Third-Party Evaluation of the PPHI in Pakistan

Volume 3 BHU and Household Survey Results

Final Report April 2011

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Sosec conducted the Health Facility and Household survey

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Acknowledgement

An evaluation of this size can only succeed through a team effort involving many people. It is impossible to include all of them here, so may we thank all those people inside and outside Pakistan who volunteered their time and their views to our evaluation, whether as key informants or interviewees.

From the group who closely oversaw the evaluation study we wish to thank Dr Raza Zaidi and Ms Zoi Andrew at the Department for International Development (DFID) of the UK and Dr Qaiser Pasha at the Australian Agency for International Development (AusAID) for providing financial and personal support to the study team. At the Technical Resource Facility (TRF) in Islamabad we are indebted to Ms. Pamela Sequeira, who personally oversaw the implementation of this evaluation (well done and huge thanks from the team) and to Mr. Farooq Azam, Team Leader at the TRF, for his continued advise and support. At SoSec we would like to thank Dr Riaz Malik for accommodating a good deal of changes to the original plan and Dr. Ghayur Ahmad for helping to coordinate the pre-testing and data collection phases. At the HSSPU, MOH we wish to thank Dr Assad Hafeez for helping with the coordination of the Advisory Forum meetings and for his continued support. At HLSP we are indebted to Claire Sanders, for holding the evaluation budget strings so efficiently, to Taher Moghim and to Jack Eldon.

Our Technical Review Panel helped the evaluation team review the study methodology and approach, the original design and then the first drafts of the report. The panel is made up of Dr Thomas Bossert (Harvard School of Public Health), Dr G M Arif (Pakistan Institute of Development Economics) and Dr. Mushtaq A. Khan, who sadly passed away on 14th May 2010.

Being evaluated is not an easy task for those who have given so much time, effort and enthusiasm to build the PPHI organisation that is now under the lens. Throughout the assignment we could always count on Mr Jahangir Tareen, the person who launched the original PPHI concept and currently Chairman of the National Steering Committee of the PPHI. Mr Farooq Haroon, National Coordinator of the PPHI provided invaluable support and advice to the evaluation team beyond the call of duty. We are also extremely thankful to the PPHI team of Program Managers and District Support Managers and collaborators. They care about PPHI – wrong, they feel passionately about it, so we sincerely hope that this report meets their expectations.

We had full support and collaboration from the Governments of Sindh, Balochistan and Khyber Pakhtunkhwa, specifically from Chief Secretaries of the respective provinces, Provincial and District Departments of Health, and offices of District Administration, that we visited. The Ministry of Health provided invaluable leadership throughout the evaluation process in the person of the Mr. Khushnood Lashari, Secretary, Government of Pakistan, Ministry of Health. We are also indebted to Madam Shehnaz Wazir Ali, Special Adviser to the Prime Minister of Pakistan on Social Sectors for her advice and support delivered at key stages of the evaluation.

We had to overcome a few obstacles while undertaking the study: poor quality data, changes in the evaluation team, misunderstandings, but nothing compared to what millions of Pakistanis had to endure during the August 2010 floods which caught us in the middle of data collection. To them, to the millions of Pakistani people who deserve better access to basic health care we dedicate this report.

Acronyms

ANC	Antenatal care
ARI	Acute respiratory infection
BHUs	Basic Health Units
CMIPHC	Chief Minister's Initiative for Primary Healthcare
CPR	Contraceptive prevalence rate
DHIS	District health information system
DOTS	Directly observed treatment short-course
DPT	Diphtheria Pertussis Tetanus
DSU	District support unit
EDOH	Executive District Officer of health
EPI	Expended Program of Immunization
FMO	Female Medical Officer
GB	Gilgit-Baltistan
GDP	Gross Domestic Product
HFS	Health facility survey
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HR	Human Resource
IMR	Infant mortality rate
KP	Khyber Pakhtunkhwa
LHV	Lady Health Visitor
LHW	Lady Health Worker
MCH	Maternal and child health
MO	Medical Officer
NWFP	North West Frontier Province
PDHS	Pakistan Demographic Health Survey
PHC	Primary Healthcare
PNC	Postnatal care
PPHI	People's Primary Healthcare Initiative
PPP	Public-private partnership
PRSP	Provincial Rural Support Program
SOP	Standard Operating Procedure
SOW	Scope of Work
SPDC	Social Policy and Development Centre
TB	Tuberculosis
ToR	Terms of Reference
TPE	Third Party Evaluation
TT	Tetanus toxoid
WMO	Woman Medical Officer

Contents

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Reports on the Third Party Evaluation

Volume 1 is the main report containing all the main findings, conclusions and recommendations.

Volume 2 contains the programme and organisational research that supports Volume 1, specifically:

- The Approach and Methodology Section;
- The impact assessment of the PPHI model in terms of delivery of services and staffing measured through the HMIS and then through PPHI own Monthly Reports;
- The Provincial and District Assessments exploring programmatic issues linked to the implementation of the PPHI model;
- The Financial Management Assessments conducted at provincial and district levels to document resource flows for PPHI and discussing value for money and efficiency issues;
- The annexes sections contain some of the main data collection tools utilised by the evaluators.

Volume 3 contains the Survey results from 78 BHUs and 30 Households from their catchment area undertaken by SoSec Consulting Services

1. Introduction

1.1 Country situation

Pakistan has lagged behind its neighbours and many other low-income countries in terms of health and fertility outcomes. This is mainly because of low spending on social sectors and poorly managed health services, especially the primary healthcare services for a vast majority of the rural population. Spending on health through public and private sectors is 2.0 percent[1] of the GDP, out of which public sector contribution is 0.55 percent of the GDP[2]. The population growth rate in 2008[3] was estimated at 2.14, which is still high. The total fertility rate is 4.1[4] as compared to 5.4 at the beginning of the 1990s[5]. The contraceptive prevalence rate is estimated at a low level of 29.6 percent. Maternal mortality ratio per 100,000 live births is pitched at 276. The infant mortality rate (IMR) was 78/1000 live births for the period 2002-06 (urban areas - 66 and rural areas –81) compared to 91 per 1000 in 1986-1990[6]. The IMR has a strong positive co-relation with the mothers' education, especially secondary level education; according to PDHS 2006/07, the IMR was 84 per 1000 live births where mothers were illiterate compared to 52 when mothers had 10 years of schooling. This statement is also reinforced by an analytical review of Demographic and Health Surveys of 60 low income countries, where analysis had shown that 10-years schooling of mothers had a strong correlation with IMR and under-5 mortality. In spite of these known links, the improvement in education and health indicators has been very slow in Pakistan.

The table A below shows change over 15-years in maternal outcome indicators in Pakistan.

Table A: Assistance by Skilled Birth Attendant for Antenatal, Delivery & Postnatal Care in Pakistan

Indicator	Percent of Women Served					
	1990/91	1998/99	2000/01	2001/02	2004/05	2006/07
Antenatal care – overall	-	31.0	51.1	35.0	50.0	64.6
By skilled birth attendant	25.6	26.4	43.3	30.8	40.0	60.9
By unskilled birth attendant	-	4.6	7.8	4.2	10.0	3.7
Delivery by skilled birth attendant	18.8	18.0	22.9	23.0	31.0	38.0
Postnatal care – overall	--	9.0	27.6	9.0	23.0	43.1
By skilled birth attendant	--	6.9	13.2	7.3	18.9	26.7
By unskilled birth attendant	--	2.1	14.4	1.7	4.1	16.4
Total Fertility	5.4 (86-91)	4.46 (94/96)	4.8 (97/00)	4.47 (98/00)	---	4.1 (2004/06)

Source: Pakistan Demographic and Health Survey, NIPS, 1990/91; Pakistan Reproductive and Family Planning Survey, 2000/01: NIPS; Pakistan Integrated Household Survey, Round 4, 2001-02; Pakistan Social and Living Standard Measurement Survey, 2004/05, FBS, Islamabad; and PDHS , 2006/07, NIPS & Macro International, 2008

Globally deaths among children under five are generally due to ARI (20%), diarrhoea (12%), malaria (8%), measles (5%), HIV/AIDS (4%), peri-natal causes (22%) and other causes (29%). In 60 percent of the deaths there is an association with malnutrition. The

1. www.who.int/nha/country/PAK.pdf.
2. Econonmic Survey of Pakistan, 2008/09, Part-2, p-170
3. www.google.com/publicdata
4. Pakistan Demographic and Health Survey 2006/07
5. Pakistan Demographic and Health Survey, 1990/91
6. Pakistan Integrated Household Survey, 2006/07

causes of child mortality specific to Pakistan are not fully known. However, a regional study covering rural areas of Baluchistan and NWFP quoted diarrhoea and ARI (43.3% and 18.9%) as major causes of infant deaths[7].

2.2 The Third Party Evaluation of PPHI

Keeping in view the low performance of a vast network of rural primary healthcare care (PHC) services operated by the District Health Departments, the government of Pakistan decided to outsource the management of PHC services under public-private partnership (PPP) arrangements covering basic health units (BHUs), dispensaries, MCH centres, sub-centres and first aid posts. The Federal Government, through the Ministry of Industries & Special Initiatives Division, launched a country wide program known as the President's Primary Healthcare Initiative (PPHI) under the public-private partnership arrangements. The outsourcing of PHC services was first experimented in one district of Punjab province in 1999 and by 2005 it was extended to 12 districts in partnership with Punjab Rural Support Program under the name of "Chief Ministers' Initiative for Primary Healthcare (CMIPHC)". In other provinces and two regions (Gilgit-Baltistan and Federally Administered Tribal Areas), the program was initiated in the second half of 2006. Presently, PPHI is operating in 66 districts, besides 12 districts managed under CMIPHC. After the induction of the elected Government in 2008, the program has been re-designated as the People's Primary Healthcare Initiative and attached with the Cabinet Division, Islamabad.

The partnership arrangements have been institutionalized through contractual arrangements between the District Health Departments and the provincial Rural Support Programs/Organization - private sector organizations constituted under Companies Act.

Under the partnership arrangements, District Health Departments provide the operating cost of PHC services covering BHUs, dispensaries, MCH centres and first aid posts to the district management of PPHI as a one line budget. The PPHI management has full freedom to incur expenditure on the purchase of services and commodities as it considers essential and necessary. Management cost of the PPHI is born by the federal government.

2. Objectives of Third Party Evaluation

The objectives of Third Party Evaluation (TPE) and the complete TOR have been included in Volumes 1 and 2 of the evaluation report so they will not be covered here. Essentially, the objective of the evaluation has been to study and assess the changes caused by the PPHI management as compared to conventional management model operated by the District Health Departments, with special reference to the following areas:

- Utilization of first level care facilities (only BHUs in study terms), especially by the poor and marginalized population.
- The range, volume and quality of services.
- Community participation in the delivery of services at and from BHUs.

[7] Fikree F Fetal: Assessment of Causes of Infant mortality in Rural Pakistan for 1990-94. Bull. WHO2002;80(4):271-6

- Efficiency and effectiveness of management structures of PPHI model at various levels.

As part of the evaluation SoSec Consulting Services was contracted by the Technical Resource Facility (TRF) –the entity managing the TPE- to undertake a survey of the BHU facilities and of the households located near those facilities, as explained next.

3. Survey Methodology

3.1 Sampling

The Province and region wise distribution of the universe i.e. districts, basic health units (BHUs) and rural population (a notional catchment area of BHUs) is presented in table B below for drawing the study sample:

Table B: Universe for Drawing Sample Size						
Province	Number of Districts				BHUs	
	Total	Non-PPHI	With PPHI in 2001	With PPHI in May 2007	with PPHI	Total
Punjab	36	24	12	12	844	1044
Sindh	24	6	18	5	553	859
Khyber Pakhtunkhwa	24	13	11	6	424	373
Baluchistan	30	0	30	11	554	554
Gilgit-Baltistan	7	0	7	0	17	17
Total	121	43	78	34	2,392	5,310

A sample of 18 out of 121 districts of Pakistan was drawn from the primary sampling units - four (4) from each of the four provinces and two (2) from Gilgit-Baltistan region (4x4+2). Although the sample size of 18 districts is not in line with 26 districts (4x6+2) proposed in the study ToRs, the reduction in the number of primary sampling units was discussed with the Advisory Forum and agreed. It will not have any significant effect on the reliability of the survey results, while considerably reducing the travel and administrative efforts and thereby the cost of the study.

Half of the study districts were selected from each province/region where BHUs are managed by the PPHI model as "PPHI Model" and the other half were selected from those managed by the public sector as "District Management Model'. Further, PPHI outsourced districts were selected from districts which had received the transfer of funds from the District Government before December 2007. The objective was to allow at-least three years to the PPHI administration for affecting management, services delivery and quality improvements and thereby allowing institutionalization of enabling environments – necessary for capturing higher proportion of PHC clients/patients from the catchment areas.

However, in Baluchistan province, BHUs in all districts have been outsourced to the PPHI model. Although not an ideal situation, the issue of selecting control districts in Balochistan was addressed by selecting two districts where funds had been transferred to PPHI in late 2008, with a view to establishing some sort of pseudo control, for the purposes of measuring impact.

The selection process of 14 sample districts from the universe was further guided by rural poverty ranking of all the districts[8] in each province. The study team decided that the districts falling in the middle-third of the poverty ranking scale will be eligible for drawing the district sample, using a random number. The objective was to assess consumption pattern of primary healthcare services by the population living in districts that are in the middle of the poverty ranking scale, i.e. neither too poor nor effluent and having more homogenous characteristics towards the utilization of BHU based primary healthcare services. The principle underlying this methodology was to reduce variability between districts in terms of aggregate poverty levels.

From the sampling unit of 5310 BHUs in the country, a sample size of 97 BHUs was calculated as reliable. An assessment of these BHUs would produce national level estimates

[8] Source: Social Development in Pakistan: Annual Review 2001, Social Policy and Development Centre (SPDC); Growth, inequality and Poverty. The poverty index is derived by using selected indictors from four sectors, using 1998 census data: education, housing quality and congestion, residential housing services and employment.

at 95% confidence level and within 5% margin of error. The number 97 was then rounded off to 102 for the purposes of geographical distribution. As the province of Punjab opted out from the study (this is explained in Volume 2 in the section on methodology) the sample size was reduced to 78 BHUs. The reduced sample size would still be able to produce national level estimates at 95% confidence level and within 6% margin of error. The sampling frame included BHUs which were more than 10 kilometres away from District/Tehsil/Teaching Hospitals, to eliminate the bias of by-pass by the patients/clients to the nearby higher level health facility.

In the reduced sample size, 54 BHUs were selected from 10 PPHI managed districts (including the 2 "newer" districts in Baluchistan that would be used as control). The 54 sample BHUs were equally distributed among the 10 PPHI managed districts @ six BHUs per district except in two districts of Gilgit-Baltistan where the total number of BHUs was only six and were all included in the study. With regard to the District Health Department managed model the number of sample BHUs was 24 in four study districts.

Around each selected BHU, two villages were selected for the household survey to assess the pattern of utilization of primary healthcare services. The selection of villages was purposive: the first village was the location of the BHU and second village was at a distance of more than ½ hour travel by foot from the selected BHU.

From each village, 15 households were surveyed using the "WHO Cluster Sampling technique". The eligible households included those having a child <2years for the assessment of preventive services for the children and of their mothers in last two years. For selecting an eligible household, a central location in the village, such as a market or a mosque was identified. The direction of the first household was chosen by spinning a bottle on even ground and wherever the bottle mouth pointed when it stopped, was the direction of the first household. From this household, 15 consecutive households having a child <2years were selected in one direction.

3.2 Survey research tools

For the Impact assessment, the TPE team developed three research tools using secondary literature and through an interactive discussion:

i. health facility (BHU) assessment tool;

ii. exit poll questionnaire, and

iii. household survey questionnaire. A summary of each tool is given in the paragraphs that follow, while the complete tools have been included in Volume 2 as Annexes 1H and 1I.

The Health facility assessment tool covered 15 thematic areas in line with the SOW for the study. The themes covered in this tool comprised of the following: (i) display of citizen's charter at the BHUs for the benefit of patients/clients; (ii) volume of services provided on a daily basis in three recent days with a breakdown by the type of services. The main purpose of collecting this information was two-fold: to provide a snap shot of real utilization while the survey teams are there, and to assess change in patient attendance when the MO and or the FMO are attending the BHUs managed by the PPHI; (iii) quantum of PHC services for the most recent quarter by the type of services. This information was to be triangulated

with a catchment population to get a sense of the proportion of population served by the BHU; (iv) assessment of planning, management and monitoring capacity at BHUs level; (v) status of physical infrastructure of BHUs; (vi) availability of essential protocols and standard operating procedures (SOPs) and the training of heath staff in their use to assess the quality of PHC services; (vii) staffing pattern of BHUs; (viii) availability of essential drugs, supplies and vaccines; (ix) availability of essential supplies for a minor surgery, dressing, and first aid; (x) availability of essential working equipment; (xi) arrangements for referral of emergencies; (xii) innovations or new services added in the PHC service package; (xiii) assessment of monitoring and evaluation and results-based management; (xiv) waste management arrangements; and (xv) regularity in timely payment of salaries.

The exit poll questionnaire, to capture the satisfaction level of beneficiaries, was administered to 10 patients/clients/caretakers that came for curative or preventive services at each sample BHU. The respondents included 3-4 adult males, 3-4 adult females and 3-4 mothers who brought their child for services. The interviews were conducted in 2-3 consecutive days at the outer gate of BHU. On each day, patients/clients/caretakers were randomly selected for the interview, i.e. 4th-5th patient in each category, who consented to participate. The interviews were conducted between 9 am and 2 pm.

The Household questionnaire was administered to 30 households around each BHU – 15 households in the village where the BHU was located and another 15 households in a village at >½ hour travel on foot from the BHU. The household questionnaire had six sections and most of the information collected was quantitative. Section 1 covered sickness related information of all household members; section 2 was for women who delivered their last baby <2years back to capture services they availed related to antenatal care, assistance during delivery and postnatal care; section 3 captured information on antenatal services utilized by the currently pregnant women; section 4 to assess the use of family planning services; section 5 was related to child health; and section 6 registered household characteristics to classify survey population in to quintiles and link with the services they utilized from the BHUs.

3.3 Fieldwork

Fieldwork began by pre-testing the draft research tools over a period of three days in settings similar to the study universe. The pre-testing was supervised and guided by an anthropologist from SoSec Consulting Services – an unpaid support for the study and the TPE Survey Coordinator.

Pre-test was followed by refinement of research tools, incorporating the lessons learnt. The tools were then translated into the Urdu language followed by the training of the field research teams. The field teams were trained for six days, covering class room sessions, interactive discussions to ensure comprehension and understanding of everyone at the same level, revision sessions, mock interviews and application of tools in the field followed by editing in an interactive session.

The actual fieldwork began in a phased manner, starting from the province of Khyber Pakhtunkhwa and Gilgit Baltistan (GB) region on July 19; in Sindh province on July 22; and in Baluchistan on August 2, 2010. The fieldwork could not be completed as planned and had to be delayed because of the heavy monsoon rains and flash floods all across the country.

Due to inaccessibility, two BHUs in Gilgit Baltistan could not be accessed and data collection was only possible in 76 BHUs instead of 78.

Although there was an initial signal to include all provinces in the Third Party Evaluation, however, Punjab Rural Support Program opted out from the study in May 2010. By dropping 24 BHUs from four districts of the Punjab province, the sample size had to be reduced from 102 to 78 BHUs which was still considered valid and enough to produce national level estimates at 95% confidence level and within <6% margin of error.

3.4 Data management and data analysis

SoSec organized data management and data analysis in five phases and in order of sequence comprised: pre-data entry phase, data entry phase, post data entry phase, data management phase, and statistical support for drafting and finalizing the report

3.5 Limitations of the Survey study

The main limitation that the entire TPE had to face was the absence of baseline data, as no baseline survey was ever conducted in either the PPHI or non-PPHI districts when the PPHI scheme was launched. This is why different strategies had to be adopted by the study team to measure results over time, but this effort was significantly affected by the poor quality of data available both at BUH level (for this survey – see below) and in the HMIS (please refer to methodology section in Volume 2).

In relation to this survey report there are various issues to be considered that limit the validity of survey results, including:

1) The quality of data available in the BHUs varied greatly from BHU to BHU. In fact, it is hard for us to assess the reliability of BHU information since such data is never systematically validated or quality assured. We observed many issues relating to how services had been counted in PPHI and NON-PPHI BHUs. For example, it was not clear whether all the information on preventive services was available in the PPHI BHUs because programme staff linked to the main Vertical Programmes did not always record their work at the BHU level (sometimes they did, sometimes they did not). Therefore, in the BHU surveys we tried to specifically focus on the services delivered from that facility, not in the entire catchment area. In the absence of baseline data this is the best we could do.

2) The survey generated a huge amount of data that could not be fully checked for data quality in the little time available. For example, when the first survey report was submitted on 12 October it was reviewed by the international team leader and by a statistician based in the UK. Both made a large number of observations regarding the quality of the data related to the impact assessment of services delivered at BHUs. For example, the figures on services measured during the 3 days when the survey teams were in that BHU did not correspond in many cases with the data on the same services measured in January, February and March 2010. There were also a few errors with the coding of certain facilities that had been attributed to the wrong province and tables were the pseudo-control districts in Balochistan had been counted as PPHI districts. These and other errors have now been corrected). There were also

a) The interpretation of some of the tables made in the original draft report, which was found to be incorrect or inaccurate.

b) The fact that the 2 "control" districts of Baluchistan had been included within the PPHI BHUs in some tables and not in others, and this was not found to have been done following any particular logic.

c) The absence of associations searched for or described between the BHU survey data and the household survey data. In other words, there is much more in the data that could be used if regression analysis had been performed.

3) A second draft of the survey report was submitted by SoSec on the 4th November. While this report was better in some respects it still left many of the original observations made by the IT and by the UK statistician unattended. We therefore requested a second review of the survey report (including the SPSS datasets) by 2 members of the TPE (the national study coordinator and the health systems specialist in our UK team). Both made an attempt to improve the report in terms of interpreting the tables for what they actually meant, but they also raised many issues regarding the reliability of data and the methodology used for the analysis.

In summary, while we believe that this survey report is of better quality than previous drafts we feel that additional work by a competent statistician on the original data sets would have delivered between links between the BHU and household surveys and within the variables under study.

In Volume 1 we have only incorporated results from this survey report that we consider to be sufficiently robust, leaving aside many other results that we consider less reliable.

3.6 Challenges in study implementation

In undertaking the study there were several issues that may have affected the survey results that will be briefly summarized here.

1) **Filtration of survey tools to districts and BHU staff**. The zero draft of research tools was shared with members of the Advisory Forum and peer reviewers for comments. These tools were circulated by a member of the Advisory Forum to the provincial management of PPHI. The TPE team considers the sharing of tools with persons other than the members of Advisory Forum and peer reviewers as unethical, as it might have given those districts and BHUs who received the survey tools an added advantage when compared to those who did not. Whether this situation has affected the survey results in some of the BHUs in unknown, but some of the field observations in this respect are given at paragraphs that follow.

   a) Citizen charter: Inputs to meet display of citizen charter were met in many BHUs in the recent months after the unofficial circulation of the research tools (for example, see Monthly Review Meeting Report of June 2010 of Khyber Pakhtunkhwa province published on July 21, 2010 related to study district Swabi – pages 117,128 and 129; district Kohat monthly report of June – page 33).

   b) Physical infrastructure of BHUs. PPHI undertook considerable repair and maintenance work after the announcement of the TPE and the sharing of draft research tools with

PPHI management. For example, see page 33 of minutes of Monthly Review meeting of June, 2010 of Khyber Pakhtunkhwa province related to Kohat district, which shows that building and related infrastructure up-gradation of 15 out of 21 BHUs was completed in the month of June, 2010.

c) The same list of "protocols" that had been circulated by the TPE in April was later found in one of the sample BHUs of Mirpur Khas district of Sindh province. On further exploration, it was revealed that the protocols had been delivered to the BHUs somewhere in May 2010, most likely as a consequence of reading the draft research tools. The staff from the sample BHUs on verbal inquiry confirmed to the field teams the recent delivery of the protocols. Given this and other observations we would dispute that field staff were ever trained in the use of service protocols in 2008 and 2009 as claimed at the DSU office.

2) **Poor maintenance and quality checks of BHU data**. As explained earlier the study team found many examples that challenged the credibility of the data available at both the PPHI and non-PPHI BHUs, most of them related to poor data keeping and complete absence of data quality checks. Therefore, the study team suggests that the study results related to some of the health facility assessment sections are taken with care.

STUDY FINDINGS - ASSESSMENT OF BASIC HEALTH UNITS

This section describes the assessment of the Basic Health Units. The results are presented in the following sequence

i. Physical Facilities;
ii. BHU Staffing and staff skills;
iii. Essential medicines, vaccine equipment and supplies;
iv. Service statistics;
v. Referral system at BHUs;
vi. Waste management arrangements at BHUs;
vii. Planning and management systems at BHUs level;
viii. Setting and monitoring targets for preventive, primitive and outreach services; and
ix. Client satisfaction.

4. Physical facilities

4.1 Physical condition of BHU buildings

The physical infrastructure and physical facilities for patients were observed in each BHU included in the study. Whereas 10% of PPHI managed BHUs needed physical repair, about one third (33%) of the district health department's managed BHUs required infrastructure repair. Ninety two percent of the district health department's BHUs were found to be electrified as compared to 86% BHUs, which were managed by PPHI. Water supply was found in 94% PPHI managed BHUs as compared to 71% BHUs managed by District Health Department. Functional toilets were present in only 29% of PPHI managed BHUs as compared to 17% BHUs of District Health Department. Waiting areas were found to be furnished in all (100%) BHUs of PPHI as compared to 92% of district health department BHUs. Functional labour room was found in a little less than half (48%) of PPHI managed BHUs as compared to 1/3rd (33%) district health department's BHUs. Whereas residential

accommodation was available for doctors in 69% and 88% of BHUs managed by PPHI and district health department respectively, only 4% BHUs in either model were being used. Details are given in Table 1.

Table 1: BHU Buildings That Have the Physical Following Facilities (In Percent)

Type of Facility	BHUs in Baluchistan		BHUs in Sindh		BHUs in Khyber Pakhtunkhwa		BHUs in Gilgit Baltistan	Overall BHUs	
	New (n=12)	Old (n=12)	PPHI Model (n=12)	Dist Model (n=12)	PPHI Model (n=12)	Dist. Model (n=12)	(n=4)	PPHI Model (n=52)	Dist. Model (n=24)
Electricity connection	83	75	100	100	92	83	100	86	92
Functioning electric fans in rooms	83	75	100	100	83	75	75	86	88
Functional telephone	50	67	100	0	92	0	50	73	0
Water supply within premises	100	92	100	83	92	58	100	94	71
Drinking water for patients	100	100	100	83	92	58	100	86	71
Functional toilet for patients	0	58	100	33	33	0	25	29	17
Furnished wait area for patients	100	100	100	100	100	83	100	100	92
Patient examination room / place	100	100	100	83	100	92	100	100	88
Functioning labour room	42	42	100	42	42	25	100	48	33
Separate store room	100	92	100	100	100	58	100	96	79
Leakage from building roof	8	0	0	50	8	17	0	10	33
Doctor residence within premises	75	67	100	83	100	92	50	69	88
MO resides in BHU	0	0	8	0	16	8	0	4	4
LHV residence within premises	83	42	100	83	100	92	50	63	88
LHV resides in BHU	33	17	0	8	42	17	50	21	13

4.2 Display of citizen's charter

The display of services at the BHU buildings was reviewed to assess whether the management had provided enough information to the citizens about the type of services provided at the BHUs, the type of service providers, the working hours, and arrangement to lodge their complaint. In the PPHI managed BHUs, we found that there was no standardized or uniform information list across all the facilities assessed, depicting limited guidance from either the provincial or national PPHI offices. The display of citizen's information chart was almost non existent in the BHUs managed by the district health department. The details are given in table 2.

Table 2: Display of Services and Staff at BHU Buildings by Number of BHUs

Areas Displayed at Prominent Place	BHUs in Baluchistan		BHUs in Sindh		BHUs in Khyber Pakhtunkhwa		BHUs in Gilgit Baltistan	Overall BHUs	
	New (n=12)	Old (n=12)	PPHI Model (n=12)	Dist Model (n=12)	PPHI Model (n=12)	Dist. Model (n=12)	(n=4)	PPHI Model (n=52)	Dist. Model (n=24)

Working hours	12	12	12	1	6	0	4	46	1
Availability of MO	9	12	12	2	11	1	3	47	3
Working days of MO	9	12	12	0	7	0	0	25	0
Availability of LHV	10	7	12	2	12	3	3	37	5
Roster of services	12	11	12	1	12	0	1	46	1
Phone number of BHU	6	5	12	0	11	0	4	31	0
Complaint box at visible place	11	11	12	0	12	0	4	49	0

5. BHU Staffing and staff skills

5.1 Staffing of BHUs

Only technical cadres of service providers, with the main job of providing curative and preventive services at the BHU level with limited outreach responsibility, have been shown in the table HFS6 given below. However, the analysis is restricted to two main categories, i.e. doctors and LHVs who have the main job of providing the services to the patients/clients as well as ensuring effective utilization of other technical staff. The staffing information related to medical officers and LHVs revealed the following:
On an overall basis, BHUs in the PPHI model were better staffed with Medical Officers and LHVs compared to the District Health Department model, except less than desired number of doctors in Khyber Pakhtunkhwa province in both models.
BHUs in the PPHI model in Sindh province were poorly staffed with LHVs. Details are given in Table 3.

Table 3: Staffing Pattern of BHUs by Number of Staff in Important Cadres

Name of Post	Baluchistan		Sindh		Khyber Pakhtunkhwa		Gilgit Baltistan	Overall	
	PPHI New	PPHI Old	PPHI	Dist. Model	PPHI	Dist. Model	PPHI	PPHI	Dist. Model
	n=12	n=12	n=12	n=12	n=12	n=12	n=4	n=52	n=24
MO/ WMO	12	10	12	17	7	4	4	45	21
FMO	0	3	12	0	1	0	2	18	0
LHV	11	12	12	9	12	9	4	46	18
Paramedic/ Tech	19	29	16	10	23	23	11	98	33
Midwife/ Dai	11	12	13	9	9	10	6	51	19

5.2 Use of protocols and standard operating procedures

To assess the skills of the PHC staff in the sample BHUs, the TPE study selected 12 context specific protocols and SOPs and gathered information related to their availability in the BHUs and skills to apply them by PHC staff in actual setting. These included:
Integrated Management of childhood illnesses;
Immunization schedule for children <2years and women in the reproductive age;
Guidelines for Management of TB-DOTS cases;
Guidelines for Management of malaria cases;
Protocols for family planning services;
Protocol for antenatal care;
Protocol for management of normal delivery;
Protocol for postnatal care;
Protocol for identification & referral of pregnancy complications;

Protocol for identification & referral of delivery complications;
Protocol for identification & referral of postpartum complications; and
Guidelines for training of BHU staff on Planning, Management.

We found that 17 out of 52 PPHI BHUs had all 12 protocols available as compared to one BHU of the district health department. Likewise there were 4 and 2 BHUs of PPHI and DoH, which had no protocol available. Interviews with the staff of BHU indicated that three protocols which were mostly used included immunization schedule for children and women, guidelines for management of TB-DOTS cases, and guidelines for management of malaria cases, depicting a focus on implementation of vertical health program initiatives.

6. Essential medicines, vaccine equipment and supplies

6.1 Availability of essential drugs and vaccines at BHUs on the day of visit

Essential Drugs. BHUs in the PPHI model were better stocked with minimum essential drugs than the District Health Department model. Also that PHI managed BHUs from the newly managed districts of Balochistan were better equipped that the ones taken over earlier. An improved availability of minimum essential drugs in the PPHI model should be expected because of the freedom in the resource utilization. Details are given in Table 4.

Table 4: Availability of Essential Drugs at Sample BHUs on the Day of Visit in Both models

Name of Essential Drug	Available by Number of BHUs								
	Baluchistan		Sindh		Khyber Pakhtunkhwa		Gilgit Baltistan	Overall	
	PPHI New	PPHI Old	PPHI	Dist. Model	PPHI	Dist. Model	PPHI	PPHI	Dist. Model
	n=12	n=12	n=12	n=12	n=12	n=12	n=4	n=52	n=24
1. Amoxicillin capsule / syrup	12	12	12	8	12	5	4	50	13
2. Contrimaxazole Tab/syrup	11	12	12	12	12	6	3	45	18
3. Metronidazole Tab / syrup	12	12	12	12	12	10	3	50	22
4. Inj. Ampicillin	8	1	9	11	12	1	3	22	12
5. Tablet Diclofenic	11	11	12	10	12	7	3	47	17
6. Chloroquin tablet / syrup	11	12	12	11	12	8	3	49	19
7. Oral pills	7	10	9	6	12	1	4	35	7
8. Intravenous infusions	12	12	12	12	12	10	4	50	22
9. Inj. Dexametazone	12	3	12	11	12	6	3	42	17
10. Tablet Iron-folic acid	12	12	11	9	12	9	3	47	18

Vaccine Availability: As seen from table 5 below, BHUs had considerable stock-outs of vaccines in both models, except a relatively better stock position in GB and the District Health Department model in Sindh province. Hepatitis-B vaccine was particularly in short supply in sample BHUs from Khyber Pakhtunkhwa province (both models) and GB. Overall, BHUs in the District Health Department model were better stocked with minimum essential vaccine than the PPHI model.

Table 5: Availability of Selected Vaccines at Sample BHUs on the Day of Visit in Both models

Name of Vaccine	Available by Number of BHUs				
	Baluchistan	Sindh	Khyber Pakhtunkhwa	Gilgit Baltistan	Overall

	PPHI New	PPHI Old	PPHI	Dist. Model	PPHI	Dist. Model	PPHI	PPHI	Dist Model
	n=12	n=12	n=12	n=12	n=12	n=12	n=4	n=52	n=24
DPT/Pentavalent vaccine	9	9	12	10	9	11	3	38	21
Polio drop	7	5	12	10	7	10	2	29	20
Hepatitis-B	6	8	12	7	2	0	1	24	7
Measles vaccine	9	9	12	9	5	10	3	33	19
Tetanus toxoid vaccine	9	9	12	10	7	10	4	36	20

In the case of vaccines, 21 (40%) BHUs from the PPHI model and seven (29%) from the District Health Department model were well stocked, having all five vaccines and a similar number were poorly stocked and working with less the four vaccines. Ten BHUs in each model were working with four vaccines (19% in the PPHI model and 42% in the District Health Department model). It is interesting to note that 29% (15) of PPHI managed BHUs and 17% (4) did not have refrigerators for storage of vaccines.

6.2 Status of minimum essential equipment and supplies at BHUs on the day of visit

The data presented in table 6 below captures stock position of eleven essential working equipment and supplies on the day of visit to the BHUs by the survey teams. As seen from the table HFS12 given below, only BHUs in the PPHI model from Sindh province were better equipped compared to the BHUs in the Khyber Pakhtunkhwa province. On an overall basis, BHUs in the PPHI model were better equipped than those in the District Health Department model. Details are given in Table 6.

Table 6: Status of Essential Equipment and Supplies at Sample BHUs on the Day of Visit

Name of equipment/ supply	Available by Number of BHUs								
	Baluchistan		Sindh		Khyber Pakhtunkhwa		Gilgit Baltistan	Overall	
	PPHI New	PPHI Old	PPHI	Dist. Model	PPHI	Dist. Model	PPHI	PPHI	Dist Model
	n=12	n=12	n=12	n=12	n=12	n=12	n=4	n=52	n=24
Stethoscope	11	12	12	12	12	11	4	47	23
Blood pressure apparatus	11	12	12	12	12	11	4	47	23
Torch with cell	11	12	12	6	12	5	2	42	11
Weighing scale – child	11	12	12	7	12	10	3	46	17
Refrigerator for vaccines	7	9	12	9	11	11	4	37	20
Generator	0	1	0	3	0	0	0	1	3
Delivery kit	11	8	12	5	12	7	2	38	12
Disposable syringes	12	11	12	10	12	9	3	49	19
Cannula/butterfly needle, various size	12	10	12	7	12	4	4	41	11
Growth monitoring chart	10	5	12	6	0	8	4	31	14
Antenatal card	9	10	12	6	12	8	2	40	14

BHUs in the PPHI model were found better equipped than those managed by the District Health Department model. Details are given in table 7.

Table 7: Status of Essential Supplies for Minor Surgery, Dressing and First Aid

Name of essential supply	Available by Number of BHUs

	Balochistan		Sindh		Khyber Pakhtunkhwa		Gilgit Baltistan	Overall	
	PPHI New	PPHI Old	PPHI	Dist. Model	PPHI	Dist. Model	PPHI	PPHI	Dist Model
	n=12	n=12	n=12	n=12	n=12	n=12	n=4	n=52	n=24
1. Bandage	12	12	12	12	12	12	4	52	24
2. Surgical gloves	12	10	12	6	12	4	4	49	10
3. Forceps dissecting	12	11	12	10	12	11	4	49	21
4. Artery forceps	12	12	12	10	12	12	4	52	22
5. Surgical blade - various size	11	11	12	7	12	5	4	48	12
6. Absorbable suture	8	11	12	11	12	4	4	40	15
7. Non-absorbable suture	12	11	12	11	12	7	4	50	18
8. Stitching needle, various size	12	11	12	10	12	8	4	48	18
9. Plaster of paris	5	1	10	11	0	1	0	17	6
10. Set of splints - various sizes	8	0	5	11	0	0	1	16	2

Taking a cue from the earlier practice, BHUs were also classified in terms of the number of "essential supplies" they had in stock from an essential list of 10 items. A little over 3/4th BHUs in the PPHI model (40 out of 52) and 1/3rd in the District Health Department model (8 out of 24) were found better stocked on the day the field teams visited the BHUs having 8 to 10 essential supplies, but with poor representation from Khyber Pakhtunkhwa province in both the models especially the District Health Department model.

6.3 Availability of essential drugs and vaccines from January to March 2010

The status of availability of 15 minimum essential drugs and vaccines in the BHUs over a longitudinal period of three months was assessed based on the review of actual drugs store records. The composite scoring method was then applied to all the BHUs in each geographical area, separately, for the two models. To calculate the composite score, a score of one (1) was allocated to the availability of each drug or vaccine for one day. For example, the maximum score for the availability of a drug at a BHU, for say 90 days, carried a score of 90 and for all 10 drugs 10x90=900 score. BHUs having 90% or >90% drugs vaccines all through three months were classified as having a "Highly satisfactory" status, those with 80-89% score as "satisfactory" status, unsatisfactory where all drugs/vaccines were available to the extent of 70-79% and "highly unsatisfactory" with a score <70%. Using this method, the ranking of BHUs for both the models is summarized in the table 8 below.

Overall, 36.5% BHUs in the PPHI model obtained a score to qualify as having a "highly satisfactory or satisfactory status" in terms of availability of essential drugs in the recent three month period compared to 12.5% BHUs in the District Health Department model. In general, most sample BHUs from Khyber Pakhtunkhwa province – PPHI model, Sindh province-District Health Department model and Khyber Pakhtunkhwa province – District Health Department model were conspicuous in obtaining a score of <70% and classified as having an "highly unsatisfactory" status.

The availability of five vaccines scored highly satisfactory or satisfactory status by 70.8% BHUs in the District Health Department model against 59.6% BHUs in the PPHI model-a difference of 11 percent points. A large number of BHUs were conspicuous in scoring highly unsatisfactory status from Balochistan-old and new districts, Sindh province-PPHI model and KHYBER PAKHTUNKHWA province-District Health Department model.

Table 8: Ranking of BHUs Based on Composite Score in Percent Based on Availability of Ten Essential Drugs for the Period January 2010 to March 2010									
Score Status	BHUs in Bln		BHUs in Sindh		BHUs in Khyber Pakhtunkhwa		BHUs in GB	Overall BHUs	
	New (n=12)	Old (n=12)	PPHI Model (n=12)	Dist Model (n=12)	PPHI Model (n=12)	Dist. Model (n=12)	(n=4)	PPHI Model (n=52)	Dist. Model (n=24)
Highly Satisfactory	0.0	8.3	58.3	25.0	0.0	0.0	25.0	17.3	12.5
Satisfactory	16.7	50.0	16.7	0.0	0.0	0.0	0.0	19.2	0.0
Unsatisfactory	75.0	25.0	25.0	25.0	8.3	16.7	50.0	34.6	20.8
Highly Unsatisfactory	8.3	16.7	0.0	50.0	91.7	83.3	25.0	28.8	66.7
Ranking of BHUs Based on Composite Score in Percent Based on Availability of Five Vaccines for the Period January 2010 to March 2010									
Highly Satisfactory	33.3	50.0	66.7	50.0	33.3	41.7	50.0	46.1	45.8
Satisfactory	25.0	0.0	0.0	33.3	25.0	16.7	25.0	13.5	25.0
Unsatisfactory	0.0	0.0	0.0	0.0	25.0	8.3	0.0	5.8	4.2
Highly Unsatisfactory	41.7	50.0	33.3	16.7	16.7	33.3	25.0	34.6	25.0

7. Service statistics

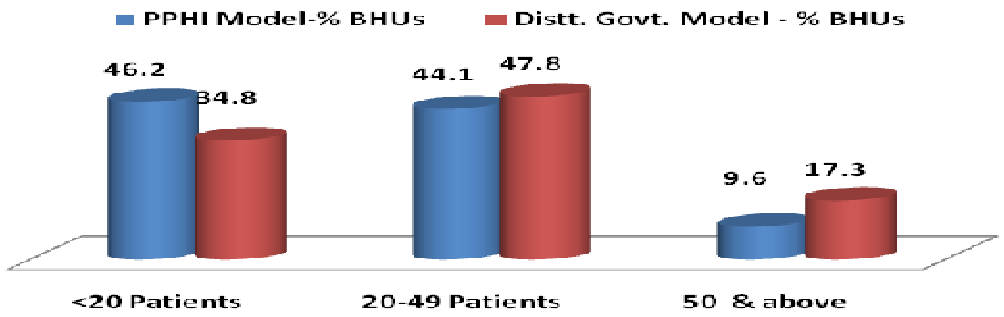
7.1 Outpatient attendance

We collected outpatient data for three days, starting a day before the visit to the BHU and the first and second days of the visit. In addition, the outpatient data for the months of January 2010 to March, 2010 was also collected. Parameters of outpatient data comprised of general outpatient attendance; patients attended by Female Medical Officer (FMO); TB-DOTS cases under treatment; TB-DOTS cases lost, ANC attendance; deliveries supervised at home and at BHU; Postnatal care visits; neonates attended; family planning clients served; TT vaccination; measles vaccination; DPT/pentavalent vaccination; growth monitoring of children <2years, number of school health sessions conducted and the number of community health sessions conducted. Each component is discussed below comparing the performance of both the models.

Table 9A: Average Daily General Outpatient Attendance at BHUs During Jan.–March 2010				
Average Daily Patients	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
<20 Patients	24	46.2	8	34.8
20-49 Patients	23	44.1	11	47.8
50 & above	5	9.6	4	17.3
Total BHUs	52	100.0	23	100.0

As seen from the table 9A and Fig. 1A given below showing patients attended during the period January–March 2010, there appeared to be slightly better utilization pattern of PHC services in the BHUs of the District Health Department model in terms of daily outpatient attendance than the PPHI model. In the PPHI model, 46.2% BHUs (n=24) had daily outpatient attendance of <20 patients compared 34.8% BHUs (n=8) in the District Health Department model. Those receiving 20-49 average daily patients were 44.1% BHUs (n=23) in the PPHI model and 47.8% BHUs (n=11) in the District Health Department model. In the District Health Department model, average (median) daily patients seen by the BHUs during January – March, 2010 were slightly more compared to the BHUs of the PPHI model, i.e. 29 versus 27.

Fig 1A: Average Daily General Outpatient attendance at BHUs during Jan – March 2010



As part of design, the objective was to assess how BHU staff would present its performance during the visit of the field teams and compare with patients attendance in the recent past months as a tool for data reliability check.

As seen from the table 9B, the daily average of three days registered a much higher attendance in the BHUs from the PPHI model than those from the District Health Department model. If we take 50% fluctuation in the average daily attendance of three recent days above or below the base daily attendance during January – March 2010 as an acceptable variation, 69% of BHUs in the PPHI model could be considered as outliers compared to 22% in the District Health Department model. Details are given in Table 9B

Table 9B: Outpatient Attendance at BHUs: Comparison Between the Average of Three Days When Field Teams Visited BHUs and Average of Three Months for Jan.–March 2010, in Terms of Percent Change, Taking Daily Average of 3-Months as Base

Change in Outpatient Attendance by % taking daily average of 3-months as base	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
Patients increased up to 30%	8	15.4	8	34.8
Patients increased by 31-50%	5	9.6	5	21.7
Patients increased by 51-100%	10	19.2	1	4.3
Patients increased % by 101-150%	8	15.4	0	0.0
Patients increased by 151-200%	9	17.3	3	13.1
Patients increased by 201-250	2	3.7	0	0.0
Patients increased by 251-300%	4	7.8	1	4.3
Patients increased >300%	3	5.8	0	0.0
Patients decreased	3	5.8	5	21.8
Total BHUs	52	100.0	23	100.0

Some BHUs having outpatient attendance at the time of the field visit was numerically distant from their daily average of the previous three months are quoted as an example in the table 10 given below. One BHU in Kashmore district of Sindh province registered an attendance of 320 patients in one day (in 360 minutes working time) by the medical officer and 222 patients by FMO the same day, besides 13 women for antenatal care. The average daily outpatients seen by the MO in the same BHU during January-March, 2010 was calculated at 61 patients. How could it be possible for two doctors to attend 555 patients in one working day; such a level of outpatient attendance is generally registered in a well functioning medium size district headquarters hospital. However, the study team in no way

can make a judgment about the reliability of secondary outpatient attendance data collected for the period January – March, 2010. Details are given in Table 10.

Table 10: Comparison Between Daily Outpatient Attendance on the Days when Field Teams Visited Sample BHUs with Average Daily Attendance During January-March, 2010

Location of BHU	Daily Average - Jan. March 2010	Attendance on Day Before Visit	Attendance on 1st Day of Visit	Attendance on 2nd Day of Visit
Sample BHUS from Districts of PPHI Model				
Kashmore District	61	150	154	320
Kashmore District	36	56	156	108
Kohat District	63	108	225	163
Swabi District	43	58	116	103
Kohat District	26	17	117	69
Nasirabad District	12	73	80	69
Kohat District	35	85	60	81
Sample BHUS from Districts District Health Department model				
Hyderabad District	70	93	105	126
Nawabshah District	29	74	91	75
Hyderabad District	55	81	82	85

Average daily patients attended by Female Medical Officer (FMO).General outpatient service statistics for the period January-March, 2010 were available from 11 sample BHUs of the PPHI model, 10 from Sindh province and one from Khyber Pakhtunkhwa province. The average daily general outpatients attended by FMOs were <10 per day in five BHUs and 10-19 in the remaining six BHUs.

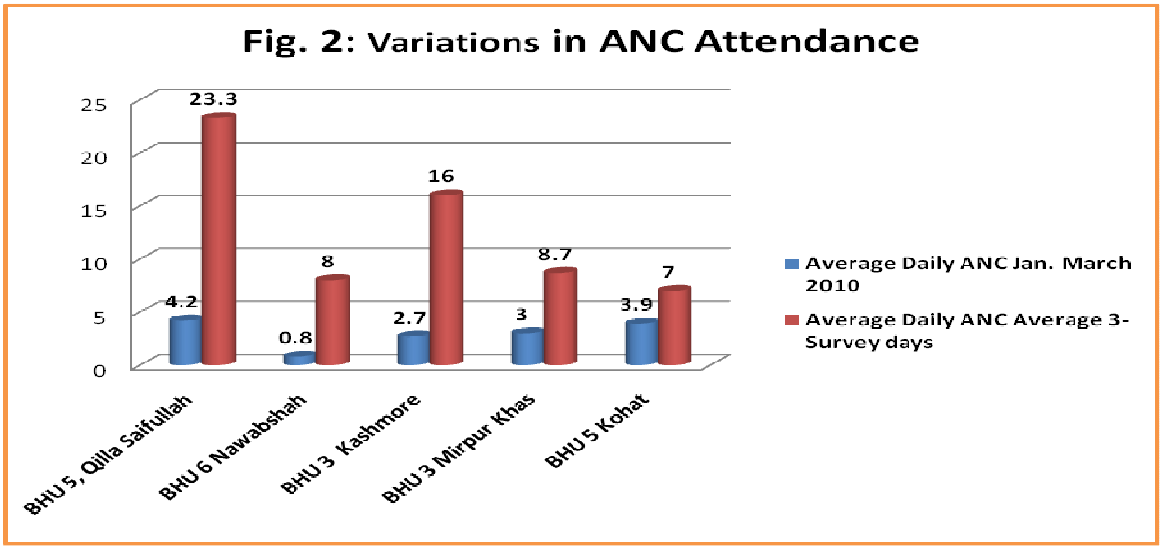
7.2 Reproductive health services

Average daily antenatal care visits. Thirteen (25%) BHUs from the PPHI model and six (26%) from the District Health Department model did not provide ANC services during the period January – March 2010. The daily ANC clients served by the remaining BHUs of two models are presented in the table 11. In line with the targets laid down in the PPHI Manual, an average of three or more ANC clients per day were seen by only 11.5% BHUs (n=6) in the PHHI model and 8.8% (n =2) in the District Health Department model. Details are given in Table 11.

Table 11: Antenatal Care Clients Served: Average No. of Daily Clients Served by the BHUs of Two models During Jan.–March 2010

Average Daily ANC Clients	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
No client served	13	25.0	6	26.1
<1 client per day	17	32.7	7	30.4
1-<2 clients per day	12	23.1	7	30.4
2-<3 clients per day	4	7.7	1	4.3
3-<4 clients per day	2	3.8	1	4.4
4 or <4 client per day	4	7.7	1	4.4
Total BHUs	52	100.0	23	100.0

ANC check-ups in three days during the survey were found very high in seven BHUs (six from the PPHI and one from the District Health Department model) compared to daily average ANC check-ups recorded during January – March 2010. These BHUs could be marked as outliers with respect to their reliability. The information is presented in the Fig.2 given below:



Average daily postnatal care visits. A large majority of BHUs were either not providing PNC services or an average of <1 client was served in a working day - 88.5% BHUs in the PPHI model and 95.7% in the District Health Department model. Details are given in Table 12.

Table 12: Postnatal Care Clients Served: Average No. of Daily Clients Served by BHUs of Two Models During Jan.–March 2010

Average Daily PNC Clients	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
No client served	20	38.5	12	52.2
<1 client per day	26	50.0	10	43.5
1-<2 clients per day	4	7.7	0	0.0
2-<3 clients per day	2	3.8	1	4.3
Total BHUs	52	100.0	23	100.0

Average monthly supervised deliveries. Like ANC and PNC services, utilization of services for delivery services remained low in both the PHC models. In both the models, a little less than half of the sample BHUs never supervised deliveries as part their job. Details are given in Table 13.

Table 13: Supervised Deliveries: Average Monthly Deliveries Assisted by BHU Staff in Two Models During Jan.–March 2010

Average No. Deliveries Supervised per Month	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
None	25	48.1	11	45.8
Up to 3 deliveries	7	13.5	4	16.7
>3 to 6 deliveries	7	13.5	4	16.7
>6 to 9 deliveries	4	7.7	2	8.3
>9 deliveries	9	17.2	3	12.5
Total BHUs	52	100.0	24	100.0

Table 14: Neonates Served: Average No. of Neonates Served per Month by the BHUs of Two Models During Jan.–March 2010

Average No. Neonates Served per Month	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
None	24	46.2	12	50.0
Up to 3 neonates	6	11.5	2	8.3
>3 to 6 neonates	9	17.3	3	12.5

>6 to 9 neonates	4	7.7	1	4.2
>9 to 12 neonates	3	5.8	0	0.0
>12 to 15 neonates	1	1.9	1	4.2
>15 to 18 neonates	0	0.0	0	0.0
>18 to 24 neonates	1	1.9	1	4.2
>24 neonates	4	7.7	4	16.7
Total BHUs	52	100.0	24	100.0

Average monthly number of neonates served. We found that notional catchment population had little confidence on the BHU staff to receive services for their neonates. In both the models, a little less than half the sample BHUs never received neonates for delivering curative or preventive services, over a period of three months. Health staff from only 17.3% BHUs (n=9) of PPHI model and 25% (n=6) of District Health Department model served an average 10 or more neonates per month. Details are given in Table 14.

Table 15: Family Planning Clients: Average No. of Clients Served per Month by BHUs of Two Models During Jan.–March 2010

Average Number of Family Planning Served per Month	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
None	18	34.6	11	45.8
Up to 6 clients	10	19.2	2	8.3
>6 to 12 clients	10	19.2	4	16.7
>12 to 18 clients	4	7.7	1	4.2
>18 to 24 clients	2	3.8	1	4.2
>24 clients	8	15.4	5	20.8
Total BHUs	52	100.0	24	100.0

Average monthly number of family planning clients served. Service statistics given indicate extremely low utilization of family planning services. A little more than 1/3rd of the PPHI managed BHUs and less than half 46% of BHUs of district health were not availed for family planning services. Only 15% BHUs (n=8) of PPHI model and 21% (n=5) of District Health Department model served on an average, more than one family planning client per day. Details are given Table 15.

Table 16: TT Vaccination: Average Monthly TT Injections Given by BHUs in Two Models During Jan.–March 2010

Average Number of TT Injections per Month	PPHI Model		Dist. Govt. Model	
	No. BHU	% BHU	No. BHU	% BHU
None	15	28.8	4	16.7
Up to 15 clients	13	25.0	2	8.3
>15 – 30 clients	10	19.2	2	8.3
>30- 45 clients	7	13.5	2	8.3
>45to 60 clients	2	3.8	2	8.3
>60 clients	5	9.6	12	50.0
Total BHUs	52	100.0	24	100.0

Average monthly TT vaccination. The overall performance of District Health Department managed BHUs in the provision of TT vaccination was found much better than those managed by the PPHI model. 29% (n=15) of PPHI managed BHUs did not provide TT vaccination in the during the time period studies. Details are given in Table 16.

7.3 Child health services

Immunization. Performance of sample BHUs under the District Health Department in immunizing children against DPT and measles was far better than those managed by the PPHI. About 1/5th BHUs under the District Health Department and 2/5th under the PPHI model did not provide DPT and measles vaccination to children <2 years during January–March 2010. BHUs providing DPT and measles vaccination to more than 60 children per

month under the District Health Department were 62.5% and 20.8% respectively as against 19.2% and 3.8% respectively under the PPHI model. Details are given in Table 17.

Table 17: DPT and Measles Vaccination: Average No. of Children Immunized per Month

Average No. of Injections Given per Month	PPHI Model – DPT Injection		Dist. Govt. Model- DPT Injection		PPHI Model-Measles Injection		Dist. Govt. Model – Measles Injection	
	No. BHUs	% BHUs	No. BHUs	% BHU	No. BHU	% BHU	No. BHUs	% BHUs
None	21	40.4	5	20.8	22	42.3	5	20.8
Up to 15 clients	10	19.2	0	0.0	15	28.8	3	12.5
>15 – 30 clients	4	7.7	1	4.2	9	17.3	6	25.0
>30- 45 clients	3	5.7	0	0.0	4	7.7	4	16.7
>45to 60 clients	4	7.7	3	12.5	0	0.0	1	4.2
>60 clients	10	19.2	15	62.5	2	3.8	5	20.8
Total BHUs	52	100.0	24	100.0	52	100.0	24	100.0

Growth monitoring of children <2years. This service was not offered by a little over half of the BHUs in both the models. BHUs that served <15 children per month were 15.3% in the PPHI model and 25% in District Health Department model.

7.4 Treatment of TB-DOTs services

Forty two percent (10) BHUs from the District Health Department and 14% (7) from the PPHI model provided TB – DOTS services during January – March 2010.

7.5 School health and community health sessions

We found that PPHI managed BHUs had regularly organized educational and promotive sessions at schools and communities level in their notional catchment area during January–March, 2010. On the other hand, BHUs managed by the District Health Department had not organized such services. The researchers were not able to establish links between school health and community health services and an increase in uptake of curative and preventive services. Details are given in Table 18.

Table 18: School Health and Community Health Sessions

Average No. of Sessions per Month	PPHI Model – School Health Session		Dist. Govt. Model- School Health Session		PPHI Model- Community Health Session		Dist. Govt. Model – Community Health Session	
	No. BHU	% BHU	No. BHU	% BHU	No. BHU	% BHU	No. BHU	% BHU
No Service	4	7.7	0	0.0	2	3.8	0	0.0
Up to one session	27	51.9	0	0.0	26	50.0	0	0.0
>1– 3 sessions	19	36.5	0	0.0	22	42.3	0	0.0
>3 sessions	2	3.8	0	0.0	2	3.8	0	0.0
Total BHUs	52	100.0	24	0.0	52	100.0	24	0.0

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7.6 Addition of new services in the PHC package

Fifty percent of BHUs in the PPHI model and 16.7% in the District Health Department model reported providing services for dog bite and snake bite.

Facility for the diagnosis of pulmonary tuberculosis through sputum smear microscopy was only available in two BHUs of the PPHI model and none among BHUs managed by district health department. Diagnosis of malaria using blood smear microscopy and rapid diagnostic

test was available in 27% and 40% of BHUs respectively (n=14 and 21) of the PPHI model and in 16.7% and 8.3% BHUs (n=4 and 2) respectively of the district health department model. BHUs from Balochistan province were found better equipped to diagnose malaria.

Twenty nine percent sample BHUs from the PPHI model (n=14) and one BHU from District Health Department model stated providing rapid diagnostic test services for Hepatitis-B.

Minimum laboratory tests during antenatal care. Inquiry was made at the sample BHUs to assess the trend of administering five important tests as part of antenatal care services. The tests included: haemoglobin level to detect anaemia, urine for sugar and proteinuria, blood grouping and pregnancy test.

One in three BHUs provided any of the five ANC related tests in the PPHI model The most frequently offered test in the PPHI model was pregnancy test followed by haemoglobin testing, and least offered tests were blood grouping and urine for proteinuria. Details are given in Table 19.

Table 19: Number of BHUs Where Innovation or New Services were Added in the PHC Package, Since March 2008

Type of Services	PPHI Model					Dist Govt. Model	
	Old dist Bln	New dist Bln	Sindh	Khyber Pakhtun khwa	GB	Sindh	Khyber Pakhtun khwa
	(n=12)	(n=12)	(n=12)	(n=12)	(n=4)	(n=12)	(n=12)
New vaccines (rabies, anti-snake venom)	12	1	12	5	3	4	0
Sputum smear microscopy for TB	0	0	1	1	0	0	0
Blood smear microscopy for malaria	7	4	2	0	0	4	0
Rapid diagnostic test for malaria	12	5	4	0	0	2	0
Hepatitis-B testing	2	2	0	12	0	1	0
Tests under antenatal care							
Pregnancy test	8	8	12	12	4	2	0
Haemoglobin test for anaemia	2	0	12	12	4	1	0
Urine for sugar	3	3	7	0	2	1	0
Blood grouping	0	2	2	0	2	2	0
Urine for proteinuria	0	1	0	0	2	0	0

8. Referral system at BHUs

Verbal inquiry revealed that the staff from most sample BHUs confirmed referring complicated cases and emergencies to higher level health facilities, i.e. 96% BHUs from the PPHI model and 79% from the District Health Department model. However, the use of standard referral form on verbal inquiry was found less commonly used and even lesser number of BHUs showed a blank referral form. Staff from only 77% BHUs (n=40) in the PPHI model and 46% BHUs (n=11) in the District Health Department model was able to show blank referral form. Further, referral record was found poorly maintained in both the models, more so in the District Health Department model. Only 42% BHUs in the PPHI model (n=22) and 13% BHUs in the District Health Department model (n=3) had maintained referral record.

Local transport system for referral. A little over 3/4th sample BHUs (77.6%) in both models confirmed the availability of some sort of local public transport system for transportation of

emergencies to higher level health facilities. However, participation of BHUs staff in improving local transport arrangements with community support was found very limited; in the PPHI model, staff from only 33% BHUs (n=17) worked on organizing local transport system compared to 38% in District Health Department model (n=9). Details are given in Table 20.

Table 20: Percentage of BHUs That Have Established Referral System and Perform Following Functions

Activity	PPHI Model						Dist Govt. Model		
	Bln New dist	Bln Old dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
Referral system established	100	100	100	83	100	96	67	92	79
Use standard referral form	75	100	100	50	100	83	58	50	54
Standard referral form seen	67	92	100	42	100	77	58	33	46
Referral record seen	42	83	17	25	50	42	0	25	13
Returned filled referral form seen	17	0	0	8	0	6	0	8	4
Telephone working at BHU and number given to serious patients	42	67	100	33	75	62	0	0	0
Local transport system available	75	100	92	67	100	85	58	67	62
Type of Transport used - where local transport system is available									
Taxi	42	50	50	50	250	48	0	25	13
Private car / ambulance	33	83	25	42	75	48	17	17	17
Public Transport	67	75	25	50	50	54	42	33	38
BHU staff improved local transport arrangements with community support	25	42	25	25	75	33	58	17	38
Referred complicated deliveries in first quarter of 2010 - record seen	42	25	50	0	50	31	0	25	12
Referred complicated deliveries in first quarter of 2010-record not maintained	33	75	50	50	50	27	58	25	42
Received written response of complicated deliveries from referral facility	17	8	8	0	25	10	0	17	8

9. Waste management arrangements at BHUs

The standard operating protocols were present in 25% of PPHI managed BHUs and 8% of the district health department managed BHUs. Separate containers for collection and disposal of hazardous waste, infectious waste and kitchen waste were found in both the models, except for kitchen waste in both the models in Sindh province. The disinfection of infectious and hazardous wastes was not practiced in both the models, except in BHUs from Sindh province in both models. The method of final disposal was generally landfill in both the models. Details are given in Table 21.

Table 21: Waste Management Arrangements at BHUs (Percent BHUs)									
Parameters	PPHI Model						District Govt. Model		
	Bln New dist	Bln Old dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
Kitchen waste	100	100	90	75	75	71	0	92	46
Hazardous waste	100	100	100	75	50	90	100	92	96
Infectious waste	100	100	100	50	75	87	92	92	92
Method of disinfection of hazardous and infectious waste									
None	100	92	50	83	100	83	50	92	71
Disinfection with Sodium Hypochlorite solution	0	8	50	17	0	17	50	8	29
Method of final disposal									
Throw in street	0	8	0	8	0	0	4	17	0
Landfill	83	92	100	92	100	100	92	83	100
Burn	17	0	100	0	0	0	4	0	0
Standard operating procedure available for waste management	33	67	100	100	8	25	50	83	8

10. Planning and management systems at BHUs level

10.1 Target setting for preventive programs

Staff from 63% BHUs in PPHI model (n= 33) and 17% from District Health Department model (n=4) stated setting targets for providing preventive services like ANC, PNC, family planning, supervised deliveries, immunizations, and etc. The most common answer to set the targets was by following HMIS/DHIS guidelines[9]. We believe that on further probing, these responses were not presented on ground realities and setting targets on a monthly basis for various preventive interventions was an uncommon practice at BHUs level. Details are given in Table 22.

Table 22: Number of BHUs Having Planning and Management Systems in Place for Target Setting for Preventive programs									
Parameters	PPHI Model						Dist. Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall PPHI	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n= 24
1. MO sets monthly targets	10	10	9	0	4	33 (63%)	3	1	4 (17%)
Basis used for target setting - those who set monthly target									
1.1 Follow guidelines given in HMIS/DHIS	9	9	6	0	2	26 (50%)	0	0	0
1.2 Follow guidelines of PPHI Manual	1	1	3	0	0	5 10%	0	0	0
1.3 Follow guidelines given by EDOH office	0	0	0	0	0	0	1	1	2 8%

[9] See page 14, annex C of PPHI Manual, January 2010.

1.4 Use team approach at BHU level	0	0	0	0	1	1 2%	2	0	2 8%
1.5 Others	0	0	0	0	1	1	0	0	0
2. MOs approves duty roster of staff - by No of BHUs									
2.1 For BHU staff only	8	10	7	2	2	29 56%	1	2	3 12%
2.2 Both for BHU & outreach staff	2	0	5	3	2	12 (23%)	8	0	8 33%

Supervision and monitoring. Two aspects were reviewed under this topic and comprised of: monitoring of MCH centre/ dispensary by the medical officer in the catchment area of BHUs; and monitoring by the BHU staff of two high priority community outreach programs in the catchment area of BHU namely the LHWs and EPI programs.

Unlike the PPHI model[10], the District Health Department model does not authorize medical officers of BHUs to supervise dispensaries and MCH centres located in the catchment area of the BHUs.

Linkages between BHUs and village based Lady Health Workers (LHWs) were also reviewed. Staff from 33% BHUs (n=17) in the PPHI model and 42% (n=10) in the District Health Department model reported that they supported LHW program to: periodically supervise LHWs in the field, examine and give feedback on referrals received from the LHWs, and provide technical support and guidance during monthly meetings.

In District Health Department model, 46% sample BHUs and 65% in the PPHI model reported supporting the EPI program in some of the following areas: periodically supervised EPI vaccinators; investigated EPI coverage in areas from where a case of whooping cough, measles or tetanus was received/ reported; monthly desk review of performance against targets; monitoring temperature of stored vaccines; and monitoring stock position of vaccines and syringes. Details are given in Table 23.

Table 23: Number of BHUs who Have Planning and Management Systems in Place for Supervision and Monitoring of Attached MCH Centre/Dispensary

Parameters	PPHI Model					Dist. Govt. Model	
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Sindh	Khyber Pakhtunkhwa
	n=12	n=12	n=12	n=12	n=4	n=12	n=12
1: MOs monitor dispensary/MCH centre in the catchment area by No. of BHU For:	5	1	4	0	2	0	0
1.1: Routine supervision	4	1	3	0	0	0	0
1.2: Attend patients listed for advice	5	0	1	0	1	0	0
1.3:Organize continuing education session	5	1	3	0	0	0	0
1.4: Review stock position of essential drugs and assist in replenishing stock	5	1	2	0	1	0	0
1.5:Help in resolving challenges faced	5	0	1	0	1	0	0
Number of BHUs who Have Planning and Management Systems in Place for Supervision and Monitoring of LHWs Program							
2. BHU staff monitors LHWs to:	2	5	2	6	2	8	2
2.1:Periodically supervise LHWs	2	5	0	4	1	7	1
2.2: Examine and give feedback on referrals received from LHWs	2	5	1	6	2	7	2

[10] See annex C, page 9 of Manual of Operations, Federal Support Unit, PPHI, January 2010.

2.3:Provide technical support and guidance during monthly meetings	2	5	1	5	2	8	0
Number of BHUs who Have Planning and Management Systems in Place for Supervision and Monitoring of Immunization Program							
3. BHU staff monitors EPI program by No. of BHUs to:	9	8	10	5	2	8	3
3.1:Periodically supervise EPI vaccinators	9	7	7	2	1	6	2
3.2:Investigate EPI coverage in areas from where a case of whooping cough, measles or tetanus is received/ reported	5	6	8	2	1	6	1
3.3 Monthly desk review of performance against targets	7	6	5	3	1	8	0
3.4 Monitor temperature of stored vaccines	8	8	9	4	2	7	3
3.5 Monitor stock position of vaccines	8	8	9	3	0	7	2
3.6 Monitor stock position of syringes	8	8	8	3	0	7	3

Supply of medicines. Medical officers from 69% BHUs (n=36) in the PPHI model and 54% (n=13) in the District Health Department model confirmed participation in estimating the annual or quarterly needs of medicines. Eighty-five percent of BHUs in the PPHI model stated getting required quantities of medicines compared to 54% in the District Health Department model (n=13). Details are given in Table 24.

Table 24: Percent BHUs Having Planning and Management Systems in Place to Quantify Requirements for Medicines

Parameters	PPHI Model						Dist. Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
MOs estimate quantities of medicines required	83	83	50	50	100	69	83	25	54
BHUs Generally get required quantities of medicines from district office	100	83	100	50	100	85	83	25	54

Human resource management at BHU level.

About 67% BHUs in PPHI model claimed to have a manual of operations; those without a manual of operation belonged to Khyber Pakhtunkhwa province and GB region. However, in a large majority of BHUs it was claimed that some staff had been trained in the management of BHU – in 94% BHUs in the PPHI model and 75% in the District Health Department model.

Financial powers of MOs.

As explained in the table 25 below, MOs in-charge of BHUs in the District Health Department model and those from the PPHI model in GB had no financial powers. On an overall basis, MOs working in 58% BHUs from the PPHI model (n=30) stated having financial powers. The authorization to use these powers varied area by area in different provinces, e.g. for repair & maintenance of building and equipment to 40% MOs, and for local purchase of medicines in case of emergency to 37% MOs. MOs had varying level of powers ranging from PKR 1,000 to 10,000. Probing at some BHUs revealed that MOs from the PPHI model were not enjoying the facility of Imprest Account/money, but could spend money from their own pocket on emergency repair and maintenance of building and

equipment, subject to approval from the DSU, and then later get reimbursed. Details are given in Table 25.

Table 25: Percent BHUs Having Planning and Management Systems in Place with Reference to Financial Aspects

Parameters	PPHI Model					Dist. Govt. Model		
	Bln	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=24	n=12	n=12	n=4	n=52	n=12	n=12	N=24
1. MOs have financial powers by % BHUs	100	100	50	0	58	0	0	0
2. Financial powers for purposes of:								
2.1 Repair and maintenance of building	13	100	17	0	40	0	0	0
2.2 Repair and maintenance of equipment	67	10	25	0	40	0	0	0
2.3 Emergency purchase of medicine	67	13	33	0	37	0	0	0
3. Ceiling of Financial Powers by % BHUs								
3.1Up to PKR 1000	67	4	25	0	25	0	0	0
3.2 PKR 1001-5000	33	10	17	0	31	0	0	0
3.3 PKR 5001-10,000	0	0	8	0	2	0	0	0
4. BHUs who maintain Imprest Account Rs1001-5000	0	100	0	0	23	0	0	0

10.2 Disbursement of salaries

Verbal inquiry revealed that BHU staff received their salary for the month of June 2010 by the 5th of month, in both the models – an indication of timely payment of salaries to the staff.

10.3 How communities participate

The question was posed to the health staff managing the BHU asking them to explain how communities participate e.g. decision about the services, setting priorities for various services, opening hours of BHUs, providing support to BHUs, etc. Since the District Health Department model had not introduced any formal system of community participation, the BHU in-charge did not respond to this question. The qualitative responses given by the BHU in-charge in the PPHI model were somewhat vague and ambiguous, as synthesized in the table 26 given below, indicating that BHU staff was not trained, lacked skills and had no clue in how to harness community support for improving the BHU services. Details are given in Table 26.

Table 26: Explanation of "How the Communities Participate, by Percent of BHUs e.g. Decisions About Services, Opening Hours, Setting Priorities for Services, Providing Support, etc"

How the Communities Participate	PPHI Model						Dist. Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
Arrange according to the need of facility	50	17	25	0	0	21	0	0	0
Discussion on health related	0	25	17	0	0	9	0	0	0

Table 26: Explanation of "How the Communities Participate, by Percent of BHUs e.g. Decisions About Services, Opening Hours, Setting Priorities for Services, Providing Support, etc"									
How the Communities Participate	PPHI Model						Dist. Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
issues									
For mutual understanding between support group and staff	0	33	0	8	0	9	0	0	0
Different kind of diseases and campaign for community	8	25	8	8	0	12	0	0	0
Mutually set our targets in monthly meeting	0	0	0	0	25	2	0	0	0
Community wants to see BHU open for 24 hours a day	0	0	0	0	25	2	0	0	0
Cannot do anything due to BHU timings	8	0	0	0	0	2	0	0	0
Community participate in vaccination camps	33	0	0	8	0	10	0	0	0
Community does not agree to do anything, only want to avail benefits	0	0	0	8	0	2	0	0	0
Response not given	0	0	50	67	50	31	100	100	100

10.4 Mechanism of monthly target setting

BHU staff lacked skills and guidance on target setting, in both the models. Staff from every BHU responded according to his/her own understanding and ideas. Details are given in Table 27 below.

Table 27: Explanation of "How Monthly Targets are Set for Different BHU Staff and Who Coordinates Target Setting"									
Mechanism of Monthly Target Setting	Response by Percent BHUs								
	PPHI Model						Dist. Govt. Model		
	Bln Old Dist	Bln New Dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Khyber Pakhtunkhwa	Sindh	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
How monthly targets are set for different staff									
Everyone works according to his/her work plan Khyber Pakhtunkhwa	42	67	8	0	0	27	17	8	12
Dispenser & nurse try to inform	8	0	0	0	0	2	0	0	0

Table 27: Explanation of "How Monthly Targets are Set for Different BHU Staff and Who Coordinates Target Setting"

Mechanism of Monthly Target Setting	Response by Percent BHUs								
	PPHI Model						Dist. Govt. Model		
	Bln Old Dist	Bln New Dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Khyber Pakhtunkhwa	Sindh	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
people on different occasion									
MO set targets after discussion with staff	0	17	17	0	0	8	0	0	0
Targets are set with consultation	8	8	0	0	0	4	0	0	0
No monthly targets sets for staff	0	8	0	25	4	15	17	8	13
Vaccination targets are not set by EDO/THO	0	0	0	0	0	0	0	8	4
Targets are different for Vaccinators &LHWs	0	0	50	0	0	11	0	25	13
PPHI operational manual, DHIS report	42	0	0	0	0	10	0	0	0
According to DHIS we discuss with our staff	0	0	0	0	0	0	8	0	4
Targets set by the EDO	0	0	0	8	0	2	42	0	21
Targets reviewed on 20th of every month	0	0	0	8	0	2	0	0	0
Plan activities according to vaccination needs	0	0	0	0	0	0	8	0	4
LHW, LHV and EPI staff set their targets	0	0	0	17	0	4	8	0	4
Not responded	0	0	25	42	0	15	0	50	25
Who coordinates target setting									
Medical officer through monthly meeting	92	92	75	25	75	71	17	50	33
Every BHU staff individually	8	8	25	75	25	29	83	50	67

10.5 Organizational system to deal with low performers at BHUs

The MOs or in-charge of BHU team in the PPHI model had no clear idea on how to deal with low performers in their teams and gave varied responses according to their past experience. In the District Health Department model, although there was no manual for consultation, but the main response was more rational and comprised "check and refer to EDOH". Details are given in Table 28.

Table 28: Explanation of "Organizational system is in Place to Deal With Low Performers i.e. Those Who Consistently Under perform in Meeting Outreach Service Targets, etc: Percent MOs or In-charge of BHUs Who Responded

How Medical Officer Deals With Low Performers	PPHI Model						Dist. Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
Have no problem	50	25	50	17	25	35	25	8	17
Check and refer to EDOH	0	0	0	0	0	0	50	67	58

Report to EDOH of absentees	0	0	0	0	0	0	0	8	4
Forward the complaint to stop salary	0	17	0	0	0	4	0	8	4
MO tries to resolve issue before reporting	0	8	17	0	25	8	0	9	4
Warn them to work accordingly	0	17	8	0	0	6	0	0	0
Issue report to PPHI	50	16	0	8	0	17	0	0	0
Report to DSM about low performers	0	0	0	34	0	8	0	0	0
Do not have a system	0	0	0	8	0	2	0	0	0
One dispenser who have his own store and warned	0	0	0	8	25	4	0	0	0
MO had no idea as he was just 15 days before appointed	0	0	0	8	25	4	0	0	0
Appreciate those who perform well	0	0	0	9	0	2	0	0	0
No response	0	17	25	8	0	11	25	0	13

PATIENT SATISFACTION IN EXIT INTERVIEWS

11. Client satisfaction

Sample size. A total of 760 clients/patients or caretaker of clients/patients were interviewed through exit poll in 14 sample districts covering 76 BHUs. Ten interviews were conducted at each BHU, covering 3-4 female clients in the reproductive age, 3-4 adult males and 2-3 children.

Reasons for choosing the BHU. Patients / clients were invited to explain the reasons for selecting this BHU for services. They were encouraged to provide multiple answers from a given menu. Most of the clinics cited choosing the BHU on the basis of self selection. After self selection, easy access emerged as an important factor in the utilization of BHU services in both models, Good quality of care, kind / helpful staff received low ranking by clients interviewed from the sample BHUs of District Health Department model (18% clients in the District Health Department model versus 51% from the PPHI model). Details are given in Table 29.

Table 29: Reasons for Choosing the BHU by the Clients/Patients for Service: Percent Respondents

Parameters	PPHI Model						District Govt. Model		
	Bln New dist	Bln Old dist	Sindh	Khyber Pakhtun khwa	GB	Overall	Sindh	Khyber Pakhtun khwa	Overall
	n=12	n=12	n=12	n=12	n=4	n=52	n=12	n=12	n=24
Self decision	84	95	87	85	95	88	88	83	86
Easy Access	89	70	64	91	43	76	85	100	92
Good Quality Service	74	57	63	22	45	51	29	6	18
Kind/ Helpful Staff	42	34	21	18	2	26	6	22	14
All medicine given	18	29	8	4	0	13	3	1	2
Most medicine given	14	18	3	40	10	18	8	14	11
Recommended by friend	10	4	16	12	5	10	8	11	10

Suggested by LHW	1	0	0	1	0	0.37	3	5	4
Suggested by community organizer	5	0	0	2	0	1.5	NA	NA	0

Wait time in the queue. Between 90% - 98% exit interview patients/clients from the provinces of Balochistan (PPHI model) and Sindh (both PPHI and the District Health Department models) had to queue up for less than 30 minutes in order to avail their turn for receiving the services. The pattern of wait time for patients interviewed from the Khyber Pakhtunkhwa province (served by both models) and Gilgit-Baltistan (GB) was somewhat different; less than 30 minutes wait time by 63% patients in GB and 78% in Khyber Pakhtunkhwa (PPHI model) and 65% patients (Khyber Pakhtunkhwa District Health Department model). Details are given in Table 30.

Table 30: Wait Time in the Queue: Percent Respondents

Wait time	PPHI Model						District Govt. Model		
	Bln Old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=120	n=120	n=120	n=120	n=40	n=520	n=120	n=120	n=240
<30 minute	98	90	91	65	63	84	97	78	88
30-60 minute	2	8	7	30	35	13	3	22	12
>60 minute	0	2	2	5	2	2	0	0	0

Medical care provider. Doctors in the PPHI model served 71% of exit interview clients compared to 59% in the District Health Department model. In Khyber Pakhtunkhwa province, more than half of the exit interview clients received medical care from a paramedic in both the models; the findings are consistent with staffing pattern observed in the BHUs of Khyber Pakhtunkhwa province. In other geographical areas, clients were mostly served by a doctor in both models, ranging from 67% in old PPHI districts of Balochistan to 87% in GB. Summary information by model and geographical area is presented at table 31.

Table 31: Who Provided Primarily Medical care by Percent of Respondent

Type of Care provider	PPHI Model						District Govt. Model		
	Bln old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=120	n=120	n=120	n=120	n=40	n=520	n=120	n=120	n=240
Doctor	74	67	94	43	87	71	78	39	59
Paramedic	26	33	6	57	13	29	22	61	42

How many prescribed medicines did patients receive?. In the PPHI model, 79% patients received all prescribed medicines, 20% 'some medicines' and only 1% did not receive any medicine. In the District Health Department model, 48% patients received all prescribed medicines and 55% 'some medicines'. No difference was observed in both models with reference to instructions given to the patients for use of prescribed medicines and the level of patients understanding of instructions. Care providers of both models in Khyber Pakhtunkhwa province had given less emphasis on advising the patients for a repeat visit, when necessary. Details are given in table 32.

Table 32: Prescription Related Information from Clients Who were Prescribed Medicines: Response by Percent of Respondent									
Prescription related Information	PPHI Model						District Govt. Model		
	Bln New dist	Bln Old dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=110	n=113	n=119	n=113	n=39	n=494	n=118	n=99	n=217
% Patients who received all medicines	70	90	95	63	67	79	48	37	43
% Patients who received some medicines	30	10	5	33	31	20	52	60	55
% Patients who received no medicine	0	0	0	4	2	1	0	3	2
% instructed how to take medicine	99	100	99	91	100	98	98	98	98
% who understood Instructions	98	100	99	90	100	97	97	98	97
% instructed for repeat visit	87	91	95	56	72	81	91	43	69

Exit interview clients in the range of 85% to 99% stated having visited the designated BHU in the past.

Quality of care. In the PPHI model, 82% clients cited an improvement in the quality of care since their last visit as compared to 42% clients in the District Health Department model. Details are given in Table 33.

Table 33: Clients Views About the Quality of Care - for Those Who Visited the BHU Before									
Comparison of Quality of Care Since last Visit	PPHI Model						District Govt. Model		
	Bln Old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	Gilgit Baltistan	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=116	n=119	n=116	n=102	n=38	n=491	n=117	n=106	n=223
Quality of care has improved	81	98	90	55	87	82	33	52	42
Quality of care remained the same	19	2	10	40	13	17	64	48	56
Quality of care worsened since last visit	0	0	0	5	0	1	3	0	2

Would clients visit again the BHU if needed? Eighty seven percent of the exit interview clients from the PPHI model expressed their view to "always" revisit the BHU on a need basis compared to 52% in the BHUs of the District Health Department model. Details are given in Table 34.

Table 34: Client's View to Revisit BHU for Medical Care Needs: Response by Percent of Respondent									
Client's View to Revisit BHU for Health Care Needs	PPHI Model						District Govt. Model		
	Bln Old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=120	n=120	n=120	n=120	n=40	n=520	n=120	n=120	n=240
Always	98	90	91	67	97	87	47	56	52
Some time	1	9	6	16	0	7	34	13	23
Occasionally	1	1	2	17	3	5	19	30	25
Not at all	0	0	1	0	0	0	0	1	0

Travel time to reach the BHU. Most of the exit poll clients were residing within 30 minutes travel distance from the BHU in both models, ranging from 81% in the PPHI model to 84% in the District Health Department model. However, BHUs in the PPHI model in GB region, the catchment population availing the services of BHUs was more wide spread with a travel effort of up to or more than 90 minutes. Details are given in Table 35.

Table 35: Time taken to Reach the BHU: Percent Respondents									
Travel Time	PPHI Model						District Govt. Model		
	Bln Old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=120	n=120	n=120	n=120	n=40	n=520	n=120	n=120	n=240
< 15 minutes	35	18	46	15	5	27	52	20	36.0
15-30 minutes	60	63	44	56	32	54	41	55	48.0
31-45 minutes	5	16	8	15	10	12	1	12	6.5
46-60 minutes	0	3	2	6	20	3	6	8	7.0
61-90 minutes	0	0	0	3	20	2	0	2	1.0
> 90 minutes	0	0	0	5	13	2	0	3	1.5

Travel costs to reach BHU. Except GB, majority of the clients interviewed from both the models did not spend any amount on travel to reach the BHU. When this data is triangulated with "time to reach the BHU", it appears that most patients were living in nearby villages. Details are given in Table 36.

Table 36: Money Spent to Reach the BHU: Percent Respondents									
Amount in PKR	PPHI Model						District Govt. Model		
	Bln Old dist	Bln new dist	Sindh	Khyber Pakhtunkhwa	GB	Overall	Sindh	Khyber Pakhtunkhwa	Overall
	n=120	n=120	n=120	n=120	n=40	n=520	n=120	n=120	n=240
Nothing	100.0	98.3	85.8	80.0	25.0	86.0	94.2	75.0	84.6
< 20 Rupees	0.0	1.7	13.3	13.3	20.0	8.1	4.2	6.7	5.4
20-50 Rupees	0.0	0.0	0.8	4.2	22.5	2.9	1.7	3.3	2.5
51-100 Rupees	0.0	0.0	0.0	0.8	20.0	1.7	0.0	9.2	4.6
>100 Rupees	0.0	0.0	0.0	1.7	12.5	1.3	0.0	5.8	2.9

Client's satisfaction level. As seen from table 37, on an overall basis, 92.5% of clients/ patients or caretakers of clients/patients rated the services they received at BHUs as highly satisfactory or satisfactory in the districts managed by the PPHI model while this figure fell to 71% in the BHUs managed by the District Health Department model. Details are given in Table 37.

Table 37: Rating of Overall Services in Percent Received by Respondents Interviewed at BHUs

Parameters	Baluchistan		Sindh		Khyber Pakhtunkhwa		GB
	PPHI Model - old dist	PPHI Model - new dist	PPHI Model	Dist. Govt. Model	PPHI Model	Dist. Govt. Model	PPHI Model
	n=120	n=120	n=120	n=120	n=120	n=120	n=40
Highly satisfied/ satisfied	99	99	94	67	77	75	95
Partially satisfied/ not satisfied	1	1	6	33	23	25	5

Summary Parameters	PPHI Model	District Govt. Model
Highly satisfied/ satisfied	92.5	71.0
Partially satisfied/ not satisfied	7.5	29.0

HOUSEHOLD SURVEY RESULTS

12. Sample size

The household survey had two objectives: (i) to assess the pattern of utilization of primary healthcare services by the population in the notional catchment areas of BHUs, particularly the preventive services by women and children <2years in last two years; and (ii) to assess how BHUs services were utilized by the poor.

As stated earlier under the "study methodology", two villages were picked up around each of the 76 selected BHU for household survey. The selection of villages was purposive: first village was the location of BHU and second at more than ½ hour travel on foot from the selected BHU. From each village, 15 households were surveyed using "WHO cluster sampling technique". The eligible households included those having a child <2years for the assessment of preventive services the children and their mothers received in last two years; this option assisted in increasing the sample size for birth and child health indicators. For selecting an eligible household, a central location in the village, such as market or mosque, was identified. Direction of the first household was chosen by spinning bottle on even ground; wherever the bottle mouth pointed, when it stopped, was the direction of the first household. From this household, 15 consecutive households having a child <2years were selected in one direction.

Distribution of sample population is given in table HHS57 below. The sample size comprises of 152 villages around 76 sample BHUs - 76 villages where BHUs were located and an equal number of villages which were at >½ hour travel distance by foot from the BHUs, 2,280 households and 16,097 persons. The sample was distributed in line with the BHUs selected from each model: 11,145 persons from 1,560 households from the notional catchment population of 54 BHUs of PPHI model; and 4,952 persons from 720 households around notional catchment population of 24 BHUs of District Health Department model. Details are given in Table 38.

Table 38: Distribution of Sample Population of Household Survey by Model, Age and Sex

Sample Population by Age Group		PPHI Model			Dist. Govt. Model			Overall		
		BHU Villages	Far Villages	Total	BHU Villages	Far Villages	Total	BHU Villages	Far Villages	Total
0-5 Months	No.	183	184	367	91	94	185	274	278	552
	%	3.3	3.3	3.3	3.6	3.9	3.7	3.4	3.5	3.4
6-23 Months	No.	639	645	1,284	311	279	590	950	924	1,874
	%	11.5	11.5	11.5	12.1	11.7	11.9	11.7	11.6	11.6
2-5 Years	No.	871	892	1,763	406	391	797	1,277	1,283	2,560
	%	15.7	15.9	15.8	15.8	16.4	16.1	15.8	16.1	15.9
6-10 Years	No.	960	1,008	1,968	351	369	720	1,311	1,377	2,688
	%	1,7.3	18.0	17.7	13.7	15.4	14.5	16.2	17.2	16.7
> 10 Years	No.	2,888	2,875	5763	1,404	1,256	2,660	4,292	4,131	8,423
	%	52.1	51.3	51.7	54.8	52.6	53.7	53.0	51.7	52.3
Male	No.	2,836	2,857	5,693	1,273	1,172	2,445	4,109	4,029	8,138
	%	51.2	51.0	51.1	49.7	49.1	49.4	50.7	50.4	50.6
Female	No.	2,705	2,747	5,452	1,290	1,217	2,507	3,995	3,964	7959
	%	48.8	49.0	48.9	50.3	50.9	50.6	49.3	49.6	49.4
Total Population		5,541	5,604	11,145	2,563	2,389	4,952	8,104	7,993	16,097
Total Households		780	780	1,560	360	360	720	1,140	1,140	2,280
Average Family Size		7.1	7.2	7.1	7.1	6.6	6.9	7.1	7.0	7.1

13. Morbidity in last 30 days

A total of 3,894 sick persons were reported from a sample of 16,097, as shown in the table HHS58 given below, giving an estimate of cross sectional morbidity rate of 24.2% on a recall history of past 30 days. Unexpectedly, the highest morbidity rate of 35.8% was observed in the population above 10 years age. The next highest morbidity rate was observed in children 6-23 months at 26.7%, followed by in children 2-5 years at 18%. Details are given in Table 39.

Table 39: Distribution of Sample Population Who Suffered from Illness in Last 30-Days

Patient Age Group		Suffered from Any Sickness during Last 30 Days/ Currently Sick								
		PPHI Model			Dist. Govt. Model			Overall		
		BHU Villages	Far Villages	Total	BHU Villages	Far Villages	Total	BHU Villages	Far Villages	Total
0-5 Months	No.	98	106	204	55	57	112	153	163	316
	%	7.9	9.3	8.6	6.9	8.0	7.4	7.5	8.8	8.1
6-23 Months	No.	344	309	653	208	178	386	552	487	1,039
	%	27.6	27.2	27.4	26.1	24.9	25.5	27.0	26.3	26.7
2-5 Years	No.	231	197	428	142	129	271	373	326	699
	%	18.5	17.4	18.0	17.8	18.0	17.9	18.2	17.6	18.0
6-10 Years	No.	155	139	294	81	72	153	236	211	447
	%	12.4	12.2	12.3	10.2	10.1	10.1	11.5	11.4	11.5
> 10 Years	No.	420	384	804	310	279	589	730	663	1,393
	%	33.7	33.8	33.7	38.9	39.0	39.0	35.7	35.8	35.8
Total Sick Persons		1,248	1,135	2,383	796	715	1,511	2,044	1,850	3,894

13.1 Treatment place by persons who fell sick in last 30 days

As seen from table HHS59, 71.9% sick population or caretakers of sick persons opted to receive treatment from the BHUs in their notional catchment areas, 17.8% from private practitioners, 5.0% from other government health facilities and the remaining 5.2% relied on home remedy. A higher proportion of sick persons stated receiving treatment from the BHUs of the PPHI model than the District Health Department model, i.e. 78.9% versus 61.0%.

Sick persons who visited BHUs for treatment were classified in to quintiles using principle components on a list of assets and household characteristics and the detail is presented in the table HHS60 given below. In the PPHI model, 51.1% patients who received treatment from the BHUs were from the two poorest quintiles, more poor patients benefited from the services from the villages located at > ½ hour travel from the BHU than those from the village of location of BHUs. In the District Health Department model, the proportion of poor patients who received treatment from the BHUs was found considerably less than those receiving treatment from the PPHI managed BHUs, i.e. 31.3% in the District Health Department model versus 51.1% in the PPHI model. This difference is apparently unlikely to be due to differential treatment access policies of the two models, but because of better availability of wide range of essential drugs in the BHUs of PPHI model. Details are given in Table 40.

Table 40: Distribution of Sick Persons by Quintile, Who Visited BHU for Treatment

Management Model	Poorest	Second	Middle	Fourth	Richest	Total

		%	No.	%	No.	%	No.	%	No.	%	No.	Persons
PPHI Model	BHU Village	22.7	227	21.9	219	21.3	213	16.5	165	17.8	178	1002
	Far Village	33.2	291	25.3	222	18.6	163	15.2	133	7.8	68	877
	Total	27.6	518	23.5	441	20.0	376	15.9	298	13.1	246	1879
Dist. Govt. Model	BHU Village	11.7	60	19.3	99	20.1	103	20.5	105	28.5	146	513
	Far Village	13.2	54	18.4	75	19.6	80	28.2	115	20.6	84	408
	Total	12.4	114	18.9	174	19.9	183	23.9	220	25.0	230	921

Reasons to avail services from BHUs were cited to be 'easy access' and 'good quality service'. Details are given in Table 41.

Table 41: Reason for Selecting BHUs From Those Who Received Treatment from BHUs

Reasons for Selecting BHU for Treatment	Patient Origin	PPHI Model		District Govt. Model		Overall	
		No. of Patient	Percent	No. of Patient	Percent	No. of Patient	Percent
Easy Access	Total	906	48.2	792	86.0	1,698	60.6
	BHU Villages	482	48.1	455	88.7	937	61.8
	Far Villages	424	48.3	337	82.6	761	59.2
Good quality service	Total	836	44.5	72	7.8	908	32.4
	BHU Villages	445	44.4	39	7.6	484	31.9
	Far Villages	391	44.6	33	8.1	424	33.0
Reasonable price	Total	96	5.1	51	5.5	147	5.3
	BHU Villages	51	5.1	16	3.1	67	4.4
	Far Villages	45	5.1	35	8.6	80	6.2
Passionate staff	Total	31	1.7	3	0.3	34	1.2
	BHU Villages	20	2.0	1	0.2	21	1.4
	Far Villages	11	1.3	2	0.5	13	1.0
Working hours suit	Total	10	0.5	3	0.3	13	0.5
	BHU Villages	4	0.4	2	0.4	6	0.4
	Far Villages	6	0.7	1	0.2	7	0.5
Total Patient		1,879	100.0	921	100.0	2,800	100.0

13.2 Payments to BHU staff by patients who visited BHU in last 30 days

The respondents were invited to state "how much they paid to BHU staff" for treatment other than the registration fee. Details are given in Table 42. Except in Balochistan (new districts used as control) where 11% of patients reported having paid to BHU staff the overwhelming majority of patients (90+%) did not make any payments to staff in either PPHI or non-PPHI facilities.

On a question related to "reasons for selecting the treatment place" 96 household respondents also stated having availed the BHU facility of the PPHI model because of "reasonable price" (see table 41 above).

Table 42: If visited BHU for Treatment, How Much was Paid to BHU Staff											
Model	< PKR 20		PKR 20 – 50		PKR 51 – 100		> PKR 100		Nothing		Total Person
	%	No.	%	No.	%	No.	%	No.	%	No.	
PPHI Model											
Baluchistan earlier district	0.3	1	0.7	2	0.0	0	0.0	0	99.0	287	290
Baluchistan later district	0.0	0	0.3	1	1.0	4	11.3	45	87.5	349	399
Sindh province	0.1	1	0.0	0	0.0	0	0.0	0	99.9	842	843
Khyber Pakhtunkhwa province	5.5	10	1.1	2	0.6	1	0.0	0	92.8	168	181
GB region	0.0	0	0.0	0	0.0	0	0.6	1	99.4	165	166
Overall	0.6	12	0.3	5	0.3	5	2.4	46	94.4	1,811	1,879
District Health Department model											
Sindh province	0.0	0	0.0	0	0.0	0	0.0	0	100.0	437	437
Khyber Pakhtunkhwa province	0.0	0	0.6	3	0.0	0	0.0	0	99.4	481	484
Overall sample	0.0	0	0.3	3	0.0	0	0.0	0	99.7	918	921

13.3 Expenditure on purchase of medicines by patients who visited BHUs in last 30 days

Patients who visited the BHUs of the PPHI model in last 30-days had better access to prescribed medicines on "no-cost" basis than those who visited the BHUs of the District Health Department model. In the PPHI model, 88.5% patients received all prescribed medicines from the BHUs compared to 63.8% patients in the District Health Department model. A little over 1/5th of patients visiting BHUs of the District Health Department model had to spend <PKR100 to purchase the prescription medicines as against 6% attending BHUs of the PPHI model. Details are given in Table 43.

Table 43: If visited BHU for Treatment, How Much was Spent on Medicines											
Model	< PKR 20		PKR 20 – 50		PKR 51 – 100		> PKR 100		Nothing		Total Person
	%	No.	%	No.	%	No.	%	No.	%	No.	
PPHI Model											
Baluchistan earlier district	0.3	1	0.3	1	0.0	0	0.3	1	99.0	287	290
Baluchistan later district	0.0	0	0.5	2	1.8	7	14.8	59	83.0	331	399
Sindh province	0.4	3	0.0	0	0.0	0	0.0	0	99.6	840	843
Khyber Pakhtunkhwa province	31.5	57	6.1	11	6.1	11	18.2	33	38.1	69	181
Gilgit Baltistan region	1.2	2	0.6	1	3.6	6	12.0	20	82.5	137	166
Overall	3.4	63	0.8	15	1.3	24	6.0	113	88.5	1,664	1,879
District Health Department model											
Sindh province	0.0	0	0.5	2	0.0	0	0.0	0	99.5	435	437
Khyber Pakhtunkhwa province	7.0	34	8.5	41	10.1	49	42.8	207	31.6	153	484
Overall	3.7	34	4.7	43	5.3	49	22.5	207	63.8	588	921

13.4 Expenditure by patients on travel to BHU in last 30 days

A little over 93% patient who received treatment from the BHUs of both the models in last 30-days did not spend on travel in order to reach the BHU (table not included).

14. Review of reproductive health services based on past history of two years

14.1 Antenatal care attendance

A total of 2,329 women delivered their last baby in the recent period of <2years back in 2,280 households sampled from 152 villages around 76 sample BHUs in both the models under review, 1,585 in the households sampled from the PPHI model and 744 in the District Health Department model. In the PPHI model, 71% pregnant women received antenatal care from both skilled and unskilled birth attendants against 61.1% in the District Health Department model.

As seen from the table 44, BHU staff from PPHI model provided ANC to an average of 53.6% pregnant women, of which 56% resided in the villages of BHU location and to 51.3% in the villages at > ½ hour travel from the BHU. The corresponding figures from the sample BHUs of the District Health Department model were as low as 22.6% as an average, and 28.4% and 16.4% respectively for the villages of BHU location and those at > ½ hour travel from the BHU. The private doctors substituted for this gap to a considerable extent in the District Health Department model. In the PPHI model, 48% of pregnant women who received ANC were from the two poorest quintiles compared to 12% in the District Health Department model.

Table 44: Women with Child <2years Who Received ANC in Last Pregnancy

	PPHI Model			Dist. Govt. Model			Overall	
	BHU Village	Far Village	Overall	BHU Village	Far Village	Overall	BHU Village	Far Village
No. of Eligible Women (n)	789	796	1,585	384	360	744	1,173	1,156
Women with child <2years who received ANC in Last Pregnancy								
Number of Women	579	553	1,132	245	220	465	824	773
Percent women	73.4	69.5	71.4	63.8	61.1	62.5	70.2	66.9
Place for service for those who received ANC in last pregnancy - by percent of women								
BHU Staff	56.0	51.3	53.6	28.4	16.4	22.6	47.0	40.4
Private Doctor	10.1	10.3	10.2	24.2	33.1	28.5	14.7	17.4
Unskilled birth attendant	7.2	7.9	7.6	11.2	11.6	11.4	8.5	9.0
% women who knew visiting days of FMO/WMO at BHU	28.0	26.8		3.9	2.8		20.1	19.3

As part of ANC service, inquiry was made from the respondent women on four important components of ANC, i.e. blood pressure, weight, urine check and haemoglobin level. The services offered in the order of provision consisted of (i) checking of blood pressure - 90% pregnant women by the PPHI model and to 74-84% clients by the District Health Department model; (ii) weight check - monitored in 70-80% clients in the PPHI model and 44-46% clients in the District Health Department model; (iii) Urine testing; and (iv) least was the blood test for anaemia.

Approximately 77% and 54% of women availing services for ANC from PPHI and district health department BHUs respectively, stated that the BHU staff had educated them about the complications related to pregnancy

Inquiry was also made from the respondent women about their TT vaccination status. In the PPHI model 53-60% pregnant women received TT vaccination from the BHU as against 48-55% from the BHUs of District Health Department. Details are given in Table 45.

Table 45: Women with Child <2years Who Visited BHU for ANC and Received Following Services						
	PPHI Model		Dist. Govt. Model		Overall	
	BHU Village	Far Village	BHU Village	Far Village	BHU Village	Far Village
Women who visited BHU for ANC (n)	442	408	109	59	551	467
Percent women who visited BHU for ANC and received the following services						
Blood pressure checked	94.3	93.4	74.3	84.7	90.4	92.3
Weight checked	79.4	77.7	44.0	45.8	72.4	73.7
Urine tested	33.7	34.1	45.0	59.3	35.9	37.3
Blood tested for anaemia	27.1	28.4	9.2	11.9	23.6	26.3
Pregnant women who were told about complications in pregnancy during ANC visit at BHU						
Percent women	77.4	73.0	45.9	54.2	71.1	70.7
Who told about complications in pregnancy during ANC at BHU - by percent of women						
BHU LHV	37.6	38.7	21.1	39.0	34.3	38.8
BHU doctor	39.8	34.3	24.8	15.3	36.8	31.9
Percent women who were able to name complications during pregnancy						
Two Complications	76.2	77.0	83.5	86.4	77.7	78.2
One Complication	5.7	4.2	2.8	5.1	5.1	4.3
Percent women who were told where to go in case of complication	79.9	80.1	37.6	44.1	71.5	75.6
Who gave the message						
BHU doctor	43.2	40.4	22.0	16.9	39.0	37.5
BHU LHV	36.7	39.7	15.6	27.1	32.5	38.1
Eligible Women with child <2year	789	796	384	360	1173	1156
% women who received TT injection	73.3	66.8	88.0	86.4	78.1	72.9
Percent women who received TT injection - by source of service						
At BHU	60.2	53.0	54.7	47.5	58.4	51.3
At another place	8.7	10.9	14.1	21.1	10.5	14.1
At home by vaccinator	4.3	2.9	19.3	17.8	9.2	7.5

14.2 Assistance during delivery

Twenty one percent of women living in the village of location of BHU and 16.6% residing in the villages away from BHU and who delivered in the past two years received assistance during delivery from the BHUs of the PPHI model. In case of the District Health Department model, the level of provision of these services was as low as 9.4% and 5.8% in villages of location of BHUs and those away from the BHUs, respectively. In the PPHI model 49% of women who delivered a baby were from the two poorest quintiles compared to 7.5% in the District Health Department model.

Women gave three main reasons for not availing the services of BHUs: (i) the timing did not suit as BHUs open for about 6-hours a day; (ii) LHVs generally did not reside in the BHU premises; and (iii) low quality services, especially in the District Health Department model. Details are given in Table 46.

Table 46: Assistance During Delivery of Women Whose Youngest Child was <2years									
Delivery assisted by	PPHI Model			Dist. Govt. Model			Overall		
	BHU Village	Far Village	Total	BHU Village	Far Village	Total	BHU Village	Far Village	Total
No. Eligible Women (n)	789	796	1,585	384	360	744	1,173	1,156	2,329
Who assisted in the delivery of your child - by percent of women									

LHV of BHU	16.9	13.3	15.1	9.4	5.8	7.7	14.4	11.0	12.7
FMO/WMO of BHU	3.9	3.3	3.6	1.8	0.8	1.3	3.2	2.5	2.8
BY skilled birth attendant of BHU	20.8	16.6	18.7	11.2	6.6	9.0	17.6	13.5	15.5
Private hospital	24.0	21.1	22.5	20.3	30.6	25.3	22.8	24.0	23.4
BY unskilled birth attendant	55.3	62.3	58.8	68.5	72.8	70.6	59.6	62.4	61.0
Reasons for not using services of BHU staff									
Women who did not use BHU (n)	625	664	1,289	341	336	677	966	1,000	1,966
Timing didn't not suit	55.0	51.4	53.1	19.9	14.9	17.4	42.7	39.1	40.8
Quality not good	23.4	17.5	20.3	54.8	65.2	60.0	34.5	33.5	34.0
Too far away	1.4	8.0	4.8	0.6	3.9	2.2	1.1	6.6	3.9
Casual approach of Staff	1.6	3.5	2.6	10.3	6.8	8.4	4.7	4.6	4.6
Others	18.6	19.6	19.1	14.4	9.2	12.0	17.0	16.2	16.6

14.3 Pattern of ANC in currently pregnant women

Among currently pregnant women in the sample households, the proportion of women who received antenatal care from the BHUs improved slightly in the District Health Department model compared to ANC service coverage among women whose youngest child was <2years. In the PPHI model, the ANC services coverage among two groups of women was 48.28% and 53.6% respectively, while in the District Health Department model it was 31.3% and 22.6% respectively.

14.4 Family planning services

The overall contraceptive prevalence rate (CPR) in the notional catchment areas of District Health Department model was higher, at 46.9% compared to the PPHI at 39.6%. However, proportion of married women using BHUs for family planning services was almost double in the PPHI model at 19.2% than the District Health Department model at 9.7%. CPR was found slightly lower in the far villages in both the models. In District Health Department model, LHWs emerged as the main source of family planning services and served around 23.3% of couples. All other sources of services served 7.5% couples in the catchment areas of the PPHI model and 13.2% in the District Health Department model. Details are given in table 47.

Table 47: Married Women Who were Currently using Family Planning Services

Parameters	Eligible and Beneficiary Children					
	PPHI Model			District Health Department Model		
	BHU Village	Far Village	Overall	BHU Village	Far Village	Overall
Total Eligible women (n)	674	691	1365	359	329	688
% women currently using any method of family planning	42.6	36.8	39.6	48.7	45.0	46.9
Percent women currently using any method to delay or avoid pregnancy - by source of method						
BHU	21.2	17.2	19.2	11.4	7.9	9.7
LHW	11.6	10.9	11.2	24.2	22.2	23.3
Family welfare clinic	2.4	2.2	2.3	2.5	4.0	3.2
Other Govt health facility	1.2	1.9	1.5	3.9	3.3	3.6
Other sources	3.9	3.5	3.7	5.6	7.3	6.4
Percent women currently using any method to delay or avoid pregnancy - by type of method						
Oral pills	15.3	13.5	14.4	17.3	13.4	15.4

Injection	13.2	12.4	12.8	14.5	17.3	15.8
Condom	8.8	7.1	7.9	10.3	10.3	10.3
Female sterilization	1.9	1.9	1.9	4.7	2.7	3.8
Male sterilization	0.0	0.1	0.1	0.0	0.0	0.0
Withdrawal method	2.4	1.2	1.8	1.1	0.3	0.7
Other methods	1.0	0.6	0.8	0.8	0.9	0.9

15. Child health services

The respondents cited the most common place to take their child less than two years was the BHU in both models. A higher proportion of mothers/caretakers residing in the territorial jurisdiction of District Health Department model stated utilizing the services of the BHUs for immunization of children <2years than those living around the BHUs of the PPHI model, both in the village of location of BHU – 86.6% versus 77% and the village at > ½ hour travel – 79.4% versus 68.8%.

Mother/ caretakers of 50.1% children stated having benefited from the PPHI model in terms of 'ever weighing of child' from the village of location of BHU and 41.8% from the village away from the BHU. The corresponding figures in the District Health Department model at the village of location of BHU and the villages away from the BHU were low at 10.4% and 15.5% respectively. Details re given in Table 48

Table 48: Child Health, Vaccination and Nutrition Services for Children <2years

Parameters	PPHI Model					District Govt. Model		
	Baluchistan	Sindh	Khyber Pakhtunkhwa	Gilgit Baltistan	Overall	Sindh	Khyber Pakhtunkhwa	Overall
Pattern of service in Villages Where BHUs were Located								
Eligible Children <2years (n)	378	194	186	62	820	191	211	402
Treated at BHU	92.3	96.9	61.3	91.9	86.3	63.4	48.3	55.5
Treated by alternate providers	7.7	3.0	38.7	8.0	13.6	36.6	51.6	44.4
i) Private clinic / hospital	4.8	0.0	29.1	3.2	9.0	24.6	19.9	22.1
ii) Government Hospital	2.6	1.5	4.4	1.6	2.7	9.9	25.1	17.9
iii) Govt. dispensary / MCH centre	0.0	1.5	0.5	0.0	0.5	0.5	0.0	0.2
iv) Other place including home remedy	0.3	0.0	4.7	3.2	1.4	1.6	6.6	4.2
% Children received any vaccination	81.0	99.5	88.2	83.9	87.2	92.7	95.7	94.3
% Children received any vaccination at BHU	65.3	97.4	80.1	74.2	77.0	85.3	87.7	86.6
% Children ever weighed at BHU	58.7	71.6	14.0	38.7	50.1	11.5	9.5	10.4
Pattern of service in Villages at >½ Hour Travel Away from BHUs								
Eligible Children <2years (n)	380	195	191	61	827	181	192	373
Treated at BHU	87.3	99.0	45.0	62.3	78.5	65.2	32.3	48.3
Treated by alternate providers	12.7	1.0	54.9	37.7	21.5	34.8	67.7	51.7
i) Private clinic / hospital	7.4	0.5	40.8	13.1	13.9	27.1	36.5	31.9

ii) Government Hospital	5.3	0.5	6.8	8.2	4.7	7.2	27.6	17.7
iii) Govt. dispensary / MCH centre	0.0	0.0	0.0	6.6	0.5	0.0	0.0	0.0
iv) Other place including home remedy	0.0	0.0	7.3	9.8	2.4	0.5	3.6	2.1
% Children received any vaccination	75.5	98.5	84.8	78.7	83.3	94.5	96.4	95.4
% Children received any vaccination at BHU	62.6	97.4	56.0	55.7	68.8	81.2	77.6	79.4
% Children ever weighed at BHU	48.2	73.8	4.2	18.0	41.8	21.5	9.9	15.5

15.1 Health education activities at village level

Women with a child <2years were also invited to recall if BHU staff had visited the village for educating the communities in health matters in the last 3-months. About 44% women from the village of location of BHU and 36% from the villages at <½ half travel on foot from the BHU confirmed undertaking of health education activities by the staff of the PPHI model against 2.2–8.3% women in the District Health Department model. The snap shot indicated that PPHI model had better outreach for educating the communities on health matters. Details are given in Table 49.

Table 49: Health Education Activities Conducted by BHU Staff in Last 3-months

Parameters	PPHI Model			Dist. Govt. Model			Overall		
	BHU Village	Far Village	Total	BHU Village	Far Village	Total	BHU Village	Far Village	Total
No. Eligible Women (n)	789	796	1,585	384	360	744	1,173	1,156	2,329
Health education activities conducted by BHU staff other than LHW - percent women									
Yes	44.0	36.3	40.1	8.3	2.2	5.4	32.3	25.7	29.0
No	27.5	32.7	30.1	58.1	52.2	55.2	37.5	38.8	38.1
Don't know	28.5	31.0	29.8	33.6	45.6	39.4	30.2	35.5	32.8

15.2 Hand washing practices

Inquiry was made from women at the household level in both the models about 'hand washing practices' covering five important events: (i) before taking meals, (ii) before cooking, (iii) before feeding child, (iv) after defecation and (v) after child defecation. On an overall basis, the hand washing practices were relatively better practiced by women in the villages that fell in the administrative jurisdiction of the PPHI model (73.9%) than those in the District Health Department model (68.8%); the overall difference was by 5.1 percent points ($p<0.05$). The hand washing practices were found almost similar in the villages where BHUs were located and the villages that were at >½ hour travel from the BHUs. The hand washing practices were less rigorously followed in the villages that were surveyed in the Sindh province from both the models, by an overall average of 45.5% women in the villages from PPHI model and 58% from District Health Department model. More details appear in table 50 given below.

Table 50: Hand Washing Practices by Women (Summary of Section 3 and 4)

Parameters	PPHI Model						Dist Govt. Model		
	Old Dist	New Dist	Sindh	Khybe	GB	Overall	Sindh	Khybe	Overall

				r Pakht unkh wa				r Pakht unkh wa	
Percent women who washed hands with soap: Pattern in village where BHU is located									
No. women interviewed (n)	215	194	183	225	60	877	193	233	426
Before taking meals	84.7	95.4	29.0	81.8	61.7	73.1	33.7	82.0	60.1
Before cooking	78.6	94.8	32.2	80.0	55.0	71.3	21.8	72.1	49.3
Before feeding child	83.7	97.4	32.2	50.2	51.7	53.8	32.6	55.4	45.1
After defecation	99.5	100.0	89.6	72.0	86.7	89.4	96.4	90.6	93.2
After child defecation	99.5	100.0	82.5	63.1	80.0	85.4	90.7	77.3	83.3
Composite score	0.892	0.975	0.531	0.694	0.670	0.769	0.550	0.755	0.662
Percent women who washed hands with soap: Pattern in village away from BHU									
No. women interviewed (n)	222	192	191	214	59	878	180	216	396
Before taking meals	76.6	95.8	29.3	76.6	47.5	68.6	42.8	83.8	65.2
Before cooking	67.1	93.2	28.8	72.9	49.2	64.7	32.2	81.5	59.1
Before feeding child	77.9	95.3	33.5	41.1	33.9	60.1	40.0	59.7	50.8
After defecation	94.6	99.5	91.6	65.0	93.2	87.6	96.1	92.6	94.2
After child defecation	97.7	98.4	86.4	57.0	91.5	85.1	93.9	85.6	89.4
Average score	82.8	96.4	37.9	62.5	63.1	73.2	61.0	80.6	71.4
Composite score	0.859	0.970	0.535	0.661	0.650	0.751	0.579	0.780	0.689

TRF is funded by UKaid from the Department for International Development and AusAID, and managed by HLSP