

MANAGEMENT SCIENCES FOR HEALTH
A NONPROFIT INSTITUTION

MIS Consultancy Trip Report
Pakistan Child Survival Project
Islamabad, Pakistan

By Randy Wilson/MSH Boston
June 6, 1991

PAKISTAN CHILD SURVIVAL PROJECT (PCSP) MONITORING SYSTEM

Revised July 8, 1991

1. INTRODUCTION

An essential component of the PCSP implementation strategy is the development of a monitoring system to track accomplishment of targets for quantifiable inputs and outputs as well as resource utilization. While meeting the projects immediate management requirements, this system should also be capable of being adapted to Ministry of Health (MOH) use for monitoring ongoing health programs as a component of the larger Health Management Information System (HMIS) for Pakistan.

In addition to providing project-component specific breakdowns of resource utilization and achievement of targets (i.e Training, Communications, HIS, Drugs & Logistics), the system will map data against the existing health infrastructure which benefits from project interventions. It is hoped that careful attention paid to geographic coding of health resources data will permit sensible aggregation of data at the province, district and even tehsil levels.

This geographic coding should also provide the links to population survey data generated by the DHS and Census, greatly facilitating analysis of coverage, resource allocation and the identification of health related outcomes.

2. OBJECTIVES

The PCSP Monitoring System is being developed to provide means for tracking:

- a. **Project input indicators** for accountability purposes.
 - e.g. * Child Survival commodities
 - * vehicles provided
 - * computer equipment provided
- b. **Project output indicators** and comparing them with targets:
 - e.g. * training sessions held and associated costs
 - * workshops held
 - * number of staff trained
 - * number of CSTU units established
- c. **Indicators related to the quality of case management** in each of the Child Survival interventions. These will serve as proxy measures of project impact indicators for which data collection is very complicated and costly.

- d. **Provincial/district-wise variation** in project activities, process indicators and resources to identify gaps or inequitable spread of project interventions. Similarly, this geographic coding will enable speculation on health outcomes/project impact in districts covered by project interventions by providing a link to data generated by the DHS and other population based surveys.
- e. **Recurrent vs capital investment expenditures:** This will permit more accurate cost projections for identifying cost implementations and eventual sustainability of project interventions by the MOH.

3. MONITORING INDICATORS

The tables in Annex 1 of this document provide a summary of the indicators which are being used to monitor the project's status. They include a blend of process and output indicators which have been identified as useful for management purposes and in quantifying the attainment of project objectives.

It should be noted that the indicators in Training and in Health Information Systems assume the identification of additional funding for the Child Survival Project. A subset of indicators will be provided in the near future, taking into account the present funds available to USAID and to the MSH contract.

4. SYSTEM STRUCTURE

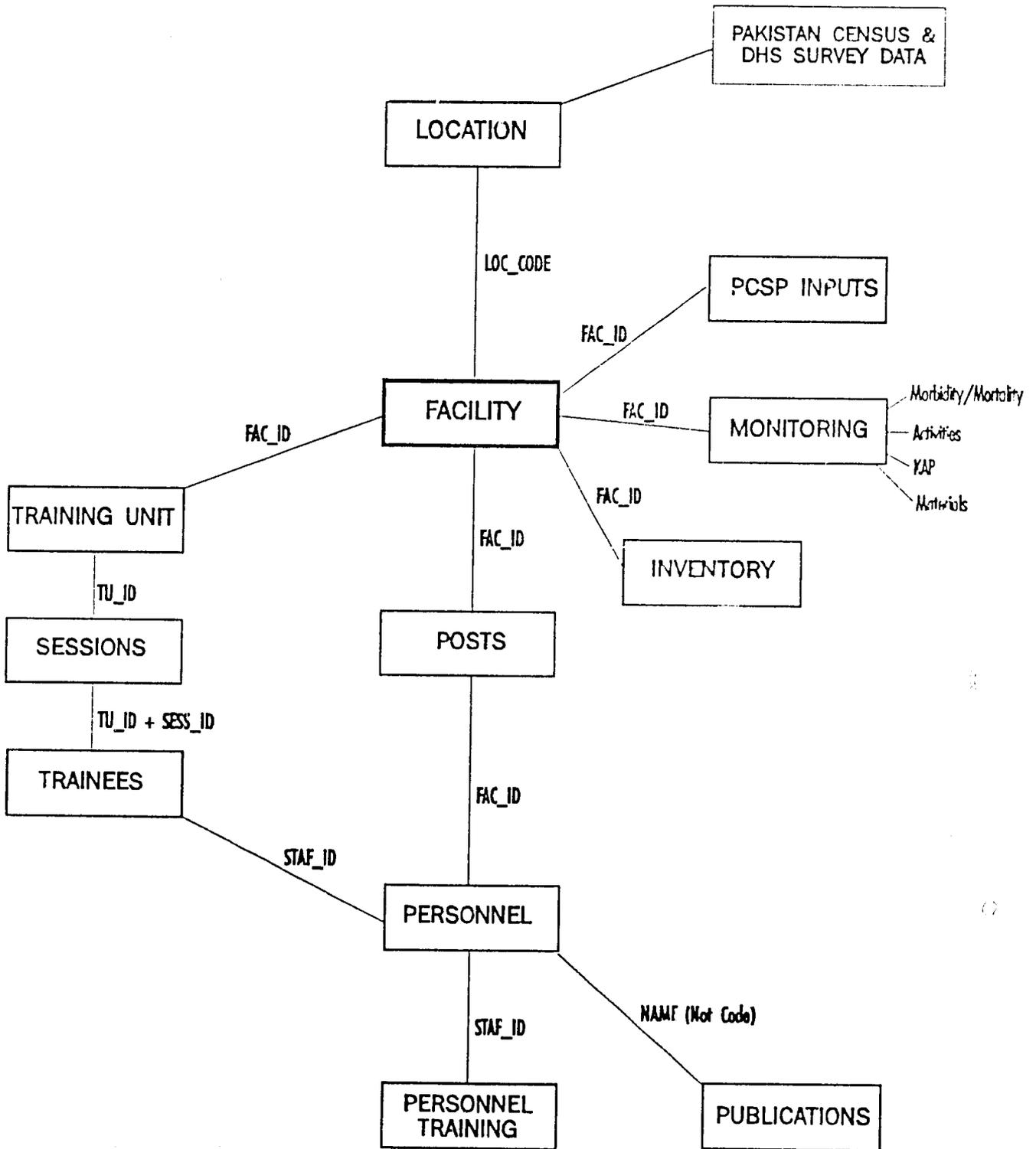
The system will consist of a number of data files built around a comprehensive health resource data file. This will be the back bone of the system which will provide the denominator information for many of the performance indicators being used as well as the geographic coding required for preparing regional/district breakdowns of the data. It will also be used operationally for personnel and facility planning and management by the MOH.

Figure 1 illustrates the general structure of the system.

5. DATA SOURCES

- a. **Facility data:** This data does not appear to be available in any comprehensive form at the Federal Level. As a result a comprehensive effort will need to be made through Provincial Health Services to build up this inventory of Govt health facilities. A simple register type form should be developed for this purpose initially. Later the actual data maintenance will become a provincial function, with data sent to the Federal level on disk for incorporation into a national system.

DATA DIAGRAM FOR PCSP MONITORING SYSTEM (PMS)



Not only clinical facilities will be included in the facility data base. Each administrative unit of the Federal MOH and of the Provincial MOHs will be considered as a separate facility (e.g the Basic Health Service Cell of the Federal MOH).

- b. **Personnel data:** Once again, provincial health ministries seem to be the only source of data on health personnel, as they are responsible for post assignment. The federal HMIS and PCSP monitoring system will need to rely on provincial updates of this data. Because of the large number of personnel involved, it may be most practical to begin data acquisition by entering the names of personnel who have actually been trained or have otherwise received PCSP support.
- c. **Training Data:** This will come from standardized reports similar to those currently used by the DTUs. The key data entry documents will be:
 - a. Trainee summary list
 - b. Training session financial summary
 - c. Training session evaluation summary
- d. **Child Survival Interventions Monitoring Data:** Because the final data collection system for this data will only come after the HMIS system for first level care facilities is designed, an interim methods will need to be designed for gathering this data:
 - 1. Facility Based Surveys (FBS)

Somewhat of a cross between a supervisory checklist and a sample survey, this should also serve as a useful means to help pre-test some of the concepts to be introduced in the HMIS Supervisory Checklists (HMIS/SCKL). The FBS will include the following information:

 - a. Employment Status of personnel
 - b. Quality and quantity of child survival related services delivered
 - c. Stock situation of priority essential drugs/equipment
 - 2. Household Based Surveys (HBS)

For certain indicators, household level data will have to be collected (e.g. correct home use of ORS). Rapid Assessment Methods will be tested out for this purpose. Their use on an institutionalized basis will be promoted under the new HMIS (HMIS/RAM).
- e. **PCSP Material Inputs:** This will be entered at the PCSP office from delivery challans produced by Jaffer Brothers Limited and from JBL's accounts (i.e for refurbishment costs paid out on behalf of PCSP).
- f. **PCSP Financial Data:** This data will be generated from computerized accounts maintained by Jaffer Brothers or, for expatriate TA and travel expenses, from MSH/Boston accounting office.

Table 1. PCSP MONITORING INDICATORS

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
I. INTERVENTIONS						
A. CONTROL OF DIARRHEAL DISEASES						
1. Number of government health facilities where personnel trained	10 DTUs 263 Hospitals ¹ 356 BHUs/RHCs ¹	18 TH/CSTUs 10 DHQ/CSTUs 60 Hospitals ² 200 BHUs/RHCs ³	18 TH/CSTUs 20 DHQ/CSTUs 200 Hospitals 1000 BHUs/RHC	10 DTUs	PMS ⁴	PMS
2. Proportion of diarrhoeal disease cases receiving proper treatment in trained government facilities (averaged)		70%	80%	DHS 1991	FBS ⁵ HMIS/SCKL ⁶	HMIS/SCKL
3. Correct home ORT use for diarrheal cases in catchment areas of trained government facilities (only for children under five who visited during the last year)		--- Wait for results from DHS ---		DHS 1991	HBS ⁷ HIMS/RAM ⁸	HMIS/RAM

¹ Former model of separate diarrhoeal disease training; data up to June 30, 1991

² Average of 10 health workers per hospital will be trained

³ Average of 2 health workers per BHU/RHC will be trained

⁴ PMS = Project Monitoring System

⁵ FBS = Facility Based Surveys

⁶ HMIS/SCKL = Health Management Information System / Supervisory Checklist

⁷ HBS = Household Based Surveys

⁸ HMIS/RAM = Health Management Information System / Rapid Assessment Methods

I. INTERVENTIONS (Continued)

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
B. ACUTE RESPIRATORY INFECTIONS⁹						
1. Number of government health facilities where personnel trained		18 TH/CSTUs 10 DHQ/CSTUs 60 Hospitals 200 BHUs/RHCs	18 TH/CSTUs 20 DHQ/CSTUs 200 Hospitals 1000 BHUs/RHCs	0	PMS	PMS
2. Proportion of ARI cases receiving proper treatment in trained govt facilities (averaged)		70%	80%	0	FBS HMIS/SCKL	FBS HMIS/SCKL
C. EXPANDED PROGRAM OF IMMUNIZATION						
1. Number of government health facilities where personnel trained		18 TH/CSTUs 10 DHQ/SCTUs 60 Hospitals 200 BHUs/RHCs	18 TH/CSTUs 20 DHQ/CSTUs 200 Hospitals 1000 BHUs/RHCs	0	PMS	PMS
2. Proportion of children aged 0-11m in government health facilities where personnel trained who receive proper EPI case mgmt. (averaged)		70%	80%	0	FBS HMIS/SCKL	FBS HMIS/SCKL
3. Proportion of WCBA in government health facilities where personnel trained who receive proper EPI case management (averaged)		70%	80%	0	FBS HMIS/SCKL	FBS HMIS/SCKL

⁹ ARI outputs assume expanded agreements between GOP and USAID.

I. INTERVENTIONS (Continued)

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
D. NUTRITION						
1. Number of government health facilities where personnel trained		18 TH/CSTUs 10 DHQ/CSTUs 60 Hospitals 200 BHUs/RHCs	18 TH/CSTUs 20 DHQ/CSTUs 200 Hospitals 1000 BHUs/RHCs	0	PMS	PMS
2. Proportion of children under 5 years in government facilities where personnel trained who receive proper nutritional screening, education and follow-up (averaged)		70%	80%	0	FBS HMIS/SCKL	HMIS/SCKL
3. Proportion of pregnant and lactating women in government health facilities where personnel trained who receive proper nutritional screening, education and follow-up (averaged)		70%	80%	0	FBS HMIS/SCKL	HMIS/SCKL
4. Proportion of children under 4 m in catchment area of government health facilities where personnel trained receiving exclusive breastfeeding (only for children who visited the health facility at least once during the past year) (averaged)		--- Wait for results DHS 1991 ---		DHS 1991	HBS HMIS/RAM	HMIS/RAM
5. Proportion of children of 6 m or more in catchment area of government health facilities where personnel trained receiving adequate supplementary feeding (only for children who visited the health facility at least once during the past year) (averaged)		--- Wait for results DHS 1991 ---		DHS 1991	HBS HMIS/RAM	HMIS/RAM

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
II. COMPONENTS						
A. PROGRAM PLANNING & MANAGEMENT						
1. Functional Steering Committees	in place					
2. Computerized Project Monitoring System	in place					
B. TRAINING						
1. Continuing education section established federal & provincial level	---	---	Plan exists		Semi-annual Progress Report	Final Rpt.
2. Continuing education program funded in provincial recurrent budgets	---	---	Plan exists		Semi-annual Progress Report	Final Rpt.
3. Integrated training program for MOs and paramedics	---	available			Semi-annual Progress Report	Final Rpt.
4. Integrated supportive supervision & mgmt. training program for district supervisors in CS intervention areas	---	available			Semi-annual Progress Report	Final Rpt.
5. Establishment of CSTUs at Teaching Hospitals.	10	18	18	10	PMS	PMS
6. Number of Teaching Hospital trainers trained	---	90	180	0	PMS	PMS
7. Establishment of CSTUs at District level.	---	10	20	0	PMS	PMS
8. Number of District Hospital trainers trained	---	100	200	0	PMS	PMS
9. Number of Medical Officers and Paramedics trained in CS interventions in TH/CSTUs.	---	620 ¹⁰	1960	0	PMS	PMS

¹⁰ Assumptions:

- 10 workshops per year
- 10 participants invited per workshop
- 20% drop out rate

8

II. COMPONENTS (Continued)

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep 30, 93)		MONITORING	EVALUATION
10. Number of Medical Officers and Paramedics trained in CS interventions in DHQ/CSTUs.	--	400 ¹²	2000	0	PMS	PMS
11. Number District Supervisors trained	--	100	200	0	PMS	PMS
12. Proportion of female staff trained in CS interventions in trained government health facilities	---	30%	50%	0	PMS	PMS
13. Curriculum MBBS/LHV/HT	--	--	revised		Semi-annual Progress Report	Final Rpt.
14. Malnutrition casement curriculum	--	--	available		Semi-annual Progress Report	Final Rpt.
15. Proportion of trained government facilities demonstrating proper case management in all 4 CS areas	---	70%	80%		FBS HMIS/SCKL	HMIS/SCKL

II. COMPONENTS (Continued)

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
C. HEALTH INFORMATION SYSTEM						
1. Analysis of existing morbidity/mortality data	completed				Semi-annual Progress Report	Final Rpt.
2. HMIS/First Level Care Facilities	225 ¹¹	225 ¹¹	2,500	300	PMS	PMS
3. Provincial/District Supervisors trained in use of MIS	30 ¹¹	30 ¹¹	300	10	PMS	PMS
4. Proportion of trained facilities reporting regularly			80%		PMS/HMIS	PMS/HMIS
5. Computerized dataprocessing cells set up at provincial & divisional level	4	11	20	4	PMS	PMS
D. COMMUNICATIONS¹²						
1. Number of Medical Officers and Paramedics trained in Interpersonal Communications at TH/CSTUs	---	620	1940	0	PMS	PMS
2. Number of Medical Officers and Paramedics trained in Interpersonal Communication at DHQ/CSTUs	---	400	2000	0	PMS	PMS
3. Proportion of target audience reached by communications campaign in districts covered	---	20%	45%		HBS HMIS/RAM	HBS HMIS/RAM
4. Average number of communications activities per district per year	---	to be estimated	to be estimated		HBS HMIS/RAM	HBS HMIS/RAM

¹¹ Trained by PHC Project

¹² Will be refined in coming weeks

II. COMPONENTS (Continued)

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR (Thru Sep.30, 1991)	2 YEARS (Thru Sep.30, 92)	3 YEARS (Thru Sep.30, 93)		MONITORING	EVALUATION
F. DRUG & LOGISTICS SUPPLY SYSTEMS¹³						
1. Need assessment for priority drugs	---	---	completed		Semi-annual Progress Report	Final Rpt.
2. Assess of procurement and distribution of drugs, vaccines and cold chain equipment	---	---	completed		Semi-annual Progress Report	Final Rpt.
3. Assess prescribing practices	---	---	completed		Semi-annual Progress Report	Final Rpt.
4. Proportion of government health facilities where personnel trained without stockouts of priority essential drugs	10%	20%	50%		FBS HMIS/RR	HMIS/RR

¹³ Will be refined in coming weeks

Randy Wilson/MSH Boston
June 6, 1991

Trip Report: Pakistan Child Survival Project, Islamabad
Dates: June 1-7, 1991

1. *Purpose of Visit:* This was my second short term consultancy with the PCSP to help with the project's computerisation efforts. Most of my time was spent conducting a needs assessment for the PCSP Monitoring System, and developing a detailed specification for the elements of this system which will be computerised.
2. *Specific Activities:*
 - a. Reviewing the project's workplan and monitoring indicators in light of changes required under the reduced project budget: In addition to adjusting some of the project's targets in line with reduced budget levels, this involved refining some of the indicators which had been selected.

In particular, I worked with staff from each of the project's components (Tara Upreti/Training, Theo Lippeveld/HIS, Youssaf Dawfiq/Drugs & Logistics, Jim Messick and Spectrum Communications/Social Marketing and Stephen Sacca/Administration) to produce some new indicators to measure the project's effect on quality of care. In discussions with Theo, Shafad and others, we then identified specific data sources to gather the required information. The key new development was the proposal for Facility Based Surveys (FBS), using Lot Quality Assurance Sampling (LQAS) and rapid appraisal methods. These will be conducted by Provincial Supervisory Staff to gather monitoring data from selected institutions on an interim basis until the routine reporting is introduced as part of the HMIS. The PCSP monitoring system description, in ANNEX I contains the latest iteration of project monitoring indicators, target figures for each indicator and proposed data sources for gathering them.

- b. Design of the Database structure for the Project Monitoring System: Based on the refined indicators identified above, I produced a much more complete computer database structure capable of storing most of the information required for ongoing project monitoring.

One issue that we appear to have made some progress on is in identifying a geographic coding scheme. This came about following a useful visit with Mr. Sayeed at the Pakistan Census Bureau, during which he described the

structure of the location codes used for census blocks. This 9 digit code localises households down to the Census block level (about 200 households). I have proposed that we use the first 5 digits of the code to provide us details on the Province, Division, District, Tehsil and whether the location is urban or rural. Shafad is making arrangements with the Federal Bureau of Statistics to obtain on disk the data required to prepare the lookup tables which we would hope to use. This should contain:

- i. Code
- ii. Province
- iii. Division
- iv. District
- v. Tehsil
- vi. Urban/rural

If possible, data on population projections from the 1981 census would also be useful in this file. These figures could then be used to generate population-based service coverage figures.

- c. Development of a Phased Approach for Software Development: Following several days of discussions with Ministry of Health, PCSP and AID staff a phased approach to software development for the Monitoring System was proposed. Details about the specific modules to be developed can be found in Annex II.

With the expectation that Fox Software will be releasing a compiler with FoxPro 2, which is expected out shortly, it was decided to do initial software development using FoxPro. I spent most of a morning demonstrating the use of the application development module, FoxView, to Shafad.

Development will proceed as follows:

- i. Development of the Health Facility/Personnel infrastructure database (to be completed by the end of August): The emphasis here will be on developing a national inventory of Health Facilities and staff to form the backbone of the various modules of the project monitoring system (and later the HMIS itself).

Because most of the information needed for this process does not get much further than the Provincial Health Ministries, the software will be developed for use in the Provinces on computer equipment already provided. Not only is this the

logical place for such data to be gathered, but it gives the PCSP a chance to involve the Provincial Office statistical staff in a simple but useful way early on the the Project's life. At the provincial level the data gathered will provide the Provincial Ministries with a flexible tool for managing the constantly changing staffing patterns within their own institutions. The aggregated data can then be used for planning and producing the denominator data needed for the Monitoring System at the Federal level.

The emphasis here is to be on simplicity, both in the types of data gathered and in the user interface. Although the system will provide a mechanism for storing nominative data on each individual employed in each facility, some provinces may decide to limit their data collection to summaries of the total numbers of personnel by category in each facility.

- ii. Training Database: This should be the most straightforward module to complete as it will essentially be a modification of the existing Diarrheal Training Unit (DTU) database, which Shafad developed for Pritech. This should be completed by the end of September, when the new training curricula are to be introduced. Key modifications will be to:
 - (1) link training sessions to training units in the facilities database (FAC_ID)
 - (2) copy trainee details into the personnel database, and produce an explicit link between the two files (STAF_ID).
 - (3) introduce a new file into the structure for storing details about individual training sessions conducted (e.g. dates, no. of participants invited, overall session evaluation results, etc...). Tara will need to work with Theo to develop standard training session evaluation forms, as well as a method for gathering pre- and post-test data on trainee's clinical practice -- not the currently collected information which is limited to trainee's knowledge.
- iii. PCSP Inputs database: There is less urgency to this module, as the number of material inputs to facilities are not of such a volume that they cannot be maintained manually over the short term.

A key issue which was resolved during my visit was the decision to track all key project related material inputs (e.g. computers, vehicles, as well as ORT kits), not just those provided directly using project funds. This will require including a field on each record to identify the source of the input (e.g. UNICEF, AID, MSH), so that non-MSH inputs can be excluded in reports to AID.

- iv. Child Survival Intervention Monitoring database: This will store the data generated from Facility Based Surveys. It is still too soon to have a firm idea about how this file will be structured, as a survey form or checklist still needs to be produced. Once such forms are prepared and pre-tested, they will be completed by provincial supervisors and can be forwarded to Islamabad where the data entry and analysis will be performed.

It was felt that these surveys would build upon experience gained with the PHC Monitoring system: asking similar questions but reducing the potential for errors due to self-reporting which characterised that system. In addition, it would give the HIS group an opportunity to pre-test some of the questions that will go into the HMIS later on.

The computerisation of this module will need to wait until more thought has been given to questionnaire design. This will, therefore, be the last module that will be worked on (probably after my next visit in September 1991).

3. *Specific Follow-up Actions:*

- a. Plan a two week visit back to Islamabad in early September. This will focus on:
 - i. Reviewing Shafad's progress on developing the Health Facility/Personnel application and developing a strategy for introducing it into the Provincial Offices. It is hoped that a visit can be arranged at that time to the provincial office in Lahore to seek user feedback on the prototype and identify training requirements.
 - ii. Preparing a detailed specification for the Facility Based Survey data entry module
 - iii. Modifying the DTU application for use for all training sessions, and recoding existing data for use in the new system.

- b. Provide Shafad with support on specific programming issues related to the use of FoxPro. One tool that Thom Graziano, MSH's Boston-based programmer, should develop almost immediately is a generic lookup user function, similar to the one we use with Clipper. This will be required for geographic coding as in the Clinic application developed for the Afghanistan Health Sector Support Project. Arrange for an upgrade to FoxPro 2 as soon as it is released.
- c. Send Theo complete documentation on the Philippines Child Survival Project HIS. This should include routine reporting forms and computerised system descriptions. Theo is keen to feed lessons learned from similar systems into the development of the Pakistan HMIS.
- d. Send Shafad a copy of our MIS call logging software. He can use this to monitor hardware and software support for Federal as well as Provincial offices.

ANNEX I:

PAKISTAN CHILD SURVIVAL PROJECT (PCSP) MONITORING SYSTEM Revised June 11, 1991

OVERVIEW:

An essential component of the PCSP implementation strategy is the development of a monitoring system to track accomplishment of targets for quantifiable inputs and outputs as well as resource utilization. While meeting the Project's immediate management requirements, this system should also be capable of being adapted to Ministry of Health (MOH) use for monitoring ongoing health programs as a component of the larger Health Management Information System (HMIS) for Pakistan.

In addition to providing project-component specific breakdowns of resource utilization and achievement of targets (i.e. Training, Social Marketing, HIS, Drugs & Logistics), the system must map data against the existing health infrastructure which benefits from project interventions. It is hoped that careful attention paid to geographic coding of health resources data will permit sensible aggregation of data at the province, district and even tehsil levels.

This geographic coding should also provide the links to population survey data generated by the DHS and Census, greatly facilitating analyses of coverage, resource allocation and the identification of health related outcomes.

OBJECTIVES:

1. The PCSP Monitoring System is being developed to provide:
 - a. Up-to-date data on project inputs for accountability purposes. This will include:
 - i. ORS kits
 - ii. vehicles provided
 - iii. computer equipment provided
 - b. A means for tracking project outputs and comparing them with targets:
 - i. training sessions held with their associated costs
 - ii. workshops held
 - iii. research grants provided
 - iv. numbers of staff trained
 - v. numbers of DTU units set up
 - c. A means for tracking indicators related to the quality of case management in each of the Child Survival interventions. These will serve as proxy measures of project impact and will be handled initially through ad hoc Facility Based Surveys (FBS), conducted by Provincial and Federal level staff. Eventually this data will be generated through a continuous process of supervision -- the Supervisory Check Lists (SCKL) serving as a monitoring data source within the HMIS for first level care facilities -- to be developed under the project.

17

- d. A means to map provincial/district-wise variations in project activities, process indicators and resources to identify gaps or inequitable spread of project interventions. Similarly, this geographic coding will enable speculation on health outcomes/project impact in districts covered by project interventions by providing a link to data generated by the DHS and other population based surveys.
- e. A method for tracking recurrent vs capital investment expenditures. This will permit more accurate cost projections for identifying cost implications for eventual sustainability of project interventions by the MOH.¹

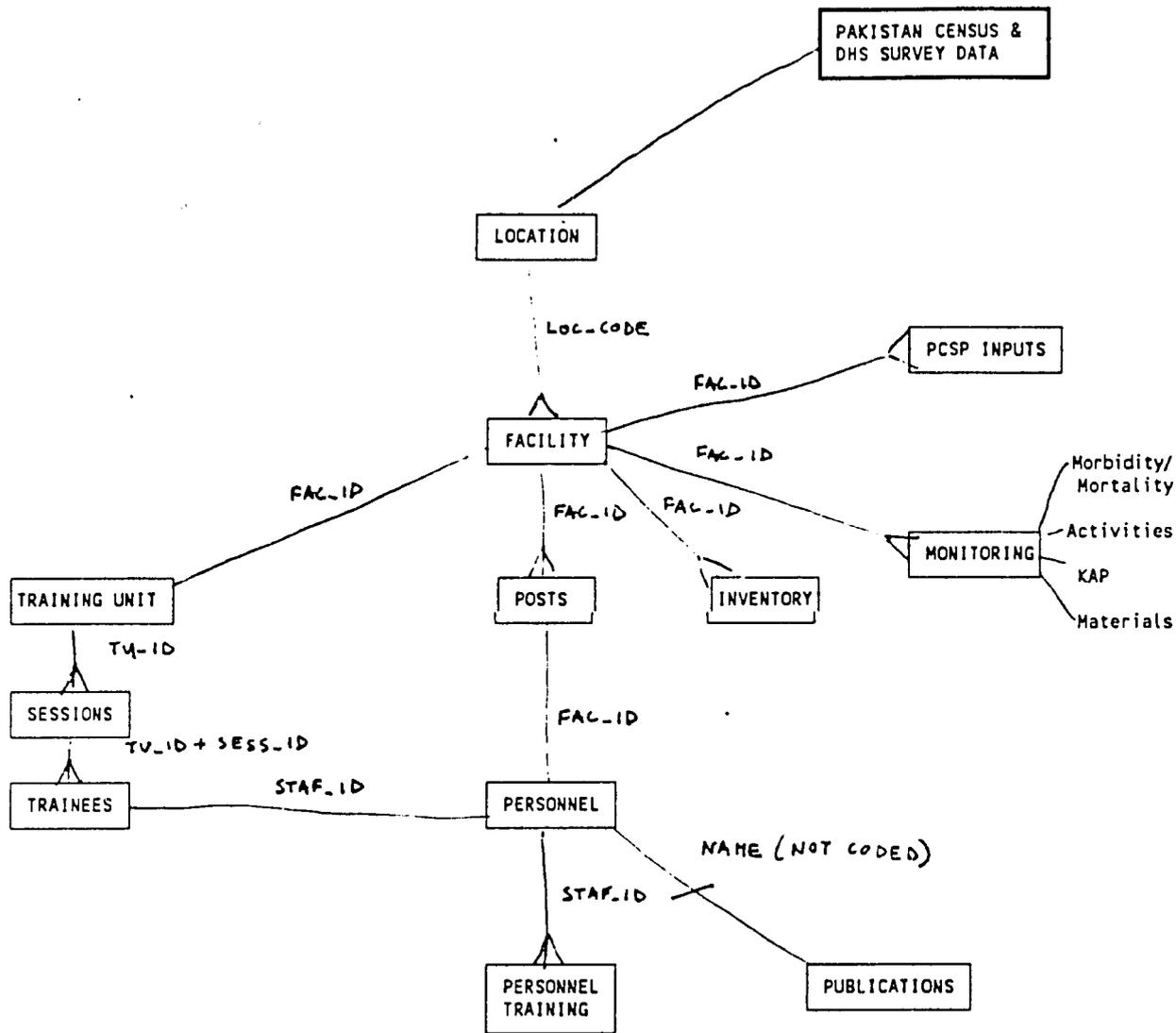
SYSTEM STRUCTURE:

The system will consist of a number of data files built around a comprehensive health resources data file. This will be the backbone of the system which will provide the denominator information for many of the performance indicators being used as well as the geographic coding required for preparing regional/district breakdowns of the data. It will also be used operationally for personnel and facility planning and management by the MOH.

The following figure illustrates the general structure of the system:

¹ This data will be generated from computerized accounts maintained by Jaffer Brothers. Financial data, per se, will not be stored with monitoring data in either the PMS or HMIS. Given the fact that the chart of accounts maps precisely onto the discrete categories of project outputs, the links between the two sources of data are explicit. Data on other project costs, e.g. Expatriate TA and travel expenses, will only be available through MSH's Boston accounting office.

Data Diagram for PCSP Monitoring System



Lookup tables:

LOCATION:

- PROVINCE
- DIVISION
- DISTRICT
- TEHSIL

MISC. CODES:

- PROGRAM COMPONENT
- OCCUPATIONAL CATEGORY
- FACILITY TYPE
- TRAINING SESSION TYPE
- EDUCATIONAL QUALIFICATIONS

19

DATA SOURCES:

1. **Facility data:** This data does not appear to be available in any comprehensive form at the Federal Level. As a result a comprehensive effort will need to be made through Provincial Health Services to build up this inventory of Govt health facilities. A simple register type form should be developed for this purpose initially. Later the actual data maintenance will become a provincial function, with data sent to the Federal level on disk for incorporation into a national system.
2. **Personnel data:** Once again, provincial health ministries seem to be the only source of data on health personnel. As they are also responsible for post assignment. The federal HMIS and PCSP monitoring system will need to rely on provincial updates of this data. Because of the large number of personnel involved, it may be most practical to begin data acquisition by entering the names of personnel who have actually been trained or have otherwise received PCSP support.
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 - a. Trainee summary list
 - b. Training session financial summary
 - c. Training session evaluation summary
4. **Child Survival Interventions Monitoring Data:** Because the final data collection system for this data will only come after the HMIS system for first level care facilities is designed, an interim method will need to be designed for gathering this data: the Facility Based Survey (FBS). Somewhat of a cross between a supervisory checklist and a sample survey, this should also serve as a useful means to help pre-test some of the concepts to be introduced in the HMIS Supervisory Checklinst. The FBS will include the following information:
 - a. Employment Status of personnel
 - b. Quality and quantity of Child Survival related services delivered
 - c. Stock situation of priority essential drugs
 - d. Population based household data on child survival-related knowledge, attitudes and practice gathered through Rapid Assessment Methods.
5. **PCSP Material Inputs:** This will be entered at the PCSP office from delivery challans produced by Jaffer Brothers Limited and from JBL's accounts (i.e. for refurbishment costs paid out on behalf of PCSP).

MONITORING INDICATORS:

The table on the following page provides a summary of the indicators which are being used to monitor the project's status. This includes a blend of output and process indicators which have been identified as useful for management purposes and in quantifying the attainment of project objectives.

Table V. PCSP OUTPUT INDICATORS²

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR	2 YEARS	3 YEARS		MONITORING	EVALUATION
A. CONTROL OF DIARRHEAL DISEASES						
1. No. ORT corners/units established and personnel trained	10 CSTU 500 BHU /RHU	18 CSTU 10 DHQTU 1000 BHU /RHU	18 CSTU 20 DHQTU 2000 BHU /RHU	10 CSTU ?	PMS ³	PMS
2. Proportion of diarrheal disease cases receiving proper treatment in trained government facilities (averaged).	80%	80%	80%	DHS 1991	FBS ⁴ HMIS/SCKL ⁵	HMIS/SCKL
3. Home use of ORT for diarrheal cases in catchment areas of trained government facilities	20%	50%	80%	DHS 1991	FBS HMIS/RAM	FBS HMIS/RAM
B. ACUTE RESPIRATORY INFECTIONS*						
1. No. gov. facilities where personnel trained		18 ATU /CSTU 10 DHQTU 300 HOSP 1000 BHU /RHC	18 ATU /CSTU 20 DHQTU 450 HOSP 2000 BHU /RHC	0	PMS	PMS
2. Proportion of ARI cases receiving proper treatment in trained government facilities (averaged)		80%	80%	0	FBS HMIS/SCKL	FBS HMIS/SCKL

² Outputs include those planned by the PCSP using both USAID and outside funding.

³ Project Monitoring System (PMS): This will include information specific to the PCSP's own implementation plans. As noted above, this system may eventually be adapted by the ministry for tracking information about other MOH projects.

⁴ Facility Based Surveys

⁵ Health Management Information System (HMIS): this is the all encompassing system which will constitute the HIS component's ultimate output. As this will not become fully operational until the end of the project, other data sources are being used to gather monitoring data during the life of the project. Some elements of the HMIS will, however, become operational at earlier stages. They will thus feed in monitoring data as they begin to be used.

1. Supervisory Check Lists (SCKL): These will report the results of supervisory visits by provincial and district supervisors.
2. Routine Reporting (RR): This will take the form of monthly or quarterly reports from health facilities on their activities.

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR	2 YEARS	3 YEARS		MONITORING	EVALUATION
C. EXPANDED PROGRAM OF IMMUNIZATION						
1. No. gov. facilities where personnel trained		18 CSTU 20 DHQTU 2000 BHU /RHC 300 HOSP	18 CSTU 48 DHQTU 3200 BHU /RHC 450 HOSP	? NIH ?	PMS	PMC
2. Proportion of children aged 0-11 months in trained government facilities who receive proper EPI case management (averaged).		80%	80%		PMS	FBS/ EPI coverage survey
2. Coverage of children: 0-11 months						
BCG	80%	90%	90%	83%	EPI/RR	EPI coverage survey
DPT3	70%	80%	80%	76%	HMIS/RR	
Measles	70%	80%	80%	68%		
4. Coverage MCBA	27%	45%	50%	27%	EPI/RR HMIS/RR	EPI coverage survey
D. NUTRITION						
1. No. gov. facilities where personnel trained		18 CSTU 16 DHQTU 1500 BHU /RHU	18 CSTU 32 DHQTU 1500 BHU /RHU	0	PMS	PMS
2. Proportion of children under 5 years of age in trained government health facilities who receive proper nutritional screening, education and follow-up (averaged).		80%	80%	0	FBS HMIS/SCKL	HMIS/SCKL

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR	2 YEARS	3 YEARS		MONITORING	EVALUATION
II. COMPONENTS						
A. Program Planning and Management						
1. Functional Steering Committees	in place					
2. Computerized Proj. Monitoring System	in place					
3. Program for integrated service			available			
B. Training						
1. Continuing education sections established at fed. & prov. levels			Plan exists		Biannual Progress Rpt.	Final Rpt.
2. Continuing ed. program funded in prov. recurrent budgets			Plan exists		Biannual Progress Rpt.	Final Rpt.
3. Integrated training program for MOs and paramedics		available			Biannual Progress Rpt.	Completed curriculum
4. Integrated supportive supervision & mgmt. trng. program for district supervisors in CS intervention area		available			Biannual Progress Rpt.	Completed manuals
5. Establishment of CSTU at Teaching Hospitals	10	18	18	10	PMS	PMS
6. No. of Teach. Hosp trainers trained		100	100	0	PMS	PMS
7. Establishment of CSTU at Dist. level		10	20	0	PMS	PMS
8. No of Dist. Hosp. trainers trained		100	200	0	PMS	PMS
9. No. of Medical Off. and Paramedics trained in CS Interventions		700	1400	0	PMS	PMS
10. Proportion of female staff trained in CS interventions in trained govt. facilities	10%	30%	50%		PMS	PMS
11. Proportion of invited trainees successfully completing CS training courses	80%	80%	80%		PMS	PMS
12. Curriculum MBBS/LHV/HT			revised		Biannual Progress Rpt.	Final Rpt.
13. Nutrition curriculum			available		Biannual Progress Rpt.	Completed curriculum
14. Proportion of trained govt. facilities demonstrating proper case management in all 4 Child Survival Areas	80%	80%	80%		FBS HMIS/SCKL	FBS HMIS/SCKL

24

INDICATORS	TARGET			BASELINE	DATA SOURCE	
	1 YEAR	2 YEARS	3 YEARS		MONITORING	EVALUATION
C. Health Information Systems						
1. Analysis of existing morbidity/mortality data	completed				Biannual Progress Rpt.	Final Rpt.
2. No. of health workers trained in use of HMIS in first level care facilities	225	225	2500	300	PMS/HMIS	PMS/HMIS
3. No. of provincial/district supervisors trained in use of HMIS.	30	30	300	10	PMS/HMIS	PMS/HMIS
3. Proportion of trained facilities reporting regularly			80%		PMS/HMIS	PMS/HMIS
4. Computerized data processing systems set up at provincial/district levels	4	11	20	4	Biannual Progress Rpt.	Final Rpt.
D. Communications/Marketing						
1. Institutionalized PCSP Media campaign capacity	initiated	early dev.	in process		Biannual Progress Rpt.	Final Rpt.
2. No. of districts covered by Media campaign		20	20		PMS	PMS
3. No. of Medical Officers & Paramedics trained in Interpersonal Communications		700	1400		PMS	PMS
4. Proportion of target audience reached by media campaign in districts covered.		275	850		PMS	PMS
6. Communication/Marketing Research institutionalized by subcontract process		?	?		FBS	FBS
		initiated	completed		Biannual progress rept	Final Rpt.
E. Drug & Logistics supply systems						
1. Needs assessment for priority drugs			completed		Progress reports	Final rept.
2. Assessment of procurement and distribution of drugs, vaccines and cold chain equipment			completed		Progress reports	Final rept.
3. Assessment of prescribing practices			completed		Progress reports	Final rept.
4. Proportion of trained health facilities without stockouts of priority essential drugs throughout entire year	10%	20%	50%		FBS HMIS/RR	PMS/HMIS

25

PROPOSED PHASING OF PROJECT MONITORING SYSTEM DEVELOPMENT:

1. DATABASE SETUP:

- a. **Facility Database:** This can begin to be developed in Islamabad by Shafad and staff from the Basic Services Cell. A form for gathering the basic data on all first level care facilities should be developed. Provincial HIS staff can be responsible for completing the form and eventually data entry/maintenance can be done at the province level with updates sent to Islamabad. Specific tasks that must be completed include:
 - i. Gathering location data from the Federal Bureau of Statistics for Province, Division, District, Tehsil coding, along with population figures from the last census, if available. These will form the lookup tables for geographic coding of facility and personnel data.
 - ii. Developing the data entry/maintenance module
 - iii. Developing a report format for printing out a complete facility record, including a listing of all staff currently included in the personnel file.
- b. **Personnel Database:** Initially this will be limited to all professional staff in first level care facilities. A personnel biodata sheet should be developed to gather this information. This can be based on the form developed in the Punjab, but should probably be simplified. In particular, spouse data should be limited to spouse id number, if the spouse is also employed by the Ministry. This will create a link to a complete spouse record in the database, and eliminate the need to duplicate data. Publications information, not required for project monitoring purposes because the research component has been axed, is probably better stored in a standard bibliographic citation form with accompanying abstract. As publications often have multiple authors, a search by employee name will produce the desired link to the personnel. Other tasks that are required for this include:
 - i. Determining a standard coding scheme for:
 - (1) occupational categories
 - (2) basic qualifications
 - ii. Developing a data entry/maintenance module for personnel biodata sheets.
 - iii. Developing a report format for individual Biodata Form printouts. These can be used to send to employees for verification.
- c. **Training Database:** This should build upon the currently operational DTU training database, but contain explicit links to the Personnel and Facility databases above (through the Staff id and Facility id fields). An additional level of data will need to be incorporated on each training session done. This will include basic

qualitative information from session evaluations as well as location, no of trainees invited, trained, completed. Specific tasks required include:

- i. Modifying current training session reporting forms so that they can be used for all types of training sessions, and include data on qualitative indicators from course evaluations. The currently used Training Budget forms should also include a crude ratio of actual vs. budgeted expenses to help assess training units financial control. This summary information can be entered onto the training session final reports.
 - ii. Developing a coding scheme for types of training sessions
 - iii. Develop a data sheet for CSTU information on new and existing CSTUs. This should include facility, location, staff members, etc...
- d. **Equipment Inputs:** This will mean creating a data entry module for tracking equipment provided to facilities by the PCSP. The data will be entered directly from delivery challans from JBL. In addition to type of equipment supplied, these records should include facility id numbers so that inputs can be linked to specific facilities. At this stage this will provide a very limited view of Child Survival material inputs given that computer equipment, vehicles, etc... are actually allocated from separate AID budgets and delivered independent of the PCSP.
- e. **Facility Based Survey Data:** This will require some major planning and development work. There is currently no reporting form which includes all of the elements that the FBS intends to generate. The following are some of the specific tasks that lie ahead:
- i. A checklist type of form will need to be developed, perhaps based loosely on the PHC project's monitoring forms. Key areas which are not included the in the PHC forms relate to household level data on KAP and morbidity.
 - ii. A strategy must be developed for implementing the surveys. This will mean identifying who will conduct them and how they will be trained. What should be the frequency of surveys? Which facilities should be surveyed? How should samples be drawn?
 - iii. A data entry/maintenance module must be developed to permit data entry either at the Provincial or Federal level.

2. **REPORTING SYSTEM:** Routine and Ad Hoc report and query facilities must be developed integrating data from each of the

21

- linked data files. These should include, for example:
- a. A report on personnel trained by province, district, facility this should also include some estimate of personnel remaining to be trained.
 - b. A report on material inputs provided by province, district, facility
 - c. A report showing the progression of child survival case management indicators at the individual facility level and averages per district, for trained and non-trained facilities.
 - d. Various formats for facility and personnel listings.
 - e. A report on all training sessions/workshops held with type of session, location, number of trainees, overall course evaluation results.
 - f. A report on training workshops and sessions conducted by PCSP component (e.g. HIS, Training, Social Marketing) by province compared to numbers of sessions planned.

Annex II:

Proposed Menu Structure for PCPC project monitoring System

1. Facilities database:

- a. Data Entry
 - i. Facilities
 - ii. Posts
 - iii. Personnel
- b. Maintenance
 - i. Batch Update for Islamabad
 - ii. Reindex files
 - iii. Backup (use pkzip and/or dos backup command)
- c. Queries
 - i. Facility data
 - ii. Personnel data
- d. Reports
 - i. Facility list
 - ii. Personnel by facility
- e. Quit

2. Training database:

- a. Data entry
 - i. Training units
 - ii. Session details
 - iii. Trainee details
- b. Maintenance
 - i. Reindex
 - ii. Backup
- c. Queries:
 - i. Trainees
 - ii. Sessions
 - iii. Training Units
- d. Reports: (see DTU system reports menu)
- e. Quit

3. PCSP inputs database

- a. Data entry
 - i. Inputs
 - ii. Modify types of inputs
- b. Maintenance
 - i. Reindex

- ii. Backup
- c. Queries:
 - i. Inputs by facility
 - ii. Inputs by district
- d. Reports:
 - i. Inputs by facility grouped by district
 - ii. Inputs by type of input
- e. Quit

PAKISTAN CHILD SURVIVAL PROJECT

National Basic Health Services Cell
Feroz Center, 14-D West, Blue Area, P.O. Box: 2439, Islamabad, Pakistan.
Tel. 815818, 811325, 811067 Fax: 92-51-820487

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Islamabad, July 2, 1991

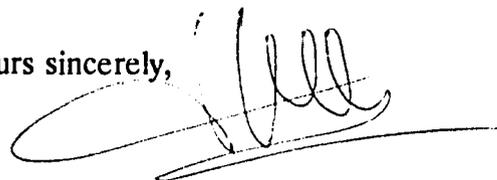
Mrs. Anne Aarnes
Chief Officer HPN
USAID, Islamabad

Dear Anne,

Enclosed please find for your information the Consultancy Trip Report of Randy Wilson, who recently provided short term technical assistance to our Project. Mr. Wilson did a follow-up visit to assist us in the development of computerized databases for the Project Monitoring System.

I thank you for your attention to this matter.

Yours sincerely,



Theo Lippeveld
HIS Advisor, PCSP

cc. Dr. Diana Silimperi, acting COP/PCSP