treatments were seen in the OPD register:

Dysentery, treated with Penicillin + furoxane, ORS alone, Penicillin + Metronidazole, Furazole + Metronidazole.

Bronchitis, treated with Penicillin + Cotrimoxazole.

Bloody Diarrhea, treated with ORS alone.

Pneumonia, treated with Cotrimoxazole + Ampicillin, and Paracetamol alone.

Diarrhea, treated with Metronidazole + Furoxane.

Some interesting comments were made by the MO during the interview:

1. The MO said that patients could not be satisfied by the guidelines because they wanted injections and syrups. He felt that patients should be given antibiotics on their demands, because they came from long distances and needed and demanded more than just paracetamol. Such patients were given either multivitamin or Penicillin injection.
2. He said that in his center all patients under two were first screened by an LHV for immunization and nutritional status.
3. The MO told that Cotrimoxazole was misused outside by many quacks, and hence resistance was developing.
4. He admitted that all cases of ARI who were given antibiotics were classified as Moderate ARI.
5. He felt that quackery must be stopped for implementation of PHC.
6. He recommended that the guidelines should be implemented in all hospitals all over, and should also be used by the specialists.
7. Lab facilities should be extended to all BHUs to facilitate patient access and compliance.

HEALTH FACILITY #17

This center was situated near the district headquarter. The nearest large hospital was the civil hospital. The MO was a native of the village. He had been working there for more than two years. The center had two dispensers, one Dai and a vaccinator. There were no lab facilities.

Some interesting observations were made during the visit:

1. This was another center where patients were coming in without registration.
2. MO himself was running a small drug store inside the center. He claimed to keep only the drugs not supplied by the DHO office, only for convenience of the patients.
3. MO was smoking while examining the patients.
4. He was also using a mixture of half a ml of Streptomycin with four ml of Procaine Penicillin injections and dispensing it for several diseases.
5. Again, the patients were seen demanding injections and the MO was complying.
6. Two prescriptions were being written too
7. He did ask one patient of Diarrhea for passage of blood.
8. He was also doing private practice during working hours.
9. Some interesting treatments:

Acute Tonsillitis, treated with Inj. Penicillin + Oxytetracycline.

Bronchitis, treated as above, and Inj. Penicillin + Cotrimoxazole.

Bloody Dysentery, treated with ORS alone.

Pneumonia, treated with Aspirin alone.
10. He also mentioned that the RHC manual was very useful.

The MO made some interesting comments during the interview:

1. He thought that the guidelines were different from the medical training but were better specially because they had curtailed excessive use of antibiotics.
2. He mentioned that patients did not prefer being referred.
3. He felt that the practice of private practitioners thrived because government MOs were restricted by the guidelines and hence could not satisfy the patients.
4. Security problem were significant in the area. Kidnapping and looting was common. He wanted to shift to a larger city.

HEALTH FACILITY # 18

This center was situated about 3 hours drive from the district headquarter. The nearest large hospital was the civil hospital. There were five MOs. Three worked in the morning, one in evening and one at night. Only the morning MOs were oriented.

The MO I/C had been working as I/C for several years.

Labs available included MP, AFB, x-ray and urine albumin and Sugar. x-ray technician came from a nearby center twice a week, whereas there was no lab technician. There were two dispensers, a LHV and one vaccinator.

Some interesting observations were made during the visit:

1. Mostly two prescriptions were being given here too.
2. Some interesting treatments from the OPD register:

Pneumonia, treated with Cotrimoxazole+ Inj. Penicillin, and Paracetamol only.

Otitis Media, alongwith Bronchitis, treated with Cotrimoxazole+ Inj. Penicillin.

Tonsillitis, treated with Cotrimoxazole+ Inj. Penicillin.

No Pneumonia, treated with Cotrimoxazole.

The MO made some interesting comments during the interview:

1. He sometimes gave antibiotics from market if the patient was classified as No Pneumonia.
2. He felt that Cotrimoxazole was being overused, and hence resistance would develop soon.
3. He mentioned that he was diagnosing dysentery as Amebic if it was associated with constipation and fever, and treating it with Metronidazole, whereas Bacillary dysentery was indicated by diarrhea and fever, and treated with Cotrimoxazole.
4. He felt that the guidelines had restricted patient management.

HEALTH FACILITY # 19

This center was situated very close to the city. Apparently it was built there on the demand of the local people. The MO here had been working here since the center was established about a year ago.

Some interesting observations were made during the visit:

1. The MO was very polite and gentle towards the patients. He did use otoscope in patients with ear problems. He also conducted a neurological examination, though incomplete, on a patient suspected of stroke.
2. Again it was noticed that patient were walking in without registration.
3. Again, two prescriptions were given in most cases.
4. At one place in the OPD register, it was noted that a case diagnosed as No Pneumonia, was treated with Cotrimoxazole.

The MO made some interesting comments during the interview:

1. He mentioned that supply of Cotrimoxazole was not enough to provide complete five day course on the first visit, and patients usually did not come for follow up, leaving the course incomplete.
2. He was diagnosing Pneumonia if respiratory rate was >50 with intercostal recessions, fever and crepitation.

3. He felt that guidelines would never work unless implemented by all the health personnel, including large hospitals and private practitioners.
4. Again, the problem of patients demanding injections was raised.
5. During the visit, a patient walked in with an ampoule of Fosfomycin which some private practitioner had prescribed for her baby for diarrhea. Since only the government's facilities were open during the day, she had come for injection. MO said that the was common, and he usually helped them.
6. MO thought that ORS message had reached homes. Mothers usually started it even before coming to see the doctor. This was also observed during the visit.
7. He felt that the paper work was extensive and time consuming. He mentioned that it took him 2 to 3 hours to complete the monthly PHC monitoring.
8. Because of poor follow up, it was difficult to know if the treatment recommended by the guidelines worked. He mentioned that patients did not return if they were better, and went to some other doctor if they were not.
9. He believed that most diarrheas were bacterial because of unhygienic living conditions, requiring antibiotics.
- 10 He had noticed that different brands of Cotrimoxazole had varying potencies.

HEALTH FACILITY # 20

This center was situated about several km from the district headquarter, bordering on the desert. It had a large catchment area, mostly desert and its scattered population. The MO interviewed had been working there for more than five years.

There were seven MOs in the center. Five MOs worked in the morning, one MO in the evening and one at night. All except the evening MO were oriented. Nearest hospital was the civil hospital with travelling time of two

hours. There was an ambulance in the center. Laboratory examinations available included HG %, ESR, sputum AFB, and urine sugar, albumin, proteins, bile salts and bile pigments. The trained laboratory technician had been transferred and hence MP could not be done. Laboratory was being managed those days by just one lab assistant. X-ray machine was also there, apparently in working condition, and a x-ray assistant. There was one dispenser and no HT.

Some interesting observations were made during the visit:

1. The MO appeared conscientious and concerned about the patients. He was also talking to the patients, giving advice and home remedies, and suggesting simple measures and remedies to help the patients instead of just prescribing medications for every complaint.
2. Here too, mostly two prescriptions were given to the patients.
3. The MO was asking for blood in cases of diarrhea.

The MO made some interesting comments and observations during the interview:

1. He acknowledged that treatment besides the recommended one was given from the market, off the record.
2. He mentioned that mostly patients came after self treatment with paracetamol, and hence were afebrile.
3. He mentioned that the center usually ran out of Cotrimoxazole by the middle of the month and hence full course of antibiotics could not be given to the patients on their first visit. However, patients usually could not come for follow up regularly because of difficult terrain, distance and lack of transport. He felt that such patients would fare better if they were given antibiotics, even if ARI was mild.
4. He said that the policies of health department changed very quickly, and sometimes unreasonably. Once they were told to give tetanus toxoid (TT) to all women in child bearing age (CBA), but then, after extensive education had been done to convince the women, it was restricted only to pregnant women. All the efforts were wasted. Later, the policy was changed again to immunize all women in CBA.
5. His criteria for diagnosing Pneumonia was a respiratory rate more than normal (normal being a little more than 20 in children, according to her), temperature more than 101F, chest "congestion" and intercostal recessions.
6. He mentioned that power failure daily for 8 to 9 hours were common. There was a generator to maintain cold chain, but no budget to meet the running expenses. Sometimes the MOs had to pay from their own

pocket.

9. The MO mentioned that he knew about ORS, Breast Feeding, Nutrition , immunization, etc. from his internship (housejob) in Pediatrics, before the PHC project was started.
- 10 He mentioned that due to his efforts, the supply and sale of antidiarrheal in the town was reduced. He first increased community awareness. The community, then, pressurized the shopkeepers against selling antidiarrheal.
- 11 Most of the patients of ARI came when the disease had progressed to Moderate stage.
- 12 He recommended that every medical practitioner should follow the guidelines, including the private practitioners to make it work.

Comments of MO I/C

1. Measles was occurring despite vaccination. In addition it was occurring as early as six months of age, while the recommended age for immunization was 9 months.
2. He mentioned several problems with immunization, including difficulty in maintaining cold chain because of frequent power failures and unavailability of ice, poor follow up, inadequate supply of registers to maintain the records and the need to replace the iceboxes, as the one being used were old.
3. It cost them Rs. 100 to bring medications from the DHO office every month, which was not reimbursed. They could not afford to send for drugs again in the middle of the month.
4. He said that he had stopped giving feedback because only rarely was any action taken on them.
5. Patients did not sit in ORT corner for rehydration because they did not have time. In addition, the staff available was not enough to run that.

HEALTH FACILITY # 21

This center was situated about 60 min from the district headquarter.

MO I/C had apparently gone to supervise EPI in the field. The MO interviewed had been working here for more than a year.

Labs available included Blood picture complete (CP), blood sugar by glucometer, Urine D/R, sputum AFB and MP. There was an x-ray machine too, but was out of order for more than six months now. Facilities were also available to cross match the blood but not for storage.

Some interesting observations were made during the visit:

1. The center had printed OPD slips.
2. As in most centers two prescriptions were being given to the patients.
3. Some interesting records of the OPD register:

Severe Pneumonia, treated with Inj. Penicillin.

Measles, treated with Cotrimoxazole.

The MO made some interesting comments during the interview:

1. He thought that most diarrheas there were bacterial.
2. ARI patients never presented in the mild stage. He said, infact they had to make some false entries of Mild ARI to satisfy the PHC monitoring.
3. He felt that Cotrimoxazole products supplied were of poor quality. He also said that some patients came without any relief after using Cotrimoxazole.
4. Patients demanded injections, as mentioned by most MOs.
5. He had also noticed that Measles was occurring despite immunization.
7. He mentioned that an important cause of high morbidity was that safe drinking water was not available anywhere, not even in the center.
8. Like other MOs, he also pointed out that whereas the specialists could prescribe all kinds of antibiotics and MOs were only allowed to use Cotrimoxazole.

HEALTH FACILITY # 22

This center was situated about 45 min from the district headquarter The only lab test available was urine sugar.

The MO had been working here for more than 5 years. He claimed to be the only qualified medical practitioner in town, besides several quacks and a MT practicing privately. The center also had two HTs. MO admitted a or two patients if the need arose, even though the center was equipped to take only one MCH patient.

Some interesting observations were made during the visit;

1. There was atleast one male inpatient.

The MO made some interesting comments during the interview:

1. He said that the most useful guideline were of Diarrhea.
2. Most patients had used Cotrimoxazole before coming to the center, and hence demanded something else.
3. In cases where antibiotics had to be used besides the guidelines recommendations, he said that they either changed the diagnosis to skin infection, to justify use of other antibiotics, or prescribe medications from the market.
4. When injections and syrups were not given as the patients demanded because of the guidelines, people accused the MOs for selling the drugs or using them in his private practice. They also complained to the DHO, who instead of asking me first, called for official explanations.
5. Again the MO recommended the universal use of the guidelines. The other district was quite closeby, where the PHC was not being implemented. He said it was very difficult for him to explain to the people why the MOs there could use any drug they wanted to, while he could not.
6. He mentioned that when patient attendance increased, the supply of drugs became short. When the supply of drugs ran short, patient attendance dropped.
7. He mentioned that since his center was part of IRHC complex, drug were supplied from there. This arrangement only delayed the supply.

HEALTH FACILITY # 23

This center was situated about one and a half hour drive from the district headquarter. There were two MOs, no x-ray, no lab facilities. X-ray plant had been there since 6 months but there was no place to install it. The expansion of the center was underway.

The MO I/C had been working in this center for more than one year.

Some interesting observations were made:

1. MO I/C also called the evening MO to meet the researcher. The evening MO had little knowledge concerning the guidelines, though he had participated in orientation workshops.
2. In his opinion, the guidelines were useless.
3. Only one case of diarrhea was recorded in the OPD register for the last one week, and no dysentery, with daily attendance of almost 50

The MO made some interesting comments:

1. Here too, patients demanded injection.
2. Most patients had used Cotrimoxazole before presenting.
3. There was no incentive to work.
4. Planners had no idea of field problems. Little consideration was given to local conditions.
5. Most of the patients were going to a local hospital, instead of the health center.
6. Only the poor people came to the health centers.
7. Some newly constructed health centers were being used as stores by the local landlords, and schools were being used as sitting rooms.
8. PHC was a useless exercise, and exists only on papers.

9. (He addressed the researcher)"You can write on your proforma whatever you want to, but no action will be taken. Government's system is all messed up. Nobody cares for services. Most are just concerned to keep the records straight".
- 10 No allowance was given for field visits.
- 11 PHC project would not be accepted unless awareness and education was increased in the community.

HEALTH CENTER # 24

This center was situated about 60 min from the district headquarter. There were four MOs including MO I/C. One MO was on leave. MO I/C worked in the morning, one covered the evening and the third, nights. Only MO I/C had attended orientation workshop. MO I/C had been working here for more than one year.

There were two inpatient beds, no x-ray facilities, only laboratory test available were urine sugar and albumin. The nearest hospital did not have specialized services.

Some interesting observations were made during the visit:

1. The MO refused to examine a child till he was immunized.
2. He was diagnosing Pneumonia by presence of cough, fever and crepitation in chest.

MO made some interesting comments during the interview:

1. The Diarrhea guidelines were the most useful.
2. Cotrimoxazole was effective only in 50%.
3. Severe ARI patient refuse to go to hospital.
4. Sometimes he gave antibiotics to mild ARI and classified it as Moderate.
5. The most important thing for PHC was to increase awareness in community.

6. **People in general had lost faith in government's health services.**
7. **People did not keep their children's immunization cards.**
8. **He mentioned that the personnel policies of the health system were ineffective in evaluating the efficiency of the personnel.**

HEALTH FACILITY # 25

This center was located about 90 min from the district headquarter. There were four MOs here. All MOs were oriented, except one doing the evening duty. There were facilities for inpatients. Labs available included Blood picture complete (CP), blood sugar by glucometer and urine D/R. x-ray machine had been out of order for more than 9 months, and there was no x-ray technician either. AFB and MP microscopist were not available. AFB were sent to a nearby taluka hospital and some private lab, MP slides were sent to the civil hospital with irregular reporting.

The MO had been here for more than one year. He made some interesting comments during the interview:

1. **Supply of antibiotics was less than required, full course of antibiotics could not be prescribed.**
2. **The center did not have any equipment for ORT.**
3. **There was no equipment for deliveries, anesthesia or sterilization of instruments. There was no female worker to assist in deliveries.**
4. **The diagnosis of Moderate ARI was being made by the presence of cough and fever.**

Phone No.514210

OFFICE OF THE
PROJECT DIRECTOR
BASIC HEALTH SERVICES CELL, SINDH

No. PD/BHSC/-1(20)/-

Karachi, dated the ___ March, 1990

To

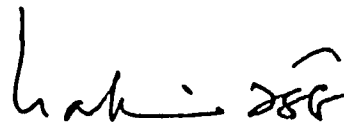
The District Health Officer,
Khairpur/Sukkur/Thatta/
Tharparkar.

Subject: VISIT OF DR. SHAHID SHAFI, FROM USAID ISLAMABAD.

You are hereby informed by this letter that the above named Dr. Shahid Shafi will visit your District in connection with Primary Health Care Monitoring System to study the standard treatment guideline practices in your district. He will visit approx 30 BHUs/RHCs of the four Districts where PHC Monitoring system is being implemented. The visits will be unannounced.

You are directed to cooperate & facilitate his work.

The purpose of study is not to evaluate the Medical Officers but to identify the problem encountered in implementation of standard treatment guideline, for improving its working.



(DR. A. RAHIM HINGORJO)
PROJECT DIRECTOR
BASIC HEALTH SERVICES CELL, SINDH
KARACHI.

M.Salaem/@@

PHONE NO:2746.

OFFICE OF THE DISTRICT HEALTH OFFICER KHAIRPUR.

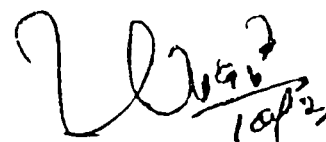
NO:DHOK/()/-8100/44

DATED THE 10th MARCH, 1990.

C I R C U L A R.

Dr. Shahid Rafique from USAID Islamabad will be visiting all the Rural Health Centres/Basic Health Units of District Khairpur in connection with Primary Health Care Monitoring system.

You are hereby advised to extend your full cooperation during his visit.



(DR. UMED ALI KHAMISANI)
DISTRICT HEALTH OFFICER
KHAIRPUR

To

Dr. Shahid Rafique, for information.

The Medical Officer I.C, RHC/BHU _____
for information and necessary action.

(DR. UMED ALI KHAMISANI)
DISTRICT HEALTH OFFICER
KHAIRPUR

PHONE NO. 84109.

NO:DHOS/5178/90

OFFICE OF THE
DISTRICT HEALTH OFFICER, SUKKUR
DATED THE 10th MARCH 1990

To

THE MEDICAL OFFICER INCHARGE,
RHC/BHU _____ ALL _____

SUBJECT:-VISIT OF DR. SHAHID SHAFI FROM USAID ISLAMABAD.

THIS IS FOR YOUR INFORMATION THAT DR. SHAHID SHAFI FROM USAID WILL VISIT YOUR RHC/BHU IN CONNECTION WITH THE PRIMARY HEALTH CARE MONITORING SYSTEM STUDY STANDARD TREATMENT GUIDE LINE PRACTICES IN THE DISTRICT FROM 10-3-1990. HE MAY VISIT ANY R.H.C./B.H.U WHERE P.H.C MONITORING SYSTEM IS ITS IMPLEMENTED.

THE PURPOSE OF STUDY IS NOT TO EVALUATE THE MEDICAL OFFICER BUT TO IDENTIFY THE PROBLEM ENCOUNTERED IN IMPLEMENTATION OF STANDARD TREATMENT GUIDE LINE IMPROVING ITS WORKING.

YOU ARE ACCORDINGLY DIRECTED TO PROVIDE THE USAID REPRESENTATION NECESSARY CO-OPEKATION AND FACILITIES AT YOUR CENTER.


DISTRICT HEALTH OFFICER
SUUKUR.

COPY FORWARDED WITH COMPLIMENTS TO THE PROJECT DIRECTOR, BASIC HEALTH SERVICES CELL, SINDH, KARACHI FOR INFORMATION.

COPY TO DR. SHAHID SHAFI USAID ISLAMABAD FOR INFORMATION.


DISTRICT HEALTH OFFICER
SUUKUR

PHONE NO:3488

OFFICE OF THE DISTRICT HEALTH OFFICER, THARPARKER

NO.DHO/()/- 5287/88

Dated the 8th April, 90

To

The Medical Officer Incharge,
Rural Health Center,

The Medical Officer Incharge,
Basic Health Unit,

SUBJECT:-VISIT OF DR. SHAHID SHAFI FROM USAID ISLAMABAD.

The above said Doctor is visiting the Hospitals in connection with the Primary Health Care Monitoring System to study the standard treatment/guide lines/practices.

You are therefore directed to please make full co-operation and other facilities as usual.



(DR. HADI BUX LAGHARI)
DISTRICT HEALTH OFFICER
THARPARKAR, MIRPURKHAS

No. DHOT/() 3304/90

Dated the 4th March, 1990.

To,

The Sr. Medical Officer
Taluka Hospital _____

The Medical Officer Incharge
Rural Health Center _____

The Medical Officer Incharge
Basic Health Unit _____

The Medical Officer Incharge
Government Dispensary Ghare/Baradabad/Garhe.

Subject: VISIT OF DR. SHAHID SHAFI FROM USAID ISLAMABAD.
Reference letter NO.PD/BHSC/*(120) dated Nil.

Dr. Shahid Shafi nominee of USAID, will visit your institution to evaluate the performance of Primary Health Care monitoring System and protocols, so as to identify the problem in implementation.

It is therefor requested to co-operate with him and provide him every facility which he requires for the above purpose.



(DR. GHULAM MOHAMMED MEMON)
DISTRICT HEALTH OFFICER
THATTA

No. DHOT/()/

Copy forwarded with compliments to the Deputy Director Health Services, Hyderabad Division, Hyderabad for information.

Copy forwarded with compliments to the Project Director Basic Health Cell Karachi for information with reference to his letter No quoted above.

Copy forwarded to Dr. Shahid Shafi for information.



(DR. GHULAM MOHAMMED MEMON)
DISTRICT HEALTH OFFICER
THATTA

Government of Pakistan
Ministry of Health, Special Education
and Social Welfare
(HEALTH DIVISION)

NATIONAL BASIC HEALTH SERVICES CELL

14-D (WEST) FERROZ CENTER, BLUE AREA,

Islamabad, the 21st June, 1990.

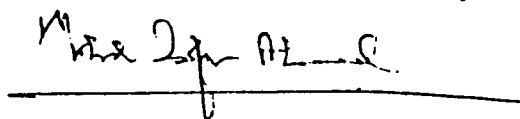
Dr. Arjumand Faisal
Public Health Physician
HPN Section, USAID,
ISLAMABAD

Subject:- STUDY OF IMPLEMENTATION OF STANDARD
TREATMENT GUIDELINES FOR ARI AND BLOOD IN
STOOLS IN SINDH PROVINCE.

Dear Dr. Faisal,

I have gone through the study report of implementation of standard treatment guidelines for ARI and Blood in stools in Sindh provinces prepared by you along with Dr. Shahid Shafi and Dr. Umr Khalil Mian during February to May, 1990. The report is excellent and I appreciate the findings, conclusions and recommendations mentioned in the report.

Yours Sincerely,



(Dr. M. ZAFAR AHMED)
DEPUTY DIRECTOR GENERAL HEALTH

TELE : 8 1 5 1 5 8

ari National ARI Control Programme

Prof. Mushtaq A. Khan
National Programme Manager (ARI) /Coordinator
Children Hospital, P.I.M.S.,
Islamabad Phone: 853142
No.F. 1-26/ARI/PO/89-90.

Date July 25, 1990.

Dr. Arjumand Faisal
Public Health Physician
HPN/USAID
Islamabad.

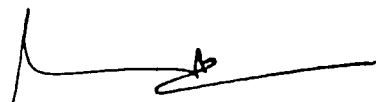
Dear Dr. Faisal,

Thank you so much for sharing the ARI materials with me. I feel that you have put in a lot of effort and hope that it will be useful in implementation of our future programme.

As regards the analysis and data from the field, I have no particular comments except that training does not necessarily lead to an appropriate practice by the trainees.

With regards.

Yours sincerely,



PROF. MUSHTAQ A. KHAN

ABBREVIATIONS

AOM	Acute Otitis Media
ADHO	Assistant District Health Officer
AFB	Acid Fast Bacilli
ARI	Acute Respiratory Infection
BHSC	Basic Health Services Cell
BHU	Basic Health Unit
CBA	(Women in) Child Bearing Age
CDD	Control of Diarrheal Diseases
CHW	Community Health Worker
DHO	District Health Officer
EMRO	Europe Mediterranean Regional Office, WHO
ENT	Ear, Nose, Throat
EPI	Extended Program of Immunization
ESR	Erythrocyte Sedimentation Rate
FSMO	Field Supervisor Medical Officer
GOP	Government Of Pakistan
GOS	Government of Sindh
HF	Health Facility
HPN	Health, Population and Nutrition, USAID
HT	Health Technician
IRHC	Integrated Rural Health Complex
LHV	Lady Health Visitor
LRTI	Lower Respiratory Tract Infections
MA	Management Analyst
MCH	Maternal and Child Health
MO	Medical Officer
MT	Medical Technician
NIH	National Institute of Health
OPD	Out Patient Department
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
OTC	Oxytetracycline
PHC	Primary Health Care

PRITECH	Technologies for Primary Care
RHC	Rural Health Center
RTI	Respiratory Tract Infection
SM	Suspected Malaria
THO	Taluka Health Officer
UNICEF	United Nations Children's Educational Fund
URTI	Upper Respiratory Tract Infections
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization
WMO	Women Medical Officer

VIII. REFERENCES

1. Goldman HW, Ravji R, Limprecht NS, Ahmed MZ. Using information system to improve management of Primary Health Care services. *Pakistan Pediatric Journal*, 13:3;145-148.
2. Goldman HW, Ravji R, Limprecht NS, Ahmed MZ. Standard Guidelines for the Primary Health Care Program; a step towards better health care in Pakistan. *Pakistan Paediatric Journal*, 8: 4; 269-283.
3. United States Agency for International Development. Report of the Mid term evaluation team, Pakistan Primary Health Care Project. USAID, Office of Health, Population and Nutrition, Islamabad. December 1985.
4. Limprecht NS. Analysis of ARI data from the Primary Health Care Project Monthly Monitoring System, Jan. 1988 to Sep. 1989. Federal Basic Health Services Cell.

IX. ACKNOWLEDGEMENTS

We are grateful to the following persons for their assistance/ contribution/ support in their respective capacities.

Their names

appear in alphabetical order:

1. Dr. Zafar Ahmed, Deputy Director General, Basic Health Services Cell (BHSC), Ministry of Health, Government of Pakistan.
2. Dr. Mushtaq Ahmed Bajgani, ADHO Sukkur, Sindh.
3. Dr. Mohammed Bux Bhurguri, Management Analyst, PHC Project, Sindh.
4. Dr. Harold Campbell, Office of ARI, WHO Geneva.
5. Dr. Peter Crippen, WHO EMRO.
6. Ms. Lucia Ferraz-Tabor, Country Representative, PRITECH/Pakistan.
7. Dr. Heather W. Goldman, Deputy Chief of HPN, USAID.
8. Mr. Zamin Gul, Management Analyst, PHC Project, NWFP.
9. Dr. Sawat Ramaboot Hanafi, Control of Diarrheal Diseases (CDD) Advisor/ARI coordinator, WHO Pakistan.
10. Dr. A. R. Hingorjo, Project Director, PHC Project, Sindh.
11. Mr. Ashiq Hussain, Statistical Officer, Directorate of Health, NWFP.
12. Ms. Shahnaz Imam, Training Specialist, PHC Project, Sindh.
13. Ms. Sonia James, Secretary, PHC Project, Islamabad.
14. Dr. Umaid Ali Khamisani, DHO Khairpur, Sindh.
15. Col. M. Akram Khan, National Project Manager, EPI/CDD, National Institute of Health.
16. Dr. Mushtaq A. Khan, National Programme Manager, ARI.
17. Mr. Rashid Q. Khan, PRITECH
18. Mr. Tasleem Khan, Driver, PHC Project, Sindh.
19. Dr. Ali Nawaz Khoso, DHO Sukkur, Sindh.
20. Dr. Hadi Bux Leghari, DHO Tharparkar, Sindh.
21. Dr. Nancy Limprecht, Information Analysis Specialist, PHC Project, Islamabad.
22. Dr. Ashraf Memon, Ex Management Analyst, PHC Project, Sindh.
23. Dr. Ghulam Mohammed Memon, DHO Thatta, Sindh.
24. Dr. Sajjan Memon, Director Health Services, Government of Sindh, Hyderabad.

25. Dr. Rik Peeperkorn, Program Officer ARI, UNICEF/Pakistan.
26. Mr. Riaz Hussain Shah, Office Manager, PHC Project, Islamabad.
27. Dr. Tara Upreti, Training Advisor, PHC/BHSC
28. Dr. Aizaz Usmani, Training Specialist and Management Analyst, PHC Project, Sindh.
29. Mr. Masood Hussain Quraishi, Administrative Officer/Computer Data Specialist, PRITECH/Pakistan
30. MEDICAL OFFICERS AND STAFF OF HEALTH FACILITIES SURVEYED.