パキスタン・イスラム共和国
EPI ／ポリオ対策プロジェクト
終了時評価調査報告書

平成 23 年 10 月
（2011 年）

独立行政法人国際協力機構
人間開発部

人 間
ＪＲ
11-126

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付属資料

略　語　表

略　語	正式名称	和　文
ADB	Asian Development Bank	アジア開発銀行
AFP	Acute Flaccid Paralysis	急性弛緩性麻痺
BCC	Behavier Change Communication	行動変容のためのコミュニケーション
BHU	Basis Health Unit	基礎保健ユニット
CDC	Centers for Disease Control and Prevention	疾病管理予防センター
Combo	Combination of Hepatitis B vaccine & DPT	4 価ワクチン
Combo5	Combination of Hepatitis B vaccine & Hib & DPT	5 価ワクチン
C/P	Counterpart	カウンターパート
DD-EPI	Deputy Director EPI（at provincial level）	保健副局長（EPI 担当）
DG	Director General Health Services	保健サービス局長
DPT	Diphtheria, Pertussis, Tetanus	三種混合ワクチン
DSV	District Super Visor	県スーパーバイザー
EAD	Economic Affairs Division	経済関係局
EDO-H	Executive District Officer Health	県保健局長
EPI	Expanded Programme on Immunization	拡大予防接種プログラム
FLCF	First-level Care Facility	第一次保健医療施設
FSV	Field Super Visor	現地スーパーバイザー
GAVI	Global Alliance for Vaccine and Immunization	ワクチンと予防接種のための世界同盟
GIVS	Global Immunization Vision and Strategy	国際的な予防接種目標及び戦略
GMP	Good Manufacturing Practice	品質管理規則
HSS	Health Systems Strengthening	保健システム強化
JCC	Joint Coordination Committee	合同調整委員会
JICA	Japan International Cooperation Agency	国際協力機構
KAP	Knowledge, Attitude and Practice	知識、態度、行動（に係る調査）
KPK	Province of Khyber Pakhtunkhwa（former NWFP, since April 2010）	ハイバルパフトゥンハー州（2010 年 4 月より NWFP から名称変更）
LHS	Lady Health Supervisor	女性保健監督者
LHV	Lady Health Visitor	女性保健上級官
LHW	Lady Health Worker	女性保健従事者
MDGs	Millennium Development Goals	ミレニアム開発目標

MO	Medical Officer	メディカルオフィサー
MoH	Ministry of Health	保健省
NCGM	National center for Global Health and Medicine	国立国際医療研究センター
NEAP	National Emergency Action Plan	国際緊急行動計画
NGO	Non-Governmental Organization	非政府組織
NID	National Immunization Days	ポリオキャンペーン
NIH	National Institute of Health	国立保健院
NWFP	North West Frontier Province	北西辺境州
ODA	Official Development Assistance	政府開発援助
OJT	On-the-Job Training	オンザジョブ・トレーニング
OPV	Oral Polio Vaccine	経口生ポリオワクチン
P&D	Planning & Development Department	計画開発局
PC-1	Project Commission Forum-1	予算書
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PHC	Primary Health Care	プライマリヘルスケア
PIC	Project Implementation Committee	プロジェクト実施委員会
PO	Plan of Operations	活動計画
QA	Quality Assurance	品質保証
QCL	Quality Control Laboratory	ワクチン品質管理検査室
R/D	Record of Discussions	協議実施記録
SOP	Standard Operation Procedure	標準業務手順書
TBA	Traditional Birth Attendant	伝統的産婆
TOT	Training of Trainers	講師のための研修
TT	Tetanus Toxoid	破傷風トキソイド
U5MR	Under-five Mortality Rate	5 歳未満死亡率
UC	Union Council	行政単位（村）
UNICEF	United Nations Children’s Fund	国際連合児童基金
USAID	United Staates Agency for International Development	米国国際開発庁
WB	World Bank	世界銀行
WHO	World Health Organization	世界保健機関
WPRO	WHO Western Pacific Regional Office	WHO 西太平洋地域

評価調査結果要約表

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１－１　協力の背景と概要

パキスタン・イスラム共和国（以下、「パキスタン」と記す）は人口約 1 億 5,500 万人、1 人当たりの GNI が 600 米ドルの低所得国である。5 歳未満の子どもの死亡率は出生 1,000 当たり 101、乳児（1 歳未満の子ども）の死亡率は出生 1,000 当たり 80 を記録する。予防接種率に関しては、ポリオ 65％、麻疹 67％、結核・BCG 80％となっており、拡大予防接種プログラム（Expanded Programme on Immunization：EPI）に対してはポリオを中心にワクチンと予防接種のための世界同盟（GAVI）、世界保健機関（WHO）、国際連合児童基金（UNICEF）等、多くのドナーが一定規模の資金協力・技術支援等を行っている。2004 年におけるこれらドナーによるポリオの予防接種への拠出額は 1,500 万米ドル（約 18 億円）にのぼった。わが国は 1996 年以来、ポリオワクチンの調達のための無償資金協力を実施しており、JICA は 2001 年以降、複数の EPI に関係する専門家を派遣するとともに、機材供与、本邦研修等を実施している。こうした経緯を踏まえ、2003 年にパキスタン政府は、子どもの健康向上のための EPI に関する技術協力プロジェクトを要請し、これを受けて JICA は 2006 年 3 月と 7 月に第一次・第二次事前評価調査を経て、本プロジェクトは 2006 年 9 月 7 日から 2011 年 9 月 6 日までの予定で開始した。本プロジェクトは、保健省（MoH）及びハイバルパフトゥンハー州（KPK）保健局をカウンターパート（Counterpart：C/P）機関に据え、KPK 4 県（スワート県、ブネール県、シャングラ県、ハリプール県）を対象として、対象県における 2 歳未満の乳幼児が予防接種を受けられるようになることを目標に、2006 年 9 月 7 日より 2011 年 9 月 6 日まで 5 年間の予定で実施中である。アウトプットは、KPK 保健局及びスワート県、ブネール県、シャングラ県、ハリプール県の 4 県を対象に、①対象県において定期予防接種サービスが適切に提供される、②対象県において両親が乳幼児に定期予防接種を受けさせるようになる、連邦の品質管理検査室において③ワクチン品質管理検査室（Quality Control Laboratory：QCL）が強化される、また、連邦と各州を対象に、④連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される、と定め、長期専門家として、チーフアドバイザー及び業務調整員、年間 3 名程度のワクチンロジスティックス、QCL 能

力強化、EPI 支援の分野の専門家を派遣し、また EPI 関連の機材供与等を通じ活動を進めている。2008 年 10 月に運営指導調査、2009 年 10 月に中間レビュー調査を実施し今日に至るが、今回実施する終了時評価調査は、2011 年 9 月のプロジェクト終了を控え、プロジェクト活動の実績、成果を評価、確認するとともに、今後のプロジェクト活動に対する提言及び今後の類似事業の実施にあたっての教訓を導くこと、また本分野における将来的な協力案件の形成に資する情報を収集することを目的とする。

１－２　協力内容

（１）上位目標：対象県において定期予防接種にて予防可能な疾患の罹患率が減少する。

（２）プロジェクト目標：対象県における 2 歳未満の乳幼児が予防接種を受けられるようになる。

（３）成　果

１）対象県において定期予防接種サービスが適切に実施される。
２）対象県において両親が乳幼児に定期予防接種を受けさせるようになる。
３）ワクチン品質管理検査室（QCL）が強化される。
４）連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される。

（４）投入（評価時点）

＜日本側＞

長期専門家派遣　　4 名
（チーフアドバイザー、業務調整）
短期専門家派遣　　9 名
（ワクチンロジスティクス、ワクチン品質管理）
研修員受入　　15 名
（ワクチン品質管理等）
機材供与　　4,034 万 1,000 Pak Rs（約 4,030 万円）
（冷蔵庫、冷凍庫、温度計等コールドチェーン機材、オートクレーブ等 QCL 用機材等 46 種）
ローカルコスト負担　　6,275 万 1,000 円
（現地スタッフ雇用、研修諸費等）

＜相手国側（パキスタン）＞

C/P 配置　　40 名
ローカルコスト負担　　約 1,620 万 Pak Rs（約 1,620 万円）
（プロジェクト事務所、光熱費負担）

２．評価調査団の概要

調査者	団　長	磯野　光夫	JICA 人間開発部　課題アドバイザー（保健）
	EPI ／ポリオ対策	蜂矢　正彦	国立国際医療研究センター国際医療協力部派遣協力第二課　感染症グループ長
	協力計画	青木　恒憲	JICA 人間開発部保健第二グループ保健第四課　主任調査役

	評価分析　　青木　裕子　　国際航業株式会社海外事業部　コンサルタント	
調査期間	2011 年 4 月 17 日～ 5 月 1 日	評価種類：終了時評価

３．評価結果の概要

３－１　実績の確認

（１）成果１：対象県において定期予防接種サービスが適切に実施される。

成果１は、以下 4 つの指標がハリプール県においては達成されたことが確認できたため、部分的に活動が中断した 3 県を除き、達成されたと判断される。

「指標 1-1：定期予防接種サービスの提供に関する研修を受講した LHW や EPI 従事者の比率が 80％以上になる」については、ハリプール県では 100％の女性保健従事者（Lady Health Worker：LHW）（計 731 名）が研修を修了。99％の EPI テクニシャン（計 55 名）及び 100％ のメディカルオフィサー（Medical Officer：MO）（計 38 名）もそれぞれ研修を修了していることが確認された。

「指標 1-2：LHW による予防接種数の増加」については、2009 年から 2010 年にかけてハリプール県で LHW による予防接種数が増加していることが確認された〔麻疹：9 件から 722 件 、BCG：0 件から 38 件、ポリオ：25 件から 1,698 件、5 価ワクチン（Combo 5）：25 件から 1,698 件、破傷風トキソイド（TT）：23 件から 2,349 件に増加〕。

「指標 1-3：機能する冷蔵庫を有する EPI センターの数の増加」については、プロジェクトを通じて冷蔵庫がハリプール県に 27 台供与される見込みである。これによって機能する冷蔵庫を保有する EPI センターは 32 カ所から 59 カ所に増加することとなる。

「指標 1-4：一次医療施設レベルでの活動計画（アウトリーチプラン）の適切な策定・実施がなされる」については、ハリプール県ではプロジェクト実施以前は EPI テクニシャンのうち、アウトリーチプランの策定と実施を行っている者は 54％であったが、プロジェクトで支援した EPI テクニシャンの月例ミーティングを通じて、EPI テクニシャン全員を対象にアウトリーチプランがつくり直され、プランの実施が増加した。

なお、活動が中断した 3 県（スワート県、ブネール県、シャングラ県）においては実績の確認が困難であった。

（２）成果２：対象県において両親が乳幼児に定期予防接種を受けさせるようになる。

プロジェクト活動が実施されていないため、成果２については達成度を判断することは困難であった。

成果２については、「指標 2-1：住民啓蒙活動に参加した宗教指導者、コミュニティリーダー、両親、政策策定者の数が増加する」、「指標 2-2：スケジュール通りに定期予防接種（8 疾患）を完了させるべきであることを認識している 1 歳未満児の両親や後見人の比率の向上」、「指標 2-3：ポリオキャンペーンに加えて定期予防接種が重要であることを認識している 1 歳未満児の両親及び養育人の数が増加する」が設定されている。

プロジェクトの前半時期にスワート県、シャングラ県、ブネール県においてこれら指標のためのベースラインとして知識・態度・行動（Knowledge, Attitude and Practice：KAP）調査が実施されたが、その後現時点に至るまでプロジェクト活動が実施されてこなかった。ハリプールについては活動方法を協議するために、2009 年 7 月に教師、コミュニティリーダー、NGO を対象とした啓発に係るセミナーがハリプールで実施され、88 名が参加したが、その後現在に至るまで活動は行われていない。

以上のように、活動初期の段階で活動が中断されており、上記指標については、計測す

ることができなかった。

（３）成果３：ワクチン品質管理実験室（QCL）が強化される。

以下 3 つの指標の達成が確認できたため、成果３はほぼ達成されたと判断できる。

7 名の QCL 職員及び 2 名の品質保証（Quality Assurance：QA）職員が現地での短期専門家による研修を修了し、うち 3 名については本邦研修も修了したことから、「指標 3-1：研修を受講した QCL 職員の数が増加する」が達成された。

日本人専門家の評価によると、研修を受けたスタッフの知識や技術に係る能力は強化され、QCL の日常業務活動からも QCL スタッフの能力強化が示されていることが確認されたことから、「指標 3-2：GMP（Good Manufacturing Practice）を含めた検査基準に沿った知識と技術を QCL 職員が習得する」についても達成された。

プロジェクトで供与された機材に関しては、本調査中に QCL に係る供与機材の使用及び維持管理状況が適切であることが確認され、「指標 3-3：調達機材の適切な活用および維持管理がなされている」は達成されていることが確認できた。

（４）成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される。

現時点で成果達成を判断することは困難である。

成果４の指標には、「指標 4-1：州および県における在庫切れ日数及び受け取り最大日数が減少する」、「指標 4-2：研修モニタリング・評価の実施数が増加する」、「指標 4-3：定期予防接種データの質が向上する」、及び「指標 4-4：州 EPI 局及びナショナルプログラムによるモニタリング数が増加する」が設定されている。

指標 4-1 については、2011 年 2 月に 4 州内のすべての県を対象にした EPI ロジスティクス研修が、指標 4-2 から 4-4 については、2011 年 3 月に EPI データマネジメント研修が、それぞれ修了したばかりで、現地点でこれらを評価するには時期尚早である。また、研修効果の実践にあたってはデータ・フォーマットが統一されていなければならず、現在、プロジェクトでは KPK 州の EPI モニタリング／評価フォーマットの統一を行っている最中であり、これについても現地点でモニタリング数を計測することができないため、現地点で成果４の達成度を確認することはできなかった。

（５）プロジェクト目標

ハリプール県においては以下 3 つの指標が達成されたためプロジェクト目標は達成されたが、他の 3 県についてはプロジェクト活動の中断のため、現時点での判断は困難であった。

「指標１：麻疹と 5 価ワクチンの予防接種を受けた 1 歳未満児の数が増加する」については、ハリプール県にては、過去 5 年間増加傾向にあり、指標は達成された。プロジェクトは定期予防接種に LHW を取り込むことによって接種数増加に貢献した。ただし、接種数は 2008 年のハリプールでのプロジェクト開始以前から増加傾向がみられており、これは県政府の努力によるところが大きいと思われる。

「指標２：報告される EPI カバレッジ（5 価ワクチン）が増加する」についても、ハリプール県では過去 5 年間増加している。ハリプール県での増加度合いは、KPK 州全体の増加傾向と比べても大きい。なお、カバレッジの算出にあたっては、1998 年のセンサスに基づいた予測人口を分母にしており、実際の人口より少ない可能性が高いため、100％を超えるカバレッジが算出された。このため数値の解釈に注意が必要である。

「指標３：DPT 接種のドロップアウト率〔(DPT1-DPT3) / DPT1〕」が減少するについても、ハリプール県でのドロップアウト率は 2008 年から減少傾向にあり、2009 年から 2010 年にかけては 851 件から 419 件に半減している。

（６）上位目標の達成見込み

終了時評価時点では、上位目標の達成見込みを確認することは困難であった。

上位目標のための「指標１：ポリオ発生患者ゼロが維持される」については判断が困難であった。過去 5 年間の数値によると、スワート県とシャングラ県でポリオ患者が発生しており、ハリプール県とブネール県では発生していない。また、ポリオについてはプロジェクトよりもポリオキャンペーンによる発生抑制効果が大きいと考えられ、プロジェクト単独のこの指標への貢献度を判断するのは困難であった。

「指標２：麻疹の発症数が減少する」についても、達成状況の判断が困難であった。麻疹の発症数は、サーベイランスデータによると、2007 年のピークを除いてその前後は比較的低い数値を示しているものの、年度を経ての減少は確認できない。疫学的な知見を考慮すれば、数値の推移は自然な変動であって、プロジェクトの効果とは一概にいえないと思われる。

「指標３：新生児破傷風の発症数が減少する」についても、発症数は減少しておらず、数年という短期の観察期間で、医学的な分析の困難さ、かつ発症数の少なさなどの理由から、プロジェクト活動の効果を測ることが困難であった。

３－２　評価結果の要約

（１）妥当性

パキスタンにおける定期予防接種及びポリオ対策の重要性、世界の潮流、パキスタン政府の開発計画との整合性、日本の支援政策との整合性、日本の技術の優位性に照らして、妥当性は高いと判断できる。

ミレニアム開発目標（MDGs）及びパキスタンの貧困削減戦略では、感染症への対策が優先課題として取り上げられている。保健省の予算書である PC-1（2009-10 ～ 2013-14）には、定期予防接種に関する活動が含まれており、また、その他の保健政策や戦略、国家保健戦略、国家 EPI 政策、ポリオ根絶のための国際緊急行動計画（NEAP）2011 にも、プロジェクトは準じている。現行の EPI 政策では、LHW は EPI サービスに従事しなければならないことになっている。

日本の ODA 方針に照らしても、ODA 重点課題の一つである「保健・人口」課題との整合性がある。本プロジェクトでは EPI といったまさに基本的保健医療に係る分野を扱い、プロジェクトで採択している方法の LHW や EPI テクニシャンの人材育成、地域住民の保健医療へのアクセスの底上げを目的とするプロジェクト計画は、基礎社会サービス拡充の観点からの保健医療システム強化支援という日本の ODA 方針に整合している。

日本の技術の優位性については、JICA はこれまでにもパキスタンでの個別専門家派遣経験や中国や他国における予防接種に係るプロジェクトの経験があり、過去の経験を生かして EPI サービスの具体的技術支援を行うことができる。

（２）有効性

本プロジェクトの有効性は、おおむね高いと判断される。

プロジェクト目標「対象県における 2 歳未満の乳幼児が予防接種を受けられるようにな

る」に対する各成果の有効性は以下のとおりである。

「成果１：対象県において定期予防接種サービスが適切に実施される」については、ハリプール県においては有効性が確認された。LHW の予防接種への取り込み、EPI に関するレコーディング・レポーティングシステムの強化を通じて、特に LHW による接種数の増加によって、プロジェクト目標の達成に貢献したと判断される。「成果２：対象県において両親が乳幼児に定期予防接種を受けさせるようになる」については、活動が実施されなかったため、有効性の確認が困難であった。

「成果３：ワクチン品質管理検査室（QCL）が強化される」については、QCL スタッフのスキル強化のための包括的な技術研修、使用と管理方法の指導を含めた機材供与及び QCL のモニタリングが行われた結果、予防接種のワクチンの質が保たれることになり、間接的にプロジェクト目標に貢献したと判断される。

「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」については、かかる活動は実施途中であり、現時点で有効性を判断するのは困難である。しかし、研修を受けた C/P や関連機関からの反応から考察するに、すべての活動が完了すれば、EPI データが管理されることによる正確な予防接種数の把握及びワクチンの安定供給が見込めるため、プロジェクト終了時の段階では、有効性が高くなるであろうと判断される。

（３）効率性

本プロジェクトの効率性は、中程度と判断される。

「成果１：対象県で定期予防接種サービスが適切に実施される」については、LHW 等への研修事業が、治安上の理由により対象 3 県への投入が計画どおりに行うことができず、効率性はやや低くなった。これまでに対象 3 県に対して行った研修や供与機材などの投入についても、現時点でこれらの地域へアクセスすることができないため、活用状況が確認できず、効率性の判断自体が困難である。

「成果２：対象県において両親が乳幼児に定期予防接種を受けさせるようになる」については、宗教指導者等への予防接種への理解促進の活動が計画されていたが、日本人専門家の判断により、ハリプール県においては優先順位が低いとされたため、実施されなかった。他の 3 県においては、治安上の理由により投入が中断された。効率性は低いと判断される。

「成果３：QCL 強化」に関しては、専門家派遣と機材供与が計画通り投入され、活動も実施された。その結果として、指標は現時点で既に達成されており、効率性は高いと判断される。

「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」については、対象地域は 4 州となっており、日本人専門家やプロジェクトのローカルスタッフが治安上の理由により、アクセスすることができない地域があるため、C/P にイスラマバードに赴いてもらうことでプロジェクト活動を行っている。現段階では活動は一部終了しておらず、効率性を判断するには時期尚早である。

（４）インパクト

上位目標の達成見込みについては、現地点で判断することは困難であった。

その他のインパクトのうち、正のインパクトは、レポーティングシステムを含む EPI サービス供給のメカニズムが、プロジェクトによってハリプール県で構築されつつあり、ステークホルダーからの評価は非常に高い点が挙げられる。またハリプール県での LHW

によるパフォーマンスに対する評価も高く、パキスタンの国家計画に盛り込まれる見込みであり、これにより他県でも適用される可能性が高い。

終了時評価チームにより、EPI サービス供給に関する研修を受けた LHW は自らの仕事に対するモチベーションが高まり、自信をつけていることが確認された。プロジェクトの効果が彼らの通常業務に組み込まれ、コミュニティレベルでより良い保健サービスが供給されることが望まれる。

負のインパクトについては、現時点では観察されなかった。

（5）持続性

持続性については、現時点では一定度確保されていると判断される。

政策面での持続性については、パキスタンの「中期開発計画フレームワーク 2005 ～ 2010」と国家 EPI プログラムにおいても、プロジェクトで実施されている活動が計画されていた。現在改訂中の国家 EPI 政策においても、LHW と連携した予防接種活動は継続される予定である。

組織面での持続性については、2011 年 6 月施行予定の連邦から州への権限委譲後も、組織の持続性が維持されることが望まれる。連邦と州の EPI 局は既に、EPI サービス供給のために必要な人員を配置し、組織の強化を図っている。

プロジェクトを通じてさまざまな研修が行われ、C/P は知識や技術を身に付けることができた。しかし、研修は日本側主導で実施されており、パキスタン側の取り込みが十分ではなかった。これは特に州レベルで、パキスタン側の人的資源の配分が適切でなかったことによる。こうした状況を考慮してプロジェクトでは、研修を通じてレポーティングシステムを組織の運営体系のなかに組み込むようにし、技術的な持続性として確立しようと努めた。今後は、組織面での持続性、特に人的資源の開発は、連邦及び州の EPI 局によって計画・管理され、適切な人員が配置されることが望まれる。

技術面での持続性では、「成果１：対象県において定期予防接種サービスが適切に実施される」については、ハリプール県では定期予防接種の実施が、EPI テクニシャンと LHW によって担われるメカニズムが定着しつつあり、KPK 州の EPI 局は技術的にこのメカニズムを維持できるようになっている。「成果３：ワクチン品質管理検査室（QCL）が強化される」については、QCL の技術的な持続性は高く、プロジェクトを通じてスタッフは供与機材の取り扱いに関する知識と技術を身に付けた。「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」については、前述のとおり、現地点で研修の成果が C/P の通常業務のなかに定着するまでは至っておらず、技術的な持続性にはやや課題がある。

財政面での持続性については、連邦から州への権限委譲により、実質的な定期予防接種供給主体は州政府となるが、各州 EPI 局は、次のパキスタン国会計年度（2011 年 6 月から）に向けて予算書である PC-1 の最終的な調整段階に入っており、定期予防接種が予定どおりに実行されることが期待される。しかし、連邦及び州の EPI 局は、オペレーション・コストまでもドナーに頼っているのが現状である。しかし現時点でもドナーからの支援が中断されれば、直ちに給与支払いの遅滞や研修の中断といった問題が起きている。連邦、州 EPI 局は、引き続きより一層の財源確保に努めることが望まれる。成果３に係る QCL に関しては、連邦から州への権限委譲後も、連邦に属し、財源は連邦 PC-1 の項目に既に組み込まれていることから、財政面での持続性は高いと判断される。

３－３　効果発現に貢献した要因

（１）計画内容に関すること

特になし。

（２）実施プロセスに関すること

日本人専門家は、C/P やその他機関の定期的な会合に出席・参加することで、プレゼンスを示し、プロジェクトについての情報を共有、EPI に関する情報収集に努めた。会合のなかには、プロジェクトの実施にとって直接的に有益なものもあり、なかでも 2009 年 9 月の EPI レビュー会合では、チームリーダーはワクチンロジスティクス管理及び EPI データ管理のコンセプトについて説明し、関係者のコンセンサスを得た。この会合を経て、ワクチンロジスティクス管理に関する項目が、連邦 PC-1 補正の際に盛り込まれることになった。

３－４　問題点及び問題を惹起した要因

（１）計画内容に関すること

「成果２：対象県において、両親が乳幼児に定期予防接種を受けさせるようになる」ための宗教指導者等への予防接種への理解促進の活動について、日本人専門家の判断により、ハリプール県では優先順位が低いため、かかる活動が行われなかったことについて、これは結果として、プロジェクトデザインがパキスタンのハリプール県の状況に合致していなかった可能性があることを示唆している。このような事態を避けるためには、中間レビュー評価調査以降のいずれかの段階で PDM1 の検討がなされるべきであった。

（２）実施プロセスに関すること

上記の会合に出席・参加するなかで、日本人専門家は C/P や関連機関とのコミュニケーションを図っていった一方で、下記のような阻害要因も見受けられた。

１）C/P はプロジェクトの活動ごとに異なっており、プロジェクト全体を監督する機能はつくられてこなかった。合同調整委員会（JCC）はオーバーサイト的機能を果たすことが期待されていたが、中間レビュー以降 JCC は、多岐にわたる C/P への会議召集が困難であったため、開催されなかった。

２）C/P とのコミュニケーション不足、特に連邦と州レベルの EPI 局 及び国家計画とのコミュニケーションが十分でなかった。

３）不安定な治安と洪水災害に見舞われた。2006 年 10 月 30 日 KPK のマドラサ（神学校）空爆以降、自爆テロなど治安上の問題が深刻になった。2007 年にはスワート県の治安の悪化に伴い保健・教育関係の活動が制限され、2007 年 5 月以降、日本人専門家がプロジェクトサイトであるスワート県、ブネール県、シャングラ県に立ち入ることができなくなった。さらに、7 月以降には KPK の州都であるペシャワールへの日本人立ち入りも不可能となり、プロジェクトで雇用しているスタッフを現地に派遣し、対象県の C/P をイスラマバードに招き会議を行うなどしてプロジェクト活動を進めていた。この状況を受け、JICA は 2008 年 10 月に活動の一部見直しのため運営指導調査を派遣し、計画の見直しに加え、治安状況を考慮したうえで新たに活動ができるプロジェクトサイトとして、ハリプール県の追加を決定し、2009 年 4 月に実施された第 2 回 JCC において正式に承認された。その後、現時点まで当初の 3 対象県での治安は回復せず、現在はハリプール県のみでの活動実施となっている。

さらに2010年7-8月にかけては、パキスタンは大規模な洪水にみまわれ、4州の全県を対象に実施していたワクチンロジスティクス研修を約3カ月間中断せざるを得なかった。

３－５　結　論

プロジェクト目標の達成について、ハリプール県での達成が確認された。５項目評価の観点から、妥当性は高い、有効性はおおむね高い、効率性は中程度、インパクトのうち、上位目標の達成見込みは現時点で確認が困難、であった。ハリプール県において構築されたレポーティングシステムを含むEPIサービス供給のメカニズム及びLHWの活動は、スワート県など他パイロットサイトでは治安の悪化により十分に実施されなかったものの、「成果１：対象県において定期予防接種サービスが適切に実施される。」及び「成果３：ワクチン品質管理検査室（QCL）が強化される。」は限定的であるものの確実な成果を上げることができた。持続性については、政策面での持続性は確保されているものの、組織面においては、連邦から州への権限委譲後の適切な人員の計画・管理・配置が必要である。また技術面においては、おおむね確保されていると判断されるが、「成果４：連邦EPI局と州EPI局の定期予防接種システムが強化される」は、プロジェクト終了時までに一定程度の確保に向けた継続した活動が必要である。財政面の持続性は、慢性的な予算不足のなかでドナーからの支援に、EPIのオペレーションコストも頼らざるを得ないパキスタンにとっては困難ではあるが、財源確保に向けた継続した取組が必要であると考えられる。

プロジェクトの実施過程には、治安の悪化による実質上の対象地域の変更や洪水など幾つかの阻害要因があった。しかしそのようななかにおいてもプロジェクトはその都度限られた活動範囲内で、実施可能な活動を継続してきた。また、これまで述べられてきたようにプロジェクトのパフォーマンス評価に影響を与えた要因はほかにもあり、プロジェクト活動の慎重な設計など、何らかの手段が講じられる必要があるものもあった。現時点では、技術的な持続性はまだ十分とはいえない。この理由のひとつにはプロジェクトの実質的な活動期間が短かったことが挙げられる。残りのプロジェクト期間で、技術面での持続性が見込めるよう日本人専門家側からの働きかけがなされることが必要であると思われる。しかし本プロジェクトでは、一定の成果が確認できており、残る6カ月のプロジェクト期間においても、特に技術面での持続性を念頭に置いた活動の総仕上げが期待できるため、延長は不要と考えられる。一方で、2011年8月15日に円借款「ポリオ撲滅事業」の実施が確認された。本円借款の効果向上とポリオ対策を含む定期予防接種の強化は検討に値する。

３－６　提　言

（１）中間レビュー調査により、プロジェクト活動が変更され、結果として活動が多岐にわたることになり、連邦、州等関係者間でのコミュニケーションを図ることが困難になった。連邦EPI局がプロジェクト活動を把握できていない現在の状況を解決するため、今後は連邦EPI局、州EPI局、NIHを含めたすべてのプロジェクト関係者間で、良いコミュニケーションを図る必要がある。

（２）上記（１）に関して、最大限のプロジェクト実施の効果をもたらすため、プロジェクトでは早急に会議等の場を設け、これまでのプロジェクトの実績及び残り期間で行うべきことを関係者間で共有する必要がある。

（３）プロジェクト活動全体を通して、研修実施は本プロジェクトに於ける重要なアプローチである。そのため、プロジェクト終了後に、パキスタン側は研修実施を行うための持続性を得る必要があるが、現時点では研修実施体制が特に州レベルでは十分整備されていない。そのため、最低限パキスタン側が第三者に委託して同様の研修を行えるよう、日本人専門家によって研修内容等実施に関する必要事項が文書として整理される必要がある。同時に、これまで実施した研修の評価から、研修実施に関する細部のノウハウも残されることが望まれる。また、連邦及び州 EPI プログラムが、研修実施体制を整備することも望まれる。

（４）「成果１：対象県において定期予防接種サービスが適切に実施される」に関して、LHW の EPI プログラムへの取り込みの効果は、本調査でも確認できた。一方で、中間レビュー調査時でも提言したように、この取り組みの全国における評価がなされるべきであり、予防接種数の増加のみならず LHW による啓発活動や他の正負の効果も含めて、連邦 EPI 局はナショナルプログラムと連携して包括的なアセスメントを行う必要がある。

（５）「成果１：対象県において定期予防接種サービスが適切に実施される」ための活動であるアウトリーチプランの作成・実施促進に関して、ハリプール県での活動では、EPI テクニシャンによるアウトリーチプランが作成・実施されるようになったものの、この活動のモニタリングが十分に行われていない。プロジェクトではこの活動のモニタリング及びフィードバック体制を強化する必要がある。

（６）「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」に関して、EPI データ管理及びワクチンロジスティクス管理に関しては、技術的な持続性が確保されるよう、プロジェクトの残り期間で日本人専門家による継続した技術指導が必要である。

（７）現時点では幾つかのプロジェクト活動に関する指標、特に「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」に関しての指標が取れない状態であるが、これらの指標はプロジェクト実施の意義を判断するうえで重要な意義をもつ。そのため、プロジェクトは残り期間で可能な限りこれらの指標を取れるようにデータを収集する必要がある。

（８）「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」の活動のうち、EPI データ管理研修は、現時点では 1 州の 12 県のみで行われている。この研修は、EPI プログラムにとり大きな意義をもつものであることから、プロジェクトにより残り期間で可能な限りすべての州でこの研修が実施されることが望まれる。

（９）「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」のサーベイランスデータの分析とアセスメントに関する活動に関しては、データの分析と評価を行う際に客観性を確保するために、プロジェクトでは、まずデータの質に関する評価基準を設ける必要がある。

３－７　教　訓

（１）連邦から州への権限委譲に伴い、プロジェクト活動実施に際しての判断が州レベルでなされるようになっている。このような状況下では、プロジェクト活動の最大限の成果及び持続性を確保するために、活動内容を随時連邦レベルや他ドナーと共有していくことが重要であ

る。

（2）パキスタンでは他分野でも同様であるが、プロジェクト実施に際して役務提供的な役割を求められる傾向が顕著である。このため、JICA のめざすキャパシティ・ディベロップメントをめざすためには、綿密なプロジェクトデザインと事前及びプロジェクト実施中のパキスタン側への働きかけが重要である。

（3）このプロジェクトデザインの際には、いわゆる「対象エリアでモデルを完成させて全国に展開」という図式の実施が困難であり、パキスタン側にも理解されにくい点を留意する必要がある。

（4）同時に、キャパシティ・ディベロップメントをめざすにも、今回の研修実施のように先方に受け皿となる組織や人材が不足している場合がある。このため、事前に先方組織の確認と持続性に向けた先方の理解と施策の実施に向けて、十二分な協議を行う必要がある。

（5）役務的な側面は、技術面のみならず財政面でも同様であることら、事前に可能な限り先方負担を担保していく協議を行うことが望まれる。

（6）成果ごとに異なる C/P が設定されていたために、政府側の全体統括機能が不足していた点に関し、プロジェクトデザイン策定時に統括責任をもつ C/P を注意深く選ぶ、または合同会議等の統括する場を設定することが必要である。

（7）本事業のように、治安の悪化により活動の実施に大きな制約が生じる可能性のあるプロジェクトの場合、安全面を考慮した対応を取らざるを得ない。可能であるならば、現地リソースの活用を進め、運営が滞りなく行われるような体制をつくることが望まれる。

３－８　フォローアップ状況

本終了時評価の結果を踏まえ、第 2 フェーズの実施を検討中である。

SUMMARY OF TERMINAL EVALUATION

1. Outline of the Project		
Country: The Islamic Republic of Pakistan		Project title: The EPI/Polio Control Project
Issue/ Sector: Health-Medicine		Cooperation Scheme: Technical Cooperation
Division in charge: Health Division 4, Health Group 2, Human Development Department		Total Cost: (As of May 2011) 384 million yen
Period of Cooperation	7/September /2006~ 6/September /2011	Partner Country's Implementing Organization: -Federal EPI of National Institute of Health (NIH) -Quality Control Laboratory (QCL) of NIH -Directorate General Health Service of Government (DGHS) of Khyber Pakhtunkhwa (KPK) -Executive District Office-Health (EDO-H) in four districts; Swat, Shangla, Buner and Haripur - EPI cell-Provinces (Punjab, Balochistan, Sindh)
		Period of Cooperation: 5 years
		Supporting Organization: - National Center for Global Health and Medicine: NCGM -The Research Foundation for Microbial Diseases of Osaka University (BIKEN)

1-1 Background of the Project

Pakistan is one of the countries with the highest child mortality rate, such as under 5 mortality rate is 101 per 1,000 live births, infant mortality rate is 80 per 1,000 live births. Immunization coverage is not optimal with polio being 65%, measles 67% and BCG 80% and many donors such as GAVI, WHO and UNICEF have supported Expanded Programme on Immunization (EPI) with certain amount of inputs. Japanese Government had also provided polio vaccine through grant aid scheme since 1996. JICA also had dispatched long-term and short-term experts, provided equipment and offered the trainings in Japan. Based on above cooperation and the request from Pakistan government, the EPI/Polio Control Project in Pakistan (hereinafter referred to as 'the Project') has been launched in September 2006 to last for five years until September 2011, in order to increase the number of the children under the age of two who are vaccinated in the target districts within the province of Khyber Pakhtunkhwa (KPK), namely Swat, Buner, Shangla and Haripur. The counter- parts of the Project are Ministry of Health (Federal) and KPK Province's health office. Outputs of this Project are as follows, 1."EPI services are properly provided in the target districts." and 2."Parents ensure their children to be vaccinated in the target districts." for districts of Swat, Buner, Shangla and Haripur, 3." Quality control capacity of QCL (Quality Control Laboratory)/NIH is enhanced." for Quality Control Laboratory of National Institute of Health, 4." Federal and Provincial routine EPI system is strengthened." for federal and provincial EPI cells. The chief adviser and project coordinator as long-term experts and short-term experts of vaccine logistics, QCL capacity strengthening and EPI support have been dispatched. EPI related equipment is also provided.The Advisory Study Mission was dispatched in October, 2008 and the Mid-term review was conducted in October, 2009. The Terminal Evaluation Team was dispatched in April 2011, to confirm the achievement of the Project, to draw the lessons for the Project's

activities and related activities, and to collect essential information for the future plan of a project.

1-2 Project Overview

(1) Overall Goal

Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.

(2) Project Purpose

Children under the age of two are vaccinated in the target districts.

(3) Output

1) EPI services are properly provided in the target districts.
2) Parents ensure their children to be vaccinated in the target districts.
3) Quality control capacity of QCL/NIH is enhanced.
4) Federal and Provincial routine EPI system is strengthened.

(4) Input (at the point of Terminal Evalutaion)

Japanese side:

Long-term Experts (Chief Advisor, EPI Support etc.)	4 persons	Equipment Provision	46 items: Cold chain equipment (refrigerators, freezers, temperature monitor), QCL equipment etc. (40,340,908Pak Rs, 40 million JPY)
Short-term Experts (Vaccine Logistics, Vaccine Quality Control etc.)	9 persons	Costs necessary for the implementation of the Project	62.8 million JPY (Local Consultant, Training Expense)
Trainings in Japan (Vaccine Quality Control etc.)	15 persons		

Pakistan's side:

Counterparts	40 persons	Local Cost (for whole Project period)	16.2 million Pak Rs 16.2 million JPY

Others: Project Office was provided and the cost of electricity and water supply was paid by Pakistan side.

2. Evaluation Team

Members of Evaluation Team	Leader	Dr. Mitsuo ISONO	Senior Advisor, Human Development Department, JICA
	EPI/Polio Control	Dr. Masahiko HACHIYA	Head, Infectious Disease Control Group Department of International Medical Cooperation, Japan National Center for Global Health and Medicine

	Cooperation Planning	Mr. Tsunenori AOKI	Deputy Director, Health Division 4, Health Group 2 Human Development Department, JICA
	Evaluation Analysis	Ms. Yuko AOKI	Consultant, Overseas Department, Kokusai Kogyo Co., Ltd.
Period of Evaluation	17/April/2011- 1/May/2011		Type of Evaluation: Terminal Evaluation

3. Results of Evaluation

3-1 Project Performance

- Inputs and Outputs

(1) Output 1: EPI services are properly provided in the target districts.

Output 1 is being partially achieved as the indicators for Output 1 shown below have been achieved in Haripur.

Indicator 1 "More than 80% of LHWs, EPI technicians and medical doctors are trained on EPI service provision" was achieved, as 100% of LHW (731 persons) finished the training course of LHW routine EPI involvement, 99% of EPI technicians (55 persons) and 100% of MO (Medical Officer) in charge of health facility (38 persons) have also completed their training courses in Haripur.

As for Indicator 2 "The number of immunizations administered by LHWs is increased." the number of immunization administered by LHW has been increased from 2009 in Haripur. Cases of immunization for measles were increased from 9 to 722 in 2009 to 2010, 0 to 38 for BCG, 25 to 1698 for polio, 25 to 1698 for pentavalent, and 23 to 2349 for tetanus toxoid.

For Indicator 3 "The number of EPI centers having functional refrigerator is increased", 27 refrigerators for vaccines are going to be provided to EPI centers in Haripur for storage of vaccines for LHW and EPI technicians. The number of EPI centers having functional refrigerator will increase from 32 to 59.

As for Indicator 4 "Out Reach Plan is formulated and implemented at First-level Care Facility (FLCF) level", according to the situation survey of Haripur, 46% of the EPI technicians had not planned and implemented the outreach plan before the Project. Since the Project has supported the monthly meeting of EPI technician, Out Reach Plan is re-formulated and strengthened implementation.

It could not be judged in other three districts (Buner, Shangla and Swat) due to suspension of the Project activities.

(2) Output 2: Parents ensure their children to be vaccinated in the target districts.

It is difficult to evaluate Output 2 as the Project activities have not been conducted.

Indicators for Output 2, 1.:"The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased." 2: " The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from 8 dangerous diseases, availing the services to complete the course in a timely." and 3: "The percentage of parents/caretakers of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs /SNIDs (Polio campaign)" have not been achieved as the Project activities have not been conducted due to security reasons

KAP(Knowledge, Attitude and Practice) survey was conducted in Swat, Shangla and Buner in the first half of the project period. Thereafter, the Project has not conducted the activities at this moment. A seminar for

88 members including teachers, community leaders and NGO staff, was held in Haripur in July 2009. Since then, no activity was conducted until now.

As seen above, it's difficult to measure the achievement by the indicators as the Project Activities have been interrupted in an early stage.

(3) Output 3: Quality control capacity of QCL/NIH is enhanced.

Output 3 is mostly achieved as Indicators shown below have been achieved.

In order to enhance quality control by QCL, the training of 'Quality Control Testing Method' and 'Trend Analysis' by short-term experts and the training in Japan of 'Vaccine Quality Control Technology' were conducted.

The indicator 1 "The number of trained QCL staff is increased." has been achieved, as 7 QCL staff and 2 QA (Quality Assurance) staff participated in the training conducted by short-term experts and among them, 3 staff members participated in the counterpart training in Japan.

Indicator 2 "The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP." has also been achieved. According to the Japanese expert, the capacity of trained staff in terms of knowledge and skill has been improved through the above mentioned trainings.

Indicator 3 "Procured equipment of the QCL is properly utilized and maintained." has been achieved, as it was confirmed that almost of all the provided equipment are used and well maintained by the terminal evaluation team.

(4) Output 4: Federal and Provincial routine EPI system is strengthened.

It is difficult to judge Output 4 at the time of terminal evaluation.

Indicators for Output 4 are 1:" Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage is reduced." 2:" The number of training monitoring and evaluation is increased." 3.:"The quality of routine EPI data is improved." and 4:" The number of monitoring by provincial EPI Cell and Provincial National Program is increased."

Since the training course was completed in February, 2011 in all districts of 4 provinces for indicator 1, and the training of EPI data management has just been completed in March, 2011 for indicator 2, 3 and 4.

To evaluate these training courses, it is necessary to standardize the data format for EPI. However, currently the Project activities are at the stage of integration of the monitoring/evaluation format in KPK only and have not started in other 3 provinces.

-Project Purpose

The Project purpose was achieved in Haripur as three indicators shown below have been achieved, but not in Swat, Shangla, and Buner for interruption of the Project Activities.

Indicator 1:" The number of immunized children with measles or pentavalent vaccine under one year-old is increased." has been achieved, as the number of immunized children with measles and pentavalent vaccine under one year-old increased in the last five years in Haripur. The Project contributed to this progress mainly by introducing LHWs' involvement in EPI service from 2009. The number of vaccination increasing started earlier than the Project (from 2008) in Haripur, it can be judged that this improvement was mainly contributed by the efforts of district government.

Indicator 2: "Reported routine EPI coverage (DPT/Pentavalent) increased" has been achieved for five years in Haripur. The degree of increase in Haripur appears greater than those of other districts in KPK, but

interpretation of this figure should be made very carefully as the coverage (immunized population/target population) in Haripur showed over 100% The reason of this can be suspected that the population data for coverage calculation may be lower than actual number as is based on the census in 1998.

Indicator 3 "Drop-out rate of Pentavalent [(Penta 1-Penta 3)/ Penta 1] is reduced" has been achieved in Haripur as drop-out rate is tending to decrease from 2008, it dropped from 851 cases into 419 cases from 2009 to 2010.

- Prospect of Overall Goal

The achievement of the overall goal cannot be verified at the point of the Terminal Evaluation.

Indicator 1: "Polio free is maintained" was difficult to be judged. Polio cases were reported in Swat and Shangla, but not in Haripur and Buner in the last five years. The Project's contribution to polio control seems to be limited, and repeated polio immunization campaigns play a major role in controlling polio.

Indicator 2: "The incidence of measles is reduced." was also difficult to be judged. Measles incidence was not reduced. The surveillance data shows the incidence peaked in 2007 and incidence in other years were relatively low. Considering the epidemiology of disease, unstable values may result in reflect natural fluctuation rather than project effect.

Indicator 3: "The incidence of NT is reduced." was also difficult to be judged. Neonatal tetanus did not decrease in incidence. The effect of the Project activities cannot be measured because of the short duration of observation period, difficult clinical diagnosis, and low incidence.

3-2 Summary of Evaluation Results

(1) Relevance

The relevance of the Project is high, considering the importance of EPI/Polio control in global trend and in Pakistan, consistency of the development plan of government of Pakistan and the assistance policy of government of Japan. Moreover, Japan has the advantage in EPI field

Protect against infectious diseases is the priority subject in millennium development goal and Pakistan's strategy of poverty reduction. In a budget document of Ministry of Health, PC-1(2009-10- 2013-14), EPI-routine activities are included. The Project also follows other health policies and strategies, National Health Strategy, National EPI Policy and National Emergency Action Plan for Polio eradication (NEAP) 2011. LHW is obliged to do EPI service under the current EPI policy.

There is consistency with Japanese ODA policy in priority subjects of health and population. EPI service delivery itself is the basic health service and the Project's plan of training for LHW and EPI technicians to contributes to universal access of EPI service to communities.

As JICA has experiences of technical support on EPI field, by dispatching short-term experts in Pakistan and by EPI projects in China and other countries, those experiences can be utilized in practical support for EPI service.

(2) Effectiveness

Effectiveness of the Project is can be judged as generally high. Effectiveness of each Output for the Project purpose "Children under the age of two are vaccinated in the target districts." is as follows.

Regarding Output 1: "EPI services are properly provided in the target districts.", effectiveness can be observed in Haripur. Output 1 is contributing to the Project Purposes, through involvement of LHW and strengthening of recording and reporting system of EPI, the Project activities turned out the significant

increase of vaccination especially by LHWs and coverage of immunization.

Output 2:"Parents ensure their children to be vaccinated in the target districts.", effectiveness cannot be observed as the Activities were not conducted.

Output 3:"Quality control capacity of QCL/NIH is enhanced.", effectiveness can be observed indirectly. As results of comprehensive technical training was conducted to strengthen the skills of QCL staff, provision of equipment including instruction of its maintenance, and monitoring QCL, quality of the vaccines for EPI has been secured.

Output 4: "Federal and Provincial routine EPI system is strengthened.", it's difficult to judge the effectiveness as the activities for Output 4 have been in the middle of implementation. At this moment, there were no effects observed by these activities. However, considering response from trainees and relevant parties, calculating accurate number of immunization and stable supply of vaccines by EPI data management can be expected. Thus, effectiveness can be expected if all the activities are completed at the time of termination of the Project.

(3) Efficiency

Efficiency can be judged as middle level.

As Training courses for LHW for Output 1:"EPI services are properly provided in the target districts" have not been implemented as planned in three target districts due to security reasons, the efficiency was rather low. All the equipment provided towards those districts is unable to monitor its use at the time of the Terminal Evaluation.

The Activities of Output 2:"Parents ensure their children to be vaccinated in the target districts", such as promoting the understanding of immunization for religious leaders, have been interrupted due to security reasons in three target districts. And there were no such activities conducted in Haripur as it was judged low priority by Japanese experts. The efficiency of the Output 2 should be considered as low in this regard.

Regarding Output 3:"the strengthening of QCL", the experts and equipment were inputted as scheduled and related activities were implemented along with the plan. As a result, indicators have been already achieved at the time of terminal evaluation. Thus, the efficiency of the output 3 is high.

Activities for Output 4:"Federal and Provincial routine EPI system is strengthened." target four provinces. As Japanese experts and even project local staff are not able to access some area in those provinces due to security reasons, counterparts need to travel to Islamabad. Activities were conducted after getting consensus among the relevant parties and were conducted smoothly and appropriately. However, not all of planned activities have been completed at this moment therefore it is too early to judge its efficiency.

(4) Impact

It is difficult to determine the possibility of the achievement of the Overall Goal at this moment.

In terms of positive impact, a mechanism for EPI service delivery including reporting system which was developed in Haripur has been highly evaluated and the performance of LHW in Haripur is recognized as a good practice by stakeholders. It is expected that the National Programme will contain these systems to introduce them to other districts.

Judging from interview survey by the terminal evaluation team, it was found that LHW became confident and well-motivated after the EPI services training. Thus, it is expected that their routine activities will be well motivated and resulting in providing better health care services to communities.

No negative impact was observed.

(5) Sustainability

It is judged that the sustainability of the Project is expected in certain level.

Political Sustainability of Project Effects: One of the Project Activities, LHW's involvement in EPI service provision was cited in Mid-Term Development Framework 2005-2010 and National EPI Program. The LHW activities related EPI service delivery will be cited in a new National EPI Policy which is drafted now.

Institutional Sustainability of Project Effects: The Federal and Provincial EPI cells have already strengthened their capacity with adequate number of staff members for EPI service delivery. It is expected that these institutions will be able to sustain current capacity after the devolution. Through the various training courses implemented by the Project, counterparts acquired knowledge and skill. However, those trainings have been conducted only by the Japanese side and the Pakistan side has not been fully involved. This is due to the lack of adequate human resources in Pakistan side, especially at provincial levels. Considering this situation, the Project aimed to institutionalize the reporting to obtain technical sustainability. In future, to obtain the institutional sustainability, a planning and management for proper human resources allocation will be expected on EPI cells of the federal and provincial levels.

Technical Sustainability of Project Effects: Regarding the output 1:"EPI services are properly provided in the target districts." in Haripur, the routine EPI service delivery system through EPI technician and LHW have been observed well developed. And the KPK Provincial EPI cell has acquired sustainability to maintain this mechanism technically. For the output 3:"strengthening of QCL", technical sustainability of the QCL is high as through the Project, all the staff members have obtained knowledge and skill to deal with the equipment related to QCL. Regarding the output 4 :"strengthening of routine EPI system in Federal and Provincial EPI cells", to obtain the technical sustainability, the Project team will still have to be worked on as remaining tasks.

Financial Sustainability of Project Effects: The main implementation body of EPI service provision will be Provincial Government after the devolution (from federal to province), each Province EPI cell is currently reviewing its PC-1 for the next fiscal year (starts from June, 2011). It is expected that proper service provision would be made as planned though, the Federal and Provincial EPI cells still rely on donors for operational costs. There were interruptions of trainings or delay of salary payments due to problems regarding contracts with donors. Thus, the Federal and Provincial EPI cells will have to continue their efforts to secure the budget.

As for QCL, the financial sustainability is high, as the budget is allocated according to the national component of PC1.

3-3 Factors promoting better sustainability and impact

(1) Factors concerning to Planning

None could be observed.

(2) Factors concerning to the Implementation Process

The Japanese Experts have been attending those regular meetings with counterparts or other organizations to exude their presence and to share the information about the Project, and to collect the necessary information on EPI. Some of the meetings were essential for smooth implementation of the Project. Especially, at the EPI review meeting in September. 2009, the chief adviser share the information on the concept of vaccine logistics Management and EPI data management, as a result, the concept was recognized as a practical mechanism by relevant parties. Soon after that, the component of Vaccine Logistics

Management was included in PC-1 (Federal) at the time of its revision.

3-4 Factors inhibiting better sustainability and impact

(1) Factors concerning to Planning

The Activities of Output 2" Parents ensure their children to be vaccinated in the target districts.", such as for religious leaders to promote understandings of EPI towards parents in target districts have not been done. Which was judged by the Japanese Experts as the priority of these activities was not high in the targeted district. This might indicate that there was mismatch between the project design and actual situation in Pakistan. Thus, those activities should have been modified through revision of PDM at the certain point of time after the midterm review.

(2) Factors concerning to the Implementation Process

While Japanese experts have been communicating with counterparts and other related institutions by attending those conferences above, some concerning factors can be observed as follows.

1) Non-existence of oversight on the Project: a function to oversee whole activities was not formulated by the Project even though the counterparts are varied according to the activity of the Project.
2) Less communication among counterparts: Especially with EPI and National Program of federal and province levels, a communication channel was not well organized.
3) Since the bombing of the madrassa in KPK in October 2006, security problems such as suicide bombing have become widespread and serious. Also, the activities related to health and education has been restricted due to deterioration of security conditions, and Japanese experts were not able to work in the project sites since May 2007. Furthermore, Japanese experts could not visit even Peshawar and started to send national staff of the Project to the project sites for implementing the project activities and invited the counterparts to Islamabad for meetings. The Project had newly employed medical doctors as national staff to re-start and promote the activities in three target districts. However, the grave security condition did not allow them to do so fully. Responding the above situation, in October 2008, Advisory Study Mission was dispatched to Pakistan to review the activities and progress of the Project. The Advisory Study Mission selected Haripur as new target area among the candidate districts. The addition of new target district to the Project was approved in second JCC in April 2009. Since dispatching the Advisory Study Mission, security condition has not improved and the activities in three target districts have remained suspended. The project activities in Haripur, however, have been implemented until now. And the training on EPI Data Management has been newly conducted targeting KPK after the Mid-term review. Furthermore, on July and August 2010, Pakistan suffered extensive damages from floods. And some of the Training courses of the Project had to be suspended for three months, as there was no other choice.

3-5 Conclusion

The Project Purpose has been achieved in Haripur From the view of evaluation of five criteria, relevance is high, effectiveness is also almost high, and efficiency is moderately high. As for impact, "Prospect for the achievement of the Overall Goal" cannot be confirmed at the moment. Although EPI service provision mechanism including reporting system and LHW's performance in Haripur were not implemented in other pilot areas including Swat because of security issues, output 1 "EPI services are properly provided in the target districts" and output 3 "Quality control capacity of QCL/NIH is enhanced" were partially achieved

with clear results in Haripur. As for sustainability of the Project, political aspect of sustainability is assured though, from institutional aspect, it is needed to proper allocation, plan and management of human resources from federal to provincial level. Technical aspect of sustainability is almost assured though, continuous activities until the termination of the Project is required to ensure the Output 4 "Federal and Provincial routine EPI system is strengthened". Financial sustainability will be tough issue for Pakistan as it has chronicle shortage of budget and depending on donors' support for EPI operational cost, continuous efforts to obtain the resources is needed.

There were several hindering factors such as change of target areas due to deterioration of security condition and flood etc…during the implementation process of the Project. The Project team made efforts to continue the activities they could do in those limited areas. At the moment, the sustainability in terms of technical aspect is not enough, and one of the reasons behid is the length of the project was not enough. It is necessary that Japanese experts will do their best to assure technical sustainability untill the end of the project. However, certain results are evaluated from this project, and it is expected to wrap up the cooporation with the enhancement of technical sustainability within the remaining 6 months. Therefore, the suspension of the project is not necessary. Meanwhile, Japanese yen loan project "Polio Eradication Project" has been initiated since August 15, 2011. It should be discussed the possibility of the new technical cooporation project for the enhancement of EPI to strengthen the emerging yen loan project.

3-6 Recommendations

(1) Communication between federal and provincial level has not been enough as the Project activities have become diverse after the mid-term review. Thus, it is recommended to enhance communication among all stakeholders including the Federal and Provincial EPI cells, NIH and other partners to solve the problems of comprehension of the Project activities by federal EPI cell.

1) Also, it is recommended to organize a meeting with all stakeholders to share the achievement of the Project and develop a plan for each output on how to bring the maximum effect of the Project in the remaining period.
2) Enhancing capacity by conducting training is the major approach of the Project implementation. It is recommended that the Pakistan side obtain sustainability to conduct these trainings after the end of the Project. However, as described above, as there are not enough caretakers at provincial levels in this regard, the Project is recommended to develop training mechanisms with the documented concepts, so that the Pakistan side can, at least, conduct those trainings by assistant of third parties. Also, it is recommended to draw lessons learnt from evaluation of the trainings. Also, the federal and provincial EPI are recommended to enhance intuitional capacity to conduct those trainings.
3) As for output 1 "EPI services are properly provided in the target districts." It was recognized the positive effect of involvement of LHW into EPI program. However, as recommended at the mid-term review, effects of involvement of LHW have not been analyzed well. Thus, for further progress, the Federal EPI, along with the National Program, is recommended to analyze effects of involvement of LHW on EPI program, including effects of BCC activities by LHW and impacts, either positive or negative, by LHW activities for immunization.
4) As for the activity for output 1 "EPI services are properly provided in the target districts." which is making and implementing of outreach plan by EPI technicians, EPI technicians have been able to develop outreach plans in Haripur. But, not enough monitoring on implementation of those plans has been done. It is recommended to develop monitoring and feedback mechanisms of implementation of

those plans.

5) As for output 4 “Federal and Provincial routine EPI system is strengthened”, for EPI logistics and data management, the Japanese side is recommended to continue technical assistance so that the Pakistan side can obtain technical sustainability in these fields within the Project period.
6) At this moment, it is impossible to obtain certain numbers of indicators, especially for output 4 “Federal and Provincial routine EPI system is strengthened” of EPI data, vaccine stock and etc... Since these indicators are very important to judge significance of the Project, the Project is required to collect data regarding these indicators by the end of the Project period.
7) As for one of the activities for output 4 “Federal and Provincial routine EPI system is strengthened”, the Project has finished trainings on EPI data management in only twelve districts in one province at this moment. Since this training is very meaningful for EPI program and planned to conduct in four provinces to bring maximum effect of the Project. Thus, the Project is recommended to conduct these trainings in remaining provinces as much as possible.
8) For the activity 4-4 (Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell) of output 4, the Project is recommended to develop the criteria for validation of data quality to assess surveillance data.

3-7 Lessons Learned

(1) In the process of on devolution (from federal to province), more decision making authority will be delegated to provincial level. Under such a circumstance, it is more important to share the contents of the Project activities among federal level and other donors to ensure maximum effects and development of Project activities.

(2) It is the same in other projects in Pakistan, the Project tended to be “rendering of service” rather than enhancing capacity development. It is essential for capacity development that a Project has precise project design and active approach to Pakistan side before and during Project period.

(3) Regarding the project design, it should be carefully considered that an approach “build implementing system as a model in a target area and try to expand to country wide“ is very difficult not only to implement, but to obtain consensus from relevant parties in Pakistan.

(4) As seen in the training course of the Project, there was lack of recipient institutions and human resources for implementation of training for capacity development. It is important to do deep discussion about it with counter parts beforehand for better understandings about sustainability of the project and confirmation of the recipient institution.

(5) Since the project activities tend to be “service rendering” technically and financially, it is recommended to discus with counter parts beforehand so that counter parts have more ownership and responsibility.

(6) Since the counterparts were assigned according to each activity of the Project, there was no one to oversee and manage those counterparts as a whole. Regarding this matter, a person who is in charge of the entire project activities must be chosen at the beginning of the project design, or meetings such as JCC should be set to make the counterparts well coordinated.

(7) When having projects with the possibility of having various restrictions on project activities because of the bad security situation, one's safety must be the first priprity for experts. If possible, local resources should be utilized, and a structure for the smooth implementation must be prepared.

第１章　調査の概要

１－１　調査団派遣の経緯と目的

パキスタン・イスラム共和国（以下、「パキスタン」と記す）は人口約 1 億 5,500 万人、1 人当たりの GNI は 600 米ドルの低所得国である。子どもの健康状況は厳しく、5 歳未満死亡率は対出生 1,000 人当たり 101 で、乳児（1 歳未満の子ども）の死亡率は 80 を記録する。予防接種率はポリオ 65％、麻疹 67％、結核・BCG80％であり、ポリオを中心にワクチンと予防接種のための世界同盟（GAVI）、世界保健機関（WHO）、国際連合児童基金（UNICEF）等、多くのドナーが多額の投入を行っている。

わが国は 1996 年以来、無償資金協力を通じてポリオ及び破傷風ワクチンの調達を実施してきた。また 2001 年以降は長期・短期の専門家を派遣するとともに、機材供与・本邦研修等を実施した。こうした実績を踏まえ、パキスタン政府から技術協力プロジェクト「EPI ／ポリオ対策プロジェクト」の要請を受けて、2006 年 9 月 7 日より 2011 年 9 月 6 日までの 5 年間の予定で開始に至った。

本プロジェクトは上位目標を「対象県において定期予防接種にて予防可能な疾患の罹患率が減少する」、プロジェクト目標を「対象県における 2 歳未満の乳幼児が予防接種を受けられるようになる」とし、イスラマバードの国立保健院（NIH）におけるワクチン品質管理検査室（Quality Control Laboratory：QCL）支援と、北西辺境州〔NWFP：のちに KPK（ハイバルパフトゥンハー州）に名称変更〕政府を対象とする拡大予防接種プログラム（EPI）支援から構成されている。現在、長期専門家 2 名を派遣中である。このうち EPI 支援については、指標が比較的悪い地域である北西辺境州の 3 県（スワート、ブネール、シャングラ）を対象としていたが、治安悪化により対象県内での活動が困難となり、2010 年当初よりペシャワール、その後更なる治安の悪化によりイスラマバードに関係者を集めて研修・技術指導を行う方法にて支援を行っている。

このような状況にかんがみ、プロジェクト活動の一部見直しの必要性が認められたため、2008 年 10 月に運営指導調査団を派遣し、治安が比較的安定している北西辺境州ハリプール県を新たな協力対象地域とすることなどが提言された。右を受け、2009 年 4 月には、ハリプール県における EPI 支援活動を開始している。2009 年 10 月には中間レビュー評価を実施した。

今回の終了時評価調査は、上記の経緯を踏まえたうえで、EPI 支援及び QCL 支援についてパキスタン側と合同で目標達成度や成果等を分析し、プロジェクトの残り期間（約半年）の課題及び今後の方向性について確認し、合同評価報告書に取りまとめ、合意することを目的として派遣された。

１－２　調査団の構成

氏　名	担当業務	所　属	現地調査期間
磯野　光夫	団長・総括	JICA 人間開発部　課題アドバイザー（保健）	2011/4/26～5/1
蜂矢　正彦	EPI ／ポリオ対策	国立国際医療研究センター国際医療協力部派遣協力第二課　感染症グループ長	2011/4/22 ～ 30
青木　恒憲	協力企画	JICA 人間開発部保健第二グループ保健第四課　主任調査役	2011/4/22 ～ 30

青木　裕子	評価分析	国際航業株式会社海外事業部 コンサルタント	2011/4/17 ～ 5/1

１－３　調査日程

（2011 年 4 月 17 日～ 29 日）

日付	曜日	磯野（団長）	蜂矢（EPI ／ポリオ対策） 青木（協力計画）	青木（評価分析）
4/17	日			成田→バンコク→ラホール
4/18	月			パンジャブ EPI へのインタビュー ラホール→イスラマバード
4/19	火			KPK-EPI へのインタビュー UNICEF-KPK へのインタビュー JICA 事務所へインタビュー 日本人専門家へインタビュー
4/20	水			ハリプール県訪問 県保健局〔局長、県 EPI コーディネーター、県スーパーバイザー、女性保健監督者（LHS）、女性保健上級者（LHV）〕面談・聞き取り
4/21	木			ハリプール県訪問 女性保健従事者（LHW）グループディスカッション（2 BHUs） ヘルスハウス訪問（2 カ所）
4/22	金		成田→バンコク→イスラマバード WHO 面談・聞き取り	連邦 EPI 面談・聞き取り QCL 視察、面談・聞き取り
4/23	土		経済関係局（EAD）面談・聞き取り NIH QCL office 面談・聞き取り	データ収集・分析、資料整理 団内ミーティング
4/24	日			データ収集・分析、資料整理
4/25	月		ハリプール県訪問	データ収集・分析、 報告書ドラフト作成 団内ミーティング
4/26	火	カブール→イスラマバード	保健省（MoH）との協議	データ収集・分析、 報告書ドラフト作成 団内ミーティング
4/27	水	MoH との協議、UNICEF 面談・聞き取り、WHO 面談・聞き取り		
4/28	木	MoH との協議、米国国際開発庁（USAID）面談・聞き取り		
4/29	金	ミニッツ署名、在パキスタン日本国大使館報告、JICA パキスタン事務所報告、イスラマバード発		

１－４　主要面談者

本調査で面談した主要な関係者は以下のとおりである。

＜パキスタン側＞

（１）保健省（MoH）

Dr. Muhammad Azam Saleem	Joint Secretary Planning and Development Department（P&D）
Dr. Rana Muhammad Safdar	Deputy Director General, Planning and Development Department（P&D）
Dr. Birjees Mazher Kazi	Executive Director, NIH（National Institute of Health）
Dr. Altaf Bosan	National Project Manager
Dr. Faisal Mansoor	Deputy National Programme Manager EPI
Mr. Qadir Bux Abbasi	Deputy Director（Monitoring & Evaluation）EPI
Mr. Ahmad Bashir	Store Officer EPI

（２）国立保健院／ワクチン品質管理検査室（NIH/QCL）

Mrs. Anwar Begum	Senior Scientific Officer

（３）KPK 州保健局

Dr. Janbaz Afridi	Director EPI, Department of Health
Dr. S.M. Taimur Shah	Assistant Director EPI, Department of Health
Dr. Ihsanullah Turabi	Provincial Coordinator National Program
Dr. Ijaz Ahmed	Assistant Provincial Coordinator National Program

（４）KPK ハリプール県保健局

Dr. Muhammad Idrees	Executive District Officer-Health（EDO-H）
Dr. Waseem Ahmed	District EPI coordinator
Mr. Liaqat Ali	District EPI Supervisor

（５）パンジャブ州 EPI 局

Dr. Arshad Iqbal Dar	Director Health Services（DHS）
Dr. Sajjad Ahmad	District Superintendent Vaccination（DSV）
Mr. Mahmood Ahmad	Store Keeper

（６）UNICEF

Dr. Bilal Ahmad	Immunization Officer, KPK
Dr. Mushtaq Hussain Rana	Health Officer, Punjab

＜日本側＞

（１）JICA　EPI ／ポリオ対策プロジェクト

宮城　裕人	チーフアドバイザー

藤原　章裕	業務調整
Dr. Muhammad Saleem	Project Medical Officer

（２）JICA パキスタン事務所

石黒　洋平	企画調査員
Mr. Sohail Ahmed	現地所員（保健担当：Senior Program Officer）

１－５　プロジェクトの概要

プロジェクトの概要は以下のとおり。

＜上位目標＞対象県において定期予防接種にて予防可能な疾患の罹患率が減少する。

＜プロジェクト目標＞対象県における 2 歳未満の乳幼児が予防接種を受けられるようになる。

＜成果１＞対象県において定期予防接種サービスが適切に実施される。

＜成果２＞対象県において両親が乳幼児に定期予防接種を受けさせるようになる。

＜成果３＞ワクチン品質管理検査室（QCL）が強化される。

＜成果４＞連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される。

第２章　終了時評価の方法

２－１　評価時調査団メンバー

第１章１－２「団員構成」に同じ。

２－２　評価手法

以下の手順に従って、評価を実施した。

（１）評価設問を設定する。評価設問は評価５項目を基にして検討された評価のための要確認事項であり、評価グリッドに示されている（付属資料３を参照）。

（２）必要な情報・データや収集手段を検討する。これらも評価グリッドに示されている（同様に評価中でも改訂、増減される）。

（３）評価グリッドに基づき、必要な情報・データを収集する。

（４）評価５項目の視点から、プロジェクトの実績と計画を比較する。

（５）評価５項目の各視点に基づく評価結果を検討する

（６）評価の目的に照らし合わせて、評価結果をまとめる。

（７）提言及び教訓をまとめる。

表２－１　評価５項目

妥当性	評価時点においても、プロジェクト目標及び上位目標の整合性があるかどうかを、パキスタン政府の政策、裨益者のニーズ、日本の援助政策との整合性の観点から考察する。
有効性	プロジェクト目標の達成の度合い、及びアウトプットがどの程度プロジェクト目標の達成に貢献したかを考察する。
効率性	プロジェクトの投入が、質や量の面でどれだけアウトプットに還元されたかを考察する。
インパクト	プロジェクトが実施されたことにより生じる波及効果の正・負の効果を、当初予期しなかった効果も含め考察する。
持続性	協力終了後、プロジェクトによってもたらされた成果や開発効果が持続されるか、あるいは拡大されていく可能性があるかどうかを予想するために、制度的側面、政策財政的側面、技術的側面からプロジェクトの持続性の見込みを考察する。

第３章　調査結果

３－１　プロジェクト実施のプロセス

３－１－１　日本側投入実績

（１）専門家派遣（127.62 人 / 月）

終了時評価時点で 7 分野の専門家が派遣された。専門分野は、チーフアドバイザー、業務調整、ワクチンロジスティクス、ワクチン品質管理、BCC ／社会動員、EPI 支援となっている。長・短期の別としては、長期専門家が 4 名、短期専門家が 9 名という配分となっている。専門家派遣に係る詳細は付属資料 1 の合同評価報告書 ANNEX IV を参照のこと。

（２）調査団派遣

運営指導調査団が 2008 年 10 月に、中間レビュー調査団が 2009 年 9 月に派遣された。

（３）供与機材

終了時評価時点で、46 種の機材がプロジェクトにおいて供与されている（合計 3,856 万 9,030 Pak Rs[1]）。これらの機材は、パーソナルコンピュータやプリンター、プロジェクター等のプロジェクト運営や研修運営に係る機材、モニタリング活動に必要な車両、また、アイスライン式冷蔵庫、冷凍庫、温度計といったコールドチェーンに係る機材が含まれている。KPK 州のプロジェクトサイトに供与された機材のうち、いくつかの機材に関しては治安悪化によって略奪・破壊されている。供与機材の詳細は付属資料 1 の合同評価報告書 ANNEX V を参照のこと。

（４）在外事業強化費

終了時時点での在外事業強化費は合計およそ 6,280 万円である。主なものは現地スタッフ雇用、研修諸費、インターネット代等日常的な経費である。

表３－１　在外事業強化費

（単位：円）

2006 年度	2007 年度	2008 年度	2009 年度	2010 年度	合　計
2,319,040	8,075,769	11,815,438	17,742,937	22,798,542	62,751,726

出典：プロジェクトデータ

（５）本邦研修

合計 15 名のカウンターパート（C/P）が本邦研修に参加した。受講した研修コースと参加者数は下表のとおり。研修受け入れ先は、阪大微生物病研究会・観音寺研究所及び国立国際医療研究センター（NCGM）である。本邦研修の参加者リストは、付属資料 1 の合同評価報告書 ANNEX VI を参照のこと。

[1] 1 パキスタンルピー = 0.983 円（2011 年 4 月 JICA 統制レート）

表３－２　研修コース及び参加者数

研修コース名	参加人数
ワクチン品質管理技術	3
伝染病学とワクチンで予防可能な疾患の制圧方法 -GIVS に基づいて -	5
ワクチンで予防可能な疾患の制圧方法	7

３－１－２　パキスタン側投入実績

（１）C/P の配置

プロジェクト実施においては、連邦レベルの C/P は、NIH における連邦 EPI 担当者、QCL 担当者、4 州（KPK 州、パンジャブ州、バロチスタン州、シンド州）の EPI 担当者、プロジェクト対象県（スワート、シャングラ、ブネール、ハリプール）における県 EPI 担当者が C/P として配置されている。C/P リストは、付属資料 1 の合同評価報告書 ANNEX VII を参照のこと。

（２）パキスタン側ローカルコスト

パキスタン側ローカルコストの予算配分は下表のとおりである。 プロジェクト事務所は NIH 内（イスラマバード）と KPK 州保健局内（ペシャワール）に構えられている。プロジェクト事務所に係る光熱費はパキスタン側が負担している。

表３－３　パキスタン側ローカルコスト

（単位：パキスタンルピー）

パキスタン年度[2]	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	合　計
パキスタン連邦政府	1,250,000	1,375,000	1,512,500	1,663,650	1,830,125	7,631,275
北西辺境州	2,142,000	2,142,000	3,142,000	2,142,000	2,142,000	11,710,000
合　計	3,392,000	3,517,000	4,654,500	3,805,650	3,972,125	19,341,275

出典：保健省

３－２　プロジェクトの実績

３－２－１　活動計画（PO）に対する活動実績

番号	活動計画（PDM1）	活動実績
アウトプット１：対象県において定期予防接種サービスが適切に実施される。		
プロジェク活動対象地域：ハリプール - アウトプット１のための活動は、ほぼ予定どおりに実施された。活動 1-13 を除いて、調査、マテリアルの開発、研修及びモニタリングが実施された。 - プロジェクトの終了に向けて、レポーティング・システムをより機能させるために、活動 1-11（LHW 及び EPI テクニッシャンのモニタリングと報告システムの統合を行う。）の更なるモニタリングが検討されている。		

[2] パキスタンの会計年度は 6 月が開始月となっている。

1-1	ベースライン・サーベイ・中間レビュー・終了時評価を実施する。	- 2007 年 10 月に、ブネール、スワート、シャングラでベースライン・サーベイがプロジェクトの指導の下ローカルコンサルタントによって実施された。調査結果は、プロジェクト実施委員会（Project Implementation Committee：PIC）で報告され、保健省（MoH）及び JICA に提出された。 - 2008 年 10 月の運営指導調査後、ハリプール県がターゲット県に追加され、シチュエーション・サーベイがベースライン・サーベイに代わって実施された（2008 年 11 月）。調査結果は、EPI cell-KPK、連邦 EPI 及び MoH に提出された（2009 年 4 月） ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。 付属資料 1 の合同評価報告書より参照。 （ANNEX VIII：The Baseline Survey） （ANNEX VIIII：The Situation Survey）
1-2	各対象県におけるマイクロプランの作成・不足人員の補充計画（四半期毎の PIC 開催）を策定する。	- ブネール、スワート、シャングラでは、2009 年 4 月まで四半期に 1 度 PIC が開催され、3 県の EPI 人員の拡充計画を含む“マイクロプラン”が策定されていた。以降は、治安上の問題で、PIC 開催は延期されておらず、“マイクロプラン”は完成していない。 - ハリプールは、2009 年 4 月の最後の PIC にオブザーバーとして招待された。 ＜中間レビュー以降＞ - オンザジョブ・トレーニング（OJT）として、ハリプールでは既存の“マイクロプラン”が修正され、効果的な実施に関する指導がなされた。
＜人材育成＞		
1-3	ベースライン・サーベイにおいて研修のニーズ評価を実施する（1-1 にて実施）。	- ブネール、スワート、シャングラではベースライン・サーベイのひとつとして知識・態度・行動（KAP）サーベイが行われた。サーベイ結果は PIC で報告された。 - ハリプールでは、ベースライン・サーベイは行われず、シチュエーション・サーベイのみが行われた。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。 - KAP サーベイは、ベースライン・サーベイに含まれている。付属資料 1 の合同評価報告書 ANNEX VIII を参照のこと。
1-4	EPI テクニッシャン及び Lady Health Supervisor（LHS）を対象とした LHW 研修におけるトレーナー研修を実施する。	- ブネール、スワート、シャングラでは、EPI テクニシャンを対象とした研修“Training on LHW involvement in EPI services for EPI technician”及び LHS を対象とした“TOT for selected FLCF trainers“が実施された。

		- 研修の参加者数は以下のとおり。 スワート：91 名（2007 年 9 月実施） ブネール：19 名（2007 年 9 月実施）、14 名（2008 年 5 月実施） シャングラ：15 名（2007 年 9 月実施）、16 名（2008 年 6 月実施） - 国家 EPI プログラムで作成されたテキスト及びガイドラインを研修に活用した。 - ハリプールでも同様の研修“TOT for selected FLCF trainers“が、2009 年 5 月に実施され、167 名が参加した。 ＜中間レビュー以降＞ - ハリプールで、上記の研修が 2010 年 7 月に実施され、20 名が参加した。
1-5	EPI プログラムに関する LHW 研修を実施する。	- EPI サービスに関する LHW への研修“LHW Training for EPI involvement”が、ブネール、スワート、シャングラで実施された。活動 1-14 の研修を受けたトレーナーが実施し、国家 EPI プログラムで作成されたテキストとガイドラインを活用した。 - 治安上の理由により、研修は以下のとおりに延期されている。 - スワートでの活動は 2007 年 7 月に中断された。2008 年 8 月に 247 名の LHW を対象に再開されたが、1 カ月後に再度中断を余儀なくされた。 - シャングラ及びブネールでは、2009 年 5 月以降、研修が一時中断されている。 - ハリプールでは、300 名の LHW を対象に研修（第 1 回）が実施された。 ＜中間レビュー以降＞ - ハリプールで、289 名（第 2 回：2009 年 12 月～ 2010 年 8 月）及び 143 名（第 3 回：2010 年 7 月～ 2011 年 1 月）の LHW 対象に研修が実施された。
1-6	EPI テクニシャンの再研修を実施する。	- ブネール、スワート、シャングラでは、計 155 名の EPI テクニシャンに対して“The EPI refresher training”が実施された（2008 年 2 ～ 4 月）。 - ハリプールでは、2009 年 6 月に同様の研修が 55 名の EPI テクニシャンに対して行われた。 - EPI テクニシャンに対する研修には、国家 EPI プログラムで開発されたテキストが活用された。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。
1-7	メディカルオフィサーに対する EPI 研修を実施する。	- メディカルオフィサー（MO）に対する EPI 研修“EPI Training for MO/In charge of Health facility”が、ハリプールで 38 名の MO に対して実施された（2009 年 9 月）。

		- 治安上の理由により、ブネール、スワート、シャングラでは研修は中断された。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。
＜ロジスティクス支援＞		
1-8	ベースライン調査時に機材のニーズ評価を実施する。	- ブネール、スワート、シャングラでは、機材のニーズ評価はベースライン・サーベイの一貫として、ハリプールでは、シチュエーション・サーベイの一貫として計画どおりに実施された。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。
1-9	必要な機材を調達、設置する。	- 機材のニーズ評価に基づいて、冷蔵庫などの機材がスワート、シャングラ、ブネールに供与された。 - 治安上の理由により、その他の機材の供与が中断されている。 - スワートへの供与は 2007 年から中断されている。 - シャングラ及びブネールへの供与は 2009 年から中断されている。 ＜中間レビュー以降＞ - ハリプールでは、2011 年 6 月に到着予定の冷蔵庫を除き、すべての機材が調達された。 （供与機材リストについては、付属資料 1 の合同評価調査報告書 ANNEX V を参照のこと。）
＜遠隔地における EPI サービスへのアクセス＞		
1-10	ベースライン調査時にアウトリーチ活動に関するニーズ評価を実施する。	- アウトリーチ活動に関するニーズ評価はベースライン・サーベイ（1-1）のひとつとして実施された。調査結果は PIC にてスワート、ブネール、シャングラの間で共有された。ハリプールでは、シチュエーション・サーベイのひとつとして実施され、結果は EPI Cell-KPK、連邦 EPI 局及び MoH へ報告された。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。
＜モニタリング活動＞		
1-11	LHW 及び EPI テクニシャンのモニタリングと報告システムの統合を行なう。	＜中間レビュー以降＞ - ハリプールでは、LHW 予防接種レポート及び EPI 月間レポートが、2010 年 8 月に作成された。 - これらのフォーマットを用いて、モニタリングが開始された。

		- ブネール、スワート、シャングラでは、この活動に関して 2007 年に計画はされたが、治安上の理由により実施されていない。
1-12	EPI 関連機材の維持管理に関する研修を実施する。	＜中間レビュー以降＞ - ハリプールでは、EPI 関連機材の維持管理に関する研修が 2010 年 11 月に実施された。 - この研修は、治安上の理由によりブネール、シャングラ、スワートでは実施されていない。
1-13	州、県及び第一次保健医療施設において報告率、副反応、ワクチンの廃棄率及び在庫切れを含めた EPI 活動に関するチェックリストを作成する。	- 活動 1-13 は、治安上の理由により日本人専門家が詳細調査のためターゲット 3 県にアクセスすることができないため実施されていない。 - 州、県及び第一次保健医療施設（FLCF）において報告率、副反応、を含めた EPI 活動に関するチェックリストは作成が計画されていた。 ＜中間レビュー以降＞ - 活動 1-13 はハリプールでは、日本人専門家の判断により実施されていない。理由は以下のとおり、 - 治安状況が改善されれば、活動を再開する予定であったが、状況は変わらなかった。 - この活動を実施する必要性は低かった。（終了時評価チームによるインタビュー調査では、人口 2 万 5,000 人の村で 1 世帯のみワクチン拒否があった。） - プロジェクト全体の活動に照らして、この活動の優先順位は低かった。 - ファシリティーレベルでのカバレッジ、ワクチン廃棄率及び在庫切れ状況については Monthly Meeting でモニターされている。
1-14	EPI センターにおけるモニタリング強化する。	- ブネール、スワート、シャングラでは、EPI センターにおけるモニタリングが治安上の理由により中断されている。 ＜中間レビュー以降＞ - Monthly Meeting において、EPI スタッフが”Monthly Planner”を活用して作成したマイクロプランの評価が行われている。県の EPI コーディネーターが EPI テクニシャンの活動をアウトリーチ活動でのワクチン接種記録の評価を通じてモニターしている。 - 基礎保健ユニット（BHU）では、県の EPI コーディネーター、県スーパーバイザー（DSV）、現地スーパーバイザー（FSV）が、EPI テクニシャンによるアウトリーチとフィックスサイトでの活動をモニタリングしている。
アウトプット２：対象県において両親が乳幼児に定期予防接種を受けさせるようになる。		
プロジェクト活動対象地域 : ハリプール 日本人専門家の判断により、活動は以下の理由で実施されなかった。 - 治安状況が改善されれば活動を実施する予定であったが、状況は変わらなかった。		

- 活動を実施する必要性が低かった。（例 : 終了時評価チームによるインタビュー調査では、人口 2 万 5,000 人の村で 1 世帯のみワクチン拒否があった。） - プロジェクト全体の活動に照らして、この活動の優先順位は低かった。		
＜コミュニティ啓発＞		
2-1	住民啓発の戦略計画を開発する。	- EPI に関する住民啓発の戦略計画は 2008 年に策定が計画されていた。しかし、日本人専門家が詳細調査のためにターゲット県（ブネール、スワート、シャングラ）に行くことが、治安上の理由によりできなくなった。ハリプールでは、この活動は実施されなかった。 ＜中間レビュー以降＞ - 活動は実施されなかった。
2-2	啓蒙・啓発用のポスター・コミュニケーションツールを改訂する。	- 啓蒙・啓発用のポスターは作成された。 - 約 20,000 部のポスターが、すべてのターゲット地域〔各州、県、第一次保健医療施設（FLCF）及び health post〕に配布された。 ＜中間レビュー以降＞ - 活動 2-1 が実施されていないので、連動している 2-2 は実施されなかった。
2-3	学校の教師、コミュニティリーダー、LHW、宗教指導者を対象とした定期予防接種に関するセミナー／ワークショップを実施する。	- 2007 年 3 月に宗教学者との対話が行われた。イスラマバードから 3 名、ペシャワールから 1 名、スワートから 7 名が参加した。ハリプールでは、学校教師、コミュニティリーダー、及び NGO が参加したセミナーが 2009 年 7 月に 2 回実施された。以降は、どのターゲット県でもこの活動は行われていない。 ＜中間レビュー以降＞ - 活動 2-1 が実施されていないので、連動している 2-3 は実施されなかった。
2-4	学校の教師、コミュニティリーダー、LHW、宗教指導者を対象とした定期予防接種に関する健康教育を実施する。	- 活動 2-5 は実施されていない。ブネール、スワート、シャングラでは 2007 年に実施される計画があったが、治安状況の悪化により現在まで実施されていない。ハリプールでは、LHW への研修を通じて、LHW に対しての健康教育が実施された。 ＜中間レビュー以降＞ - 活動 2-1 が実施されていないので、連動している 2-4 は実施されなかった。
2-5	LHV や医師を通して予防接種に関する啓蒙を妊娠女性対象に実施する。	- 活動 2-6 は実施されていない。2007 年に実施される計画があったが、治安状況の悪化により現在まで実施されていない。 ＜中間レビュー以降＞ - 活動 2-1 が実施されていないので、連動している 2-5 は実施されなかった。

アウトプット３：ワクチン品質管理検査室（QCL）が強化される。		
プロジェクト活動対象地域：NIH/QCL 活動は予定どおりに実施された。		
<QCL 支援>		
3-1	ニーズ調査にもとづいて調達計画が策定される。	- プロジェクト初期に、ニーズ調査に基づいて調達計画が策定された。 ＜中間レビュー以降＞ 計画は適宜修正された。
3-2	機材を調達し、施設にインストールする。	- 活動 3-1 の調達計画に基づいて、オートクレーブ、有機体炭素アナライザー及び分光光度計など、QCL に関連する機材が調達され、設置された。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。 （付属資料 1 の合同評価報告書 ANNEX V：List of Equipment Provided を参照のこと。）
3-3	機材の使用及び維持管理に関する研修を実施する。	- 機材の使用及び維持管理に関する研修は、短期専門家の活動期間中に OJT として実施された。 - 短期専門家の派遣期間は、付属資料 1 の合同評価報告書 ANNEX IV：List of Japanese Experts を参照のこと。 ＜中間レビュー以降＞ - プロジェクト活動の終了により、その他活動は実施されていない。
3-4	ワクチン品質管理検査の研修を実施する。	- ワクチン品質管理検査の研修は、以下のセミナーの実施を通じて行われた。 2007 年 2 月：「EPI ワクチン品質管理検査方法」を実施 2008 年 2 月：「管理チャートを利用したトレンド分析セミナー」を実施 2009 年 2 月：セミナー「トレンド分析の実践的方法」、「アッセイバリデーションの実践的方法」を実施 ＜中間レビュー以降＞ - 2010 年 2 月：“Pharmaceutical Quality System ICH Q10” を実施
3-5	QCL 活動のモニタリングを実施する。	- QCL 活動のモニタリングは、短期専門家、運営指導調査及び QCL スタッフ自らによって行われている。品質管理規則（GMP）を適用した品質管理システムが実施されている。 - 中間レビュー調査時に、プロジェクトによって供与された機材の、インベントリーに基く適切な管理が確認された。しかし、システマティックな管理方法ではなかった。

		（供与機材については、付属資料１の合同評価報告書ANNEX V：List of Equipment Provided を参照のこと。）
アウトプット４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される。		
プロジェクト活動対象地域：4 州（シンド、バロチスタン、パンジャブ及び KPK） 活動はほぼ予定どおりに実施された。 活動 4-3（定期予防接種におけるデータ管理とサーベイランスに係る研修を 4 州の県レベルで実施する。）及び 4-4（連邦及び州の EPI 局において、予防接種関連疾患に関するサーベイランスデータの分析とアセスメントを実施する。）については、プロジェクトの終了時までに実施されることになっている。		
＜連邦 EPI 局支援＞		
4-1	ワクチン在庫管理に関して必要に応じて SOP を改訂する。	＜中間レビュー以降＞ - プロジェクト開始時には、パキスタンには標準業務手順書（SOP）は存在していなかった。ドナーによって作成されたモジュールはあったが SOP ではなかった。プロジェクトでは、EPI ロジスティクスに関する Guidelines/ Recommendations on Vaccine Stock Management を SOP に代替して作成した。 （付属資料１の合同評価報告書ANNEX XI : The Guideline/ Recommendations on Vaccine Stock Managementを参照のこと。）
4-2	SOP を基にしたワクチン在庫管理研修を 4 州の県レベルで実施する。	- 2008 年 9 月にスワート県、シャングラ県、ブネール県に対して計画どおりに SOP に基づいた EPI ロジスティクス研修が実施された。 ＜中間レビュー以降＞ - 4 州内の 137 すべての県／町に対して、EPI ロジスティクス研修が、2010 年 2 月から 2011 年 2 月にかけて実施された。合計 564 名が、25 回行われた研修に参加した。
4-3	定期予防接種におけるデータ管理とサーベイランスに係る研修を 4 州の県レベルで実施する。	＜中間レビュー以降＞ - EPI データ管理研修が、KPK 州の EPI コーディネーター、DSV、NP Coordinator 及び Assistant District NP coordinator を対象に実施された。2010 年 3 月に実施され、51 名が参加した。 - その他 3 州に対しては、EPI データ管理研修は実施されなかった。 - すべての州において、サーベイランスに係る研修は技術的な理由により実施されなかった。
4-4	連邦及び州の EPI 局において、予防接種関連疾患に関するサーベイランスデータの分析とアセスメントを実施する。	＜中間レビュー以降＞ - 予防接種関連疾患に関するサーベイランスデータの分析とアセスメントは専門家の判断により必要性は高くないものと判断され実施されなかった。 - 現時点では、予防接種関連疾患に関するサーベイランスデータの簡単な分析のみが行われた。

３－２－２　成果の達成度

（１）成果１：対象県において定期予防接種サービスが適切に実施される。

指標 1-1：定期予防接種サービスの提供に関する研修を受講した LHW や EPI 従事者の比率が 80%以上となる。

成果１は、以下に示されるように部分的に達成された。

指標はハリプールにおいては達成されたが、その他のターゲット県についてはプロジェクト活動が中断されているため判断できない。

中間レビュー調査以降、ハリプールにおける 100%の LHW が研修を修了した。289 名の LHW が第 2 回研修で、143 名が第 3 回研修で（LHW routine EPI involvement）を修了した。

研修を受けた LHW の数は下表のとおり。

表３－４　研修を受けた LHW の数

（単位：人）

研修時期	スワート	ブネール	シャングラ	ハリプール
2007 年 9 月～ 2008 年 4 月	0	66	67	0
2008 年 5 月～ 2008 年 12 月	247*	24	44	0
2009 年 6 月～ 2009 年 12 月	0	0	0	299
2009 年 10 月～ 2010 年 5 月	0	0	0	289
2010 年 6 月～ 2011 年 1 月	0	0	0	143
プロジェクト実施の研修を受講した LHW 数	247*	90	111	731
UNICEF 実施の研修を受講した LHW 数	487	0	0	0
研修を受講した LHW 数の合計	1,666			
県別 LHW 数（終了時評価時点）	1,258	228	189	731
研修カバー率	59.1%	39.5%	58.7%	100.0%

*：スワートでは 247 名の LHW に対して予防接種研修が実施されたが、1 カ月実施した時点で治安状況の悪化により研修を中断している。

出典：プロジェクト

また、99%の EPI テクニシャンが、中間レビュー調査前までに研修を修了した（下表参照）。

表３－５　リフレッシャー研修を受講した EPI テクニシャン数

（単位：人）

研修時期	スワート	ブネール	シャングラ	ハリプール
2008 年 2 月（4 日間）実施分	0	0	33	0
2008 年 4 月（4 日間）実施分	81	0	0	0
2009 年 4 月（4 日間）実施分	0	36	0	0
2009 年 6 月（3 日間）実施分	0	0	0	55
県別研修受講者数の合計	81	36	33	55
研修受講者数の合計	207			
県別 EPI テクニシャン数（2008 年 12 月時点）	81	36	35	55
研修カバー率	100.0%	100.0%	94.3%	100.0%

出典：プロジェクト

さらに、ハリプールにおいては全員のメディカルオフィサーが中間レビュー調査前に、研修を修了した（下表参照）。）

表３－６　研修を受けた MO の数

（単位：人）

MO を対象とした EPI 研修	スワート	ブネール	シャングラ	ハリプール
2009 年 9 月（1 日間）TOT	-	-	-	5
2009 年 9 月（2 日間）	-	-	-	18
2009 年 9 月（2 日間）	-	-	-	15
県別研修受講者数の合計	-	-	-	38
研修受講者数の合計	-	-	-	38
県別 MO 数（2009 年 9 月時点）	-	-	-	38
研修カバー率	0%	0%	0%	100.0%

出典：プロジェクト

指標 1-2：LHW による予防接種数が増加する。

2009 年以降ハリプールにおいては、LHW による予防接種数が増加しており、指標は達成された。実施された予防接種の実数及び場所の内訳は下表のとおり。

表３－７　実施された予防接種数

（月平均、実数）

	Measles				BCG				Polio			
	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL
2009	1726	1338	9	3072	1869	312	0	2180	6164	1827	25	8016
2010	2184	715	772	3670	1978	295	38	2311	6020	1425	1698	9143

	Penta				TT			
	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL
2009	6070	1760	25	7855	2704	1401	23	4128
2010	5992	1416	1687	9095	2883	1129	2349	6361

出典：EPI 月例報告、ハリプール県

指標 1-3：機能する冷蔵庫を有する EPI センターの数が増加する。

ハリプールでは、機材の供与が終了しだい指標は達成される。

プロジェクトを通じて 27 台の冷蔵庫がハリプールに供与されることになっている。冷蔵庫は、LHW や EPI テクニシャンが利用するワクチンを保管するためのものである。

EPI センターでの冷蔵庫の数は下表のとおり。

表３－８　EPI センターでの冷蔵庫の数

冷蔵庫の数（台）	スワート	ブネール	シャングラ	ハリプール
プロジェクトによる供与	21	12	45	27
もともとあった冷蔵庫の数（供与時点）	66	32	29	32
合　計	87	44	74	59

出典：プロジェクト

指標 1-4：一次医療施設レベルでの活動計画（アウトリーチプラン）の適切な策定・実施がなされる。

ハリプールでは指標は達成された。

ハリプールでのシチュエーション・サーベイによると、プロジェクト実施以前は 46％の EPI テクニシャンがアウトリーチプランの策定と実施をしていないことがわかった。プロジェクトでは、EPI テクニシャンの月例会議を支援した。会議を通じて、アウトリーチプランがつくり直され、プランの実施が強化された。日本人専門家は、月例会議を EPI テクニシャンへの技術移転の場とした。

アウトリーチのリストを含む“Monthly Planner”が、プロジェクトによって作成された。プランナーは、月例会議において、EPI テクニシャンによるアウトリーチプランや実施状況に関するプレゼンテーションの際に役立てられている。EPI テクニシャン同士の情報共有ツールとしても利用されている。ハリプール以外のターゲット県については、治安上の理由によりプロジェクトが中断されているため、指標達成の有無を判断できない。

（５）成果２：対象県において両親が乳幼児に定期予防接種を受けさせるようになる。

プロジェクト活動が実施されていないため、成果２については達成度を判断できない。

指標 2-1：住民啓蒙活動に参加した宗教指導者、コミュニティリーダー、両親、政策策定者の数が増加する。
指標 2-2：スケジュール通りに定期予防接種（8 疾患）を完了させるべきであることを認識している 1 歳未満児の両親や後見人の比率の向上。
指標 2-3：ポリオキャンペーンに加えて定期予防接種が重要であることを認識している 1 歳未満児の両親及び養育人の数が増加する。

スワート及びペシャワールにおいて、宗教指導者や宗教学者らと予防接種に対するイスラム教の見地等に関する対話が実施された。治安悪化により現地に入ることができないため、その後の宗教指導者の行動やプロジェクトに与えたインパクトについては確認されていない。2009 年 4 月よりハリプールでの活動が加えられ、2009 年 7 月に教師、コミュニティリーダー、NGO を対象とした啓発に係るセミナーがハリプールで実施され、88 名が参加したが、その後現在に至るまで活動は行われていない。

指標 2-2 及び 2-3 に関しては、プロジェクトの前半にスワート、シャングラ、ブネールにおいて KAP 調査が実施されたが、その後現時点に至るまでプロジェクト活動が実施さ

れてこなかった。

（９）成果３：ワクチン品質管理検査室（QCL）が強化される。

成果３は、終了時評価時点でほぼ達成された。

指標 3-1：研修を受講した QCL 職員の数が増加する。

指標 3-1 は達成された。

7 名の QCL スタッフ及び 2 名の QA スタッフが現地での研修を終了し、3 名が本邦研修を受講した。

QCL における品質管理能力の強化に向けて、短期専門家による「ワクチン品質管理検査方法」や「トレンド分析」「アッセイバリデーションの実践的方法」の研修に QCL の全 3 部門（ウイルス学、細菌学、化学）の責任者である主任科学担当官や科学担当官が参加した。また、細菌学と化学分野の技術助手が、阪大微生物研究会における「ワクチン品質管理技術」の本邦研修に参加した。

指標 3-2：GMP（Good Manufacturing Practice）を含めた検査基準に沿った知識と技術を QCL 職員が習得する。

指標は達成された。

日本人専門家による評価によると、これら研修を受けたスタッフの知識や技術に係る能力は強化されたと判断された。また、QCL 活動のルーティーン・データをみても能力強化の発揮が現れている。

指標 3-3：調達機材の適切な活用および維持管理がなされている。

指標はほぼ達成された。

中間レビュー調査以降、プロジェクトは QCL スタッフによる自己評価フォーマットを作成し、現在そのフォームが活用されている。

中間レビュー時、終了時評価時におけるワクチン品質管理専門家協力時の、対象施設の踏査において、QCL に係る供与機材の使用及び維持管理状況が適切であることが確認された。

（10）成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される。

指標 4-1：州および県における在庫切れ日数及び受け取り最大日数が減少する。

2011 年 2 月に、4 州内のすべての県を対象にした EPI ロジスティクス研修が修了したばかりであり、現時点では指標の達成度を判断することは困難である。技術的な支援を行うことにより、研修効果の定着と指標の達成が見込まれる。

指標 4-2：研修モニタリング・評価の実施数が増加する。
指標 4-3：定期予防接種データの質が向上する。
指標 4-4：州 EPI 局及びナショナルプログラムによるモニタリング数が増加する。

指標 4-2 から 4-4 については、EPI データ管理研修が 2011 年 3 月に修了したばかりであり、指標の達成度を判断するのは困難である。現在、プロジェクトは KPK 州の EPI モニタリング／評価フォーマットの統一を行っている最中である。現在までのところ指標 4-4 のモニタリング数の増加はみられない。EPI モニタリング／評価フォーマットの統一を含めたモニタリングの制度化が進めば、モニタリング数の増加につながるであろうと予想される。

３－２－３　プロジェクト目標の達成度

プロジェクト目標：対象県における 2 歳未満の乳幼児が予防接種を受けられるようになる。

指標 1 から 3 の結果から、ハリプールにおいてはプロジェクトの効果が現れたと判断することができる。その他のターゲット県に関しては、プロジェクト活動の中断のため判断できない。

ハリプールにおいてはプロジェクト目標が達成されたが、ブネール、シャングラ、スワートにおいては達成されなかった。

指標１：麻疹と 5 価ワクチンの予防接種を受けた 1 歳未満児の数が増加する。

ハリプールにおいては、麻疹と 5 価ワクチンの予防接種を受けた 1 歳未満児の数は過去 5 年間増加傾向にある（表３－９及び３－ 10 を参照のこと）。プロジェクトは EPI に LHW を取り込むことによって接種数増加に貢献した（表３－７）。指標 1 の結果に示されるように、接種数は 2008 年のハリプールでのプロジェクト開始以前から増加傾向がみられており、これは県政府の努力によるところが大きい。

表３－９　5 価ワクチン接種数推移（ハリプール）

	DPT（2006）,Combo（2007-8）,Penta（2009-10）					
	I（Number）	I（%）	II（Number）	II（%）	III（Number）	III（%）
2006	18608	62.5	18500	62.1	16757	56.3
2007	23283	72.6	21018	65.5	21295	66.4
2008	27537	90.7	26291	86.6	25975	85.5
2009	26454	85.2	25430	81.9	25603	82.5
2010	31111	111.5	31189	111.8	30692	110.0

出典：　EPI 月例レポート , KPK/EPI office.

表３－10　麻疹ワクチン接種数

	HARIPUR	BUNER	SHANGLA	SWAT
2006	12425	15094	14631	41426
2007	18703	15301	4663	31651
2008	24405	15398	12150	27661
2009	26588	15360	10487	17037
2010	27630	17044	11525	41126

出典：EPI 月例レポート、KPK/EPI office.

定期予防接種に含まれる BCG、経口生ポリオワクチン（OPV）及び破傷風トキソイド（TT）についても、ハリプールでは接種数増加がみられる（下表参照）。

表３－11　BCG 及び OPV-III 接種数推移（ハリプール）

	Target Population	BCG		OPV-III	
		Numbers	%AGE	Numbers	%AGE
2006	29778	17481	59	16757	56
2007	32076	22096	69	21295	66
2008	30372	26533	87	25975	86
2009	31037	27248	88	25603	82
2010	27899	29318	105	30692	110

出典：　EPI 月例レポート、KPK/EPI office

表３－12　TT2 接種数推移（ハリプール）

	BUNER	HARIPUR	SHANGLA	SWAT
2006	13939	12187	8213	40369
2007	13648	14190	3596	32580
2008	15795	13598	10748	27609
2009	13382	18734	11277	18688
2010	19526	29422	15785	48214

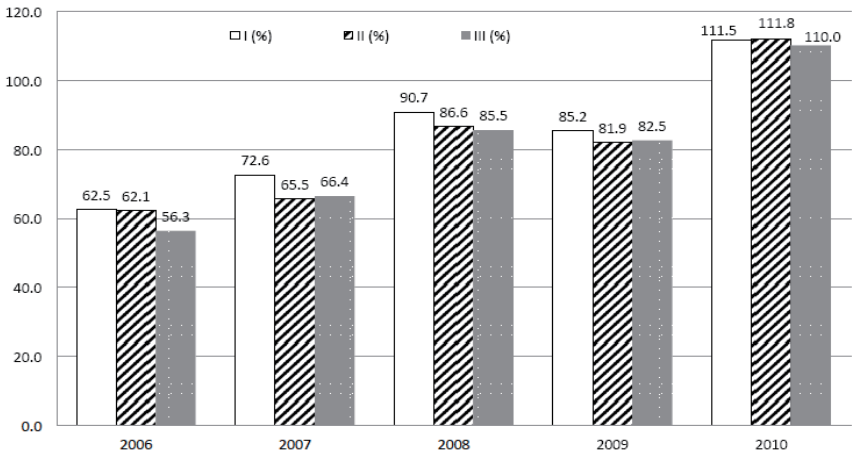
出典：　EPI 月例レポート、KPK/EPI office

その他ターゲット県では、接種数の安定した増加傾向はみられなかった。これは治安上の理由によるものと思われる。

指標２：報告される EPI カバレッジ（5 価ワクチン）が増加する。

報告される EPI カバレッジ（5 価ワクチン）は、ハリプールでは過去 5 年間増加している。KPK 州の他県に比べて、ハリプールでの増加度合いは大きいが、数値の解釈には注意が必要である。1998 年のセンサスに基づいた予測人口をもちいていることから、カバー率算出の信憑性を低くしている。なお、パキスタン政府統計局は、2011 年中にセンサスを実施する予定

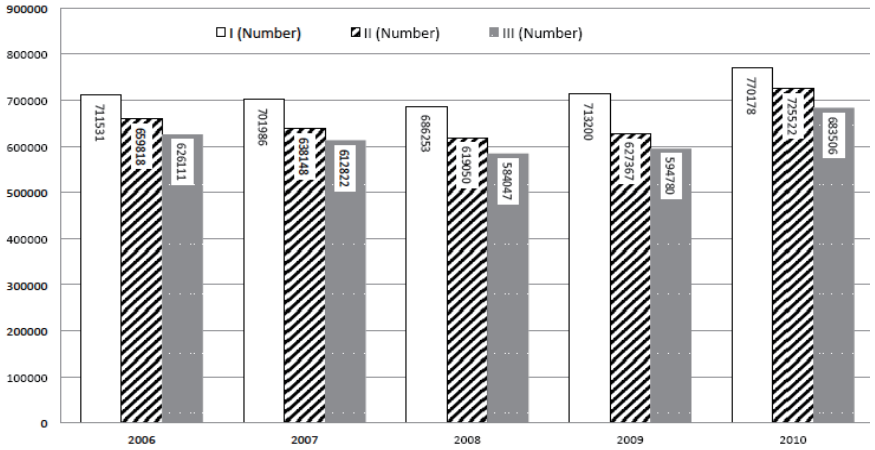
である。



出典：EPI 月例レポート、KPK/EPI office

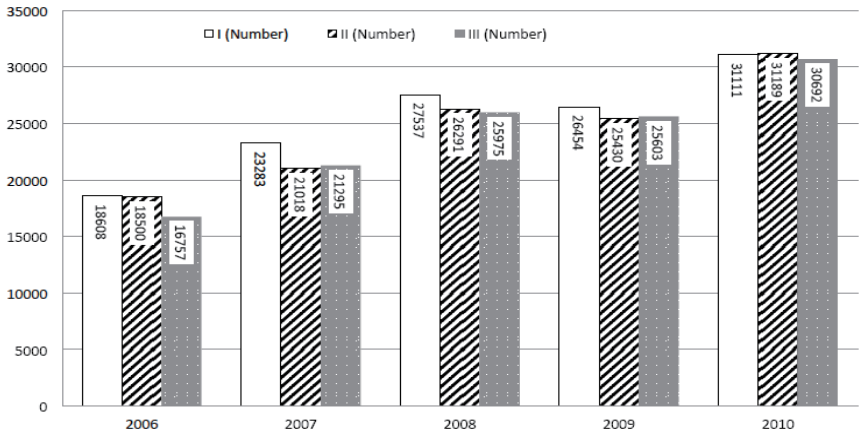
図３－１　ハリプールでの定期予防接種　カバレッジ（DPT/Pentavalent）（%）

ハリプールと KPK 州全体での、接種数（実数）の推移を比較すると、ハリプールでの数値のほうがより増加度合いが大きいことが示されている。



出典：EPI 月例レポート、KPK/EPI office

図３－２　KPK での定期予防接種数（DPT/Pentavalent）（実数）

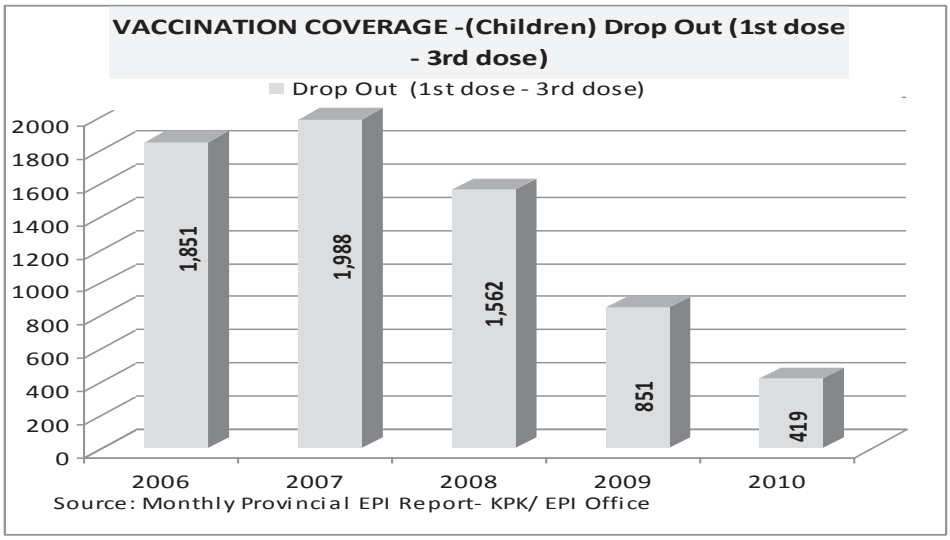


出典：EPI 月例レポート、KPK/EPI office

図３－３　ハリプールでの定期予防接種数（DPT/Pentavalent）（実数）

指標３：DPT 接種のドロップアウト率〔(DPT1-DPT3)/ DPT1〕が減少する。

ハリプールでの DPT 接種のドロップアウト率は減少していることが確認できた。（図３－４）。



出典：EPI 月例レポート、KPK/EPI office

図３－４　ハリプールでのドロップアウト率推移（1st dose-3rd dose）

３－２－４　上位目標の達成見込み

上位目標：対象県において定期予防接種にて予防可能な疾患の罹患率が減少する。

終了時評価時点では、ターゲット県における、ポリオ、麻疹及び破傷風のサーベイランスデータからは、罹患率の減少は確認できず、異なる発症パターンが示されたことから、将来的な傾向が容易に予想できず、上位目標の達成見込みは確認することができなかった。

指標１：ポリオ発生患者ゼロが維持される。

過去5年間の数値によると、スワートとシャングラでポリオ患者が発生しており、ハリプールとブネールでは発生していない。プロジェクトのポリオ・コントロールに対する貢献は限定的と考えられ、KPK州においては、ポリオキャンペーンによる効果がより大きい。

表３－13　各県におけるポリオ発症患者数推移

県	2006年	2007年	2008年	2009年	2010年	2011年*
スワート	0	1	4	11	1	0
ブネール	0	0	0	0	0	0
シャングラ	0	0	0	1	0	0
ハリプール	0	0	0	0	0	0
合計（件）	0	1	4	12	1	0

出典：DGHS -KPK
*：データは2011年4月現在。

指標２：麻疹の発症数が減少する。

麻疹の発症数は減少していない。サーベイランスデータは、2007年のピークを除いてその前後は比較的低い数値を示している。疫学的な知見を考慮すれば、数値の推移は自然な変動であって、プロジェクトの効果とはいいがたいところであり、2010年のスワート県での発生のように麻疹は容易に大規模な発生が起こり得るため、判断できない。

表３－14　各県における麻疹発症数の推移

県	2006年	2007年	2008年	2009年	2010年	2011年*
スワート	26	47	1	22	117	6
ブネール	0	94	4	0	9	2
シャングラ	0	9	0	0	0	0
ハリプール	2	250	17	12	1	4
合計（件）	28	400	22	34	127	12

出典：DGHS-KPK
*：データは2011年4月現在。

指標３：新生児破傷風の発症数が減少する。

新生児破傷風の発症数の減少は疫学、統計学的には確認できない。数年という短期の観察期間であること、医学的な分析の困難さ、かつ発症数の少なさなどの理由から、プロジェクト活動の効果を容易に測ることができない。

表３－15　各県における新生児破傷風の発症数の推移

県	2006 年	2007 年	2008 年	2009 年	2010 年	2011 年*
スワート	0	0	0	0	0	0
ブネール	0	2	6	0	1	3
シャングラ	0	1	0	0	0	0
ハリプール	0	2	2	4	0	1
合計（件）	0	5	8	4	1	4

出典：DGHS-KPK
*：データは 2011 年 4 月現在。

３－２－５　実施プロセス

＜促進要因＞

日本人専門家チームは、C/P やその他ドナー機関の定期的な会合に出席・参加することで、プレゼンスを示し、プロジェクトについての情報を共有し、EPI ／ポリオ対策に関する情報収集に努めた。会合のなかには、プロジェクトの実施にとって直接的に有益なものもあった。これらの会合の要約とプロジェクト実施上の果たした促進作用について以下に述べる。

（１）EPI レビュー会合〔半年に 1 度〕

EPI レビュー会合のメンバーは、連邦 EPI、4 州の EPI、GAVI、WHO、UNICEF、USAID、ビル & ゲイツ財団、世界銀行（WB）、国際ロータリークラブ、及び JICA から成る。議題の中心はポリオキャンペーンであるが、定期予防接種に関する議題についても話し合われる。プロジェクトのチーフアドバイザーはこの会合に出席し、最新の技術的な情報や政策、及びその動向についての情報を得ている。

2009 年 9 月の会合で、チーフアドバイザーはワクチンロジスティクス管理及び EPI データ管理のコンセプトについて説明し、関係者のコンセンサスを得た。この会合を経て、ワクチンロジスティクス管理に関する項目が、連邦 PC-1 補正の際に盛り込まれることになった。この分野に関するプロジェクトとしての活動は、2009 年 12 月から開始された。

（２）プロジェクト実施委員会（PIC）〔四半期に 1 度〕

本委員会はプロジェクトの計画・モニタリング機関としての働きを担う委員会である。本委員会は、EPI コンポーネントのほとんどの活動が実施される KPK（当時の NWFP）の州レベルの国家家族計画・プライマリヘルスケア（PHC）プログラムや EPI プログラムらのメンバーより成っている。委員会は当初、KPK 保健局の位置するペシャワールで実施されていたが、治安状況の悪化によりペシャワールで実施できなくなったため、本委員会をイスラマバードで実施していた。その後、治安上の理由により開催が中止された。

（３）国家ステアリング委員会〔毎週〕

本委員会のメンバーは、WHO、UNICEF、WB 及びドナーで構成されている。ポリオキャンペーンの進捗報告とプロジェクト進捗報告等の EPI に係る各活動進捗のモニタリングを目的として、毎週開催されている。チーフアドバイザーはこの会合に出席し、プロ

ジェク活動との重複を避けるために、特にポリオキャンペーンについての情報を収集している。

（4）国家予防接種技術指導グループ〔四半期に 1 度〕

国内の小児科医や大学教授がこのグループの主なメンバーである。ドナーによる最新のワクチン情報の提供、予防接種に係る知識・スキルの提供等の技術支援のために、四半期ごとに会合が開催されている。チーフアドバイザーはこの会合に出席し、予防接種全般に関する最新の技術的な情報を収集している。

（5）技術指導グループ会合（TAG Meeting）〔半年に 1 度〕

WHO が主導して開催されている会合である。参加メンバーは、二国間・多国間援助機関、疾病管理予防センター（CDC）等の研究機関などである。年に 2 回会合が実施されている。参加機関が連邦政府レベルに対して EPI に係る技術指導を行っている。特に、アフガニスタンとパキスタンの国境地帯のポリオ対策に焦点をあてている。

（6）州ステアリング委員会〔ポリオキャンペーンに際し定期的に開催〕

WHO、UNICEF、二国間援助機関がメンバーとなり、ポリオキャンペーン実施時に開催され、キャンペーンに係る情報共有を行っている。

（7）州サブ委員会会議〔適宜開催〕

WHO、UNICEF、二国間援助機関がメンバーとなり、適時開催され、州レベルの各自の活動進捗の共有を図っている。

＜阻害要因＞

上記の会合に出席・参加するなかで、専門家チームは C/P や関連機関とのコミュニケーションを図っていった一方で、下記のような阻害要因も見受けられた。

（1）プロジェクトのオーバーサイトの不在

C/P はプロジェクトの活動ごとに異なっており、プロジェクト全体を監督する機能は形成されてこなかった。

（2）C/P とのコミュニケーション不足、特に連邦と州レベルの EPI Cell 及び国家計画局とのコミュニケーション

JCC は、PDM 1 のレビューやプロジェクトの監督など、プロジェクトの最高意思決定機関として結成されているが、中間レビュー以降、JCC は開催されなかった。

なお、JCC メンバーは、JICA パキスタン事務所代表、Joint Secretary of MoH、Joint Secretary（ADB/Japan）of Economic Affairs Division、Director General Health Services of Government. of KPK Health Directorate、National Program Manager EPI of Federal EPI、Deputy Director EPI of Department of Health in KPK 及び QCL から構成される。

（３）不安定な治安と自然災害という状況下でのプロジェクトの実施プロセス

2006 年 10 月 30 日 KPK（当時の NWFP）州のマドラサ（神学校）空爆以降、自爆テロなど治安上の問題が深刻になってきている。2007 年にはスワート県の治安の悪化に伴い保健・教育関係の活動が制限され、2007 年 5 月以降、日本人専門家がプロジェクトサイトに立ち入ることができなかった。さらに、7 月以降にはペシャワールへの日本人立ち入りも不可能となり、プロジェクトで雇用しているスタッフを現地に派遣し、対象県の C/P をイスラマバードに招き会議を行うなどしてプロジェクト活動を進めていた。2008 年 3 月からは現地スタッフとしを雇用するなどして、スワート県を拠点に対象県で活動するように準備してきたが、治安が回復しなかったため、プロジェクトサイトへは出張ベースでの訪問にとどまっていた。

この状況を受け、JICA は 2008 年 10 月に活動の一部見直しのため運営指導調査を派遣し、計画の見直しに加え、治安状況を考慮したうえで新たに活動ができるプロジェクト対象地域として、候補地の中からハリプール県を追加することが提言された。対象県の追加は 2009 年 4 月に実施された第 2 回 JCC において承認されている。その後、現時点まで当初の 3 対象県での治安は回復せず、現在はハリプールのみでの活動実施となっている。中間レビュー調査以降、EPI データ管理研修が KPK 州を対象に新たなプロジェクト活動して実施された。

さらに 2010 年 7 月から 8 月にかけては、パキスタンは大規模な洪水にみまわれた。プロジェクト活動としての研修も、約 3 カ月間中断せざるを得なかった。

３－３　評価５項目による評価結果

３－３－１　妥当性

パキスタンにおける EPI ／ポリオ対策の重要性、パキスタン政府の開発計画との整合性、日本の支援政策との整合性、日本の技術の優位性に照らして、妥当性は終了時評価時点においても高いと判断できる。理由は以下のとおり。

（１）EPI ／ポリオ対策の必要性

パキスタンは、ワクチン接種で予防可能な感染症による子供の死亡率が高い国となっている。また、パキスタンは評価調査時点においても全世界のなかでポリオが根絶されていない 4 カ国に含まれている。国内の定期予防接種のカバレッジは十分でなく、プロジェクトはワクチン接種のカバレッジ率を上げ、パキスタンの EPI ／ポリオ対策の改善ニーズに応えることを目的としている。

（２）パキスタン政府の開発計画との整合性

パキスタンのミレニアム開発目標（MDGs）及び貧困削減戦略では、感染症への対策が優先課題として取り上げられている。MoH の PC-1（2009-10 ～ 2013-14）には、定期予防接種に関する活動が含まれている。また、その他の保健政策や戦略、国家保健戦略、国家 EPI 政策、ポリオ根絶のための国際緊急行動計画（NEAP）2011 にも、プロジェクトは準じている。現行の EPI 政策では、LHW は EPI サービスに従事しなければならないことになっている。プロジェクトは、パキスタンの政策・戦略に合致している。

（３）日本の開発政策との整合性

日本の ODA 方針の 3 重点項目のうちの 1 つが、人間の安全保障の確保と人間開発である。これらを達成するために、地域住民の保健医療サービスに対するアクセスの確保、保健医療人材育成、PHC の地域格差縮小と二次医療との連携向上が具体的な戦略として挙げられている。本プロジェクトでは EPI といった基本的な保健医療サービスに係る分野を扱い、プロジェクトで採択している LHW や EPI テクニシャンの人材育成、地域住民の保健医療へのアクセスの底上げを目的とするプロジェクト計画は、日本の ODA 方針に整合している。

（４）日本の技術協力の優位性

JICA はこれまでにもパキスタンでの個別専門家派遣経験や中国や他国における予防接種に係る感染症対策のプロジェクトの協力、及び日本国内での感染症対策に関する長年の取り組み経験があり、過去の経験を生かして EPI サービスの具体的技術支援を行うことができる。

３－３－２　有効性

終了時評価のインタビューからは、専門家の配置、研修、機材の供与などプロジェク全般に対して、C/P からの評価と活用度合いは高いことが確認され、ハリプールにおいては、プロジェクトの有効性は高いと判断できる。

成果１：有効性が確認された。成果１ はプロジェクト目標に明らかに貢献している。LHW の取り込みと EPI に関するレコーディング・レポーティングシステムの強化を通じて、特に LHW による接種数の増加とカバレッジの上昇がもたらされた。総じて、成果は高く評価されている。

成果２：活動が実施されなかったため、有効性は確認できなかった。

成果３：有効性が確認された。QCL スタッフのスキル強化のための包括的な技術研修、使用と管理方法の指導を含めた機材供与及び QCL のモニタリングが行われた。成果は明らかに現れた。しかし、成果３のプロジェクト目標への貢献は間接的である。これは QCL 自体の機能が、間接的貢献にならざるを得ないためである。

成果４：成果４のための活動は実施途中であり、有効性を判断するのは困難である。現段階では、活動による成果の発揮はみられない。しかし、研修を受けた C/P や関連機関からの反応から考察するに、活動は適当であるといえる。したがって、すべての活動が完了すれば、有効性の発揮が期待できる。

なお、プロジェクトを通じて、さまざまな資料、教材、フォーマットなどが作成された。成果物のリストについては、付属資料１の合同評価報告書 ANNEXII：List of products を参照のこと。

３－３－３　効率性

日本人専門家やプロジェクトのローカルスタッフが治安上の理由により、アクセスすることができない地域があるため、C/P はイスラマバードに赴いてもらうことでプロジェクト活動を行っていた。中間レビュー調査以降は、成果４に関する活動が追加され、対象地域がパキスタ

ンの４州となった。このため、更に交通費の負担が増加することとなった。この負担増は、在外事業強化費の増大となって直接的に現れている。治安上の理由を踏まえ、最も効率的な方法を選択していたとはいえ、こうした状況を考慮すると、プロジェクトの効率性は低かったといわざるを得ない。

成果１及び２についても、治安上の理由によりターゲット3県へのインプットは計画どおりに行うことができず、研修や供与機材などの投入は有効活用されなかった。これらの地域へは終了時評価時点においてもアクセスすることができず、モニタリングも困難である。したがって、プロジェクトの効率性はこのような外部要因によって低くなってしまった。

また、成果２のための活動については、優先順位が低かったため実施されなかった。これはプロジェクトデザインと投入がミスマッチであったことを示しており、結果としてプロジェクトの効率性を下げた可能性がある。中間レビュー以降のいずれかの段階でPDM 1の修正がなされ、活動の優先順位づけ、人的資源と財源の効果的な配分について検討することが望ましかったと考えられる。

成果３のQCL支援に関しては、専門家派遣と機材供与が予定どおり投入され、活動に関しても計画どおり実施された。その結果として、指標は現時点で既に達成されており、成果３の効率性に関しては高いと判断される。

成果４の活動は、活動の円滑で適切な実施にあたって、関連機関・団体のコンセンサスを得たのちに実施された。現段階では活動は一部終了しておらず、効率性を判断するには時期尚早である。

３－３－４　インパクト

（１）上位目標の達成見込み

上述のとおり、上位目標の指標となっている3つの感染症（ポリオ、麻疹、新生児破傷風）に関するサーベイランス結果からは、症例数の減少傾向はみられず、異なる発症パターンが示された。同時に、プロジェクト活動の効果は、短期間の観察結果、複雑な医学的分析、低い症例数、という理由からも、容易に測ることができるものではない。したがって、現段階では上位目標の達成見込みについて判断するのは困難である。

（２）プロジェクトの正負のインパクト

１）正のインパクト

レポーティング・システムを含むEPIサービス供給のメカニズムが、プロジェクトによってハリプールで構築されつつあり、ハリプールのLHWによるパフォーマンスに対する評価は高い。National Programによって、これらレポーティング・システム及びLHWを取り込んだEPIサービス供給は、他県でも適用される可能性が高い。

終了時評価チームによる調査からは、EPIサービス供給に関する研修を受けたLHWは、自らの仕事に対するモチベーションを高め自信をつけていることがわかった。プロジェクトの効果が彼女らの通常業務に組み込まれ、コミュニティレベルでより良い保健サービスが供給されることが望まれる。

２）負のインパクト

LHWの業務が追加されたことにより、他の業務への圧迫などのマイナス影響が懸念

されるものの、現時点では負のインパクトは観察されていない。

３－３－５　持続性

（１）政策面での持続性

パキスタンの「中期開発計画フレームワーク 2005 ～ 2010」と国家 EPI プログラムにおいても、プロジェクトで実施されている活動が計画されていた。また現在改訂中の国家 EPI 政策においても、LHW と連携した予防接種活動は継続される予定である。

（２）組織面での持続性

連邦と州の EPI 局は既に、EPI サービス供給のために必要な人員を配置し、組織の強化を図っている。2011 年 6 月施行予定の分権化後も、組織の持続性が維持される見込みである。

プロジェクトを通じてさまざまな研修が行われ、C/P は知識や技術を身に付けることができた。しかし、研修は日本側主導で実施されており、パキスタン側の取り込みが十分でなかったとみられる。これは特に州レベルにおいて、パキスタン側の人的資源の配分が適切でなかったことによる。こうした状況を考慮してプロジェクトでは、研修を通じてレポーティング・システムを組織の運営体系のなかに組み込むようにし、下記に述べるような技術的な持続性として確立しようと努めた。

組織面での持続性、特に人的資源の開発においては、今後、連邦及び州の EPI によって計画・管理され、適切な人員が配置されることが必要である。

（３）技術面での持続性

成果１については、ハリプールでは定期予防接種の供給が、EPI テクニシャンと LHW によって担われるメカニズムが定着しつつあり、州の EPI 局は技術的にはこのメカニズムを維持できるようになった。成果３については、QCL の技術的な持続性は高く、プロジェクトを通じてスタッフは供与機材の取り扱いに関する知識と技術を身に付けた。

成果４については、技術的な持続性は以下に述べるように、現地点では十分でない。

１）ワクチンロジスティクス管理

ワクチンロジスティクス研修が、4 州内のすべての県（137 県／町）で終了し、最大最小ワクチン在庫管理が 4 州で実践されはじめた。しかし、実践開始からまだ日が浅く、研修効果はまだ確認されていない。研修効果が定着するまでは、技術的な支援が引き続き必要である。

２）EPI データ管理

KPK 州での研修は修了し、報告フォーマットの統一に関しては州 EPI 局及び LHW プログラムの合意が得られた。プロジェクトでは、このフォーマットの試用を KPK 州内の 4 県で開始する予定である。他の 3 州でも、新フォーマットの導入に関する研修を実施することになっている。レポーティング・システムのモニタリング方法が開発され、制度化される必要がある。EPI データ管理のレポーティング・システムによるモニタリングが制度化されれば、持続性が見込めるだろう。

（4）財政面

プロジェクトの効果を持続させるためには、財源面の持続性が鍵となる。パキスタン政府は既に、以下のような取り組みを行っている。

1）各州 EPI は、次のパキスタン国会計年度（2011 年 6 月から）に向けて PC-1 の最終的な調整段階に入っている。

2）分権化の移行段階で、連邦政府にワクチン購入予算がなくなり、2011 年 6 月にワクチンの在庫切れが確実となった。パキスタン政府は、日本政府に対して、緊急的なワクチン供給支援を要請し、見返り資金によってワクチンが供給されることになった。

連邦及び州の EPI は、オペレーションコストまでもドナーに頼っているのが現状である。ドナーからの支援が中断されれば直ちに、給与支払いの遅滞や研修の中断といった問題が起きている。連邦・州 EPI は、よりいっそうの財源確保に努める必要がある。

QCL に関しては、財源は連邦 PC-1 の項目に組み込まれていることから、財政面での持続性は高いと判断される。

３－４　結　論

プロジェクト目標の達成について、ハリプール県での達成が確認された。５項目評価の観点から、妥当性は高い、有効性はおおむね高い、効率性は中程度、インパクトのうち、上位目標の達成見込みは現時点で確認が困難、であった。ハリプール県において構築されたレポーティングシステムを含む EPI サービス供給のメカニズムと、LHW の活動は、スワート県等他パイロットサイトでは治安の悪化により十分に実施されなかったものの、「成果１：対象県において定期予防接種サービスが適切に実施される」及び「成果３：ワクチン品質管理検査室（QCL）が強化される」は限定的であるものの確実な成果を上げることができた。持続性については、政策面での持続性は確保されているものの、組織面においては、連邦から州への権限委譲後の適切な人員の計画・管理・配置が必要である。また技術面においては、おおむね確保されていると判断されるが、「成果４：連邦 EPI 局と州 EPI 局の定期予防接種システムが強化される」は、プロジェクト終了時までに一定程度の確保に向けた継続した活動が必要である。財政面の持続性は、慢性的な予算不足のなかでドナーからの支援に EPI のオペレーションコストも頼らざるを得ないパキスタンにとっては困難ではあるが、財源確保に向けた継続した取り組みが必要であると考えられる。

プロジェクトの実施過程には、治安の悪化による実質上の対象地域の変更や洪水など幾つかの阻害要因があった。しかしそのようななかにおいてもプロジェクトはその都度限られた活動範囲内で、実施可能な活動を継続してきた。また、これまで述べられてきたようにプロジェクトのパフォーマンス評価に影響を与えた要因はほかにもあり、プロジェクト活動の慎重な設計など、何らかの手段が講じられる必要があるものもあった。現時点では、技術的な持続性はまだ十分とはいえない。この理由のひとつにはプロジェクトの実質的な活動期間が短かったことが挙げられる。残りのプロジェクト期間で、技術面での持続性が見込めるよう日本人専門家側からの働きかけがなされることが必要であると思われる。しかし本プロジェクトでは、一定の成果が確認できており、残る 6 カ月のプロジェクト期間においても、特に技術面での持続性を念頭に置いた活動の総仕上げが期待できるため、延長は不要と考えられる。

一方で、2011 年 8 月 15 日に円借款「ポリオ撲滅事業」の実施が確認された。本円借款の効果向上とポリオ対策を含む定期予防接種の強化は検討に値する。

第4章　提言・教訓

４－１　提　言

終了時評価を踏まえて、今後のプロジェクト期間により効果的な支援を行うことをめざして、以下の提言がなされた。

（1）中間レビュー調査を経てプロジェクト活動が変更され、内容が多岐にわたるようになった結果、州、連邦等関係者間でのコミュニケーションが十分図れなくなり、連邦 EPI がプロジェクト活動を把握できていない状況になった。そのため , 今後は NIH や他ドナーも含めたすべてのプロジェクト関係者間でのより良いコミュニケーションを図る必要がある。

（2）上記（1）に関して、最大限のプロジェクト実施の効果をもたらすため、プロジェクトでは早急に会議等の場を設け、これまでのプロジェクトの実績及び残り期間で行うべきことを関係者間で共有する必要がある。

（3）LHW の EPI プログラムへの取り込みの効果は、本調査でも確認できた。一方で、中間レビュー時にも提言したように、この取り組みの全国における評価がなされるべきであり、予防接種数の増加のみならず LHW による啓発活動や他の正負の効果も含めて、連邦 EPI はナショナルプログラムと連携して包括的な評価を行う必要がある。

（4）現時点では幾つかのプロジェクト活動に関する指標、特に成果４に関しての指標が入手できなかった。これらの指標はプロジェクト実施の意義を判断するうえで重要な意義をもつ。そのため、プロジェクトは残り期間で可能な限りこれらの指標をとれるようにデータを収集する必要がある。

（5）データ管理に関する研修は、現時点では 1 州の 12 県で完了した。この研修は、EPI プログラムにとり大きな意義をもつものであることから、プロジェクトにより残り期間で可能な限りすべての州でこの研修が実施されることが望まれる。

（6）このデータ管理及びワクチンロジスティクスに関する研修においては、実施面での持続性が確保されるよう、プロジェクト残り期間で日本人専門家による継続した技術支援が必要である。

（7）研修実施は、本プロジェクトの重要なアプローチである。そのため、プロジェクト終了後に、パキスタン側は研修実施のための持続性を得る必要があるが、現時点では研修実施体制が特に州レベルでは十分整備されていない。そのため、最低限パキスタン側が第三者に委託して同様の研修を行えるよう、以下 3 点の技術支援が必要となっている。まず 1 点目は、日本人専門家により研修内容等実施に関する必要事項の文書化の支援である。2 点目は、これまで実施した研修の評価から、研修実施に関する細部のノウハウも蓄積できるような支援である。3 点目は連邦及び州 EPI プログラムが研修実施体制を整備することへの支援である。

（８）ハリプールでの活動では、EPI テクニシャンによるアウトリーチプランが作成、実施されるようになったが、この活動のモニタリングが十分に行われていない。そのため、プロジェクトではこの活動のモニタリング及びフィードバック体制を強化する必要がある。

（９）成果４の活動に関しては、データの分析と評価を行う際に客観性を確保するために、プロジェクトでは、まずデータの質に関する評価基準を設ける必要がある。

４－２　教　訓

（１）地方分権化の進展に伴い、プロジェクト活動実施に際しての判断や権限が州レベルでなされるようになっている。このような状況では、プロジェクト活動の最大限の効果及び発展性を確保するために、活動内容を随時連邦レベルや他ドナーと共有していくことが重要である。

（２）パキスタンでは他分野でも同様であるが、技術プロジェクト実施に際して役務提供的な役割を求められる傾向が顕著である。このため、JICA のめざすキャパシティ・ディベロップメントのためには、綿密なプロジェクトデザインと事前及びプロジェクト実施中のパキスタン側への働きかけが重要である。

（３）地方分権化の進展により「対象エリアでモデルを完成させて全国に展開」するアプローチのプロジェクトは実施が難しくなっていることに留意する必要がある。

（４）キャパシティ・ディベロップメントをめざすにも、今回の研修実施のように先方に受け皿となる組織や人材が不足している場合がある。このため、事前に先方組織の確認と持続性に向けた先方の理解と施策の実施に向けて、十二分な協議を行う必要がある。

（５）役務的な側面は、技術面のみならず財政面でも同様であることから、事前に可能な限り先方負担を担保していく協議を行うことが望まれる。

（６）成果ごとに異なる C/P が設定されていたために、政府側の全体統括機能が不足していた点に関し、プロジェクトデザイン策定時に統括責任をもつ C/P を注意深く選ぶ、または合同会議等の統括する場を設定することが必要である。

（７）本事業のように、治安の悪化により活動の実施に大きな制約が生じる可能性のあるプロジェクトの場合、安全面を考慮した対応を取らざるを得ない。可能であるならば、現地リソースの活用を進め、運営が滞りなく行われるような体制をつくることが望まれる。

第5章　所　感

５－１　団長所感

パキスタンの予防接種に関する施策では、ポリオ根絶が最優先課題であり、人材や資金の投入がポリオキャンペーンに集中しており、その分定期予防接種プログラムにしわ寄せがきている。そのなかで、地道に定期予防接種の強化を適切な観点から実施した本プロジェクトに意義は高いものと思われる。プロジェクトの存在もあり、キャンペーン支援が中心のドナーも定期予防接種の強化の必要性を認識し、徐々にではあるが定期予防接種事業の強化の活動を取り入れるようになってきていることが今回の調査で確認された。

一方で、今回の調査では、現時点でまだ指標を取れず評価のできない活動や成果が少なからず存在しており、正確な評価が行えなかった部分が残った。これは、本プロジェクトでは治安の悪化という外部条件により活動地の変更や新たな活動の追加とさまざまな変遷が生じ、運営指導調査後の3年間が実質的な活動期間となったことにもよるが、投入に見合う活動の設定など必要に応じたプロジェクトデザインの変更に関して関係者間での協議が十分でなかった点は否めない。

そのなかで、ハリプールでの活動、特にLHWの取り込みやそれに伴う報告体制の整備等が、LHWの国家プログラムやUNICEFなどからも高く評価されるなど、確実な成果を上げたことは困難な環境における専門家の方々の多大な尽力によるものといえる。

中間レビュー調査の時点で、全国を対象とした活動（成果４）を追加したことは、現状のパキスタン全体のEPIにおける課題のニーズに合ったものであった。同時に、それ以前のプロジェクトデザインは、成果３のワクチン品質に関するものを除くと、限定された地域での役務提供的な感が否めなかったが、国を対象とした活動が加わったことにより裨益効果の拡大とともにJICAのめざす技術移転に沿う形になったものと思われた。

一方で、これらの活動を通じて、パキスタンにおけるJICAのめざす技術移転の実施に関する困難さも浮き彫りになっている。従来からパキスタンにおいては、他分野においても各ドナーに効率的な財政負担を含めた役割分配を行う役務提供的な支援を求められることが多い。ハリプールにおける活動もこの点に相当したものであったが、日本人専門家の高い見識からプログラム実施のための綿密な制度を定着させたことにより、単なる役務提供に終わらず持続性を確保することができている。

その一方で、本プロジェクトの中心的アプローチである研修実施による技術移転に関しては、パキスタン側が各種研修実施をほぼ100％ドナー等によっている状況である。このため、特に成果４では研修実施により相応の成果は期待されるものの、パキスタン側に研修実施を行うための組織、人材などの受け皿がないことから、研修実施能力に関する持続性を確保することは極めて難しいといわざるを得ない。プロジェクト専門家もこの点を意識した活動を行ってきたが、「技術移転を行うべきC/Pの不在」という課題が解決されない限り、限定的な技術移転にとどまらざるを得ない。

この点は、財政面でも同様であり、ポリオ根絶の重要性から多くのドナーが多額の資金を投入し持続性を軽視した支援を行っている。そのなかで、「相手の自助努力を促す」というJICAの姿勢をどこまで貫くかも含め、制限のある制度のなかでの効果的な技術移転のあり方を検討することが、今後のプロジェクト実施に向けて望まれる。

５－２　EPI ／ポリオ対策団員所感

限られた時間と厳しい移動制限の下、プロジェクトが定期接種を強化する活動で一定の成果を上げつつあることは高く評価したい。WHO 等多くの国際機関がポリオ・キャンペーンに過度に集中し定期接種が軽視されている現状ではなおさらである。

ただし、ハリプール県の EPI 接種率やドロップアウト率などの指標は、プロジェクトで投入が始まる前から改善し始めていた。そのためプロジェクトの貢献度を測定することは困難である。

次に EPI ／ポリオ対策の立場から技術的なコメントを 3 点述べたい。

（１）LHW と EPI の共通報告フォーム

GAVI-HSS は 32 県を対象に LHW の EPI への巻き込みを主導しているが、最近 1 年間ほとんど活動が進捗していない。また LHW の National Program 側と EPI 側で共通フォームを作成しようと試みたが成功せず、各県はそれぞれ独自の様式で報告している（あるいはしていない）ようである。この点 JICA プロジェクトでは共通フォームを導入しつつあり、その成果として LHW、EPI テクニシャンそれぞれの接種数が確認できるようになってきた。今後はぜひ共通フォームの使用を定着させ、またその成果を GAVI-HSS など他ドナーに共有していただきたい。

（２）ハリプール県における接種数

ハリプール県における各ワクチンの接種数を 2009 年と 2010 年とで比較すると、全体として接種数は増えており、特に LHW がヘルスハウスで行った要素が大きい。一方 BHU（fixed site）やアウトリーチでは接種数の変化はさまざまであった。今後 LHW の EPI への参加を促すためにも、もう少し細かく結果を分析する必要がある。具体的には月別、ユニオン・カウンシル別に観察し、EPI 研修の効果を検討してはどうだろうか。

（３）人口統計について

現在 EPI では 1998 年のセンサスを基に分母を求めワクチン接種率を計算しているため、信頼性が低い。パキスタン統計局の HP によれば、2011 年 4 月に世帯リストを作成し、8 ～ 9 月にセンサスを実施する予定である。そこで次回ハリプール県を訪問する際には、世帯リストがどのように作成されたか、（特にアウトリーチにおいて）聞き取りをしていただきたい。リスティングの段階で登録されない世帯は最初からセンサスの対象にならないからである。

上記（１）～（３）はすべて定期接種を強化する、というプロジェクト目標に直接的に役立つことから、残り期間で可能な限り進めていただければ幸いである。

付　属　資　料

１．協議議事録（M/M）合同評価報告書

２．PDM

３．評価グリッド

Minutes of Meeting
Between
The JICA Terminal Evaluation Team
And the Authorities Concerned of the Government of
The Islamic Republic of Pakistan
on the Japanese Technical Cooperation for
"EPI/Polio Control Project in Pakistan"

The JICA Terminal Evaluation Team organized by Japan International Cooperation Agency (JICA) and headed by (hereinafter referred to as "the Team") and headed by Dr. Mitsuo Isono visited the Islamic Republic of Pakistan from 17 April 2011 and 29 April 2011, for the purpose of jointly evaluating the implementation, performance and achievements of the project for EPI/Polio Control Project in Pakistan (hereinafter referred to as "the Project").

During the evaluation period, the Team and the authorities concerned of the Islamic Republic of Pakistan (hereinafter referred to as "both sides") had a series of discussions and exchanged views on the Project.

As a result of the discussions, both sides agreed on the issues and to recommend to their respective governments the matters referred to in the document attached hereto.

Islamabad, 29 April, 2011

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Japan International Cooperation Agency
Japan

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Mr. Roohullah Jan
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JOINT TERMINAL EVALUATION REPORT

ON

THE JAPANESE TECHNICAL COOPERATION

FOR

THE EPI/POLIO CONTROL PROJECT IN PAKISTAN

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF

THE ISLAMIC REPUBLIC OF PAKISTAN

APRIL 29, 2011

CONTENTS

Abbreviation

AFP	Acute Flaccid Paralysis
BCC	Behavior Change Communication
BCG	Bacillus Calmette-Guer in Vaccine
CDC	Centers for Disease Control and Prevention
Combo	Combination of Hepatitis B vaccine & DPT
DD-EPI	Deputy Director EPI (at provincial level)
DGHS	Director General Health Services
DSV	District EPI Supervisor
DTP	Diphtheria-tetanus-pertussis vaccine
EDO-H	Executive District Officer Health
EPI	Expanded Programme on Immunization
FLCF	First-level Care Facility
GAVI	Global Alliance for Vaccine and Immunization
GMP	Good Manufacturing Practice
IDP	Internal Displaced Persons
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
KAP (survey)	Knowledge, Attitude and Practice
KPK	Province of Khyber Pakhtunkhwa (former NWFP, since April 2010)
LHS	Lady Health Supervisor
LHV	Lady Health Visitor
LHW	Lady Health Worker
LHWP	Lady Health Workers' Programme
MO	Medical Officer
MOH	Ministry of Health
NGO	Non-Governmental Organization
NID	National Immunization Day
NIH	National Institute of Health
NP	National Program
NT	Neonatal Tetanus
NWFP	North West Frontier Province
PDM	Project Design Matrix
PHC	Primary Health Care
PIC	Project Implementation Committee
QCL	Quality Control Laboratory
R/D	Record of Discussion
SOP	Standard Operation Procedure
TOT	Training of Trainers
TT	Tetanus Toxoid
U5MR	Under-five Mortality Rate
UC	Union Council
UNICEF	United Nations Children's Fund
WB	World Bank
WHO	World Health Organization

1. Introduction

1-1 Background of the Project

Pakistan is one of the countries with the highest child mortality (under 5 mortality rate is 97 per 1,000 birth, infantile mortality rate is 78 per 1,000 birth as of 2006 according to the State of World's Children 2008 published by UNICEF in South Asia. A notable proportion of these deaths are caused by vaccine-preventable infectious diseases. Immunization coverage of Pakistan is not optimal with DPT3 being 83% as of 2006 according to same source as Under-five Mortality Rate (U5MR). The performance of Khyber Pakhtunkhwa, KPK (former North West Frontier Province, NWFP) is known to be further compromised (68% as of 2003 according to Expanded Program on Immunization & Financial Sustainability Plan 2005-13 by Ministry of Health (MOH), Pakistan, 2005) mainly because of geographical and socio-cultural difficulties. Polio is still endemic in KPK and the number of confirmed cases in 2006 were 16 (including Federally Administered Tribal Areas (FATA)), the highest among all provinces in the country.

In response to above, the EPI/Polio Control Project in Pakistan (hereinafter referred to as 'the Project') has been launched in September 2006 to last for five years in order to increase the number of the children under the age of two who are vaccinated in the target districts within KPK, namely Swat, Buner and Shangla, by enhancing EPI services mainly through training of Lady Health Workers (LHWs) on routine immunization and increasing parents' awareness on immunization.

1-2 Background and objectives of the Terminal Evaluation

The government of Pakistan requested to the Government of Japan, for the technical cooperation which aimed to achieve the condition that children under the age of two are vaccinated in the target districts. Based on this request, the Record of Discussions (R/D) was signed on August 20, 2006 by Japan International Cooperation Agency (JICA) and the Government of Pakistan. The EPI/Polio Control Project has been implemented as a five year-project in collaboration with the Ministry of Health (MOH), National Institute of Health (NIH) and Directorate General Health Services (DGHS) in KPK since September 2006. The deteriorating security situation in targeted three districts hampered appropriate project activities since May 2007. In October 2008, Advisory Study Mission was dispatched to Pakistan to review the activities and progress of the Project. Thus, it was recommended that the Project extends its target areas to other district, Haripur, in KPK.

Since dispatching the Advisory Study Mission, security situation has not improved and the activities in targeted three districts have remained suspended.

On October, 2009, the Mid-Term Review Mission was dispatched to review the progress of the Project. As a result of the review, the PDM0 was revised and PDM1 was formulated.

As nearly four and a half years have passed since the Project was launched, the Terminal Evaluation Team has been dispatched to achieve the following objectives:

(1) To review the progress of the Project and evaluate the achievement in accordance with the five evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability).
(2) To identify the promoting factors and impeding factors of achievements of the Project.
(3) To discuss the future plan for the Project together with Pakistani side based on the review and analysis of result above.
(4) To summarize the result of the study in a Joint Review Report.

1-3 Member of the Terminal Evaluation Team

Name	Designation	Title and Affiliation
Dr. Mitsuo ISONO	Leader	Senior Advisor, Human Development Department, JICA
Dr. Masahiko HACHIYA	Infectious Disease Control	Head, Infectious Disease Control Group Department of International Medical Cooperation, Japan National Center for Global Health and Medicine
Mr. Tsunenori AOKI	Cooperation Planning	Deputy Director, Health Division 4, Health Group2 Human Development Department, JICA
Ms. Yuko AOKI	Evaluation Analysis	Consultant, Overseas Department, Kokusai Kogyo Co.,Ltd.

1-4 Outline of the Project

(1) Overall Goal

Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.

Objectively Verifiable Indicators
1 Polio free is maintained.
2 The incidence of measles is reduced.
3 The incidence of NT is reduced.

(2) Project Purpose

Children under the age of two are vaccinated in the target districts.

Objectively Verifiable Indicators
1 The number of immunized children under 2 year-old is increased.
2 Reported routine EPI coverage (DPT 3) is increased.
3 Drop-out rate of DPT is reduced [(DPT1-DPT3)/ DPT1].

(3) Output

1) EPI services are properly provided in the target districts.

Objectively Verifiable Indicators
1-1 The number of Lady Health Workers (LHWs), EPI technicians and medical doctors are trained on EPI service provision.
1-2 The number of immunizations administered by LHWs is increased.
1-3 The number of EPI centers having functional refrigerator is increased.
1-4 Out Reach Plan is formulated and implemented at FLCF level.

2) Parents ensure their children to be vaccinated in the target districts.

Objectively Verifiable Indicators
2-1 The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased.
2-2 The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from 8 dangerous diseases, availing the service to complete the course in a timely.
2-3 The percentage of parents/caretaker of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs/SNIDs.

3) Quality control capacity of QCL/NIH is enhanced.

Objectively Verifiable Indicators
3-1 The number of trained QCL staff is increased.
3-2 The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP.
3-3 Procured equipment of the QCL is properly utilized and maintained.

4) Federal and Provincial routine EPI system is strengthened.

Objectively Verifiable Indicators
4-1 Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage.
4-2 The number of training monitoring and evaluation is increased.
4-3 The quality of routine EPI data is improved.
4-4 The number of monitoring by provincial EPI Cell and Provincial National Program is increased.

1-5 Methodology of Evaluation

(1) To set up Evaluation Questions (EQ). EQ is the question which should be identified in the evaluation and researched for evaluation based on the view points of Five Evaluation Criteria below. These are tentatively selected and described in "Evaluation Grid". At this time, the evaluation is conducted on the basis of PDM1 which is defined in M/M dated, October 9, 2009.

(2) To describe required information and date and how to collect the information and data. These are also selected tentatively and described in the "Evaluation Grid".

(3) To collect several information and data according to the Evaluation Grid. Some data which were collectable in Japan were already filled up in the Evaluation Grid.

(4) To compare the plan of the project and achievement of the project based on the view points of the five Evaluation Criteria which are described in 2-2.

(5) To consider the result of comparison according to the five Evaluation Criteria.

(6) To conclude the result of evaluation according to the purpose of the Evaluation.

(7) To draw the recommendations and lessons learned.

Five Evaluation Criteria

Relevance	Relevance of the Project is reviewed by examining whether the project purpose and overall goal are consistent with the development policy of Pakistan and needs of beneficiaries, Japan's aid policy as well as the needs of target groups and stakeholders at the time of the Evaluation.
Effectiveness	Effectiveness of the Project is assessed with the degree to which the project purpose has been achieved. It is also considered how outputs have contributed towards achieving the project purpose. In addition, influence of external factor (include Important Assumptions) is examined.
Efficiency	Efficiency of the Project implementation is analyzed with the emphasis on the relationship between output and input in terms of timing, quality and quantity.
Impact	Impact refers to direct, indirect positive and negative influence caused by implementation of the Project, including the extent to which the overall goal will be attained.
Sustainability	Sustainability refers to the extent to which the benefits generated by the Project will be able to be sustained after the termination of the Project, and examines seeds to sustain the benefits (e.g. organization, finance and human resources).

2. Achievement and Implementation Process

2-1 Inputs from Japanese side

(1) Dispatch of Experts

In total, Japanese experts in **7 areas** have been dispatched up to the moment. The areas of the experts are as follows: Chief Advisor/EPI, Coordinator, Surveillance, Vaccine Logistics, Vaccine Quality Control, BCC/Social Mobilization and EPI Support.

The detailed list of Japanese experts is shown in ANNEX IV.

(2) Dispatch of Missions

The Advisory Study Mission was dispatched in October, 2008. Also, **The Mid-Term Review Mission** was dispatched to review the progress of the project in September, 2009.

(3) Provision of Equipment

The total amount of equipment provided is **Pakistan Rupees 38,569,030** at the time of Terminal Evaluation.

In total **46 kinds of items** were provided. These items include equipment related to project management and training activities such as a projector and a personal computer as well as vehicles for monitoring activities. Cold chains such as ice-lined refrigerators, freezers and thermometers were provided in target districts. However, parts of the provided equipment have been destroyed or looted at the time of army led operation against the militants in Swat and Buner districts.

The detail list of equipment provision is shown in ANNEX V.

(4) Allocation of Expenses on Local Activities

The expenses on local activities are shown in Table 1.

Table 1 Expenses on Local activities by Japan side

JFY2006	JFY2007	JFY2008	JFY2009	JFY2010	Total
¥2,319,040	¥8,075,769	¥11,815,438	¥17,742,937	¥22,798,542	¥62,751,726

Source: Project data

(5) Training in Japan

A total of **15 counterparts** participated in the training in Japan. The areas of the training are show in Table 2. The trainings were mainly conducted in the Research Foundation for Microbial Diseases of Osaka University (BIKEN), Kanonji Institute, and National Center for Global Health and Medicine.

The list of participants trained in Japan is shown in ANNEX VI.

Table 2 Areas of Training and the number of counterparts

Title of the training	Number of counterparts
Vaccine Quality Control Technology	3
Seminar on Epidemiology and control measures of vaccine preventable diseases -Based on GIVS -	5
Control Measure for Vaccine Preventable Diseases	7

2-2. Inputs from Pakistan Side

(1) Assignment of counterparts

The main counterparts are from the members in **Federal EPI Cell of NIH, Quality Control Laboratory (QCL) of NIH, DGHS of Government of KPK and Executive District Office-Health (EDO-H) in four districts in KPK, namely Swat, Shangla, Buner and Haripur**, and members in **EPI Program of Punjab, Balochistan and Sindh.**

The counterpart list is shown in ANNEX VII.

(2) Allocation of Expenses by Pakistan side

Allocation of Expenses by Pakistan side are shown in Table 3.

The project offices were established and maintained for the Project in NIH, Islamabad and in DGHS of Government of KPK.

Table 3 Expenses by Pakistan side (Unit: Pak Rs[1])

Pakistan Fiscal Year	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	Total
Federal Component supported by Government of Pakistan	1,250,000	1,375,000	1,512,500	1,663,650	1,830,125	7,631,275
Provincial Component supported by Government of NWFP/KPK	2,142,000	2,142,000	3,142,000	2,142,000	2,142,000	8,571,000
Total	3,392,000	3,517,000	4,654,500	3,805,650	3,972,125	16,202,275

Source: MOH

[1] 1 Pak Rs= 0.983JPY at the point of April 2011 by JICA regulated rate.

2-3 Activities and Outputs

2-3-1Progress of Activities

Regarding Buner, Swat and Shangla where all the project activities have been interrupted, the security situation has not improved and it was difficult to implement the Activities. Thus, it was hard to evaluate the effectiveness of those Activities due to the inability to obtain the indicators.

As for the Activities for Output1 and Output2, after the Advisory Study Mission in October, 2008 and Situation Analysis in November, 2008, Haripur was added as a target area of the Project. It should be taken into consideration to evaluate the Activity as the actual implementation period of Haripur was only for one and a half year.

As for the Activities for Output3, the activities on QCL were implemented as planned from the beginning of the Project.

The Activities for Output4 was added targeting four provinces after the Mid-term Review in October, 2009.

No.	Activities planned	Activities implemented
Output 1: EPI services are properly provided in the target districts. *Target area of activities for Output1: Haripur* *- It is confirmed that all activities under Output 1 have been implemented almost as planned, survey, development materials, trainings and monitoring were implemented except Activity 1-13.* *- Toward the end of the Project, it can be considered further monitoring is supposed to be conducted especially for Activity 1-11 (Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at first-level care facility (FLCF)) to make the reporting system more functional.*		
1-1.	Conduct the Baseline Survey, Mid-term Review, and Terminal Evaluation.	- **The Baseline Survey** for Buner, Swat and Shangla was conducted in October, 2007 by local consultant under the instruction by the Project. The results of the survey were reported at Project Implementation Committee (PIC) and submitted to MOH, DGHS of Government of NWFP and JICA. - After Haripur was added as a target district by the Advisory Study Mission in October 2008, **the Situation Survey** was conducted instead of the Baseline Survey for Haripur in Nov. 2008. The result of the survey was reported to EPI cell-KPK, Federal EPI and MoH in April, 2009. <after mid-term evaluation> - None as the activity was completed. (ANNEX VIII: The Baseline Survey) (ANNEX VIIII: The Situation Survey)
1-2.	Formulate a micro plan in each district, including the allocation of EPI personnel.	- In Buner, Swat and Shangla, PIC meetings were conducted quarterly until April 2009 and **the micro plan** for Buner, Swat and Shangla including the allocation of EPI personnel had been formulated in those meetings. Thereafter, the meetings to finalize the formulation of micro plan have been suspended due to security reasons. - Haripur district was invited as an observer of the last PIC on April 2009. <after mid-term evaluation> - As a part of On the Job Training, existing micro plans were revised

		and effective implementation of them was instructed.
< Human Resources Development >		
1-3.	Conduct training needs assessment as part of the Baseline Survey (1-1).	- **The KAP survey** for Buner, Swat and Shangla was conducted as a part of the baseline survey, and the results of the survey were shared in PIC. - As for Haripur, the Baseline survey was not conducted, only the situation survey was conducted. <after mid-term evaluation> - None as the activity was completed. - The KAP survey is included in the Baseline Survey attached in ANNEX VIII.
1-4.	Conduct training on LHW involvement in EPI services for EPI technicians, Lady Health Supervisors (LHSs), etc.	- Training on LHW involvement in EPI services for EPI technician and LHSs **"TOT for selected FLCF trainers"**was conducted in Shangla Buner and Swat. - Participants of the training are as follows, Swat: **91** (September, 2007) Buner: **19** (September, 2007), **14**(May, 2008) Shangla: **15** (September, 2007), **16**(June, 2008) - Utilizing the textbook and guideline developed by National EPI Program. - For Haripur, the same training course **"TOT for selected FLCF trainers"**was conducted in May 2009. **167** participated in the trainings. <after mid-term evaluation> - In Haripur, the training was conducted once in July, 2010. **20** trainees participated.
1-5.	Conduct training on EPI service delivery for LHWs.	- Training on EPI service delivery for LHWs, **"LHW Training for EPI involvement"** had been conducted in Swat, Shangla and Buner by the trainers trained in activity 1-4, utilizing the textbook and guideline developed by National EPI Program. - Due to security reasons, the training has been suspended as follows; -The activities in Swat had been interrupted in July 2007. Although the training restarted for **247** LHWs in August 2008, the training was suspended again after one month. -In Shangla and Buner, the training has been suspended since May 2009. - In Haripur, the training for **300** LHW has been conducted (Batch 1). <after mid-term evaluation> - **289**(Batch 2, Dec 2009 - Aug 2010) and **143**(Batch 3, July - Jan 2011) were conducted in Haripur.
1-6.	Conduct refresher training for EPI technicians.	- **"The EPI refresher training"** for **155** EPI technicians was conducted in Swat, Shangla and Buner, in February and April, 2008. - In Haripur, the training has been conducted for **55** EPI technicians in June, 2009. - The textbook for EPI technicians which was developed by National EPI Program has been utilized for the training.

		<after mid-term evaluation> - None as the activity was completed.
1-7.	Conduct EPI training for medical officer	- EPI training for medical officer, **"EPI Training for MO/In charge of Health facility"** was conducted in Haripur, for 38 Medical doctors in September, 2009. - The training has been suspended in Swat, Shangla and Buner due to security reasons. - <after mid-term evaluation> - None as the activity was completed.
<Assessment of Logistics Management>		
1-8.	Conduct equipment needs assessment as part of the Baseline survey.	- Needs assessment for equipment was conducted as a part of the Baseline Survey in Buner, Shangla and Swat, Situation Survey in Haripur as scheduled. <after mid-term evaluation> - None as the activity was completed.
1-9.	Procure and install the necessary equipment (1-1)	- Based on the needs assessment for equipment, such as ice-lined refrigerators were provided to Swat, Shangla and Buner. - Due to security reasons, other equipment provision has been suspended as follows; -The provision in Swat has been suspended since 2007. -The provision in Shangla and Buner has been suspended since 2009. <after mid-term evaluation> - In Haripur, all the equipment has been procured except for the ice-lined refrigerators which are going to be provided by June, 2011. (ANNEX V: List of Equipment Provided)
<Access to EPI Services in Remote Areas>		
1-10.	Conduct needs assessment on mobile/outreach activities as part of the Baseline Survey (1-1).	- Needs assessment on mobile/outreach activities was conducted as part of the **Baseline Survey** (1-1). The results of survey were shared in PIC in Swat, Buner and Shangla. **Situation survey** was conducted for Haripur. The results of the survey was reported to EPI Cell-KPK, Federal EPI and MoH <after mid-term evaluation> - None as the activity was completed.
<Monitoring Activities>		
1-11.	Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at first-level care facility (FLCF).	<after mid-term evaluation> - In Haripur, LHW immunization report & EPI monthly report were formulated in August 2010. - Started using these formats since then for Monitoring. - The activity has not been conducted yet due to security reasons though it was planned to be done in 2007 in Buner, Shangla and Swat.
1-12.	Conduct training on maintenance and repair of EPI-related equipment.	<after mid-term evaluation> - In Haripur, the training on maintenance and repair of EPI-related equipment was conducted in November, 2010. - The training has not been conducted yet due to security reasons in Buner, Shangla and Swat.

1-13.	Formulate checklists on EPI activities, including reported coverage, adverse events, vaccine wastage, and stock-outs at provincial, district, and facility level.	- The activity 1-13 has not been conducted yet because the Japanese Experts were unable to go to target districts for the detailed research due to security reasons in three targeted districts. - Checklists are planned to be formulated on EPI activities, including reported coverage, adverse events at provincial, district and FLCFs levels. <after mid-term evaluation> - The activity 1-13 has not been conducted in Haripur due to the Japanese Experts' decision The reasons are as follows, - If security condition improved, the activity was supposed to be conducted. The situation did not improve. - Necessity to conduct the activity was low. (Refusal of vaccination was found in only 1 family in a village with 25,000 populations, according to the interview survey by the Terminal Evaluation Team.) - Priority to conduct the activity was low with all the Project activities considered. - Coverage, vaccine wastage, and stock-outs have been monitored at facility level through Monthly meeting.
1-14	Ensure monitoring of EPI activities at EPI centers.	- Monitoring of EPI activities at EPI centers has been suspended in Swat, Shangla and Buner due to security reasons. <after mid-term evaluation> - At Monthly meeting, evaluation of the micro plans, formulated by EPI staff using Monthly Planner in Monthly meeting. And, EPI coordinators at district level monitored activities by EPI technician through evaluation of vaccination record on outreach activities. - At BHUs, District EPI coordinator, DSV, FSV monitored activity of EPI technicians on both outreach and fixed site.
Output 2: Parents ensure their children to be vaccinated in the target districts. *Target area of activities for Output2 : Haripur* *The activity was not conducted for following reasons based on the decision of Japanese experts.* *- If security condition improved, the activity was supposed to be conducted. The situation did not improve.* *- Necessity to conduct the activity was low. (eg. Refusal of vaccination was found in only 1 family in a village with 25,000 populations, according to the interview survey by the Terminal Evaluation Team.)* *- Priority to conduct the activity was low with all the Project activities considered.*		
<Community Awareness>		
2-1.	Formulate a communication strategy for EPI.	- Communication strategy for EPI was planned in 2008; the activity has been suspended because the Japanese Experts were unable to go to target districts (Buner, Shangla and Swat) for the detailed research due to security reasons. The activity was not conducted in Haripur. <after mid-term evaluation> - The activity was not conducted.
2-2.	Develop or revise advocacy and Behavioral Change and Communication (BCC) materials as necessary.	- The posters for community awareness were developed. - The 20,000 posters were distributed at provincial, district, FLCFs and health house levels in ALL targeted districts before the mid-term review. <after mid-term evaluation>

		- The activity 2-2 was considered but not conducted as 2-1 was not conducted.
2-3.	Hold seminars and workshops on child immunization for health workers, maleks, TBAs, school teachers, religious and community leaders, and policymakers.	- A dialogue with religious leaders was carried once in March 2007. People from Islamabad (3), Peshawar (1) and Swat (7) gathered to discuss about the issue. In Haripur, the seminars for school teachers, community leaders and NGOs were held twice in July 2009. Since then, there was no activity in all targeted districts. <after mid-term evaluation> - The activity 2-2 is considered not conducted as 2-1 activity was not conducted.
2-4.	Promote health education on child immunization for parents, caretakers for children, etc. through health workers, LHWs, school teachers, religious and community leaders.	- The activity 2-5 has not been conducted yet due to security reasons, although it was planned to be done in 2007 in Buner, Shangla and Swat. The activity was conducted in Haripur, as health education to LHWs was conducted through the training for LHWs. <after mid-term evaluation> - The activity 2-2 was considered but not conducted as 2-1 activity was not conducted.
2-5.	Raise awareness of pregnant women on child immunization during ANC through Lady Health Visitors (LHVs) and Women Medical Officers.	- The activity 2-6 has not been conducted yet due to security reasons though it was planned to be done in 2007. <after mid-term evaluation> - The activity 2-2 was considered but not conducted as 2-1 was not conducted.
Output 3: Quality control capacity of QCL/NIH is enhanced. *Target area of activities for Output2 : QCL* *Activities were conducted as planned.*		
<Quality Control Laboratory Support>		
3-1.	Formulate a procurement plan based on the needs assessment.	- Procurement plan has been formulated based on the needs assessment at the beginning of the Project. <after mid-term evaluation> - Plan was modified accordingly.
3-2.	Procure and install the equipment.	- Based on the procurement plan (Activity 3-1), the equipment concerning QCL such as autoclave, organic carbon analyzer and spectrophotometer were procured and installed. <after mid-term evaluation> - None as the activity was completed. (ANNEX V: List of Equipment Provided)
3-3	Conduct training on the use and maintenance of the equipment.	- The training on the use and maintenance of the equipment has been conducted through OJT during the period of the short term expert activity. - The assignment period of the short term expert is shown in the LIST of Japanese Experts attached in ANNEX IV. <after mid-term evaluation> - None as the activity was completed.

3-4	Conduct training on quality control of vaccines.	- The trainings on quality control of vaccines were conducted through holding seminars as follows. Feb. 2007: **"EPI Vaccine Quality Control Testing Method"** Feb. 2008: **"Trend Analysis by Control Chart"** Feb. 2009 : **"Practical Method of Trend Analysis and Practical method of Assay Validation"** <after mid-term evaluation> February, 2010: "Pharmaceutical Quality System ICH Q10"
3-5	Monitor QCL activities.	- QCL activities were monitored by short-term experts, Advisory Study Mission and QCL staff themselves. The quality control system based on GMP was applied to QCL in NIH. - At the time of the Mid-Term Review, it was identified that appropriate maintenance of equipment, which was provided through the Project, was conducted based on inventory. However, it was not systematic. (ANNEX V: List of Equipment Provided)
Output 4: Federal and Provincial routine EPI system is strengthened. *Target area of activities for Output4: 4 provinces, Sindh, Balochistan, Punjab and KPK* *The activities were mostly conducted as planned.* *The rest of the activities, 4-3 (Conduct training on routine EPI data management and surveillance at district level in 4 provinces) and 4-4 (Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell), are supposed to be conducted at most until the termination of the Project.*		
4-1.	Revised the existing Standard Operation Procedure (SOP) for EPI logistics management as required.	<after mid-term evaluation> - SOP did not exist in Pakistan when the Project started. There were some modules made by donors though, but they were not SOP and were not used. The Project developed the **Guidelines/ Recommendations on Vaccine Stock Management** for EPI logistic management instead of SOP. - (ANNEX XI: The Guideline/Recommendations on Vaccine Stock Management
4-2.	Conduct training on EPI logistics based on SOP at district level in 4 provinces.	- **The training on EPI logistics** was conducted for Swat, Shangla and Buner in September 2008 as scheduled. <after mid-term evaluation> - This training was also conducted for all districts in four provinces during Feb.2010- Feb. 2011. **564** participants from **137** districts/towns have joined **25** batches of trainings in total.
4-3.	Conduct training on routine EPI data management and surveillance at district level in 4 provinces.	<after mid-term evaluation> - **Training on EPI data management** was conducted for EPI Coordinator, DSV, NP Coordinator and Assistant District NP coordinator in KPK. 51 participated in March, 2010. - Training on EPI data management has not been conducted yet in other three provinces. - Component Surveillance was not conducted in all provinces due to technical reasons.
4-4.	Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell.	<after mid-term evaluation> - Analysis and assessment of EPI disease surveillance data was not conducted - Only brief analysis of EPI disease surveillance data was conducted at this moment.

2-3-2 Achievement of Outputs

(1) Output 1 : Children under the age of two are vaccinated in the target districts.

Objectively verifiable indicator 1-1: More than 80% of LHWs, EPI technicians and medical doctors are trained on EPI service provision."

Currently Output1 is being partially achieved as seen below.

The indicator has been achieved in Haripur. It could not be judged in other three districts due to suspension of the Project activities.

After the mid-term review, 100%of LHW finished the training in Haripur, as 289 LHWs completed the training course of LHW routine EPI involvement at Batch2, and 143 completed at Batch3.

The number of LHW who are trained is shown below.

Table 4 Number of LHW who are trained

Date of LHW training	Swat	Buner	Shangla	Haripur
September 2007-April 2008	0	66	67	0
May-December 2008	247*	24	44	0
June-December 2009	0	0	0	299
October 2009-May 2010	0	0	0	289
June-January 2011	0	0	0	143
Total trainees trained by the Project	247*	90	111	731
Total trainees trained by UNICEF	487	0	0	0
Total No. of LHW trained	1666			
Total LHW in each district (as of Termination of the training)	1,258	228	189	731
Coverage of the training	59.1%	39.5%	58.7%	100.0%

Source: The Project

*The training on LHWs involvement on EPI services was conducted for 247 LHWs in Swat. The training had to be suspended due to security reasons, only one month after its initiation.

99% of EPI technicians have completed the training before the mid-term review, as seen below.

Table 5 Number of EPI technicians who are trained

Date of EPI Refresher training	Swat	Buner	Shangla	Haripur
February 2008 (4days)	0	0	33	0
April 2008 (4 days)	81	0	0	0
April 2008 (4 days)	0	36	0	0
June 2009 (3days)	0	0	0	55
Total trainees trained by the Project	81	36	33	55
Total No. of EPI technicians trained by the Project	207			
Total EPI technicians in each district (as of Dec. 2008)	81	36	35	55
Coverage of the training	100.0%	100.0%	94.3%	100.0%

Source: The Project

100% of MO/in charge of health facility have completed the training before the mid-term review as seen below.

Table 6 Number of MO/in charge of health facility who are trained

EPI Training for Medical Officer/in charge of HF	Swat	Buner	Shangla	Haripur
September 2009 (1days) TOT	-	-	-	5
September 2009 (2 days)	-	-	-	18
September 2009 (2days)	-	-	-	15
Total trainees trained by the Project	-	-	-	38
Total No. of MO trained by the Project	-	-	-	38
Total MO in each district (as of Dec. 2008)	-	-	-	38
Coverage of the training	0%	0%	0%	100.0%

Source: The Project Data

Objectively verifiable indicator1-2: The number of immunizations administered by LHWs is increased.

The indicator has been achieved as the number of immunization administered by LHW is increased from 2009 in Haripur. The number of immunization administrated is shown below.

Table 7 Number of immunizations administrated (Monthly Average)

	Measles				BCG				Polio			
	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL
2009	1726	1338	9	3072	1869	312	0	2180	6164	1827	25	8016
2010	2184	715	772	3670	1978	295	38	2311	6020	1425	1698	9143
	Penta				TT							
	Fix	Outreach	Health House	TOTAL	Fix	Outreach	Health House	TOTAL				
2009	6070	1760	25	7855	2704	1401	23	4128				
2010	5992	1416	1687	9095	2883	1129	2349	6361				

Source: EPI monthly report, Haripur district

Objectively verifiable indicator1-3: The number of EPI centers having functional refrigerator is increased.

Once provision is made, the indicator will be achieved in Haripur.

Through the Project, 27 refrigerators for vaccines are going to be provided to EPI centers in Haripur for storage of vaccines for LHW and EPI technicians. Procurement has been delayed on procedural grounds of JICA Pakistan Office.

The number of refrigerators in EPI centers is shown below.

Table 8 Number of Refrigerator in EPI centers

Number of Refrigerator	Swat	Buner	Shangla	Haripur
Provided by the Project	21	12	45	27
No. of Refrigerators originally by district (as of time of provision)	66	32	29	32
Total No. of Refrigerators	87	44	74	59

Source: The Project data

Objectively verifiable indicator 1-4: Out Reach Plan is formulated and implemented at FLCF level.

The indicator has been achieved in Haripur.

According to the situation survey of Haripur, 46% of the EPI technicians had not planned and implemented the out reach plan before the Project. Since the Project has supported the Monthly Meeting of EPI technician, Out Reach Plan is re-formulated and strengthened implementation. Japanese Expert team utilized the Monthly Meeting as a place for technical transfer together with the EPI staff of the district. The increase in formulation and implementation has not been measured.

"Monthly Planner" which is composed of the list of Out Reach and Calendar was developed; the Planner was utilized at the Meeting to make presentations of the Out Reach Plan and its progress of implementation by EPI technician and to share the information among them. Regarding the other target districts, it's difficult to judge due to suspension of the Project due to security reasons.

(2) Output 2 : Parents ensure their children to be vaccinated in the target districts.

It is difficult to evaluate Output2 as the Project activities have not been conducted.

Objectively Verifiable Indicator 2-1: The number of religious and community leaders, policy makers, parents caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased.

Objectively Verifiable Indicator 2-2: The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from seven dangerous diseases, availing the service to complete the course in a timely.

Objectively Verifiable Indicator2-3: The percentage of parents/caretakers of children under one year who know where the routine immunization is essential in addition to Polio drops during NIDs/SNIDs.

A dialogue with religious leaders in Swat and Peshawar was carried out, but its impact has not been identified. Due to better security situation, Haripur was selected as one of the target areas of this Project from April 2009, and a seminar for 88 members including teachers, community leaders and NGO staff was held in Haripur in July 2009. Since then no activity was conducted until now.

As for the indicator 2-2 and 2-3, KAP survey was conducted in Swat, Shangla and Buner in the first half of the project period. Thereafter, the Project has not conducted the activities at this moment.

(3) Output 3 : Quality control capacity of QCL/NIH is enhanced.

Output 3 is mostly achieved at the time of the Terminal Evaluation.

Objectively Verifiable Indicator 3-1" The number of trained QCL staff is increased

The indicator has been achieved.

7 QCL staff and 2 QA staff has completed the local training, and 3 took the training in Japan.

In order to enhance quality control by QCL, the training of " Pharmaceutical Quality System ICH Q10" composed of 'Quality Control Testing Method' and 'Trend Analysis' by short-term experts and the training in Japan of 'Vaccine Quality Control Technology' were conducted.

Senior Scientific Officers and Scientific Officers in all three department of QCL, namely virology, bacteriology and chemistry, participated in the training conducted by the short-term experts. Technical Assistants in the departments of bacteriology and chemistry and Senior Scientific Officer of bacteriology participated in the training in Japan.

Objectively Verifiable Indicator 3.2: The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP

The indicator has been achieved.

According to the evaluation by the Japanese expert, the capacity of those trained staff concerning the knowledge and technology has been enhanced through those training courses. Also, data of routine QCL activity showed enhancement of their capacity.

Objectively Verifiable Indicator 3.3 : Procured equipment of the QCL is properly utilized and maintained The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP

The indicator has mostly been achieved.

After the Mid-term review, the Project developed self-evaluation form for QCL staff. The form is utilized by them.

Proper utilization and maintenance of procured equipment of the QCL is verified at the time of Mid-Term Review. However, it is found that a part of Coulometric Karl Fischer Titrate needs to be replaced.

(4) Output 4 : Federal and Provincial routine EPI system is strengthened.

Objectively Verifiable Indicator 4.1 :Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage is reduced

Since the training course was completed on February, 2011 in whole districts of 4 provinces, **it is difficult to judge at the time of terminal evaluation.**

As for other indicators of 4.2-4.4, it is too early to judge by those indicators, because the training of EPI data management has just been completed in March, 2011.

Currently the Project activities are in the stage of integration of the format in KPK for monitoring and evaluation. The number of monitoring has not increased at the moment.

2-3-3 Project Purpose and Overall Goal

Project purpose : Children under the age of two are vaccinated in the target districts.

With the results of Indicator 1, 2 and 3, it is considered that the effects of the Projects are visible in Haripur. For other target districts, the results cannot be judged due to the suspension of the Project.

The Project purpose was achieved in Haripur, but not in Swat, Shangla, and Buner.

Objectively Verifiable Indicator 1: The number of immunized children with measles or Pentavalent vaccine under one year-old is increased.

The number of immunized children with measles and Pentavalent vaccine under one year-old increased during the last five years in Haripur (Table 8 and 9). The Project contributed to this progress mainly by introducing LHWs' involvement in EPI in 2009 (Table 6). As the results of Indicator 1 already began to increase before the Project activities started in 2008 in Haripur, major of improvement was shown by the district government.

Table 9: Number of Immunized children with Pentavalent

	DPT (2006), Combo (2007-8), Penta (2009-10)					
	I (Number)	I (%)	II (Number)	II (%)	III (Number)	III (%)
2006	18608	62.5	18500	62.1	16757	56.3
2007	23283	72.6	21018	65.5	21295	66.4
2008	27537	90.7	26291	86.6	25975	85.5
2009	26454	85.2	25430	81.9	25603	82.5
2010	31111	111.5	31189	111.8	30692	110.0

Source: Monthly Provincial EPI Report, KPK/EPI office.

Table 10: Number of Immunized children with measles

	HARIPUR	BUNER	SHANGLA	SWAT
2006	12425	15094	14631	41426
2007	18703	15301	4663	31651
2008	24405	15398	12150	27661
2009	26588	15360	10487	17037
2010	27630	17044	11525	41126

Source: Monthly Provincial EPI Report, KPK/EPI office.

In addition, the number of immunization on BCG, OPV and TT which are included in routine EPI was also increased in Haripur (Table 9).

Table 11: Number of Immunized children with BCG & OPVIII

	Target Population	BCG		OPV-III	
		Numbers	% AGE	Numbers	% AGE
2006	29778	17481	59	16757	56
2007	32076	22096	69	21295	66
2008	30372	26533	87	25975	86
2009	31037	27248	88	25603	82
2010	27899	29318	105	30692	110

Source: Monthly Provincial EPI Report, KPK/EPI office.

Table 12: Number of Immunized children with TT2 in Haripur

	BUNER	HARIPUR	SHANGLA	SWAT
2006	13939	12187	8213	40369
2007	13648	14190	3596	32580
2008	15795	13598	10748	27609
2009	13382	18734	11277	18688
2010	19526	29422	15785	48214

Source: Monthly Provincial EPI Report, KPK/EPI office.

Other target districts did not show steady increase in number of immunization mainly due to security reasons.

Objectively Verifiable Indicator 2: Reported routine EPI coverage (Pentavalent) is increased.

Reported routine EPI coverage (DPT/Pentavalent) increased during the last five years in Haripur. The degree of increase in Haripur appears greater than that of other districts in KPK, but interpretation should be made very carefully. Population data for coverage calculation is not reliable, because the estimation is based on the census in 1998. Statistics Division, the Government of Pakistan plans to conduct the census in 2011.

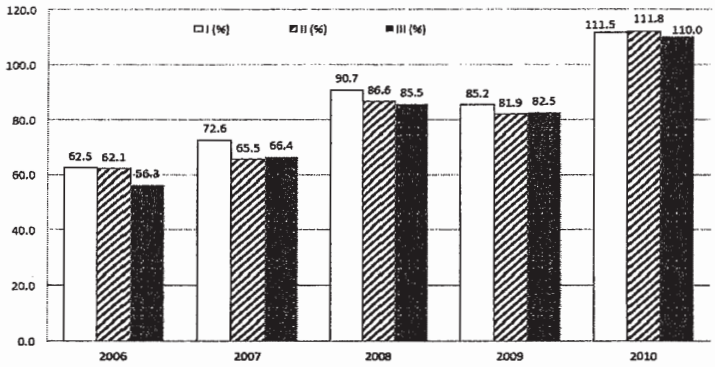

Figure1 Reported routine EPI coverage (DPT/Pentavalent) (%) in Haripur

Source: Monthly Provincial EPI Report, KPK/EPI office.

Comparison of actual number of immunization in Haripur and KPK shows that increasing trend is sharper in Haripur than in KPK.

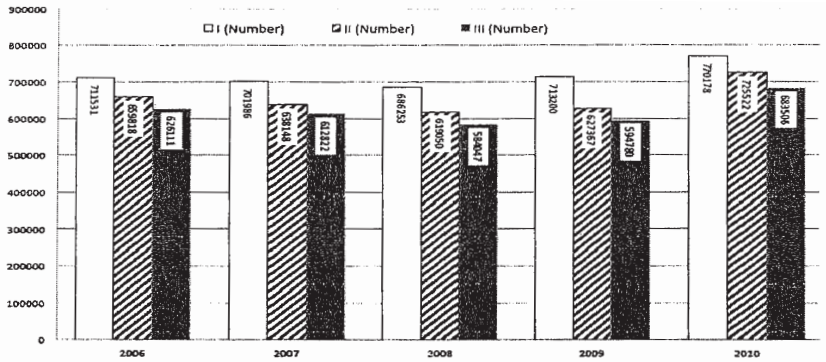

Figure2 Reported routine EPI coverage (DPT/Pentavalent) in KPK (actual number)
Source: Monthly Provincial EPI Report, KPK/EPI office.

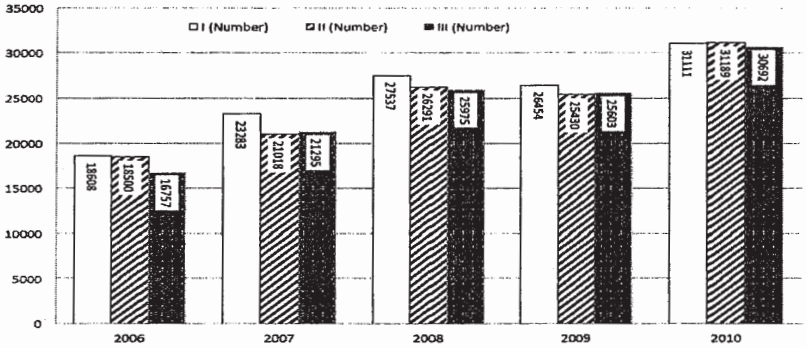

Figure 3: Reported routine EPI coverage (DPT/Pentavalent) in Haripur (actual number)
Source: Monthly Provincial EPI Report, KPK/EPI office.

Objectively Verifiable Indicator 3: Drop-out rate of DPT is reduced [(DPT1-DPT3)/ DPT1].

Drop-out rate of DPT/Pentavalent was reduced (Figure4).

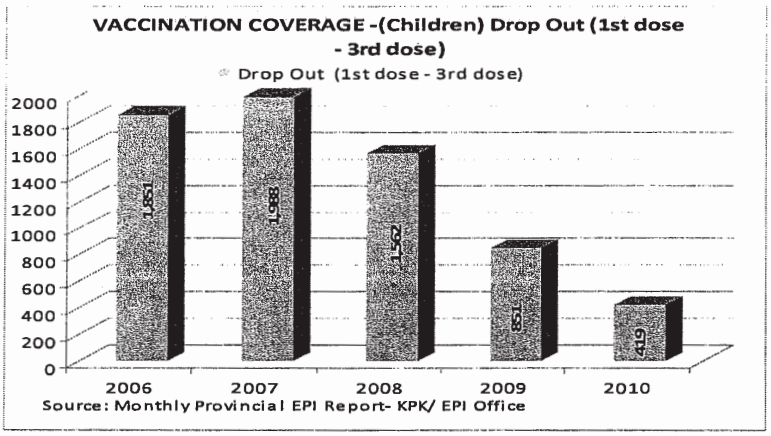

Figure4: Vaccination coverage-(children) Drop Out (1st dose-3rd dose)
Source: Monthly Provincial EPI Report, KPK/EPI office.

Overall goal : Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.

The achievement of the overall goal cannot be verified at the point of the Terminal Evaluation. The surveillance of three target diseases, polio, measles and neonatal tetanus, does not show steady decrease, and reveals different incidence patterns (Table 11, 12, and 13).

Objectively Verifiable Indicator 1: Polio free is maintained.

Poliomyelitis cases were reported in Swat and Shangla, but not in Haripur and Buner during the last five years. The Project's contribution to polio control seems to be limited, and repeated polio immunization campaigns play a major role to control polio in KPK.

Table 13 Incidence of Polio at each district

Districts	2006	2007	2008	2009	2010	2011*
Swat	0	1	4	11	1	0
Buner	0	0	0	0	0	0
Shangla	0	0	0	1	0	0
Haripur	0	0	0	0	0	0
Total	0	1	4	12	0	0

Source: DGHS in KPK *the data for 2011 as of April

Objectively Verifiable Indicator 2: The incidence of measles is reduced.

Measles incidence was not reduced. The surveillance data shows the incidence peaked in 2007 and incidence in other years were relatively low. Considering the epidemiology of the disease, change in indicator values may reflect natural fluctuation rather than project effect.

Table 14 Incidence of Measles at each district

Districts	2006	2007	2008	2009	2010	2011*
Swat	26	47	1	22	117	6
Buner	0	94	4	0	9	2
Shangla	0	9	0	0	0	0
Haripur	2	250	17	12	1	4
Total	28	400	22	34	127	12

Source: DGHS in KPK *The data for 2011 as of March

Objectively Verifiable Indicator 3: The incidence of Neonatal Tetanus is reduced.

Neonatal tetanus did not decrease in incidence. The effect of the Project activities cannot be easily measured because of shorter duration of observation period, difficult clinical diagnosis, and lower incidence.

Table 15 Incidence of Neonatal Tetanus at each district

Districts	2006	2007	2008	2009	2010	2011*
Swat	0	0	0	0	0	0
Buner	0	2	6	0	1	3
Shangla	0	1	0	0	0	0
Haripur	0	2	2	4	0	1
Total	0	5	8	4	1	4

Source: DGHS in KPK *The data for 2009 as of March

2-4 Implementation Process

2-4-1 Promoting factors

The Japanese Expert Teams has been attending those regular meetings with CP or other organizations to show their presence and to share the information about the Project and to collect the necessary information on EPI/Polio control. Some of the meetings were essential for actual and smooth implementation of the Project. The summary of those meetings and their roles for the Project are described below.

(1) EPI review meeting [Biannually]

Participants of the EPI review meeting comprised of Federal EPI, four provincial EPIs, GAVI, WHO-Pakistan, UNICEF-Pakistan, USAID, Bill and Gates Foundation, World Bank, Rotary International and JICA. Most of the discussion is about Polio Campaign though; records and issues of routine-EPI are also presented and discussed. The team leader is attending the meeting to collect latest technical information and policies.

At the meeting on September, 2009, the Team leader presented the concept of Vaccine Logistics Management and EPI data management and obtained consensus from relevant parties. Soon after that, the component of Vaccine Logistics Management was included in PC1 (Federal) during its revision. The Activity has started from December, 2009.

(2) Project Implementation Committee (PIC) [Quarterly]

This committee has been working as planning and monitoring body of the Project. Since most activities of the EPI component of the Project have been implemented in KPK, this committee consists of members of National Program for FP & PHC and EPI office at the KPK level. The committee meeting had been held in Peshawar where the DGHS in KPK is premised, but thereafter due to on the security conditions, the committee meetings have not been held.

(3) National Steering Committee [Weekly]

Members of this meeting are WHO, UNICEF, WB and bilateral agencies. The purpose of the meeting is to monitor the progress of Polio Campaign and to share information concerned with their activities such as the progress of other projects. The team leader is attending the committee to collect information especially about the Polio Campaign which is essential information for the Project's activities to avoid duplication of the activities.

(4) National Immunization Technical Advisory Group [Quarterly]

Doctors in pediatrics and professors of universities are the focal persons in the National Immunization Technical Advisory Group. The meeting is held quarterly and the donors providing technical support with information on new vaccine and updated knowledge and skills related to EPI services. The team leader is attending the TAG meeting to collect latest technical information about EPI.

(5) Technical Advisory Group Meeting [Biannually]

WHO plays the leading part in the Technical Advisory Group Meeting. The members of the meeting are from bi/multi-lateral agencies and research institutes such as CDC. The meeting provides support to Federal EPI with technical advice especially focusing on Afghanistan and Pakistan.

(6) Provincial Steering Committee [On the Polio Campaign]

WHO, UNICEF and bilateral agencies in provincial level share the information on the campaign.

(7) Provincial Sub Committee meeting on communication

WHO, UNICEF and bilateral agencies in provincial level share the information on the progress of their activities.

2-4-2 Hindering factors

While attending those above meetings to promote communication with CP and other relevant parties, some hindering factors can be observed as follows.

(1) Non-existence of oversight on the Project.

The CPs are varied according to the Activity of the Project though, a function to oversee whole activities was not formulated by the Project.

(2) Less communication with CPs, especially with EPI and National Program of federal and province levels.

Even though JCC has been agreed upon as the highest decision making body in the Project including reviewing of PDM1 and deciding about the oversight of the Project, no JCC was held since the Mid-term review.

JCC consists of JICA Pakistan Representative, Joint Secretary of MOH, Joint Secretary (ADB/Japan) of Economic Affairs Division, Director General Health Services of Government. of KPK Health Directorate, National Program Manager EPI of Federal EPI, Deputy Director EPI of Department of Health in KPK and QCL.

(3) Implementation process of the Project under the insecure condition and Natural disaster.

Since the bombing of the madrasa in NWFP in October 2006, security problems such as suicide bombing have become widespread and serious. Also, the activities related to health and education has been restricted due to deterioration of security conditions, and Japanese Experts were not able to work in the project sites since May 2007. Furthermore, Japanese Experts could not visit even Peshawar and started to send national staff of the Project to the project sites for implementing the project activities and invited the C/P to Islamabad for meetings. The Project had newly employed medical doctors as national staff to re-start and promote the activities in three target districts. However, the grave security condition did not allow them to do so fully.

Responding the above situation, in October 2008, Advisory Study Mission was dispatched to Pakistan to review the activities and progress of the Project. The Advisory Study Mission selected Haripur as new target area among the candidate districts. The addition of new target district to the Project was approved in second JCC in April 2009. Since dispatching the Advisory Study Mission, security condition has not improved and the activities in three target districts have remained suspended. The project activities in Haripur, however, have been implemented until now. And the training on EPI Data Management has been newly conducted targeting KPK after the Mid-term review.

Furthermore, on July and August 2010, Pakistan suffered extensive damages from floods. And some of the Training courses of the Project had to be suspended for three months, as there was no other choice.

3. Evaluation of five criteria

3-1 Relevance

Considering the necessity of EPI activities, the consistency with the Japanese ODA strategy and the advantage of Japanese social technical development, relevance of the Project is high.

(1) Necessity of EPI/Polio control in Pakistan

Pakistan is one of the countries with the highest child mortality. A notable proportion of these deaths are caused by vaccine-preventable infectious diseases. Also, Pakistan is one of the four countries where Polio has not been eradicated. The immunization coverage of routine EPI in Pakistan is not optimal. The Project, which aims at increasing the vaccination coverage, matches the necessity of improvement of EPI/Polio control in Pakistan.

(2) Consistency of the development plan of government of Pakistan with the Project

Pakistan Government mentioned the infection control as one of the important challenges in Millennium Development Goals and Poverty Reduction Strategy Paper in Pakistan. The MOH's Planning Commission Forum-1(PC1) 2009-10- 2013-14 includes the activity of routine EPI, and the Project is one of its components. Also, the Project is following other health policies and strategies such as National Health Strategy, National EPI Policy by MOH, and National Emergency Action Plan (NEAP) on Polio Eradication 2011. In the present EPI policy, LHWs are obliged to be involved with the EPI service. The Project has consistency with the strategy and policy in Pakistan and contributes to the increasing of the accessibility for people to EPI service.

(3) Consistency of the assistance policy of government of Japan with the Project

The ODA strategy of Japan focuses on human security and human development. The Project focused on EPI as one of Basic Health Care. The designation of the Project including the human resource development involving LHW to EPI service provision and promoting of accessibility for people to EPI service is consistent with the Official Development Assistance strategy of Japan.

(4) Advantage of Japanese technical development

JICA has already experienced and accumulated know-how about EPI/Polio Control in the countries such as Pakistan and China. The experiences and know-how can be applied to the Project to support EPI activities technically.

3-2 Effectiveness

The interview survey reveals that overall satisfaction towards inputs such as human resources, trainings and provision of the equipment is high, and so is the level of utilization. **The team concluded that the effectiveness of the Project has been observed in Haripur.**

Output1: effectiveness can be observed. Output 1 is clearly contributing to the Project Purposes. Through involvement of LHW and strengthening of Recording and Reporting system of EPI, the Project activities turned out the significant increase of vaccination especially by LHWs and coverage of immunization. Overall, the outcome is highly appreciated.

Output2: effectiveness cannot be observed as the Activities were not conducted.

Output3: effectiveness can be observed. The comprehensive technical training was conducted for strengthening the skills of QCL staff, provision of equipment including instruction of its maintenance, and monitoring QCL. And its outcome is obvious. However, Output 3 is relatively indirect contribution to the achievement of the Project Purposes. QCL by its function is indirect to it.

Output4: It's difficult to judge the effectiveness. The activities of Output4 have been in the middle of

implementation. At this moment, there were no definite outputs by these activities, but the activities seem to be adequate, considering response from trainees and relevant parties. Thus, effectiveness can be expected if all the activities are completed.

As fruits of the Project, various types of materials, text books, formats etc. were produced. List of products is shown in ANNEX XII

3-3 Efficiency

Since Japanese experts and the Project's local staff are not able to access several areas due to security reason, many of CPs and beneficiaries have to come to Islamabad to participate in the activities. After the mid-term review, the activities for Output 4 have targeted all provinces in Pakistan, thus putting more financial burden on those travel expenses due to deteriorating security condition. It is directly reflected to the increase in the Local Cost. Even though the Project is trying to select the most efficient ways, considering these situations, **the efficiency of the Project in overall might be low.**

As for Output 1 and 2, the inputs have not been utilized as planned and the activities planned have not been implemented in three target districts due to security reason. All the input towards those districts is keeping uncontrolled until the time of the Terminal Evaluation. The efficiency of the Project might be judged as low though this is attributable to external conditions.

The Activities of Output2 have not been done due to priority of the activities. This might indicate that there was mismatch between the project design and inputs and the efficiency of the Project should be considered as low in this regard. Thus, those activities should have been modified through revision of PDM1 at the certain point of time after the mid term review, considering priority of activities, effective allocation of financial and human resources.

Regarding output 3, the inputs such as experts and equipment and activities planned were executed as scheduled. As a result, the indicators have been already achieved at present. Thus, the efficiency of the output 3 is high.

Activities for Output 4 were conducted after getting consensus among the relevant parties and were conducted smoothly and appropriately. However, only part of planned activities has been conducted at this moment and it is still too early to judge its efficiency.

3-4 Impact

(1) Prospect for the achievement of the Overall Goal

As described above, the surveillance of three target diseases for the Over al Goal, polio, measles and neonatal tetanus, does not show steady decrease, and reveals different incidence patterns. Also, the effect of the Project activities cannot be easily measured because of shorter duration of observation period, difficult clinical diagnosis, and lower incidence. Thus, **it is difficult to determine the possibility of the achievement of the Overall Goal at this moment.**

(2) Positive and Negative Impacts of the Project

1) Positive impact

Mechanisms for EPI service delivery including reporting system which was developed in Haripur by the Project has been highly evaluated by stakeholders. Performance of LHW in Haripur is estimated as a good and implementable practice by the National Program and it considers replicating this reporting system to other

districts.

Judging from interview survey by the team, it was found that LHWs became confident and well motivated after they were trained to deliver EPI services. Thus, it is expected that their routine activities will be also enhanced, resulting in better health care service at community levels.

2) Negative impact

As it was indicated that workload of LHW would be increased, resulting in gradual worsening in service delivery in other fields, but at this moment no negative impact could be observed.

3-5 Sustainability

(1) Political Sustainability of Project Effects

Activities which were conducted in the Project are described in the plans for Mid-Term Development Framework 2005-2010 and National EPI Program. Cooperation to EPI for LHW will continue in the new National EPI Policy which is drafted now.

(2) Institutional Sustainability of Project Effects

The Federal and Provincial EPIs have already strengthened the institutions with adequate staffs for EPI service delivery. It is expected that these institutions can be properly sustained after the devolution.

Through the various training courses by the Project, CP acquired knowledge and technology. However, those trainings have been conducted only by the Japanese side and the Pakistan side has not been involved. This is due to lack of adequate human resources to be allocated, especially at provincial levels. Considering this situation, the Project aimed to institutionalize the system such as reporting through those trainings to obtain technical sustainability as described below.

However, for institutional sustainability, human resource development should be planned and managed by the federal and provincial EPIs and adequate staffs should be allocated.

(2) Technical Sustainability of Project Effects

Regarding the output 1, in Haripur, the mechanism for routine EPI service through EPI technician and LHW workers have been observed as well developed the Provincial EPI acquired sustainability to maintain this mechanism technically. For the output 3, technical sustainability of the QCL is high as all the staffs have obtained knowledge and skill to deal with the equipments provided and about the QCL throughout the Project.

Regarding the output 4, technical sustainability is not enough as follows;

<u>Vaccine Logistic Management</u>

The trainings have been completed for 137 districts/towns in 4 provinces and the maximum and minimum vaccine stock management is being implemented in 4 provinces. However the implementation status is incomplete and it is not institutionalized. It is required that the technical support should continue in order to obtain the maximum and minimum stock management until it is institutionalized. Therefore it would not be sustainable at this moment.

<u>EPI data management</u>

The training for KP province has been completed and the integrated reporting formats were agreed with Provincial EPI and LHW program. The project is planning the trial utilization for these new reporting formats in 4 districts of KP province and the training to introduce the new reporting formats in other 3 provinces. The monitoring mechanism of reporting system should be developed and be institutionalized. Once the data management with monitoring mechanism of reporting system is institutionalized, it would be sustainable.

Therefore it is not sustainable at this moment, and it is necessary to continue the technical support for the sustainability.

(3) Financial Sustainability of Project Effects

Financial sustainability is the key to continue the Project Effects, as Pakistan government is already trying its best as follows;

- Each EPI-province is currently reviewing its PC-1 for the next fiscal year of Pakistan (from June, 2011).
- The Pakistan side successfully obtained financial support from the Japanese Government to cope with urgent vaccine procurement to avoid stock out due to the deficiency of the budget caused by the devolution process.

However, as the Federal and Provincial EPIs still rely on donors for operational costs, there were interruptions of trainings or delay of salary payment due to problems regarding contracts with those donors. Thus, the Federal and Provincial EPIs need to continue their efforts for full financial sustainability.

As for QCL, the financial sustainability is high, as the budget is allocated according to the national component of PC1.

4. Conclusion

The Project implemented the activities based on the project design those matches to needs of situation in Pakistan. In the midst of difficult situations, the Project made certain achievement in various areas, especially in the outputs 1 and 3. Thus, as a conclusion, evaluation based on five criteria, the Project implementation and its achievement can be reasonably evaluated. As a fact, uncertain security situations hampered implementation of the Project. However, as described above, there were other factors those affected evaluation of the Project performance and certain measures, including careful design of the activities, should have been taken for efficient implementation of the Project. Also, at this moment, technical sustainability has not yet been acquired by the Pakistan side, partly due to short periods of the Project activities and certain measures to enhance technical sustainability should be implemented within the remaining period.

5. Recommendations

The team was impressed by the tremendous progress in the short period after the mid-term evaluation. This series of progress were made possible by continuous efforts and commitment of all related staffs in extremely difficult situations. The Team would be very grateful if recommendations described below will eventually bring certain additional development in EPI program in Pakistan.

(1) As indicated in the report, communication among all stakeholders has not been enough as the Project activities have become diverse. Thus, it is recommended to enhance communication among all stakeholders including the Federal and Provincial EPI, NIH and other partners.

(2) Also, it is recommended to organize the meeting with all stakeholders to review the achievement of the Project and develop the plan for each output on how to bring the maximum effect in the remaining period.

(3) The team recognized the positive effect of involvement of LHW into EPI program on increased number of immunized children. However, effects of involvement of LHW have not been analyzed well. Thus, for further progress, the Federal EPI, along with the National Program, is recommended to analyze effects of involvement of LHW on EPI program, including effects of BCC activities by LHW and impacts, either positive or negative, by LHW activities for immunization.

(4) At this moment, it is impossible to obtain certain numbers of indicators, especially for output 4. Since these indicators are very important to judge significance of the Project, the Project is required to collect data regarding these indicators by the end of the Project period.

(5) The Project has finished trainings on data management in only twelve districts in one province at this moment. Since this training is vey meaningful for EPI program and planned to conduct in four provinces to bring maximum effect of the Project. Thus, the Project is recommended to conduct these trainings in remaining provinces as much as possible.

(6) Also, for EPI logistics and data management, the Japanese side is recommended to continue technical assistance so that the Pakistan side can obtain technical sustainability in these fields within the Project period.

(7) Enhancing capacity by conducting training is the major approach of the Project implementation. Especially trainings on EPI logistics and data management were developed by the Project. Thus, it is recommended that the Pakistan side obtain sustainability to conduct these trainings after the end of the Project. However, as described above, as there are not enough caretakers at provincial levels in this regard, the Project is recommended to develop training mechanisms with the documented concepts, so that the Pakistan side can, at least, conduct those trainings by assistant of third parties. Also, it is recommended to draw lessons learnt from evaluation of the trainings. Also, the federal and provincial EPI are recommended to enhance situational capacity to conduct those trainings.

(8) For the activity in Haripur district, EPI technicians have been able to develop out reach plans, but not enough monitoring on implementation of those plans has been done. Thus, the Project is recommended to develop monitoring and feed back mechanisms of implementation of those plans.

(9) For the activity 4-4 (Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell), the Project is recommended to develop the criteria for validation of data quality to assess surveillance data.

Revised Project Design Matrix (PDM)

Date of revision :

Project Name : EPI/Polio Control Project in Pakistan

Target Group : Children under the age of two in the target districts

Target Area : 3 districts (Buner, Shangla, and Swat) in North West Frontier Province (NWFP)

Project Period : 5 years

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal: Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.	1. Polio free is maintained. 2. The incidence of measles is reduced. 3 The incidence of NT is reduced.	1. National Surveillance Bulletin (National Surveillance Cell) 2. Report by EDO Health Offices (Annual Report of 3. Same as above	Collaboration between EPI program and LHW program is maintained in NWFP.
Project Purpose: Children under the age of two are vaccinated in the target districts.	1. The number of immunized children under 2 year-old is increased. 2. Reported routine EPI coverage (DPT 3) is increased. 3. Drop-out rate of DPT is reduced [(DPT1-DPT3)/DPT1].	1. Report by EDO Health Offices 2. Report by EDO Health Offices 3. 3. Report by EDO Health Offices	1. Potency of EPI vaccine is assured. 2. The nutrition status of children does not worsen. 3. Polio campaigns are continued.
Outputs: 1. EPI services are properly provided in the target districts.	1-1. The number of Lady Health Workers (LHWs) and EPI technicians who are trained in EPI service provision is increased. 1-2. The number of immunizations administered by LHWs is increased. 1-3. Stock-out of vaccines at district vaccine storages and FLCFs is reduced. 1-4. EPI centers timely and regularly report their performance to the EDO (Executive District Officer) 1-5. The number of EPI centers that fulfill the standard set by the checklist is increased. 1-6. Micro plan is formulated and implemented at FLCF level.	1-1. Participant list 1-2. EPI Permanent Register 1-3. Project Monitoring Report (From Activity 1-19) 1-4. Report by EDO Health Offices 1-5. The checklist 1-6. Micro Plans of FLCFs	1. Role of LHWs in EPI" of the National EPI Policy remains unchanged. 2. EPI vaccines are constantly supplied to NWFP. 3. The natural disasters or conflicts do not affect project activities.
2. Parents ensure their children to be vaccinated in the target districts.	2-1. The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased. 2-2 The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from seven dangerous diseases, availing the services to complete the course in a timely 2-3. The percentage of parents/caretakers of children under one year who know where and how to avail the routine immunization services and to ask that new disposable syringes are used by health workers for immunization.	2-1. Participant list 2-2. KAP survey 2-3. KAP survey	

	2-4. The percentage of parents/caretakers of children under one year who acknowledge that minor side-effects of routine immunization are a sign that immunization is working and nothing to worry	2-4. KAP survey	
	2-5. The percentage of parents/caretakers of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs/SNIDs.	2-5. KAP survey	
3. EPI disease surveillance including using AFP (Acute Flaccid Paralysis) surveillance system is	3-1. The number of medical personnel trained in the EPI disease surveillance is increased.	3-1. Participant list	
	3-2. Timeliness and completeness of the Weekly Zero Report (%) (Timeliness: the Report is submitted by following Monday. Completeness: The Report is submitted by following Wednesday.)	3-2. Weekly Zero Report	
	3-3. The non-polio AFP rate is maintained (1≧per 100,000 population < 15 year-old).	3-3. National surveillance Bulletin (National Surveillance Cell)	
	3-4. The number of unreported EPI diseases is reduced in health facilities.	3-4. Report by EDO Health Offices (From Activity 3-3)	
4. Quality control capacity of QCL/NIH is enhanced.	4-1. The number of trained QCL staff is increased.	4-1. Participant list	
	4-2. The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP.	4-2. Questionnaire survey	
	4-3. Procured equipment of the QCL is properly utilized and maintained.	4-3. Questionnaire survey	

Activities: 1-1. Conduct the Baseline Survey, Mid-term Review, and Terminal Evaluation. 1-2. Formulate a micro plan in each district, including the allocation of EPI personnel. <Human Resources Development > 1-3. Conduct training needs assessment as part of the Baseline Survey (1-1). 1-4. Conduct training on LHW involvement in EPI services for EPI technicians, Lady Health Supervisors (LHSs), 1-5. Conduct training on EPI service delivery for LHWs. 1-6. Conduct refresher training for EPI technicians. 1-7. Develop a module for the training on supportive supervisory skills. 1-8. Conduct training on supportive supervisory skills for LHSs. <Logistics Management> 1-9. Formulate an inventory of cold chain equipment, power and water supply, and facilities in EPI centers (1-1). 1-10. Conduct equipment needs assessment as part of the Baseline Survey. 1-11. Procure and install necessary equipment (1-1). 1-12. Revise the existing Standard Operation Procedure (SOP) for EPI logistics management as required.	**Inputs:** **Japanese side** 1. Personnel ・Long-term experts Chief Advisor/EPI Project Coordinator ・Short-term experts QCL EPI disease surveillance As required 2. Training of project personnel in Japan and Pakistan 3. Equipment/training materials	**Pakistani side** 1. Personnel Project Director Project Manager Counterpart personnel 2. Provision of the project office and facilities necessary for the implementation of the project 3. Others Administrative and operational costs Running costs for electricity, water, etc.	1. POL for activities is secured in the recurrent budget of the NWFP Health Department. 2. The workload of EPI vaccinators and LHWs, such as NIDs and polio rounds, does not increase.

1-13. Conduct training on EPI logistics based on SOP 1-14. Conduct training on maintenance and repair of EPI-related equipment. <Access to EPI Services in Remote Areas> 1-15. Conduct needs assessment on mobile/outreach activities as part of the Baseline Survey (1-1). <Monitoring Activities> 1-16. Conduct training on data management at district level. 1-17. Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at first-level care facility (FLCF) 1-18. Formulate checklists on EPI activities, including reported coverage, adverse events, vaccine wastage, and stock-outs at provincial, district, and community level 1-19. Ensure monitoring of EPI activities at EPI centers.		
2-1. Conduct a Knowledge, Attitudes, and Practices (KAP) 2-2. Formulate a communication strategy for EPI. 2-3. Develop or revise advocacy and Behavioral Change and Communication (BCC) materials as necessary. 2-4. Hold seminars and workshops on child immunization for health workers, maleks, TBAs, school teachers, religious and community leaders, and policymakers. 2-5. Promote health education on child immunization for parents, caretakers of children, etc. through health workers, LHWs, school teachers, religious and community leaders. 2-6. Raise awareness of pregnant women on child immunization during ANC through Lady Health Visitors (LHVs) and Women Medical Officers.		**Pre-conditions**
3-1. Develop guidelines on EPI disease surveillance. 3-2. Conduct training on EPI disease surveillance. 3-3. Monitor the EPI disease surveillance by reviewing admission records in health facilities in order to detect unreported cases.		
4-1. Formulate a procurement plan based on the needs assessment. 4-2. Procure and install the equipment. 4-3. Conduct training on the use and maintenance of the equipment. 4-4. Conduct training on quality control of vaccines. 4-5. Monitor QCL activities.		

*: If the areas and organizations are not specified in the Objectively Verifiable Indicators, the target values are supposed to be achieved in the target districts (Buner, Shangla, and Swat).

Revised Project Design Matrix (PDM)

Version 1. Date of revision . October 9, 2009

Project Name : EPI/Polio Control Project in Pakistan

Target Group : Children under the age of two in the target districts

Target Area : 4 districts (Buner, Shangla, Swat and Haripur) in North West Frontier Province (NWFP)

Project Period : 5 years

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal: Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.	1. Polio free is maintained. 2. The incidence of measles is reduced. 3. The incidence of NT is reduced.	1. National Surveillance Bulletin (National Surveillance Cell) 2. Report by EDO Health Offices (Annual Report of Federal EPI Cell) 3. Same above	Collaboration between EPI program and LHW program is maintained in NWFP.
Project Purpose: Children under the age of two are vaccinated in the target districts.	1. The number of immunized children with measles or Pentavalent vaccine under one year-old is increased. 2. Reported routine EPI coverage (Pentavalent) is increased. 3. Drop-out rate of Pentavalent is reduced [(Penta 1-Penta 3)/ Penta 1].	1. Report by EDO Health Offices 2. Report by EDO Health Offices 3. Report by EDO Health Offices	1. Potency of EPI vaccine is 2. assured. 3. The nutrition status of children does not worsen. Polio campaigns are continued.
Outputs: 1. EPI services are properly provided in the target districts.	1-1. More than 80% of LHWs, EPI technicians and medical doctors are trained on EPI service provision.	1-1. Participant list	1. Role of LHWs in EPI" of the National EPI Policy remains unchanged.
	1-2. The number of immunizations administered by LHWs is increased.	1-2. EPI Permanent Register	
	1-3.. The number of EPI centers having functional refrigerator is increase.	1-3. Project Monitoring Report (From Activity 1-19)	2 EPI vaccines are constantly supplied to NWFP.
	1-4. Out Reach Plan is formulated and implemented at FLCF level.	1-4. Out Reach Plans of FLCFs	3. The natural disasters or conflicts do not affect project activities.
2. Parents ensure their children to be vaccinated in the target districts.	2-1. The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased.	2-1. Participant list	
	2-2 The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from 8 dangerous diseases, availing the services to complete the course in a timely.	2-2 Questionnaire survey	
	2-3 The percentage of parents/caretakers of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs /SNIDs.	2-3 Questionnaire survey	
3. Quality control capacity of QCL/NIH is enhanced.	3-1. The number of trained QCL staff is increased.	3-1. Participant list	
	3-2. The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP.	3-2. Questionnaire survey	
	3-3. Procured equipment of the QCL is properly utilized and maintained.	3-3. Questionnaire survey	
4. Federal and Provincial routine EPI system is strengthened.	4-1 Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage is reduced.	4-1 Project Monitoring Report (From Activity 1-13)	
	4-2 The number of training monitoring and evaluation is increased.	4-2 Training monitoring and evaluation report	
	4-3 The quality of routine EPI data is improved.	4-3 Routine EPI data	
	4-4 The number of monitoring by provincial EPI Cell and Provincial National Program is increased.	4-4 Provincial monitoring report	

Activities:	Inputs:		
1-1. Conduct the Baseline Survey, Mid-term Review, and Terminal Evaluation. 1-2. Formulate a micro plan in each district, including the allocation of EPI personnel. <Human Resources Development > 1-3. Conduct training needs assessment as part of the Baseline Survey (1-1). 1-4. Conduct training on LHW involvement in EPI services for EPI technicians, Lady Health Supervisors (LHSs), etc. 1-5. Conduct training on EPI service delivery for LHWs. 1-6. Conduct refresher training for EPI technicians. 1-7. Conduct EPI training for medical officers. <Assessment of Logistics Management> 1-8. Conduct equipment needs assessment as part of the Baseline Survey. 1-9. Procure and install the necessary equipment(1-1) <Access to EPI Services in Remote Areas> 1-10 Conduct needs assessment on mobile/outreach activities as part of the Baseline Survey (1-1). <Monitoring Activities> 1-11 Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at first-level care facility (FLCF). 1-12 Conduct training on maintenance and repair of EPI-related equipment. 1-13 Formulate checklists on EPI activities, including reported coverage, adverse events, vaccine wastage, and stock-outs at provincial, district and facility level. 1-14 Ensure monitoring of routine EPI activities at EPI centers. <Community Awareness> 2-1 Formulate a communication strategy for EPI. 2-2 Develop or revise advocacy and Behavioral Change and Communication (BCC) materials as necessary. 2-3 Hold seminars and workshops on child immunization for health workers, maleks, TBAs, school teachers, religious and community leaders, and policymakers. 2-4 Promote health education on child immunization for parents, caretakers of children, etc. through health workers, LHWs, school teachers, religious and community leaders. 2-5 Raise awareness of pregnant women on child immunization during ANC through Lady Health Visitors(LHVs) and Women Medical Officers. <Quality Control Laboratory Support> 3-1. Formulate a procurement plan based on the needs assessment. 3-2. Procure and install the equipment. 3-3. Conduct training on the use and maintenance of the equipment. 3-4. Conduct training on quality control of vaccines. 3-5. Monitor QCL activities. <Federal EPI Support> 4-1 Revise the existing Standard Operation Procedure (SOP) for EPI logistics management as required. 4-2 Conduct training on EPI logistics based on SOP at district level in 4 4-3 Conduct training on routine EPI data management and surveillance at district level in 4 provinces. 4-4 Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell.	**Japanese side** 1 Personnel ・Long-term experts Chief Advisor/EPI Project Coordinator ・Short-term experts QCL Vaccine Logistics Management EPI Support EPI disease surveillance As required 2. Training of project personnel in Japan and Pakistan 3. Equipment/training materials	**Pakistani side** 1. Personnel Project Director Project Manager Counterpart personnel 2. Provision of the project office and facilities necessary for the implementation of the project 3. Others Administrative and operational costs Running costs for electricity, water, etc.	1. POL for activities is secured in the recurrent budget of the NWFP Health Department. 2. The workload of EPI vaccinators and LHWs, such as NIDs and polio rounds, does not increase. **Pre-conditions**

*: If the areas and organizations are not specified in the Objectively Verifiable Indicators, the target values are supposed to be achieved in the target districts (Buner, Shangla, Swat and Haripur).
Haripur district has been newly included as target districts since April 2009.

Revision of the PDM

Item	PDM0	PDM1	Reasons
Project framework: One district is added to target areas of the Project.			
Target Area	3 districts (Buner, Shangla and Swat) in North West Frontier Province (NWFP)	*Modified* **4** districts (Buner, Shangla, Swat and **Haripur**) in North West Frontier Province (NWFP)	The activity of the project was not conducted as scheduled due to the insecurity of target area. Haripur district was included as a project site since April 2009, based on the recommendation of advisory study mission which was dispatched in September 2008. The criteria of the selection was the low coverage of routine EPI and the stable security situation in Haripur district.
Narrative Summary: Output 3 is modified.			
Output 3	Output 3. EPI disease surveillance including using AFP (Acute Flaccid Paralysis) surveillance system is strengthened.	*Modified* Output **4. Federal and Provincial routine EPI system is strengthened.**	Base on the recommendation of advisory study mission in October 2008, the project discussed and agreed with Federal and Provincial EPI cell to support the vaccine logistics management and data management in 4 provinces, which strengthen the Federal and Provincial routine EPI system.
Activities: Following activities are deleted or modified.			
Activities 1-7.	1-7. Develop a module for the training on supportive supervisory skills.	*Deleted*	The activity is included in the training of LHWs. LHS participate in the LHWs training on routine EPI so that they can be supervisor for LHW's immunization activity. There is no need to conduct separate training for supportive supervisory skills and develop the module for training.
Activities 1-8.	1-8. Conduct training on supportive supervisory skills for LHSs.	*Deleted*	
Activities 1-9.	1-9. Formulate an inventory of cold chain equipment, power and water supply, and facilities in EPI centers. (1-1)	*Deleted*	Basic and necessary information of the inventory of cold chain equipment was collected on base line survey. There is no need to formulate the inventory of these equipment.
Activities 1-12.	1-12. Recise the exisiting Standard Operation Procedure (SOP) for EPI logistics management as required.	*Deleted*	This activity was modified to the activity 4-1
Activities 1-13.	1-13. Conduct training on EPI logistics based on SOP.	*Deleted*	This activity was modified to the activity 4-2
Activities 1-16.	1-16. Conduct training on data management at district level.	*Deleted*	This activity was modified to the activity 4-3
Activities 1-18.	1-18. Formulate checklists on EPI activities, including reported coveraeg, adverse events, vaccine wastage, and stock-outs at provicial, district, and community level.	*Modified* **1-12.** Formulate Formulate checklists on EPI activities, including reported coveraeg, adverse events, vaccine wastage, and stock-outs at provicial, district, and **facility** level.	It is not feasible for the project to monitor the routine EPI activities at community level. So it was changed from community level to facility level.

Revision of the PDM

Item	PDM0	PDM1	Reasons
Activities 1-19.	1-19. Ensure monitoring of EPI activities at EPI centers.	*Modified* **1-13.** Ensure monitoring of **routine** EPI activities at EPI centers.	In order to express the project activity more clearly.
Activities 2-1.	2-1.Conduct training on data management at district level.	*Deleted*	The KAP survey took one year to make a final report. It is not feasible to conduct the KAP survey once again for the evaluation of the community awareness activity.
Activities 3-1, 3-2, 3-3	3-1. Develop guidelines on EPI disease surveillance. 3-2. Conduct training on EPI disease surveillance. 3-3. Monitor the EPI disease surveillance by reviewing admission records in health facilities in order to detect unreported cases.	*Modified* 4-1. Revise the existing Standard Operation Procedure (SOP) for EPI logistics management as required. 4-2. Conduct training on EPI logistics based on SOP at district level in 4 provinces. 4-3. Conduct training on routine EPI data management and surveillance at district level in 4 provinces. 4-4. Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell.	The training on EPI logistics, data management and surveillance were modified to the activities for the strengthening of federal and provincial EPI system: output 4. The analysis and assessment of EPI disease surveillance data was newly added as an activity to strengthen the Federal and Provincial EPI Cell.
Objectively verifiable indicators: Following indicators are modified or deleted:			
Project Purpose	1. The number of immunized children under 2 year-old is increased.	*Modified* 1. The number of immunized children **with measles or pentavalent vaccine** under **one** year-old is increased.	In order to make it more clear and specific expression as indicator.
	2. Reported routine EPI coverage (DPT 3) is increased.	*Modified* 2. Reported routine EPI coverage (**Pentavalent**) is increased.	EPI vaccines of Pakistan have been changed since 2009 as follows; ~2006 ; DPT 2006~2009 ; Combo vaccine (DPT+Hepatitis B) 2009~ ; Penta vaccine (DPT+Hepatitis B + Hob vaccine) Therefore, Pentavalent is suitable as the vaccine for indicator.

Revision of the PDM

Item	PDM0	PDM1	Reasons
	3. Drop-out rate of DPT is reduced [(DPT1-DPT3)/ DPT1].	*Modified* 1. Drop-out rate of **Pentavalent** is reduced [(DPT1-DPT3)/ DPT1].	EPI vaccines of Pakistan have been changed since 2009 as follows; ~2006 ; DPT 2006~2009 ; Combo vaccine (DPT+Hepatitis B) 2009~ ; Penta vaccine (DPT+Hepatitis B + Hib vaccine) Therefore, Pentavalent is suitable as the vaccine for indicator.
Output 1	1-1. The number of Lady Health Workers (LHWs) and EPI technicians who are trained in EPI service provision.	*Modified* 1-1. **More than 80%** of Lady Health Workers (LHWs) and EPI technicians who are trained in EPI service provision.	In order to clarify the target of output 1 by expressing the percentage of trained personnel by the project.
	1-3. Stock-out of vaccines at district vaccine storage is reduced.	*Deleted*	It was modified to the indicator 4-1.
	1-4. EPI centers timely and regularly report their performance to the EDO (Executive District Officer) Health Office.	*Deleted*	EPI centers already report regularly to the EDO Health office. There is no need for the project to facilitate the report of EPI centers.
	1-5. The number of EPI centers that fulfill the standard set by the checklist is increased.	*Modified* **1-3.** The number of EPI centers **having functional refrigerator** is increased.	The standard set was not clear expression, therefore it was changed so that the stakeholder of the project can understand the indicator without confusion.
	1-6. Micro plan is formulated and implemented at FLCF level.	*Modified* **1-5. Out Reach Plan** is formulated and implemented at FLCF level.	It was changed to be more specific. The expression of Out Reach Plan is used for Micro Plan by FLCFs, so it was changed to the actual expression.
Output 2	2-2. The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from seven dangerous diseases, availaing the service to complete the course in a timely manner.	*Modified* 2-2. The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from **eight** dangerous diseases, availaing the service to complete the course in a timely manner.	The target diseases for vaccine preventable diseases were increased from seven to eight.

Revision of the PDM

Item	PDM0	PDM1	Reasons
	2-3. The percentage of parants/caretakers of children under one year who know where and how to avail the routine immunization service and to ask that new isposable syringes are used by health workers for immunization.	*Deleted*	The KAP survey on Base line survey took one year to make a final report. It is not feasible and not cost-effective to conduct the KAP survey once again for the evaluation of the community awareness activity.
	2-4. The percentage of parents/caretakers of children under one year who acknowledge that minor side-effects of routine immunization are a sign that immunization is working and nothing to worry about.	*Deleted*	The KAP survey on Base line survey took one year to make a final report. It is not feasible and not cost-effective to conduct the KAP survey once again for the evaluation of the community awareness activity.
Output 3	3-1. The number of medical personnel trained in th EPI disease surveillance is increased. 3-2. Timeliness and completeness of the Weekly Zero Report(%) (Timeliness: the Report is submitted by following Monday. Completeness: The Report is submitted by following Wednesday.) 3-3. The non-polio AFP rate is maintained (1≧ per 100,000 population < 15 year-old). 3-4. The number of unreported EPI diseases is reduced in health facilities.	*Modified* **4-1. Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine** **4-2. The number of training monitoring and evaluation is increased.** **4-3. The quality of routine EPI data is improved** **4-4. The number of monitoring by provincial EPI Cell and Provincial National Program is increased**	Base on the recommendation of advisory study mission in October 2008, the project discussed and agreed with Federal and Provincial EPI cell to support the vaccine logistics management and data management in 4 provinces, which strengthen the Federal and Provincial routine EPI system. These 4 indicators are suitable for the output 4: strengthening the Federal and Provincial EPI system.
Means of Verification: The mean of verification of output 1 is modified due to modification of indicator.			
Output 1	1-6. Micro Plans of FLCFs	*Modified* ***1-5. Out Reach Plan** of FLCFs	The expression of Out Reach Plan is used for Micro Plan by FLCFs, so it was changed to the actual expression.
Output 2	2-2. KAP survey	*Modified* 2-2. **Questionnaire Survey**	It is because KAP survey is not cost-effective and affect the efficacy of the Project.
	2-5. KAP survey	*Modified* 2-5. **Questionnaire Survey**	It is because KAP survey is not cost-effective and affect the efficacy of the Project.
Input: Following inputs are newly added.			

Revision of the PDM

Item	PDM0	PDM1	Reasons
Japanese side	None	*Added* **-Vaccine Logistics Management** **-EPI Support** **-IEC**	The support for Vaccine Logistics Management was agreed with Federal and Provincial EPI and the dispatch of expert was requested. EPI support is more suitable expression because it includes not only EPI surveillance but also other activities for EPI.

ANNEX IV

List of Japanese Experts

No.	Field	Name	Period	M/M	Organization
1	Dr. Makoto Kobayashi	Chief Adviser	Nov 1, 2006-	24.00	International Medical Center of Japan (IMCJ)
2		EPI support	Aug 24-29, 2009	0.20	
3			Mar 1 - Mar 10, 2011	0.33	National Center for Global Health and Medicine (NCGM)
4	Mr. Hiroyuki Noda	Coordinator	Jan 10, 2007-Jan 9, 2009	24.00	-
5	Dr. Hitoshi Murakami	Surveillance	Jan 5-28, 2007	0.80	International Medical Center of Japan (IMCJ)
6	Dr. Masahiko Hachiya	EPI support	Jan 8-28, 2007	0.70	International Medical Center of Japan (IMCJ)
7			May 10-25, 2010	0.53	National Center for Global Health and Medicine (NCGM)
8	Ms. Nakae Noguchi	Vaccine Logistics	Sep 2-29, 2007	0.93	International Development Associates, Ltd.
9	Dr. Yoshikazu Tada	Vaccine Quality Control	Feb 12-21, 2007	0.33	The Research Foundation for Microbial Diseases of Osaka University (BIKEN), Kanonji Institute
10			Feb 24-Mar 5, 2008	0.37	
11			Feb 9-Feb 17, 2009	0.30	
12			Feb 14-25, 2010	0.30	
13			Feb 21- Mar 1, 2011	0.30	
14	Dr. Yuri Kodaka	BBC/Social mobilization	Jun 25-Jul 20, 2007	0.87	-
15	Dr.Hiroto Miyagi	Chief Adviser	Oct 13, 2008-Sep, 6 2011	34.80	-
16	Dr. Toru Chosa	EPI support	Sep 22-Oct 2, 2008	0.37	International Medical Center of Japan (IMCJ)
17			Jan 18 - 30, 2010	0.43	National Center for Global Health and Medicine (NCGM)
18	Mr. Akihiro Fujiwara	Coordinator	Feb 23, 2009-Sep 4, 2011	30.40	-
19	Mr. Takashi Yoza	Vaccine Logistics	Dec 14, 2009 - Mar 12, 2010	2.96	Medical Engineering & Planning co.ltd
20			Oct 18- Dec15, 2010	1.90	
21			Jan 24- Mar 17, 2011	2.80	

List of Equipment provided

ANNEX V

Legend ○; Functioning △;Functioning Partially

No.	Name of Equipment (Model No. and Name of Manufacturer)	Price (Rs.)	Date of Provision	Condition of Equipmen	Reason, in case of bad condition of equipment	Remarks
1	Diesel Generator (KDE30 STA3 25KVA)	650,000	Jan-07	○		NWFP
2	Ice-Lined Refrigerator (MK074) (QTY 43)	3,387,540	Feb-07	△	Destruction and Plunder	Cold Chain
3	Ice-Lined Refrigerator (MK204) (QTY 7)	506,100	Feb-07	△	Destruction and Plunder	Cold Chain
4	Freezer (MF214) (QTY 5)	264,000	Feb-07	△	Destruction and Plunder	Cold Chain
5	Sabilizer for Refregirator and freezers (4000w & 16,000W)	381,000	Feb-07	△	Destruction and Plunder	Cold Chain
6	Thermometer for vaccine refregirator freezer	81,900	Feb-07	△	Destruction and Plunder	Cold Chain
7	Mitsubishi Double Cabin L200 (QTY 2)	5,000,000	Feb-07	○		NWFP
8	Sony Multimedia projector with screen stand (QTY 3)	167,850	Mar-07	△	Destruction and Plunder	NWFP
9	Laptop & Desktop computers (QTY 4)	445,400	Mar-07	△	Destruction and Plunder	NWFP
10	Fax machine (Canon L-220) (QTY 5)	122,500	Mar-07	△	Destruction and Plunder	NWFP
11	Truck (Hino)	1,500,000	Dec-07	○		NWFP
12	A.C. Unit of 2 ton	50,000	Dec-07	○		QCL
13	Computer (QTY 2)	137,000	Dec-07	○		QCL
14	UPS (QTY 2)	19,600	Dec-07	○		QCL
15	Printer	39,000	Dec-07	○		QCL
16	Scanner	18,800	Dec-07	○		QCL
17	UV Vis. Spectrophotometer	593,940	Jan-08	○		QCL
18	Coulometric Karl Fischer Titrater	291,600	Jan-08	△	The Reagent of Karl Fischer is not available in Pakistan	QCL
19	Double Distillation Plant	774,180	Jan-08	○		QCL
20	Autoclave with Voltage. Stabilizer (QTY 2)	2,849,040	Jan-08	○		QCL
21	Animal weighing balance (electrical) (QTY 2)	54,000	Jan-08	○		QCL
22	Electronic Balance (QTY 2)	191,040	Jan-08	○		QCL
23	Vehicle (TOYOTA HYLUX 4WD Double Cabin)	1,895,000	Aug-08	○		NWFP
24	Total Organic Carbon Analyzer	1,786,000	Oct-08	○		QCL
25	CO2 Incubator, Automatic Labline with Volt. Stabilizer	950,000	Oct-08	○		QCL
26	Magnetic Stirrer with hot plate	120,000	Oct-08	○		QCL
27	Liquid nitrogen container 50lit	203,043	Oct-08	○		QCL

List of Equipment provided

ANNEX V

No.	Name of Equipment (Model No. and Name of Manufacturer)	Price (Rs.)	Date of Provision	Condition of Equipmen	Reason, in case of bad condition of equipment	Remarks
28	Vortex Mixer (QTY 2)	186,000	Oct-08	○		QCL
29	Sterility Testing Filtration UnitWithFunnel /support assembly a) Mainfold	240,000	Oct-08	○		QCL
30	Sterility Testing Filtration UnitWithFunnel /support assembly b) Funnels (QTY 6)	60,000	Oct-08	○		QCL
31	pH meter (QTY 3)	332,100	Oct-08	○		QCL
32	Micro pipette 10-100ul (QTY 3)	38,346	Oct-08	○		QCL
33	Micro pipette 100-1000ul (QTY 5)	38,346	Oct-08	○		QCL
34	blue tips autoclavable	2,347	Oct-08	○		QCL
35	yellow tips autoclavable	2,347	Oct-08	○		QCL
36	Mouse Rat cages (QTY 200)	660,870	Oct-08	○		QCL
37	G. Pig Cages (QTY 100)	2,173,913	Oct-08	○		QCL
38	ILR MK074 (QTY 20)	1,908,100	Nov-08	△	Destruction and Plunder	Cold Chain
39	Freezer MF214 (QTY 3)	207,027	Nov-08	△	Destruction and Plunder	Cold Chain
40	Cold box ACB-503L (QTY 55)	1,169,575	Nov-08	△	guessed Destruction and Plunder but not confirmed due to security reason	Cold Chain
41	Cold box E4/29M (QTY 5)	28,500	Nov-08	△	guessed Destruction and Plunder but not confirmed due to security reason	Cold Chain
42	TOYOTA Hilux 4WD with Spare parts (2 QTY)	4,520,526	May-09	○		KPK
43	equipment for laboratory (Tip, Pipette, Culture)	628,032	Feb-10	○		QCL
44	Biological indicator	617,977	Feb-10	○		QCL
45	equipment for laboratory (Tip, Pipette, Culture)	525,869	Feb-11	○		QCL
46	Ice-Lined Refrigerator (MK074) (QTY 27)	4,522,500	Jun-11	△	will be delivered on June 2011	Cold Chain
	Total amount	40,340,908				

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List of Trainings in Japan

No.	Name	Field of Training	Position	Period	Institution	Remarks
1	Mr. Naeem Raza	Vaccine Quality Control Technoligy	Technical Assistant QCL	Aug 20-Dec 15, 2007	The Research Foundation for Microbial Diseases of Osaka University(BIKEN), Kanonji Institute	Federal
2	Mr.Muhammad Arif Alvi	Vaccine Quality Control Technoligy	Technical Assistant QCL	Aug 20-Dec 15, 2007	The Research Foundation for Microbial Diseases of Osaka University(BIKEN), Kanonji Institute	Federal
3	Mr. Said Ali Khan	Seminar on Eoidemiology and control measures of vaccine preventable diseases -Based on GIVS -	EDO Health Shangla	Jun 11-Jul 22, 2007	International Medical Center of Japan (IMCJ)	NWFP
4	Mr.Muhammad Hussain Baloch	Seminar on Eoidemiology and control measures of vaccine preventable diseases -Based on GIVS -	Director Ligistics	Jun 11-Jul 22, 2007	International Medical Center of Japan (IMCJ)	Balochistan
5	Dr.Mustafa Alam	Seminar on Epidemiology and control measures of vaccine preventable diseases -Polio end games -	AD admin	Jun 9-July 20, 2008	International Medical Center of Japan (IMCJ)	NWFP
6	Dr.Muhammad Saleem	Seminar on Epidemiology and control measures of vaccine preventable diseases -Polio end games-	Poject Medical Officer	Jun 9 – July 20, 2008	International Medical Center of Japan (IMCJ)	NWFP
7	Dr.Munir Kasi	Seminar on Epidemiology and control measures of vaccine preventable diseases -Polio end games-	Project Manager EPI Balochistan	Jun 9 – July 20, 2008	International Medical Center of Japan (IMCJ)	Balochistan
8	Dr.Fazal Mehmood	Control Measure for Vaccine Preventable Diseases	DGHS, NWFP	Jul 5-15, 2009	International Medical Center of Japan (IMCJ)	NWFP
9	Dr.Syed Mujahid Hussain	Control Measure for Vaccine Preventable Diseases	DD(EPI) DGHS	Jul 5-15, 2009	International Medical Center of Japan (IMCJ)	NWFP
10	Dr.M.Mustafa Alam	Control Measure for Vaccine Preventable Diseases	A.D(EPI) DGHS	Jul 5-15, 2009	International Medical Center of Japan (IMCJ)	NWFP
11	Dr.Fazal Qayyum	Control Measure for Vaccine Preventable Diseases	Director Health Services , Health Department NWFP	Jul 5-15, 2009	International Medical Center of Japan (IMCJ)	NWFP
12	Ms.Ghazala Parveen	Vaccine Quality Control Technology	Senior Scientific Officer, Bacteriology	Aug 17-Dec 12, 2009	The Reserch Foundation for Microbial Diseases of Osaka University(BIKEN), Kanonji Institute	NWFP
13	Mr. Ahmad Bashir	Control Measure for Vaccine Preventable Diseases	Federal EPI Store Officer	Aug 1-11, 2010	National Center for Global Health and Medicine	Federal
14	Mr. Sardar Majad	Control Measure for Vaccine Preventable Diseases	Director of Monitoring and Evaluation EPI	Aug 1-11, 2010	National Center for Global Health and Medicine	Federal
15	Dr. Muhammad Afsa	Control Measure for Vaccine Preventable Diseases	AD(EPI) logistic	Aug 1-11, 2010	National Center for Global Health and Medicine	KPK

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List of Counterparts

ANNEX VII

No.	Name	Title	Period	Organization
1	Dr.Rehan	National Program Manager EPI	2006- Apr. 2008	Federal
2	Dr. Hussain Bux Memon	National Program Manager	Apr. 2008 – Oct. 2008	Federal
3	Dr. Altaf Bosan	National Program Manager	Oct. 2008 (Deputy) Nov. 2008 - present	Federal
4	Dr.Faisal Mansoor	Deputy National Manager	Nov. 2008 - present	Federal
5	Mr. Qadir Bux Abbasi	Director M&E	2006- present	Federal
6	Mr. Fowad Naqvi	QCL in charge	2006- present	QCL
7	Mr.Bashir Ahmed	Vaccine Store in charge	2006- present	Vaccine Store
8	Dr. Jailil ur Rehman	DG Health	2006 – May. 2007	KPK
9	Dr.Sajid Shaheen	DG Health	Jun.2007 – Mar. 2009	KPK
10	Dr. Fazal Mehumood	DG Health	Mar. 2009 - 2010 Nov	KPK
11	Dr.Waheed Khan	DDEPI	2006- Aug. 2008	KPK
12	Dr.Syed Mujahid Hussain	DDEPI	Sep 2008 - present	KPK
13	Dr. Rajwal	AD Admin	2006- Mar. 2008	KPK
14	Dr. Mustafa	AD admin	Apr. 2008 - present	KPK
15	Dr. Shams	AD Logistic	2006- Dec. 2008	KPK
16	Dr.Htikale	AD Logistic	Jan. 2009 –Jul. 2009	KPK
17	Dr. Qazi Afsar	AD Logistic	Aug 2009 - present	KPK
18	Dr. Faridoon Khan	EDO Health	2006-2008	Swat
19	Dr. Bakht Jamal	EDO Health	2008- present	Swat
20	Dr. Muhammad Naeem Khan	EPI Coordinator	2006-2008	Swat
21	Dr.Niaz Ahmed	EPI Coordinator	2008 - present	Swat
22	MR.Haroon Rasheed	DSV	2006- present	Swat
23	Dr. Maqsood Ahmed	EDOH	2007 - present	Buner
24	Dr. Tahir	EPI coordinater	2006--2007	Buner
25	Dr.Tariq Mehmood	EPI coordinator	2007 - present	Buner
26	Mr. Javid Bacha	DSV	2007 - present	Buner
27	Dr. Said Ali Khan	EDOH	2007 -present	Shangla

List of Counterparts

ANNEX VII

No.	Name	Title	Period	Organization
28	Dr. Shafi ul mulk	EPI Coordinator	2007- present	Shangla
29	Mr.Inayat ur Rehman	DSV	2007 - present	Shangla
30	Dr. Muhammad Idrees	EDOH	2009- present	Haripur
31	Dr. Waseem Ahmad	EPI Corrdinator	2009- present	Haripur
32	Mr Liaqat Ali	DSV	2009- present	Haripur
33	MS. Anwar Begum	QCL in charge	2010 - Present	QCL
34	Dr. Agha Isfaq	Deputy National Manager	2010 - Prsent	Federal
10	Dr. Muhammad Ali Chohan	DG Health	2010 Nov - present	KPK
35	Dr. Janbaz Afridi	DDEPI	2010 Nov - present	KPK
36	Dr. S. M. Taimur Shah	AD admin	2010 Nov - present	KPK
37	Dr. Wasif Zamir	DD EPI Training	2010 Dec - present	Federal
38	Dr. Arshad Iqbal Dar	DHS Punjab	2009 Jan - present	Panjab
39	Dr. Muhammad Ayub Kaka	Program Manager	2009 Jan - present	Balochistan
40	Dr. Mazhar Khamisani	Program Manager	2009 Jan - present	Sindh

ANNEX VIII

Report of Baseline Survey in the Project Target Districts

JICA EPI/Polio Control Project

October, 2007

1. Background

JICA, Pakistan Federal Government and Government of NWFP launched the EPI/Polio Control Project in September, 2006. This is a technical cooperation project for five years till 2011 and has three major components which are:

- Routine EPI
- EPI-targeted disease surveillance
- Quality Control Laboratory

In Routine EPI component, the project conducts some interventions in three districts, namely Swat, Shangla and Buner in the North-Western Frontier Province (NWFP) of Pakistan. Before these interventions start, the project needs to collect baseline information from both the suppliers (EPI technicians and LHWs) and recipients (mothers with children under one year old).

This report provides the results of the baseline survey conducted by The Nielsen Company Pakistan in cooperation with Federal governments of Pakistan, government of NWFP and JICA. The baseline survey had three different components which are:

1. EPI centers and EPI technicians
2. Lady Health Workers (LHWs)
3. KAP with mothers

This report provides the detailed findings of all three components of routine EPI.

2. Objectives

The main objectives of the overall survey are:

1. To collect baseline data regarding EPI centers;
2. To assess the needs of outreach/mobile activities;
3. To assess the needs of EPI technicians and Lady Health Workers (LHWs) for their routine EPI activities;
4. To evaluate whether routine EPI by LHWs is acceptable to the community members, and whether workload of routine EPI is acceptable to LHWs in Swat; and
5. To collect Knowledge, Attitude and Practices (KAP) of mothers.

3. Methodology

3.1 Target respondents and their sample size

The survey had following three components

1. Questionnaire survey of EPI centers and EPI technicians.
2. Questionnaire survey of LHWs.
3. KAP survey – 30 Cluster Sampling.

3.1.1 Questionnaire survey of EPI centers and EPI technicians

All EPI centers (111 in total) were visited. There are 150 EPI technicians in total (Table 1). Information of two or more EPI technicians at one EPI center was compiled by EPI center, because we thought information bias such as honest bias is not evitable. So the number of respondent EPI technicians is calculated as 111, which is the same as the number of EPI centers.

3.1.2 Questionnaire survey of LHWs

Among the three districts, training of LHWs of routine EPI has started only in Swat since October 2005 (Table 2). 50 among 189 LHWs who got 1st round training and have already started administering routine EPI, 50 among 761 LHWs who did NOT get the training in Swat, 50 among 189 LHWs in Shangla and 50 among 228 LHWs in Buner (200 in total) (Table1, Table2). The sampling for LHWs interviews was based on random selection from the list provided by district managers of National Program for Family Planning and Primary Health Care in the three districts. All LHWs selected from the list were interviewed.

Table 1: Profile of the three districts

District	Swat	Buner	Shangla	Total
Population	1.48 mil.	0.57 mil.	0.50 mil.	2.55 mil.
EPI Centers	66	26	19	111
EPI Technician	81	35	34	150
LHWs	1258	228	189	1675

Table 2: Training of LHWs for routine EPI in Swat

	1st	2nd	Not trained	Total
Period	Oct. 05 to Apr. 06	Sep. 06 to Feb. 07		
No. of LHWs	189	308	761	1258

3.1.3 KAP survey – 30 Cluster Sampling

KAP Survey of mothers who have children under one year old (before birthday); 210 mothers in each district (630 in total) were selected by 30 cluster sampling (Annex 5).

Response rate of KAP survey

The response rate for this survey was 96.6%. We made a total of 651 contacts for achieving the sample of 629 interviews.

4. Findings

4.1 EPI Centers

4.1.1. Difficulties in routine EPI work are different among the districts.

Seven difficulties in routine EPI work are raised by EPI centers. Proportion of EPI centers raising the difficulties is different among the three districts (Table E39).

- Hard to reach is more common in Shangla (p=0.004).
- Negative propaganda is more common in Swat and Buner (p=0.011).
- No or insufficient POL is more common in Shangla (p=0.011).
- Over workload, too busy, shortage of number EPI technicians is more common in Buner and Shangla (p=0.006).
- Shortage of vaccine, vaccine stock-out is more common in Swat (p=0.000).
- Mobility problem is more common in Swat (p=0.012).

Table E39: Major difficulties in daily routine EPI work

Major difficulties	Swat	Buner	Shangla	Total	p value
Hard to reach areas	31 (47%)	14 (54%)	17 (89%)	62 (56%)	0.004
Negative propaganda of EPI/polio by religious leaders	43 (65%)	14 (54%)	5 (26%)	59 (53%)	0.011
No or insufficient POL	26 (39%)	4 (15%)	11 (58%)	41 (37%)	0.011
Low salary	19 (29%)	9 (35%)	8 (42%)	36 (32%)	0.531
Over workload , too busy, shortage of number EPI technicians	11 (17%)	11 (42%)	9 (47%)	31 (28%)	0.006
Shortage of vaccine, vaccine stock-out	24 (36%)	1 (4%)	1 (5%)	26 (23%)	0.000
Mobility problem	17 (26%)	1 (4%)	1 (5%)	21 (19%)	0.012
Less awareness of people on EPI	(0%)	(0%)	(0%)	(0%)	-
Because EPI technicians are not local, so they are not accepted/welcomed by the local people	(0%)	(0%)	(0%)	(0%)	-
N= All EPI centers	66	26	19	111	-

Multiple response question

4.1.2. Accessibility: Biggest difficulty for routine EPI work

"Hard to reach areas" is the biggest difficulty for EPI centers especially in Shangla. 47% of EPI centers in Swat, 54% in Buner, 89% in Shangla and 56% is a major problem for routine EPI (Table E39). 98% of the catchment population needs outreach/mobile activities in Shangla (Table E33).

Table E33: Population covered by outreach/mobile activity among total catchment population

Mean of population covered by out reach/mobile activity by EPI center	Swat	Buner	Shangla	Average
Where LHWs are available (a)	13,234 (53%)	6,241 (24%)	3,619 (21%)	10,025 (42%)
Where LHWs are not available (b)	8,072 (32%)	18,083 (70%)	13,400 (77%)	11,223 (47%)
C (a + b)	21,306 (85%)	24,324 (99%)	17,019 (98%)	21,248 (89%)
Total catchment population*	25,167	25,683	17,437	23,985

* *We have excluded 15 EPI centers data from this table because there was no response from the EPI technicians. As per given table, the total catchment population mean is based on 96 EPI centers. Therefore total catchment population is different from the catchment population given in table E2.*

4.1.3. Communication and social mobilization for EPI and negative propaganda of EPI/Polio

EPI technicians encourage people to bring children to EPI center mainly through mosque announcements (50%), community leaders/religious leaders (37%) and LHWs (32%) (Table E37). On the other hand, mothers get information of EPI through LHWs (37%), from health facilities (21%) and religious leaders' speech (12%) (Table K9). So those three channels, namely mosque/religious leaders, LHWs and health facility which may include medical officers/medical technicians of FLCF and private clinics are important to inform mothers about EPI and to encourage them to bring their children to EPI centers.

Table E37: Communication and encouragement to bring children to EPI fixed site sessions

	Swat	Buner	Shangla	Total
Mosque announcements	28 (42%)	18 (69%)	9 (47%)	55 (50%)
Communicate with community leaders/religious leaders	26 (39%)	7 (27%)	8 (42%)	41 (37%)
Through LHWs	26 (39%)	5 (19%)	4 (21%)	35 (32%)
Door to door visits by EPI technicians	15 (23%)	4 (15%)	8 (42%)	27 (24%)
Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose	7 (11%)	3 (12%)	5 (26%)	15 (14%)
Communicate through teachers	9 (14%)	2 (8%)	1 (5%)	12 (11%)
Through LHV's	5 (8%)	0 (0%)	1 (5%)	6 (5%)
Requesting clients of EPI to encourage/inform their neighbors/friends/relatives	1 (2%)	2 (8%	0 (0%)	3 (3%)
Local radio	1 (2%)	0 (0%)	0 (0%)	1 (1%)
Printed materials	0 (0%)	0 (0%)	0 (%)	0 (0%)
N=All EPI centers	66	26	19	111

Multiple response question

Table K9: Sources of information about immunization for mothers

Sources of information	Swat	Buner	Shangla	Total
Lady Health Workers (LHWs)	89 (42%)	72 (34%)	69 (33%)	230 (37%)
From health facilities	49 (23%)	50 (24%)	34 (16%)	133 (21%)
Religious leaders speeches	23 (11%)	26 (12%)	27 (13%)	76 (12%)
Radio	17 (8%)	27 (13%)	17 (8%)	61 (10%)
TV	19 (9%)	13 (6%)	7 (3%)	39 (6%)
Vaccinators	4 (2%)	1 (0%)	27 (13%)	32 (5%)
Announcements in village	2 (1%)	5 (2%)	20 (10%)	27 (4%)
Village people	4 (2%)	11 (5%)	6 (3%)	21 (3%)
EPI team	5 (2%)	0 (0%)	5 (2%)	10 (2%)
Newspapers	3 (1%)	4 (2%)	1 (0%)	8 (1%)
Meetings organized by LHWs	0 (0%)	6 (3%)	1 (0%)	7 (1%)
Gatherings with family, relatives and neighbors	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Don't know	0 (0%)	3 (1%)	2 (1%)	5 (1%)
Not ansared	0 (0%)	1 (0%)	4 (2%)	5 (1%)
N=All respondents	210	209	210	629

Multiple response question

30% of EPI centers have problem of negative propaganda of EPI/Polio by religious leaders and it is the second biggest problem for routine EPI (Table E39). This problem is more common in Swat and in Buner than in Shangla (p=0.011) (Table E39). 51% of EPI technicians in the three districts and 62% of those in Swat want to study skill of communication with religious people and community people in the next refresher training (Table E40).

Table E40: Main contents for refresher training

Main contents for refresher training	Swat	Buner	Shangla	Total
Communication skill with religious/community people	41 (62%)	11 (42%)	5 (26%)	57 (51%)
Information about new vaccines which have not been used in EPI	23 (35%)	10 (38%)	6 (32%)	39 (35%)
Social mobilization and communication to persuade people to accept EPI	25 (38%)	7 (27%)	5 (26%)	37(33%)
How to provide health education to community people	11 (17%)	8 (31%)	6 (32%)	25 (23%)
Clinical aspects of the EPI target diseases	14 (21%)	9 (35%)	1 (5%)	24 (22%)
Record keeping	10 (15%)	4 (15%)	6 (32%)	20 (18%)
Management of drop-out	12 (18%)	5 (19%)	2 (11%)	19 (17%)
Vaccine side effects	6 (9%)	9 (35%)	2 (11%)	17 (15%)
How to estimate the target population	12 (18%)	2 (8%)	2 (11%)	16 (14%)
Knowledge to answer to frequently asked questions from people	3 (5%)	5 (19%)	7 (37%)	15 (14%)
Safe injection	7 (11%)	2 (8%)	5 (26%)	14 (13%)
How to calculate the EPI coverage	8 (12%)	2 (8%)	3 (16%)	13 (12%)
How to store and transport vaccines	6 (9%)	3 (12%)	2 (11%)	11 (10%)
Organization of EPI sessions	9 (14%)	1 (4%)	0 (0%)	10 (9%)
Cold chain management/minor repair	7 (11%)	0 (0%)	2 (11%)	9 (8%)
Mutual learning from other EPI technicians	3 (5%)	0 (0%)	3 (16%)	6 (5%)
Training related to EPI	1 (2%)	0 (0%)	0 (0%)	1 (1%)
N=All EPI centers	66	26	19	111

Multiple response question

4.1.4. No or shortage of POL

Only four out of 53 EPI center having motorbikes are given POL support (Table E19) and EPI Technicians have to pay Rs. 1,984 a month out of their pocket (Table E20). 37% (41/111) of all EPI centers in the three districts and 58% (11/19) in Shangla and 39% (26/66) in Swat are facing "No or insufficient POL" problem and it is the third biggest problem for EPI centers (Table E39). Among 65 EPI centers which have no official motorbikes, seven have private ones. Therefore the number of EPI centers which have motorbikes is 53(46+7) and proportion of EPI centers which raise "No or insufficient POL" is 77% (41/53).

Table E19: Monthly POL given by district/donors among motorbike holders

Whether POL is given	Swat	Buner	Shangla	Total
Yes POL is given	2 (7%)	2 (18%)	0 (0%)	4 (8%)
No POL is not given	28 (93%)	9 (82%)	12 (100%)	49 (92%)
N= All those having motorbike	30	11	12	53

Table E20: Monthly average POL (Rs.) given to motorbike holders

	Swat	Buner	Shangla	Average
POL from Pocket (Rs.)	1,763	2,862	1,879	1,984
N= All motorbike holders who are not given POL	28	9	12	49

4.1.5. Over workload, too busy and understaffing of EPI Technicians

Among 111 EPI centers, 87 EPI centers (79%) are managed by a single EPI technician or a dispenser (Table E3). Although many medical technicians and LHV support EPI activity at EPI center when EPI technician is busy or not available (Table E4, E5), 28% of EPI centers raises "over workload, too busy, understaffing of EPI technicians" as a major problem especially in Buner (42%) and Shangla (47%) (Table E39). Only 28% of EPI center open six days a week (Table E29). EPI centers with only one EPI technician open 3.5 days a week and those with two or more EPI technicians open 4.3 days a week on average (Table E29). However this is not statistically significant (p=0.275).

Table E3: Number of EPI technicians at EPI center

Number of EPI technicians	Swat	Buner	Shangla	Total
3 or more	1 (2%)	0 (0%)	0	1 (1%)
2	15 (21%)	4 (15%)	4 (21%)	23 (20%)
1	48 (73%)	22 (85%)	14 (74%)	84 (76%)
0	2 * (3%)	0 (%)	1 * (5%)	3 (3%)
N=All EPI centers	66	26	19	111

**Centers with no EPI technicians*

- *In both the EPI centers of Swat the dispenser manages EPI center instead of an EPI technician.*
- *In Shangla the LHV manages the EPI center instead of EPI technician.*

Table E4: Number of supporters of EPI at EPI centers which have only one EPI technician

No. of supporters	Swat	Buner	Shangla	Total
2 or more	21 (44%)	12 (55%)	8 (57%)	41 (49%)
1	23 (48%)	8 (36%)	3 (21%)	34 (40%)
0	4 (8%)	2 (9%)	3 (21%)	9 (11%)
N=Number of EPI Centers with one EPI Tech.	48	22	14	84

Table E5: Total number of supporters (and their type) of EPI at all EPI centers

EPI supporters	Swat	Buner	Shangla	Total
Medical technicians	28 (33%)	17 (50%)	7 (35%)	52 (38%)
Lady Health Visitors	20 (24%)	11 (32%)	6 (30%)	37 (27%)
Dispenser	9 (11%)	4 (11%)	5 (25%)	18 (13%)
Lady Health Supervisor (LHS)	6 (7%)	0 (0%)	1 (5%)	7 (5%)
Medical Officers	3 (4%)	0 (0%)	0 (0%)	3 (2%)
Others	18* (21%)	2* (6%)	1* (5%)	21 (15%)
Total	84	34	20	138

**Others*

Others include: Midwife, EPI trainee, Malaria supervisor, LHWs, DSV and Nurse.

Table E29: Days for fixed site sessions a week

Number of days	EPI centers with only ONE EPI technicians	EPI centers with two or more EPI technicians	Total
0	6 (7%)	1 (4%)	7 (7%)
1	13 (15%)	0 (0%)	13 (12%)
2	17 (20%)	7 (30%)	24 (22%)
3	13 (15%)	0 (0%)	13 (12%)
4	8 (10%)	6 (26%)	14 (13%)
5	7 (8%)	1 (4%)	8 (7%)
6	20 (24%)	8 (35%)	28 (26%)
Mean	3.5	4.1	3.6
N=EPI centers	84	23	107

Data from four centers is not available therefore this data is computed out of the total base of 107 ***p=0.275***

7

4.1.6. Functional but old Cold Chain equipment and shortage of furniture

Situation of cold chain equipment is relatively good. 90% of EPI centers have at least one functional refrigerator (Table E22). But among total 152 refrigerators at EPI centers, 62 refrigerators (41%) were installed 2001 or before (Table E23). They need to be replaced by 2011 when the project is over. 60% of EPI centers have shortage of furniture for documents and record keeping (Table E27).

Table E22: Functional refrigerators at EPI centers excluding sub stores

	Swat	Buner	Shangla	Total
EPI centers with two or more well functional refrigerators	8 (13%)	3 (12%)	5 (26%)	16 (15%)
EPI centers with only one well functional refrigerator	50(79%)	14 (54%)	12 (63%)	76 (70%)
EPI centers without well functional refrigerators	3 (5%)	7 (27%)	1 (5%)	11 (10%)
Don't have refrigerators	2 (3%)	2 (8%)	1 (5%)	5 (5%)
N= EPI centers	63	26	19	108

**In Swat three of the EPI centers also operate as sub stores therefore these are excluded from the base here*

Table E23: Year of installation of refrigerators

Year	Swat	Buner	Shangla	Total
2002 – 2006	41 (44%)	13 (39%)	18 (69%)	72 (47%)
1997 – 2001	22 (24%)	12 (36%)	4 (15%)	38 (25%)
1996 -	18 (19%)	5 (15%)	1 (4%)	24 (16%)
Not Answered	12 (13%)	3 (9%)	3 (12%)	18 (12%)
N=Number of refrigerators	93	33	26	152

Table E27: Shortage of equipment/materials

Equipments/Materials	Swat	Buner	Shangla	Average
Furniture	42 (64%)	12 (46%)	13 (68%)	67 (60%)
Stationery	43 (65%)	7 (27%)	12 (63%)	62 (56%)
Reporting forms of EPI	29 (44%)	5 (19%)	7 (37%)	41 (37%)
Register books of EPI	19 (29%)	1 (4%)	5 (26%)	25 (23%)
N=All EPI centers	66	29	19	111

Multiple response question

4.1.7 Documentation and Record Keeping; Available but not Up-dated

Inventory Sheets, Stock Register, Daily EPI Register and Permanent EPI Register are available at more than 90% of EPI centers but not updated at most EPI centers (Table E42). About half of EPI centers have mismatch of number of vials of vaccine except BCG between records and actual availability (Table E45). Mismatch of BCG is observed to be less in Swat and in Shangla.

Table E42: Availability of documents and their updates

	Swat	Buner	Shangla	Total
Inventory Sheet				
Availability				
Yes	62 (94%)	22 (85%)	17 (89%)	101 (91%)
No	4 (6%)	4 (15%)	2 (11%)	10 (9%)
Records Completely Entered ^				
Yes	7 (11%)	4 (15%)	1 (5%)	12 (11%)
No	55 (83%)	18 (69%)	16 (84%)	89 (80%)
Stock Register				
Availability				
Yes	62 (94%)	21 (81%)	18 (95%)	101 (91%)
No	4 (6%)	5 (19%)	1 (5%)	10 (9%)
Records Completely Entered ^^				
Yes	8 (12%)	4 (15%)	1 (5%)	13 (12%)
No	54 (82%)	17 (65%)	17 (89%)	88 (79%)
Daily EPI Register				
Availability				
Yes	63 (95%)	25 (96%)	18 (95%)	106 (95%)
No	3 (5%)	1 (4%)	1 (5%)	5 (5%)
Records Completely Entered ^^^				
Yes	5 (8%)	4 (15%)	3 (16%)	12 (11%)
No	58 (88%)	21 (81%)	15 (79%)	94 (85%)
Permanent EPI Register				
Availability				
Yes	64 (97%)	23 (88)	19 (100%)	106 (95%)
No	2 (3%)	3 (12%)	0(0%)	5 (5%)
Records Completely Entered ^^^				
Yes	24 (36%)	9 (35%)	3 (16%)	36 (32%)
No	40 (61%)	14 (54%)	16 (84%)	70 (63%)
List of Defaulter				
Availability				
Yes	43 (65%)	13 (50%)	11 (58%)	67 (60%)
No	23 (35%)	13 (50%)	8 (42%)	44 (40%)
Outreach plan for routine EPI				
Availability (for the current month, February 2007)				
Yes	38 (58%)	16 (62%)	16 (84%)	70 (63%)
No	28 (42%)	10 (38%)	3 (16%)	41 (37%)
N=All EPI centers	66	26	19	111

Updates:
^ To be filled in until yesterday
^^ To be filled in until last delivery
^^^ To be filled in until last sessions

Table E45: Number of EPI centers with mismatches of number of vaccine vials between record and actual availability

Vaccines	Swat	Buner	Shangla	Total
BCG	14 (21%)	13 (50%)	4 (21%)	31 (28%)
BCG diluent	22 (33%)	14 (54%)	7 (37%)	43 (39%)
OPV	40 (61%)	11 (42%)	7 (37%)	58 (52%)
Combo (DPT-Hep B)	35 (53%)	13 (50%)	8 (42%)	56 (50%)
TT	41 (62%)	15 (58%)	8 (42%)	64 (58%)
Measles	34 (52%)	13 (50%)	7 (37%)	54 (49%)
Measles diluent	35 (53%)	14 (54%)	9 (47%)	58 (52%)
N= All EPI centers	66	26	19	111

Multiple response question

4.1.8. Vaccine stock-out

This report dose not go into the detail of vaccine stock-out, but 36% of EPI centers in Swat raises "shortage of vaccine, vaccine stock-out" as a major problem for routine EPI (Table E39).

4.2 Lady Health Workers

4.2.1. Involvement of LHWs for routine EPI

One objective of involvement of LHWs into routine EPI is to cover people living in "Hard to reach areas". However involvement of LHWs for routine EPI might have limited impact in the three districts especially in Shangla.

First reason is the number of EPI centers which have LHWs is limited. 27% of EPI centers in Swat, 38% in Buner and 47% in Shangla have no LHWs in their catchment areas (Table E28).

Second reason is that the population, which is covered through outreach/mobile and has LHWs, is limited. On average of the three districts, 21,248 people are covered by outreach/mobile activity in the catchment area of one EPI center. Among them, 11,223 people (11,223/21,248=53%) live where LHWs are not available, it is 79% in Shangla and 74% in Buner (Table E32).

Table E28: LHWs in the catchment area

Number of LHWs	Swat	Buner	Shangla	Total
0	18 (27%)	10 (38%)	9 (47%)	37 (33%)
1 – 5	6 (9%)	5 (19%)	2 (11%)	13 (12%)
6 or more	40 (61%)	11 (42%)	8 (42%)	59 (53%)
Don't know/no response	2 (3%)	0 (0%)	0(0%)	2 (2%)
Mean	21.7	14.6	14.8	19.2
N=All EPI centers	66	26	19	111

Table E33: Population covered by outreach/mobile activity among total catchment population

Mean of population covered by out reach/mobile activity by EPI center	Swat	Buner	Shangla	Average
Where LHWs are available (a)	13,234 (53%)	6,241 (24%)	3,619 (21%)	10,025 (42%)
Where LHWs are not available (b)	8,072 (32%)	18,083 (70%)	13,400 (77%)	11,223 (47%)
C (a + b)	21,306 (85%)	24,324 (99%)	17,019 (98%)	21,248 (89%)
Total catchment population*	25,167	25,683	17,437	23,985

* *We have excluded 15 EPI centers data from this table because there is no response from the EPI technicians. As per given table, the total catchment population mean is based on 96 EPI centers. Therefore total catchment population is different from the catchment population given in table E2.*

4.2.2 Positive impact of routine EPI on LHWs who has already started routine EPI

As mentioned in the methodology only LHWs of "Swat trained" have already started administering routine EPI. Questions regarding consequence of routine EPI were asked to those LHWs.There are some positive impacts mentioned by those LHWs. Feeling better by being able to help people more (90%), obtain more trust among people (86%), obtain more support from community (76%) and better working relation with EPI technicians (70%) (Table L25).

Table L25: Positive impacts of involvement in routine EPI

Positive impacts of involvement in routine EPI	Swat Trained
Feeling better by being able to help people more	45 (90%)
Obtained more trust among people in catchment area	43 (86%)
Obtained more support from community	38 (76%)
Better working relation with EPI technician	35 (70%)
N=All LHWs	50

Multiple response question

4.2.3 Support required by LHWs

86% of them want an increase in the salary (Table L23). This might be because LHWs have not been paid any incentive since they started routine EPI session at their health houses, although they had been paid 100Rs. a day during six days of theoretical session and 500Rs. a month during six month of practical session.

Table L23: Support required from province, district and partners

Support required	Swat Trained
Salary increase	43 (86%)
Certificate after EPI training	40 (80%)
Supervision by female and not male supervisors	19 (38%)
Provision of transportation and fuel cost	13 (26%)
Change in color and/or style of the LHWs uniform	8 (16%)
Help in convincing people to accept EPI	5 (10%)
To resolve shortage of vaccines	5 (10%)
Telephone or other means of communication	4 (8%)
More frequent EPI training	3 (6%)
Help in convincing religious leaders to accept EPI	1 (2%)
More systematic feedback after supervision	1 (2%)
More frequent supervision	0 (0%)
Exclusion of meeting with male members of the community from their routine duties	0 (0%)
N=All LHWs	50

Multiple response question

4.2.4. Refusal experienced by LHWs

Refusal is more common in Polio campaign. LHWs trained in Swat faced more refusals in OPV campaign (26%) than in TT campaign (13%) and in routine EPI (12%) (Table L19).

Main two reasons of refusal against OPV campaign, TT campaign and routine EPI among the area of LHWs trained in Swat are suspicion of sterility by OPV and opposition from religious leaders (Table L18).

Table L18: Refusal experienced by LHWs trained in Swat (for detail see Annex: 3)

	Polio campaign	TT campaign	Routine EPI
Faced refusal	13 (26%)	6 (13%)	6 (12%)
Did not faced refusal	37 (74%)	42 (88%)	44 (88%)
Total	50	48*	50

**Among 50 LHWs trained in Swat, 48 LHWs have experience of TT campaign*
This table is made from table L7, L11 and L16.

Table L19: Reasons for refusal (for detail see Annex. 3)

Reason for refusal in EPI	Polio campaign	TT campaign	Routine EPI
Religious leader are against OPV/TT/injection vaccine	7 (54%)	3 (50%)	4 (67%)
People think that giving vaccine is against God's will	0 (0%)	0 (0%)	0 (0%)
Skepticism about why vaccinate before catching the disease	3 (23%)	2 (33%)	2 (33%)
People and/or religious leaders think that vaccines contain family planning substances	9 (69%)	5 (83%)	3 (50%)
People and/or religious leaders think that injection vaccines contain prohibited substance for Muslims like pork components	2 (15%)	0 (0%)	0 (0%)
People and/or religious leaders link injection vaccines with foreign NGOs some of which are Christian based organizations	2 (15%)	2 (33%)	0 (0%)
People fear vaccine side-effects	0 (0%)	0 (0%)	1 (17%)
People refuse to take babies out of their house to immunize	0 (0%)	-	1 (17%)
People are afraid of pain caused by vaccine	0 (0%)	0 (0%)	1 (17%)
N=All who mentioned they faced refusals	13	6	5

This table is made from table L8, L12 and L17.

4.2.5. Concern and negative impact of routine EPI on LHWs

Although EPI session at a health house is only once a month and vaccine is delivered by LHS, 90% of LHWs who have started administer of routine EPI thought increase in workload is negative impact in routine EPI (Table L24).

Table L24: Negative impacts of routine EPI

Negative impacts of routine EPI	Swat Trained
Increase in workload	45(90%)
Increase in expenditure that is not properly compensated	8(16%)
Relationship with local religious leaders becomes worse because they are against EPI	5(10%)
Disrupting care-taking of own family	3(6%)
Difficult working relation with EPI technicians	2(4%)
N=All LHWs	50

Multiple response question

4.3. Mothers

4.3.1. Mothers: Limited knowledge and generally positive with EPI, but some are negative

Although mothers who have children under one year old have limited knowledge of objective of EPI, diseases prevented by EPI, more than 90% of mothers want to give OPV and other injection vaccine to their children (Table K10, K11, K12, K13, K18). It should be highlighted that although LHWs trained in Swat faced more refusal in OPV campaign than in routine EPI, proportion of mothers who want to give their children OPV (96%) is not less than those of injection vaccine (94%) (Table K13).

Table K10: Administration route of vaccines

What is administration route of vaccine?

Vaccine routes	Swat	Buner	Shangla	Total
Injections and drops both	68 (32%)	74 (35%)	72 (34%)	214 (34%)
Only drops	38 (18%)	29 (14%)	71 (34%)	138 (22%)
Only injections	48 (23%)	40 (19%)	41 (20%)	129 (21%)
Don't know	56 (27%)	66 (32%)	26 (12%)	148 (24%)
N=All respondents	210	209	210	629

Table K11: Knowledge of objective of vaccination

Do you think below sentences are right?

Knowledge of the objective of vaccines	Swat	Buner	Shangla	Total
We use vaccines for preventing diseases	127 (60%)	131 (63%)	114 (54%)	372 (59%)
We use vaccines as a cure	31 (15%)	50 (24%)	79 (38%)	160 (25%)
We use vaccines for getting energy	3 (1%)	7 (3%)	1 (0%)	11 (2%)
We use vaccines for nutrition	1 (0%)	6 (3%)	1 (0%)	8 (1%)
Vaccines cause infertility	0 (0%)	0 (0%)	1 (0%)	1 (0%)
Don't know	64 (30%)	46 (22%)	38 (18%)	148 (24%)
N=All respondents	210	209	210	629

Table K12: Willingness towards vaccination

Do you think vaccine is generally acceptable for your child?

Willingness towards vaccination	Swat	Buner	Shangla	Total
Yes	203 (97%)	203 (97%)	191 (91%)	597 (95%)
No	7 (3%)	6 (3%)	19 (9%)	32 (5%)
N=All Respondents	210	209	210	629

Table K13: Willingness for OPV and injection vaccination

Do you want to give OPV immunization to your child?
Do you want to give injection vaccination to your child?

	Swat	Buner	Shangla	Total
Willingness for OPV vaccination				
Yes	203 (97%)	208 (100%)	198 (94%)	609 (96%)
No	7 (3%)	1 (0%)	12 (6%)	20 (4%)
Willingness for Injection vaccination				
Yes	202 (96%)	199 (95%)	190 (90%)	591 (94%)
No	8 (4%)	10 (5%)	20 (10%)	38 (6%)
N=All Respondents	210	209	210	629

Table K18: Knowledge of diseases preventable by EPI

Which of the following disease do you understand are preventable by EPI?

Diseases	Swat	Buner	Shangla	Total
Polio	91 (43%)	116 (56%)	131 (62%)	338 (54%)
Measles	101 (48%)	115 (55%)	126 (60%)	342 (54%)
Malnutrition	5 (2%)	5 (2%)	10 (5%)	20 (3%)
Pertussis	64 (30%)	61 (29%)	94 (45%)	219 (35%)
Pneumonia	0 (0%)	3 (1%)	0 (0%)	3 (0%)
Diarrhea	1 (0%)	1 (0%)	0 (0%)	2 (0%)
Diphtheria	4 (2%)	8 (4%)	5 (2%)	17 (3%)
Tetanus	35 (17%)	41 (20%)	32 (15%)	108 (17%)
Mental diseases	0 (0%)	2 (1%)	1 (0%)	3 (0%)
Hepatitis B	49 (23%)	47 (22%)	44 (21%)	140 (22%)
Hepatitis C	13 (6%)	18 (9%)	23 (11%)	54 (9%)
Malaria	1 (0%)	2 (1%)	1 (0%)	4 (1%)
Tuberculosis	4 (2%)	11 (5%)	25 (12%)	40 (6%)
Don't know	88 (42%)	71 (34%)	66 (31%)	225 (36%)
N=All respondents	210	209	210	629

Multiple response question

4.3.2. Concerns regarding vaccination among mothers

6% (38/629) of mothers show concerns regarding vaccination (Table K15-1). The major concerns regarding vaccination are "my family member doesn't want vaccine to my child (14/629=2.2%)", "It is available at far off place (9/629=1.4%)", "It may cause infertility (5/629=0.8%)", "It may cause side effects (5/629=0.8%)" (Table K15-2).

Table K15-1: Proportion of mothers having concerns regarding vaccination

	Swat	Buner	Shangla	Total
Yes, I have concerns	8 (4%)	10 (5%)	20 (10%)	38 (6%)
No, I don't have any concern	202 (96%)	199 (95%)	190 (90%)	591 (94%)
N=All respondents	210	209	210	629

Table K15-2: Concerns regarding vaccination

Concerns regarding vaccination	Swat	Buner	Shangla	Total
Family members unwillingness	3 (1.4%)	4 (1.9%)	7 (3.3%)	14 (2.2%)
Because it is available at far off places	0 (0%)	1 (0.5%)	8 (3.8%)	9 (1.4%)
It may cause infertility	1 (0.5%)	0 (0%)	4 (1.9%)	5 (0.8%)
It may cause side effects	1 (0.5%)	3 (1.4%)	1 (0.5%)	5 (0.8%)
Because vaccination causes pain	1 (0.5%)	1 (0.5%)	2 (1.0%)	4 (0.6%)
Religious leaders advised not to immunize	2 (1.0%)	0 (0%)	1 (0.5%)	3 (0.5%)
Because I do not like it	0 (0%)	0 (0%)	3 (1.4%)	3 (0.5%)
Because my husband is abroad	0 (0%)	1 (0.5%)	0 (0%)	1 (0.2%)
N=All respondents	210	209	210	629

4.3.3. Most mothers accept routine EPI by LHWs

96% of mothers accept routine EPI administered by LHWs (Table K30). Main reasons are "I don't have to got to the health center" (91%) and "LHWs can come to vaccinate my children at my home" (7%) (Table K31). The first reason shows that accessibility is a big barrier not only for EPI centers but also for mothers. The second reason shows that some mothers do not know that they need to bring their children to health houses for routine EPI.

Table K30: Acceptability of LHWs in routine EPI

If LHWs in your village/town work for routine EPI activities such as measles vaccine injection, do you accept them?

	Swat	Buner	Shangla	Total
Yes	202 (96%)	203 (97%)	197 (94%)	602 (96%)
No	8 (4%)	6 (3%)	13 (6%)	27 (4%)
N=All respondents	210	209	210	629

Table K31: Reasons for acceptability of LHWs in routine EPI

Reasons for acceptability	Swat	Buner	Shangla	Total
I do not have to go to the health center	190 (94%)	163 (80%)	196 (99%)	549 (91%)
LHWs can come to vaccinate their children at my home	4 (2%)	39 (19%)	0 (0%)	43 (7%)
Because I want to meet LHWs more often	0 (0%)	1 (0%)	1 (1%)	2 (0%)
Because I want to visit LHWs health house	0 (0%)	1 (0%)	0 (0%)	1 (0%)
LHW is not available	7 (3%)	0 (0%)	0 (0%)	7 (1%)
No need to go to hospital	1 (0%)	I (0%)	0 (0%)	2 (0%)
N= mothers who accepts routine EPI by LHWs	202	203	197	602

Multiple response question

5. Recommendations

5.1. Strengthening outreach/mobile activity

Involvement of LHWs for routine EPI might have limited impact in covering people living in remote area especially in Shangla. Strengthening out-reach/mobile activity is needed to cover more people. Four things would be recommended to strengthen outreach/mobile activity.

(1). Government to appoint one more EPI Technician at EPI Centers where only one EPI Technician is available and LHWs are not available in the catchment area.

(2). Government to provide some amount of POL for motorbikes.

(3). Procurement of motorbikes is recommended, given the condition that POL is guaranteed by the Government.

(4). Micro planning of outreach/mobile activity and sound-coordination of outreach session is imperative.

5.2. Strengthening communication with community people and religious/community leaders

Communication with community people including mothers and religious/community leaders are important. The project can support

(1). training of communication skill for EPI technicians and LHWs and

(2). social mobilization activity to involve religious/community leaders.

5.3. Different strategies according to their conditions and problems

Generally, the environment of EPI is different among Swat, Shangla and Buner. Strategy for improving EPI coverage in these districts should vary according to their geographical conditions and problems that affect EPI activities.

Annexure 1. EPI Centers

1.1 Background Information of EPI Centers

1.1.1 Number of Health facilities

Table E1: Number of Health facilities

Health facility	Swat	Buner	Shangla	Total
Basic Health Unit (BHU)	39 (59%)	15 (58%)	10 (53%)	64 (58%)
Civil Dispensary	12 (18%)	4 (15%)	6 (32%)	22 (20%)
Teshil Head Quarter (THQ)	6 (9%)	3 (12%)	2 (11%)	11 (10%)
Rural Health Center (RHC)	4 (6%)	3 (12%)	0 (0%)	7 (8%)
Civil Hospital	1 (2%)	0 (0%)	1 (5%)	2 (2%)
District Head Quarter (DHQ)	1 (2%)	1 (4%)	0 (0%)	2 (2%)
Teaching Hospital	1 (2%)	0 (0%)	0 (0%)	1 (1%)
Municipal Corporation (MC)	1 (2%)	0 (0%)	0 (0%)	1 (1%)
EPI Office	1 (2%)	0 (0%)	0 (0%)	1 (1%)
N=All centers	66 (100%)	26 (100%)	19 (100%)	111 (100%)

1.1.2 Total catchment population of EPI centers

Among the three districts, Swat and Buner have approximately same catchment population to be served for the total population and the less than one year old children.

Table E2: Total catchment population (population under one year old) of EPI centers

	Swat	Buner	Shangla	Total
Mean	24,737 (830)	23,738 (854)	17,530 (585)	23,266 (790)
Minimum	2,922 (37)	99 (24)	8,934 (99)	-
Maximum	71,200 (6,766)	43,266 (1,557)	32,520 (1,171)	-

1.2 Human Resource for EPI at EPI centers

1.2.1 Number of EPI technicians

Mostly the EPI centers have only one EPI technician. Only in one of the EPI centers of Swat there are three EPI technicians.

Table E3: Number of EPI technicians at EPI center

Number of technicians	Swat	Buner	Shangla	Total
3 or more	1 (2%)	0 (0%)	0	1 (1%)
2	15 (21%)	4 (15%)	4 (21%)	23 (20%)
1	48 (73%)	22 (85%)	14 (74%)	84 (76%)
0	2 * (3%)	0 (%)	1 * (5%)	3 (3%)
N=All EPI centers	66	26	19	111

**Centers with no EPI technicians*

- *In both the EPI centers of Swat, the dispenser manages EPI center instead of an EPI technician.*
- *In Shangla, the LHV manages the EPI center instead of EPI technician.*

1.2.2 EPI Supporters

Supporters refer to those who conduct EPI activities when EPI technician is busy or not available. This includes medical technicians, LHS, LHV, medical officer and dispenser.

Table E4: Number of supporters of EPI at EPI centers which have only one EPI technician

No. of supporters	Swat	Buner	Shangla	Total
2 or more	21 (44%)	12 (55%)	8 (57%)	41 (49%)
1	23 (48%)	8 (36%)	3 (21%)	34 (40%)
0	4 (8%)	2 (9%)	3 (21%)	9 (11%)
N=Number of EPI Centers with one EPI Tech.	48	22	14	84

Table E5: Total number of supporters (and their type) of EPI at all EPI centers

EPI supporters	Swat	Buner	Shangla	Total
Medical technicians	28 (33%)	17 (50%)	7 (35%)	52 (38%)
Lady Health Visitors	20 (24%)	11 (32%)	6 (30%)	37 (27%)
Dispenser	9 (11%)	4 (11%)	5 (25%)	18 (13%)
Lady Health Supervisor (LHS)	6 (7%)	0 (0%)	1 (5%)	7 (5%)
Medical Officers	3 (4%)	0 (0%)	0 (0%)	3 (2%)
Others	18* (21%)	2* (6%)	1* (5%)	21 (15%)
Total	84	34	20	138

**Others*

Others include: Midwife, EPI trainee, Malaria supervisor, LHWs, DSV and Nurse.

1.2.3 Profile of EPI technicians

- The survey findings show that most of the EPI technicians are over 30 years old.
- Majority of the EPI technicians are males
- Around 47% EPI technicians are having an experience of EPI up to 21-30 years.
- Mostly, the EPI technicians have attended the last refresher training from the year 2000 to 2006 in Swat but almost half of EPI technicians in Buner and Shangla have not attended any refresher training from 2000 to 2006.

Table E6: Age of EPI technicians (numbers of EPI Technicians)

Age	Swat	Buner	Shangla	Total
-20 years	1 (1%)	0 (0%)	0 (0%)	1 (1%)
21-30 years	9 (11%)	9 (30%)	4 (18%)	22 (16%)
Above 30 years	71 (88%)	21 (70%)	18 (82%)	110 (83%)
Average age	41	39	39	40
N=EPI Technicians	81	30	22	133

Table E7: Gender of EPI technicians

Gender	Swat	Buner	Shangla	Total
Male	72 (89%)	27 (90%)	19 (86%)	118 (89%)
Female	9 (11%)	3 (10%)	3 (14%)	15 (11%)
N=EPI Technicians	81	30	22	133

Table E8: Years of experience as EPI technicians

Years of experience	Swat	Buner	Shangla	Total
Up to 10 year	10 (12%)	9 (30%)	5 (23%)	24 (18%)
11-20 year	27 (33%)	13 (43%)	7 (32%)	47 (35%)
21-30 year	44 (54%)	8 (27%)	10 (45%)	62 (47%)
N=EPI Technicians	81	30	22	133

Table E9: Year of last refresher training

Years	Swat	Buner	Shangla	Total
1980-1989	1 (1%)	3 (10%)	0 (0%)	4 (3%)
1990-1999	4 (5%)	11 (37%)	11 (50%)	26 (19%)
2000 – 2006	76 (94%)	16 (53%)	11 (50%)	103 (78%)
N=EPI Technicians	81	30	22	133

1.3 Infrastructure and Facility

1.3.1 Distance between EPI centers and EDO (H) – Kilometers and hours

The average distance from EDO (H) office is 32 Kilometers (Km.) as highlighted in the table below. In Shangla the distance is the longest as compared to the other two districts while in Buner the centers are near to the EDO (H) office.

However owing to the type of area in Buner and Shangla it takes much longer (5.8 and 4.2 hours respectively) to reach the EDO (H) office as compared to Swat district where it takes only 3.7 hours despite an average 32 km distance.

Table E10: Distance in KM between EPI centers and EDO (H)

Distance in Km	Swat	Buner	Shangla	Total
1-10 km	18 (27%)	6 (23%)	3 (16%)	27 (24%)
11-20 km	8 (12%)	9 (35%)	3 (16%)	20 (18%)
21-50 km	28 (42%)	8 (31%)	9 (47%)	45 (41%)
51 km or more	12 (18%)	1(4%)	4 (21%)	17 (15%)
Don't Know/No answer	0 (0%)	2 (8%)	0 (0%)	2 (2%)
Mean	32.3	24.3	40.9	32.2
N=All EPI centers	66	26	19	111

Table E11: Distance in Time between EPI centers and EDO (H)

Distance in time	Swat	Buner	Shangla	Total
Less than 1 hour	21 (32%)	13(50%)	3(16%)	37(33%)
1 or more	29(64%)	5(19%)	1(5%)	35(32%)
2 or more	11(69%)	8(31%)	6(32%)	25(22%)
3 or more	5(31%)	0(0%)	9(47%)	14(13%)
Don't Know/No answer	0 (0%)	0 (0%)	0 (0%)	0(0%)
Mean	1.2	1.3	2.5	1.4
N=All EPI Centers	66	26	19	111

1.3.2 Electricity - Frequency and duration of breakdown

Frequency and duration of electricity breakdown

Electricity breakdown is a serious problem in these centers as almost half of the EPI centers mentioned that they experience electricity breakdown 3 days or more in a week.

This duration of electricity failure is for half a day or less. In one fourth of all the EPI centers electricity failure is for more than half a day.

Table E12: Frequency and duration of electricity breakdown

Frequency	Swat	Buner	Shangla	Total
No supply	4 (6%)	3 (12%)	6 (32%)	13 (12%)
3 days or more/week	27 (41%)	15(58%)	12 (63%)	54 (49%)
1 to 2 days/week	11 (17%)	0 (0%)	1 (5%)	12 (11%)
Less than 1 day/week	24 (36%)	8 (31%)	0 (0%)	32 (29%)
N= All centers	66	26	19	111
Duration	**Swat**	**Buner**	**Shangla**	**Total**
Always half day or less	50 (81%)	15 (65%)	9 (69%)	74 (76%)
Sometimes more than half day	12 (19%)	8 (35%)	4 (31%)	24 (24%)
N=Centers with electricity supply	62	23	13	98

1.3.3 Water supply

31% of EPI centers do not have water supply. Among the three districts this ratio is the highest for Shangla.

Table E13: Water supply

Whether have water supply	Swat	Buner	Shangla	Total
Have water supply	48 (73%)	21 (81%)	8 (42%)	77 (69%)
Do not have water supply	18 (27%)	5 (19%)	11 (58%)	34 (31%)
N=All EPI centers	66	26	19	111

1.3.4 Phone facility

The fixed phone facility is not available at most of the EPI centers. This is compensated by other phone facilities such as mobile phones and PCO within 5 minutes walking distance.

Table E14: Fixed phone at EPI centers

Whether have fixed phones	Swat	Buner	Shangla	Total
Yes have fixed phones	7 (11%)	3 (12%)	4 (21%)	14 (13%)
No, do not have fixed phones	59 (89%)	23 (88%)	15 (79%)	97 (87%)
N=All EPI centers	66	26	19	111

Table E15: Other phone facilities* among EPI centers which have no fixed phone

Whether have other phone facilities	Swat	Buner	Shangla	Total
Yes, have other phone facilities	54 (92%)	18 (78%)	10 (67%)	82 (85%)
No, do not have other phone facilities	5 (8%)	5 (22%)	5 (33%)	15 (15%)
N=EPI centers with no fixed phones	59	23	15	97

**Other phone facilities*
Mobile phones
PCO within 5 minutes walking distance

1.4 Transportation

1.4.1 Official vs. Personal vehicles

Around 41% of EPI technicians have official motorbikes. Seven (7) EPI technicians have private and 12 have official bicycles. 42 have no mobility.

Table E16: Official motorbikes at EPI centers

Whether have official motorbikes	Swat	Buner	Shangla	Total
Official motorbikes are available	23 (35%)	11 (42%)	12 (63%)	46 (41%)
Official motorbikes are not available	43 (65%)	15 (58%)	7 (37%)	65 (59%)
N=All EPI centers	66	26	19	111

Table E17: Private motorbikes at EPI centers where official motorbikes are not available

Whether have private motorbikes	Swat	Buner	Shangla	Total
Private motorbikes are available	7 (16%)	0 (0%)	0 (0%)	7 (11%)
Private motorbikes are not available	36 (84%)	15 (100%)	7(100%)	58 (89%)
N= All respondents who didn't have official bike	43	15	7	65

Table E18: Private cars/official bicycles at EPI centers where official/private motorbikes are not available

Vehicles available	Swat	Buner	Shangla	Total
Both private cars and official bicycle	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Only private cars	1 (3%)	3 (20%)	0 (0%)	4(7%)
Only official bicycles	10 (28%)	1 (7%)	1 (14%)	12 (21%)
Neither private cars nor official bicycles	25 (69%)	11 (73%)	6 (86%)	42 (72%)
N= All respondents who don't have official and or private motorbike	36	15	7	58

1.4.2 Transportation expenditure for routine work

Most EPI technicians do not receive any allowance for POL.

Table E19: Monthly POL given by district/donors among motorbike holders

Whether POL is given	Swat	Buner	Shangla	Total
Yes POL is given	2 (7%)	2 (18%)	0 (0%)	4 (8%)
No POL is not given	28 (93%)	9 (82%)	12 (100%)	49 (92%)
N= All those having motorbike	30	11	12	53

Table E20: Monthly average POL (Rs.) given to motorbike holders

	Swat	Buner	Shangla	Total
POL from Pocket (Rs.)	1,763	2,862	1,879	1,984
N= All motorbike holders who are not given POL	28	9	12	49

Table E21: Transportation expenditure for routine EPI work

	Swat	Buner	Shangla	Total
Motorbike holders	1,093	575	2,688	1,523
Non-motorbike holders	1,036	1,232	1,560	1,133
N=All EPI centers	66	26	19	111

1.5 Cold Chain Equipment

1.5.1 Refrigerators – working condition

Most of the EPI centers do have at least one well functional refrigerator. In district Shangla the number of well functional refrigerators is the highest as compared to the rest of the two districts.

Table E22: Functional refrigerators at EPI centers excluding sub stores

	Swat	Buner	Shangla	Total
EPI centers with two or more well functional refrigerators	8 (13%)	3 (12%)	5 (26%)	16 (15%)
EPI centers with only one well functional refrigerator	50(79%)	14 (54%)	12 (63%)	76 (70%)
EPI centers without well functional refrigerators	3 (5%)	7 (27%)	1 (5%)	11 (10%)
Don't have refrigerators	2 (3%)	2 (8%)	1 (5%)	5 (5%)
N= EPI centers	63	26	19	108

**In Swat three of the EPI centers also operate as sub stores therefore these are excluded from the base here.*

***Sub stores**

There are three facilities in Swat which not only function as EPI centers but also operate as sub stores, which need more refrigerators and freezers. These three sub stores are:

- CH Matta: Total facilities covered by this sub stores are 16
- CH Khwazakheila: Total facilities covered by this sub stores are 6
- CH Kabbal: Total facilities covered by this sub stores are 9

There are no sub stores in Buner and Shangla.

1.5.2 Refrigerators – Year of installation

The data analysis shows that most of the refrigerators are installed during the period of 2002 – 2006 (72%).

Table E23: Year of installation of refrigerators

Year	Swat	Buner	Shangla	Total
2002 – 2006	41 (44%)	13 (39%)	18 (69%)	72 (47%)
1997 – 2001	22 (24%)	12 (36%)	4 (15%)	38 (25%)
1996 -	18 (19%)	5 (15%)	1 (4%)	24 (16%)
Not Ansared	12 (13%)	3 (9%)	3 (12%)	18 (12%)
N=Number of refrigerators	93	33	26	152

1.5.3 Other cold chain equipments

The requirement of vaccine carrier for fixed EPI is 2 whereas only 58% of EPI centers have 2 vaccine carriers.

Table E24: Other cold chain equipment – Vaccine carrier

	Swat	Buner	Shangla	Total
EPI centers with two or more well functional vaccine carriers	44 (67%)	14 (54%)	4 (21%)	62 (56%)
EPI centers with only one well functional vaccine carriers	22 (33%)	9 (35%)	13 (68%)	44 (40%)
EPI centers without well functional vaccine carriers	0 (0%)	0 (0%)	1 (17%)	1 (1%)
Not available	0 (0%)	3 (12%)	1 (5%)	4 (4%)
N= EPI centers	66	26	19	111

Table E25: Other cold chain equipment – Thermometer

	Swat	Buner	Shangla	Total
EPI centers with two or more well functional Thermometers	4 (9%)	2 (8%)	1 (5%)	7 (6%)
EPI centers with only one well functional Thermometers	46 (70%)	17 (65%)	11 (58%)	74 (67%)
EPI centers without well functional Thermometers	2 (3%)	1 (4%)	2 (11%)	5 (5%)
Not available	14 (21%)	6 (23%)	5 (26%)	25 (23%)
N= EPI centers	66	26	19	111

Table E26: Other cold chain equipment – Stabilizer

	Swat	Buner	Shangla	Total
EPI centers with two or more well functional stabilizer	5 (8%)	1 (4%)	0 (0%)	6 (5%)
EPI centers with only one well functional stabilizer	47 (71%)	20 (76%)	11 (58%)	78 (70%)
EPI centers without well functional stabilizer	6 (9%)	1 (4%)	4 (21%)	11 (10%)
Not available	8 (12%)	4 (15%)	4 (21%)	16 (14%)
N= EPI centers	66	26	19	111

1.6 Shortage of Equipment/Materials

1.6.1 Shortage of Equipments/ Materials

Mostly the centers face shortage of furniture, stationery and reporting forms.

Table E27: Shortage of equipment/materials

Equipments/Materials	Swat	Buner	Shangla	Average
Furniture	42 (64%)	12 (46%)	13 (68%)	67 (60%)
Stationery	43 (65%)	7 (27%)	12 (63%)	62 (56%)
Reporting forms of EPI	29 (44%)	5 (19%)	7 (37%)	41 (37%)
Register books of EPI	19 (29%)	1 (4%)	5 (26%)	25 (23%)
N=All EPI centers	66	29	19	111

Multiple response question

1.7 Number of LHWs in the catchment area

1.7.1 LHWs in the catchment areas

One third (33%) of the EPI technicians mentioned that there are no LHWs in their catchment area.

Table E28: LHWs in the catchment area

Number of LHWs	Swat	Buner	Shangla	Total
0	18 (27%)	10 (38%)	9 (47%)	37 (33%)
1 – 5	6 (9%)	5 (19%)	2 (11%)	13 (12%)
6 or more	40 (61%)	11 (42%)	8 (42%)	59 (53%)
Don't know/no response	2 (3%)	0 (0%)	0(0%)	2 (2%)
Mean	21.7	14.6	14.8	19.2
N=All EPI centers	66	26	19	111

1.8 Out-reach/Mobile activity

1.8.1 Days fixed for site sessions

At EPI centers, specific days are fixed for EPI immunization and as per most of the centers, they do the same six days a week.

Table E29: Days for fixed site sessions

Number of days	EPI centers with only ONE EPI technicians	EPI centers with two or more EPI technicians	Total
0	6 (7%)	1 (4%)	7 (7%)
1	13 (15%)	0 (0%)	13 (12%)
2	17 (20%)	7 (30%)	24 (22%)
3	13 (15%)	0 (0%)	13 (12%)
4	8 (10%)	6 (26%)	14 13%)
5	7 (8%)	1 (4%)	8 (7%)
6	20 (24%)	8 (35%)	28 (26%)
Mean	3.5	4.1	3.6
N=EPI centers	84	23	107

Data from four centers is not available therefore this data is computed out of the total base of 107

Table E30: Days for fixed site sessions

Number of days	EPI Centers with only one EPI technicians and no supporters	EPI Centers with one EPI technicians and one or more supporters	Total
0	1 (11%)	5 (7%)	6 (7%)
1	2 (22%)	11 (15%)	13 (15%)
2	1 (11%)	16 (21%)	17 (20%)
3	0 (0%)	13 (17%)	13 (15%)
4	2 (22%)	6 (8%)	8 (10%)
5	0 (0%)	7 (9%)	7 (8%)
6	3 (33%)	17 (23%)	20 (24%)
Mean	3.8	3.5	3.5
N=EPI centers with one EPI technician	9	75	84

1.8.2 Days fixed for BCG and Measles

In Swat and Shangla mostly Monday is fixed for BCG and Measles vaccination while in Buner it is Thursday.

Table E31: Days fixed for BCG and Measles

Days fixed for BCG	Swat	Buner	Shangla	Total
Monday	53 (80%)	5 (19%)	15 (79%)	73 (66%)
Tuesday	0 (0%)	6 (23%)	5 (26%)	11 (10%)
Wednesday	1 (2%)	5 (19%)	0 (0%)	6 (5%)
Thursday	11 (17%)	14 (54%)	0 (0%)	25 (23%)
Friday	0 (0%)	2 (8%)	0 (0%)	2 (2%)
Saturday	14 (21%)	4 (15%)	1 (5%)	19 (17%)
Days fixed for measles	**Swat**	**Buner**	**Shangla**	**Total**
Monday	51 (77%)	8 (31%)	15 (79%)	74 (67%)
Tuesday	0 (0%)	6 (23%)	5 (26%)	11 (10%)
Wednesday	3 (5%)	4 (15%)	0 (0%)	7 (6%)
Thursday	10 (15%)	13 (50%)	0 (0%)	23 (11%)
Friday	1 (2%)	2 (8%)	0 (0%)	3 (3%)
Saturday	10 (15%)	4 (15%)	1 (5%)	15 (14%)
N= All EPI centers	66	26	19	111

Multiple response question

1.8.3 Population covered by outreach /mobile activity

85-99% of population is covered by out-reach/mobile activity. In Shangla, 77% of catchment population of EPI center is covered by outreach/mobile activity and living in area without LHWs. The figure is 70% in Buner.

Table E32: Population covered by outreach/mobile activity

	Swat	Buner	Shangla	Average
Where LHWs are available (a)	13,234 (62%)	6,241(26%)	3,619 (21%)	10,025 (47%)
Where LHWs are not available (b)	8,072 (38%)	18,083 (74%)	13,400 (79%)	11,223 (53%)
Total a + b=c: The total population being covered through outreach/mobile activity	21,306	24,324	17,019	21,248

Table E33: Population covered by outreach/mobile activity among total catchment population

	Swat	Buner	Shangla	Average
Where LHWs are available (a)	13,234 (53%)	6,241 (24%)	3,619 (21%)	10,025 (42%)
Where LHWs are not available (b)	8,072 (32%)	18,083 (70%)	13,400 (77%)	11,223 (47%)
C	21,306 (85%)	24,324 (99%)	17,019 (98%)	21,248 (89%)
Total catchment population*	25,167	25,683	17,437	23,985

** We have excluded 15 EPI centers data from this table because there is no response from the EPI technicians. As per given table, the total catchment population mean is based on 96 EPI centers. Therefore total catchment population is different from the catchment population given in table E2.*

1.9 Safe Injection

1.9.1 Shortage of safety boxes and AD syringes now

Majority of EPI Centers do not face shortage of safety boxes and AD Syringes.

Table E34: Shortage of safety bxes now

	Swat	Buner	Shangla	Total
Shortage of safety boxes now	5 (8%)	0 (0%)	2 (11%)	7 (6%)
No shortage of safety boxes now	61 (92%)	26 (100%)	17 (89%)	104 (94%)
N=All EPI centers	66	26	19	111

Table E35: Shortage of AD syringes now

	Swat	Buner	Shangla	Total
Shortage of AD syringes now	6 (9%)	0 (0%)	0 (0%)	6 (5%)
No shortage of AD syringes now	60 (91%)	26 (100%)	19(100%)	105 (95%)
N=All EPI centers	66	26	19	111

1.9.2 Disposing used syringes out of safety box

It is observed that at 17% EPI Centers the syringes are disposed off out of safety box.

Table E36: Disposing off used syringes out of safety box
(Based on interviewers' observation)

	Swat	Buner	Shangla	Total
Yes, dispose used syringes out of safety boxes	6 (9%)	10 (38%)	3 (16%)	19 (17%)
No, do not dispose used syringes out of safety boxes	60 (91%)	16 (62%)	16 (84%)	92 (83%)
N=All EPI centers	66	26	19	111

1.10 Communication/Social mobilization

1.10.1 Means of communication

Table below shows means of communication utilized by EPI Technicians to encourage and informs community people to bring children to fixed site sessions. The major ways are mosque announcements (50%), Communication with community leaders/religious leaders (37%), through LHWs (32%) and door-to-door visits (24%). Almost same means of communication and encouragement are used for out-reach sessions in the villages.

Table E37: Communication and encouragement to bring children to EPI fixed site sessions

	Swat	Buner	Shangla	Total
Mosque announcements	28 (42%)	18 (69%)	9 (47%)	55 (50%)
Communicate with community leaders/religious leaders	26 (39%)	7 (27%)	8 (42%)	41 (37%)
Through LHWs	26 (39%)	5 (19%)	4 (21%)	35 (32%)
Door to door visits by EPI technician	15 (23%)	4 (15%)	8 (42%)	27 (24%)
Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose	7 (11%)	3 (12%)	5 (26%)	15 (14%)
Communicate through teachers	9 (14%)	2 (8%)	1 (5%)	12 (11%)
Through LHVs	5 (8%)	0 (0%)	1 (5%)	6 (5%)
Requesting clients of EPI to encourage/inform their neighbors/friends/relatives	1 (2%)	2 (8%	0 (0%)	3 (3%)
Local radio	1 (2%)	0 (0%)	0 (0%)	1 (1%)
Printed materials	0 (0%)	0 (0%)	0 (%)	0 (0%)
N=All EPI centers	66	26	19	111

Multiple response question

Table E38: Communication and encouragement to bring children to out-reach sessions

	Swat	Buner	Shangla	Total
Mosque announcements	35 (53%)	16 (62%)	8 (42%)	59 (53%)
Communicate with community leaders/religious leaders	16 (24%)	7 (27%)	5 (26%)	28 (25%)
Door to door visit	10 (15%)	2 (8%)	10 (53%)	22 (20%)
Through LHWs	20 (30%)	0 (0%)	0 (0%)	20 (18%)
Communicate through teachers	4 (6%)	2 (8%)	0 (0%)	6 (5%)
Through LHV	3 (5%)	0 (0%)	0 (0%)	3 (3%)
Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose	2 (3%)	1 (4%)	0 (0%)	3 (3%)
Requesting clients of EPI to encourage/inform their neighbors/friends/relatives	1 (2%)	0 (0%)	(0%)	1 (1%)
Local radio	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Printed materials	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All EPI centers	66	26	19	111

Multiple response question

1.10.2 Major difficulties in daily routine EPI work

Seven difficulties in routine EPI work are raised by EPI centers. Proportion of EPI centers raising the difficulties is different among the three districts (Table E39).

- Hard to reach is more common in Shangla (p=0.004).
- Negative propaganda is more common in Swat and Buner (p=0.011).
- No or insufficient POL is more common in Shangla (p=0.011).
- Over workload, too busy, shortage of number EPI technicians is more common in Buner and Shangla (p=0.006).
- Shortage of vaccine, vaccine stock-out is more common in Swat (p=0.000).
- Mobility problem is more common in Swat (p=0.012).

Table E39: Major difficulties in daily routine EPI work

Major difficulties	Swat	Buner	Shangla	Total	p value
Hard to reach areas	31 (47%)	14 (54%)	17 (89%)	62 (56%)	0.004
Negative propaganda of EPI/polio by religious leaders	43 (65%)	14 (54%)	5 (26%)	59 (53%)	0.011
No or insufficient POL	26 (39%)	4 (15%)	11 (58%)	41 (37%)	0.011
Low salary	19 (29%)	9 (35%)	8 (42%)	36 (32%)	0.531
Over workload , too busy, shortage of number EPI technicians	11 (17%)	11 (42%)	9 (47%)	31 (28%)	0.006
Shortage of vaccine, vaccine stock-out	24 (36%)	1 (4%)	1 (5%)	26 (23%)	0.000
Mobility problem	17 (26%)	1 (4%)	1 (5%)	21 (19%)	0.012
Less awareness of people on EPI	(0%)	(0%)	(0%)	(0%)	-
Because EPI technicians are not local, so they are not accepted/welcomed by the local people	(0%)	(0%)	(0%)	(0%)	-
N= All EPI centers	66	26	19	111	-

Multiple response questionn

1.10.3 Contents for next refresher training

Majority of EPI Technicians require communication skills especially in Swat.

Table E40: Main contents for refresher training

Main contents for refresher training	Swat	Buner	Shangla	Total
Communication skill with religious/community people	41 (62%)	11 (42%)	5 (26%)	57 (51%)
Information about new vaccines which have not been used in EPI	23 (35%)	10 (38%)	6 (32%)	39 (35%)
Social mobilization and communication to persuade people to accept EPI	25 (38%)	7 (27%)	5 (26%)	37(33%)
How to provide health education to community people	11 (17%)	8 (31%)	6 (32%)	25 (23%)
Clinical aspects of the EPI target diseases	14 (21%)	9 (35%)	1 (5%)	24 (22%)
Record keeping	10 (15%)	4 (15%)	6 (32%)	20 (18%)
Management of drop-out	12 (18%)	5 (19%)	2 (11%)	19 (17%)
Vaccine side effects	6 (9%)	9 (35%)	2 (11%)	17 (15%)
How to estimate the target population	12 (18%)	2 (8%)	2 (11%)	16 (14%)
Knowledge to answer to frequently asked questions from people	3 (5%)	5 (19%)	7 (37%)	15 (14%)
Safe injection	7 (11%)	2 (8%)	5 (26%)	14 (13%)
How to calculate the EPI coverage	8 (12%)	2 (8%)	3 (16%)	13 (12%)
How to store and transport vaccines	6 (9%)	3 (12%)	2 (11%)	11 (10%)
Organization of EPI sessions	9 (14%)	1 (4%)	0 (0%)	10 (9%)
Cold chain management/minor repair	7 (11%)	0 (0%)	2 (11%)	9 (8%)
Mutual learning from other EPI technicians	3 (5%)	0 (0%)	3 (16%)	6 (5%)
Training related to EPI	1 (2%)	0 (0%)	0 (0%)	1 (1%)
N=All EPI centers	66	26	19	111

Multiple response question

1.10.4 Support required from district, province and partners

Salary/incentives (50%), POL (41%) and transportation/motorcycle/vehicle (38%) are the main requirements and expectations of EPI technicians from district office, province and other partners of EPI.

Table E41: Support required from district, province and partners

Support required from district, province and partners	Swat	Buner	Shangla	Total
Salary/incentives	31 (47%)	12 (46%)	12 (63%)	55 (50%)
POL	28 (42%)	8 (31%)	9 (47%)	45 (41%)
Transportation/ motorcycle/ vehicle	30 (45%)	9 (35%)	3 (16%)	42 (38%)
Refresher training	19 (29%)	10 (38%)	11 (58%)	40 (36%)
Regular supervision	7 (11%)	5 (19%)	7 (37%)	19 (17%)
Distribution of vaccine	14 (21%)	0 (0%)	1 (5%)	15 (14%)
District team convince people on EPI	2 (3%)	6 (23%)	1 (5%)	9 (8%)
N=All EPI centers	66	26	19	111

Multiple response question

1.11 Documentation/Record checking

1.11.1 Availability of documents and their updates^

Inventory Sheets, Stock Register, Daily EPI Register and Permanent EPI Register are available at more than 90% of EPI centers but not updated at most EPI centers (Table E42). About half of EPI centers have mismatch of number of vials of vaccine except BCG between records and actual availability (Table E45). Mismatch of BCG is observed to be less in Swat and in Shangla.

Table E42: Availability of documents and their updates

	Swat	Buner	Shangla	Total
Inventory Sheet				
Availability				
Yes	62 (94%)	22 (85%)	17 (89%)	101 (91%)
No	4 (6%)	4 (15%)	2 (11%)	10 (9%)
Records Completely Entered ^				
Yes	7 (11%)	4 (15%)	1 (5%)	12 (11%)
No	55 (83%)	18 (69%)	16 (84%)	89 (80%)
Stock Register				
Availability				
Yes	62 (94%)	21 (81%)	18 (95%)	101 (91%)
No	4 (6%)	5 (19%)	1 (5%)	10 (9%)
Records Completely Entered ^^				
Yes	8 (12%)	4 (15%)	1 (5%)	13 (12%)
No	54 (82%)	17 (65%)	17 (89%)	88 (79%)
Daily EPI Register				
Availability				
Yes	63 (95%)	25 (96%)	18 (95%)	106 (95%)
No	3 (5%)	1 (4%)	1 (5%)	5 (5%)
Records Completely Entered ^^^				
Yes	5 (8%)	4 (15%)	3 (16%)	12 (11%)
No	58 (88%)	21 (81%)	15 (79%)	94 (85%)
Permanent EPI Register				
Availability				
Yes	64 (97%)	23 (88)	19 (100%)	106 (95%)
No	2 (3%)	3 (12%)	0(0%)	5 (5%)
Records Completely Entered ^^^				
Yes	24 (36%)	9 (35%)	3 (16%)	36 (32%)
No	40 (61%)	14 (54%)	16 (84%)	70 (63%)
List of Defaulter				
Availability				
Yes	43 (65%)	13 (50%)	11 (58%)	67 (60%)
No	23 (35%)	13 (50%)	8 (42%)	44 (40%)
Outreach plan for routine EPI				
Availability (for the current month, February 2007)				
Yes	38 (58%)	16 (62%)	16 (84%)	70 (63%)
No	28 (42%)	10 (38%)	3 (16%)	41 (37%)
N=All EPI centers	66	26	19	111

Updates:
^ To be filled in until yesterday
^^ To be filled in until last delivery
^^^ To be filled in until last sessions

1.11.2 Monthly progress chart

23% of EPI Centers did not display monthly progress chart of both 2006 and 2007.

Table E43: Display of monthly progress chart at EPI centers (based on interviewers' observation)

	Swat	Buner	Shangla	Total
Both of 2006 and 2007	30 (45%)	11 (42%)	13 (68%)	54 (49%)
Only 2006	16 (24%)	3 (12%)	1 (5%)	20 (18%)
Only 2007	8 (12%)	2 (8%)	2 (11%)	12 (11%)
Neither	12 (18%)	10 (38%)	3 (16%)	25 (23%)
N=All EPI centers	66	26	19	111

1.11.3 Location of diluents and mismatch number of vaccine vials

The survey also checked for the diluents and found that at 95% EPI centers, it is placed in refrigerators. About half of EPI Centers have mismatch number of vaccine vials between record and actual availability except BCG and BCG Diluents.

Table E44: Storage of diluent in refrigerator

	Swat	Buner	Shangla	Total
Yes	64 (97%)	25 (96%)	17 (89%)	106 (95%)
No	2 (3%)	1 (4%)	2 (11%)	5 (5%)
N= All EPI centers	66	26	19	111

Table E45: Number of EPI centers with mismatches of number of vaccine vials between record and actual availability

Vaccines	Swat	Buner	Shangla	Total
BCG	14 (21%)	13 (50%)	4 (21%)	31 (28%)
BCG diluent	22 (33%)	14 (54%)	7 (37%)	43 (39%)
OPV	40 (61%)	11 (42%)	7 (37%)	58 (52%)
Combo (DPT-Hep B)	35 (53%)	13 (50%)	8 (42%)	56 (50%)
TT	41 (62%)	15 (58%)	8 (42%)	64 (58%)
Measles	34 (52%)	13 (50%)	7 (37%)	54 (49%)
Measles diluent	35 (53%)	14 (54%)	9 (47%)	58 (52%)
N= All EPI centers	66	26	19	111

Multiple response question

1.11.4 Supervision confirmed by signature

Supervisory visit for EPI is made about two times per EPI center during last three months. The visits are done mainly by EPI coordinators and DSVs.
Limitation: Since the number of signatures is recorded from the daily EPI register, it does not represent the actual number of supervisory visits made by these personnel, if supervisors did not leave signatures, the visits are not counted.

Table E46: Number of supervisory visit per EPI center during last three months for routine EPI

	Swat	Buner	Shangla
EDO (H)	0.3	0.0	0.0
EPI coordinator	0.6	1.9	0.3
DSV	1.0	0.3	1.4
TSV	0.1	0.1	0.1
MO in the FLCF	0.1	0.1	0.0
Total	2.1	2.4	1.8

Annexure 2. Detail of Cold Chain Equipment at District Sub-stores Swat

2.1 CH Matta

	Refrigerator 1
Type	Chest Type
Maker Model	Vest Frost Denmark
Power	Electricity
Refrigerator Capacity	NA*
Freezer Capacity	NA
Total Capacity	NA
Year of Install.	2003
Condition	Function Well
If NR**, Since When?	

**NA: Not Answered*
***NR: Not Repairable*

Equipment	Available	Function Well	Not Function Well but repairable	Not Repairable
Cold Box	1	1	0	0
Vaccine Carrier	6	6	0	0
Thermometer*	1	1	0	0
Stabilizer	1	1	0	0

**NOT including thermometers fixed on the door of refrigerators*

2.2 CH Khwazakhela

	Refrigerator 1	Refrigerator 2	Refrigerator 3
Type	Upright Type	Chest Type	Chest Type
Maker Model	Super General R 134 A	Vest Frost Denmark X 144000-0041187 MK 144	Waves WF 210
Power	Electricity	Electricity	Electricity
Refrigerator Capacity	NA*	NA	NA
Freezer Capacity	NA	NA	NA
Total Capacity	130	140	NA
Year of Install.	2001	NA	2006
Condition	Function Well	Function Well	Function Well
If NR**, Since When?			

**NA: Not Available*
***NR: Not Repairable*

Equipment	Available	Function Well	Not Function Well but repairable	Not Repairable
Cold Box	0	0	0	0
Vaccine Carrier	18	18	0	0
Thermometer*	2	2	0	0
Stabilizer	3	3	0	0

**NOT including thermometers fixed on the door of refrigerators*

2.3 CH Kabal

	Refrigerator 1	Refrigerator 2	Refrigerator 3
Type	Upright Type	Chest Type	Chest Type
Maker Model	Philips MYL 202	Vest Frost Denmark	Vest Frost Denmark R 1348
Power	Electricity	Electricity	Electricity
Refrigerator Capacity	NA*	NA	NA
Freezer Capacity	NA	NA	NA
Total Capacity	NA	NA	NA
Year of Install.	1997	1996	1997
Condition	Function Well	Function Well	Function Well
If NR**, Since When?			

**NA: Not Available*
***NR: Not Repairable*

Equipment	Available	Function Well	Not Function Well but repairable	Not Repairable
Cold Box	0	0	0	0
Vaccine Carrier	13	13	0	0
Thermometer*	3	3	0	0
Stabilizer	3	2	1	0

**NOT including thermometers fixed on the door of refrigerators*

Annexure 3. Lady Health Workers (LHWs)

3.1 Lady Health Workers – Demographics

3.1.1 Age of LHWs

Most of the LHWs in the three districts are 21-30 years old. The average age of the LHWs is 24.9 to 27.0 years.

Table L1: Age of LHWs

Age of LHWs	Swat Trained*	Swat Untrained	Buner	Shangla
Less than 21 years	1 (2%)	5 (10%)	6 (12%)	6 (12%)
21 – 25 years	23 (46%)	25 (50%)	26 (53%)	22 (44%)
26 – 30 years	17 (34%)	11 (22%)	12 (24%)	20 (40%)
31 – 35 years	7 (14%)	5 (10%)	4 (8%)	0 (0%)
36 years and above	2 (4%)	4 (8%)	1 (2%0	2 (4%)
Mean	27.0	26.3	24.9	25.3
N=All LHWs	50	50	49	50

**LHW trained in 1st batch for involvement in routine EPI*

3.1.2 Education level of LHWs

All the LHWs are educated up to grade 8 or more and the average education is 10.3 to 11.2 years.

Table L2: Education level of LHWs

Education of LHWs*	Swat Trained	Swat Untrained	Buner	Shangla
0	0 (0%)	0 (0%)	0 (0%)	0 (0%)
1-7	0 (0%)	0 (0%)	0 (0%)	0 (0%)
8 or more	50 (100%)	50 (100%)	49 (100%)	50 (100%)
Mean	10.9	10.3	11.2	10.5
N=All LHWs	50	50	49	50

3.1.3 Population of catchment area

The catchment population served by a LHW is 772 to 869 and population under one year per LHW is 21 to 24. While the average number of children served by each trained LHW in Swat is 24.

Table L3: Catchment total population and population under one year per LHW

	Swat Trained	Swat Untrained	Buner	Shangla
Mean	869 (24)	842 (23)	833 (23)	772 (21)
Minimum	700 (12)	619 (5)	71 (6)	75 (4)
Maximum	1,157 (41)	1,050 (47)	1,274 (80)	1,064 (70)

3.1.4 Number of deliveries registered in 2006

The average number of deliveries registered in 2006 by LHWs is 15 to 22.

Table L4: Number of deliveries registered by a LHW in the catchment area in 2006

No. of deliveries registered in 2006	Swat Trained	Swat Untrained	Buner	Shangla
Mean	21.9	20.1	14.8	16.3
Minimum	8	32	3	2
Maximum	45	44	36	37

3.1.5 Working days a week

Across all the districts most of the LHWs are working for six days or for the whole week.

Table L5: Working days

Working days	Swat Trained	Swat Untrained	Buner	Shangla
One	0 (0%)	0 (0%)	2 (4%)	0 (0%)
Two	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Three	0 (0%)	0 (0%)	0 (0%)	1 (2%)
Four	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Five	1 (2%)	4 (8%)	4 (8%)	0 (0%)
Six	47 (94%)	46 (92%)	43 (88%)	49 (98%)
Mean	5.9	5.7	5.9	5.9
N=All LHWs	50	50	49	50

3.2 Expanded Programme on Immunization

3.2.1 Formal tasks of EPI

The LHWs are asked for the formal tasks of EPI.

Table L6: Formal tasks

Formal tasks	Swat Trained	Swat Untrained	Buner	Shangla
Educating mothers on EPI	48 (96%)	46 (92%)	42 (86%)	39 (78%)
Providing referral slips for children due for routine EPI doses	49 (98%)	47 (94%)	35 (71%)	43 (86%)
Polio immunization campaign	47 (94%)	46 (92%)	44 (90%)	22 (44%)
TT campaign immunization	48 (96%) b	40 (80%)	38 (78%)	22 (44%)
Following up on defaulters of EPI	48 (96%) b	33 (66%)	31 (63%)	33 (66%)
Assistance to EPI technicians in outreach	45 (90%) b	35 (70%)	27 (55%)	30 (60%)
N=All LHWs	50	50	49	50

Multiple response question

3.2.2 Refusal cases of OPV campaign

It appears from the survey data that the refusal ratio in case of OPV campaign is a little over one fourth (26%) for all trained LHWs of Swat while it is much higher among untrained LHWs of the same district. In Buner the refusals are much less than Swat while in Shangla the LHWs mentioned that they face no refusals at all.

Table L7: Refusal cases of OPV campaign

	Swat Trained	Swat Untrained	Buner	Shangla
Faced refusals in OPV campaign	13 (26%)	20 (40%)	9 (18%)	0 (0%)
Did not faced refusals in OPV campaign	37 (74%)	30 (60%)	40 (82%)	50 (100%)
N=All LHWs	50	50	49	50

3.2.3 Reasons for refusal for OPV campaign

According to those who faced refusals, the major reasons are suspicion of sterility of OPV and objection by religious leaders. The reasons mentioned by LHWs are listed in the table below.

Table L8: Reasons for refusals in OPV campaign

Reasons for refusals in OPV campaign	Swat Trained	Swat Untrained	Buner	Shangla
People and/or religious leaders think that OPV contain family planning substances	9 (69%)	14 (70%)	7 (78%)	0 (0%)
Religious leaders are against polio immunization	7 (54%)	11 (55%)	2 (22%)	0 (0%)
People are skeptical why vaccinate even before catching disease	3 (23%)	9 (45%)	1 (11%)	0 (0%)
People/religious leaders think that OPV contain prohibited substances for Muslims such as pork components	2 (15%)	8 (40%)	1 (11%)	0 (0%)
People/religious leaders link OPV with foreign NGOs some of which are Christian based organization, therefore doubt their relevance	2 (15%)	4 (20%)	1 (11%)	0 (0%)
People think getting vaccine is against God's will	0 (0%)	1 (5%)	1 (11%)	0 (0%)
People fear vaccine side-effects	0 (0%)	1 (5%)	1 (11%)	0 (0%)
People refuse to take their babies out of the house	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All who faced refusals	13	20	9	0

Multiple response question

3.2.4 Negative Impact of OPV campaign

LHWs consider heavy workload and traveling outside their catchment areas as negative impact. The details are shown in the table below.

Table L9: Negative impact of OPV campaign

Negative impact	Swat Trained	Swat Untrained	Buner	Shangla
Too much additional work	37 (74%)	32 (64%)	25 (51%)	21 (42%)
Traveling outside the catchment areas	6 (12%)	13 (26%)	13 (27%)	10 (20%)
Opposition from religious leaders	9 (18%)	8 (16%)	5 (10%)	8 (16%)
Refusal for OPV also caused refusal for other vaccines	4 (8%)	4 (8%)	2 (4%)	1 (2%)
Face no negative impact	1 (2%)	1 (2%)	7 (14)	10 (20%)
N=All LHWs	50	50	49	50

Multiple response question

3.2.5 TT Campaign while on duty as LHW

Most of the LHWs mentioned that TT campaign has been conducted while they were on duty as LHWs. This number is the highest among trained LHWs of Swat and lowest for the LHWs of Shangla.

Table L10: TT Campaign while on duty

	Swat Trained	Swat Untrained	Buner	Shangla
Yes, TT campaign conducted while on duty	48 (96%)	34 (68%)	37 (76%)	21 (42%)
No, TT campaign did not conduct while on duty	2 (4%)	16 (32%)	12 (24%)	29 (58%)
N=All LHWs	50	50	49	50

3.2.6 Refusal faced in TT campaign

It is mostly the Swat district where the number of refusals is higher. While in other two district negligible ratio mentioned that they faced any refusals in TT campaign. The table below presents the details.

Table L11: Refusal faced in TT campaign

	Swat Trained	Swat Untrained	Buner	Shangla
Yes, faced refusal	6 (13%)	16 (47%)	5 (14%)	1 (5%)
No, not faced refusal	42 (88%)	18 (53%)	32 (86%)	20 (95%)
N= LHWs are who experienced TT campaign	48	34	37	21

3.2.7 Reasons for refusals in TT Campaign

Similar to the reasons for refusal mentioned for the OPV campaign, the main reasons for refusals in the TT campaign are also religious and cultural. The table on the next page presents the details.

Table L12: Reasons for refusals in TT campaign

Reasons for refusals in TT campaign	Swat Trained	Swat Untrained	Buner	Shangla
People and/or religious leaders think that TT vaccine contains family planning substances	5 (83%)	12 (75%)	5 (100%)	0 (0%)
Religious leaders are against TT immunization	3 (50%)	9 (56%)	0 (0%)	1 (100%)
People are skeptical why vaccinate even before catching disease	2 (33%)	8 (50%)	0 (0%)	0 (0%)
People think getting vaccine is against God's will	0 (0%)	2 (13%)	0 (0%)	0 (0%)
People and/or religious leaders link TT with foreign NGOs some of which are Christian based organization, therefore doubt their relevance	2 (33%)	1 (6%)	1 (20%)	0 (0%)
People and/or religious leaders think that TT contain prohibited substances for Muslims such as pork components	0 (0%)	2 (13%)	0 (0%)	1 (100%)
People fear vaccine side-effects	0 (0%)	0 (0%)	1 (20%)	0 (0%)
It cause pain	0 (0%)	2 (13%)	0 (0%)	0 (0%)
Elders get angry	0 (0%)	0 (0%)	1 (20%)	0 (0%)
Women are afraid of the pain caused by injection	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All those who experienced refusals in TT campaign	6	16	5	1

Multiple response question

3.3 Involvement of Lady Health Workers for Routine EPI in Swat

Training of LHWs for routine EPI has been done only in Swat District (Table 2). As first batch 189 LHWs are trained from October 2005 to April 2006. Out of these trained LHWs 50 were selected randomly for this survey and interviewed. These trained LHWs were asked about their views regarding the duration of training, their actual administration of EPI and their experience with the routine EPI.

3.3.1 Actual Inoculation

All LHWs who received EPI training in first batch mentioned that they are now conducting actual inoculation of routine EPI.

Table L13: Actual Inoculation

	Swat Trained
Yes, conducting the actual inoculation of routine EPI	50 (100%)
No, not conducting the actual inoculation of routine EPI	0 (0%)
N =All LHWs	50

3.3.2 Duration of training

Out of the trained LHWs of Swat, 88% reported that the six months duration of the training is sufficient, while the rest felt that this six months period is not sufficient for trainings.

Table L14: Duration of training

	Swat Trained
Yes, six month training enough	44 (88%)
No, not enough	6 (12%)
N= All LHWs	50

3.3.3 Shortage of equipment/material /medicine

LHWs were asked if they faced any shortage of equipment/material/medicine for their activities in the past one year. Mostly the shortage is faced in the following equipment, material and medicine, while majority mentioned that they face no shortage. Table L15 presents the details.

Table L15: Shortage of equipment/material/medicine

Equipment/Material/Medicine	Swat Trained
Vaccines *	6 (12%)
AD syringes	2 (4%)
Safety boxes	2 (4%)
Vaccine carrier	1 (2%)
Icepacks	1 (2%)
Stationery (Pen, papers, etc)	1 (2%)
Reporting and recording forms of EPI	1 (2%)
Weighing machine	1 (2%)
No shortage is faced	40 (80%)
N=All LHWs	50

Multiple response question
**BCG, Measles vaccine 3, BCG 2, did not mention its name 1*

3.3.4 Refusals in routine EPI

It has appeared from the data that only 12% LHWs faced any refusal in routine EPI. The refusals in routine EPI are less as compared to those of OPV (26%) (Table L7) and TT campaign (13%) (Table L11).

Table L16: Refusal in routine EPI

	Swat Trained
Yes, faced refusal	6 (12%)
No, not faced refusal	44 (88%)
N=All LHWs	50

Table L17: Reasons for refusals in EPI

Reasons for refusals in EPI	Swat Trained
Religious leaders are against Injection vaccines	4 (67%)
People think that getting vaccine is against god's will	0 (0%)
Skepticism about why vaccinate before catching the disease	2 (33%)
People and/or religious leaders think that injection vaccines contain family planning substances	3 (50%)
People and/or religious leaders link injection vaccines contain prohibited substances for Muslims like pork components	0 (0%)
People and/or religious leaders link injection vaccines with foreign NGOs some of which are Christian based organizations	0 (0%)
People fear vaccine side-effects	1 (17%)
People refuse to take babies out of their house to immunize	1 (17%)
People are afraid of pain caused to their child	1 (17%)
N=All who mentioned they faced refusals	6

Multiple response question

3.3.5 Refusal in Polio Campaign, TT Campaign and routing EPI experienced by LHWs trained in Swat

Table L18: Refusal in Polio Campaign, TT Campaign and routing EPI experienced by LHWs trained in Swat

	Polio campaign	TT campaign	Routine EPI
Faced refusal	13 (26%)	6 (13%)	6 (12%)
Did not faced refusal	37 (74%)	42 (88%)	44 (88%)
Total	50	48*	50

* Two LHWs have no experience of TT campaign.

Table L19: Reasons for refusal

Reason for refusal in EPI	Polio campaign	TT campaign	Routine EPI
Religious leader are against OPV/TT/injection vaccine	7 (54%)	3 (50%)	4 (67%)
People think that giving vaccine is against God's will	0 (0%)	0 (0%)	0 (0%)
Skepticism about why vaccinate before catching the disease	3 (23%)	2 (33%)	2 (33%)
People and/or religious leaders think that injection vaccines contain family planning substances	9 (69%)	5 (83%)	3 (50%)
People and/or religious leaders think that injection vaccines contain prohibited substance for Muslims like pork components	2 (15%)	0 (0%)	0 (0%)
People and/or religious leaders link injection vaccines with foreign NGOs some of which are Christian based organizations	2 (15%)	2 (33%)	0 (0%)
People fear vaccine side-effects	0 (0%)	0 (0%)	1 (17%)
People refuse to take babies out of their house to immunize	0 (%)	-	1 (17%)
People are afraid of pain caused by vaccine	0 (0%)	0 (0%)	1 (17%)
N=All who mentioned they faced refusals in Swat	13	6	5

3.3.6 Difficulties in routine EPI

The LHWs were asked to mention the difficulties they face during their daily activities of routine EPI other than equipment and refusal cases. They complaint that increased workload of EPI is the major difficulty for them. The other problems are expressed in the table below.

Table L20: Difficulties faced in daily routine EPI activities by LHWs of Swat (Except equipment and refusal cases)

Difficulties faced in daily routine EPI	Swat Trained
Increased workload caused by routine EPI	43 (86%)
Because some religious leaders are against EPI, it hurts their reputation	8 (16%)
Shortage of incentive for the routine EPI activity	4 (8%)
Mothers don't bring children out of the house to get serviced due to superstition	2 (4%)
Difficult working relation with EPI technicians	2 (4%)
Have to iste a lot of vaccine doses because the target population is minimal	0 (0%)
N=All LHWs	50

Multiple response question

3.3.7 Need for refresher training and contents

The data shows that more than half (54%) out of the total LHWs who have received EPI training feel that they need to undergo refresher training courses. The contents of interest are listed in table L22 given below.

Table L21: Need for refresher training

Need for refresher training	Swat Trained
Yes	27 (54%)
No	23 (46%)
N=All LHWs	50

Table L22: Contents to learn in the next refresher trainings

Contents to learn in the next refresher trainings	Swat Trained
Knowledge to answer frequently asked questions posed by people	14 (52%)
How to reach to un-reached (far off) population	12 (44%)
Knowledge about new vaccines	8 (30%)
Clinical aspects of the EPI target diseases	8 (30%)
How to store and transport vaccines	8 (30%)
Safe injection	8 (30%)
Vaccine side effects	6 (22%)
How to organize EPI sessions	4 (15%)
How to estimate the target population	4 (15%)
How to calculate the EPI coverage	4 (15%)
Social mobilization and communication to persuade people to accept EPI	2 (7%)
N=Those who said they need refresher training	27

Multiple response question

3.3.8 Support from district, province and partners

The LHWs were asked about the support they require from the district, province and partners besides equipment. They are read out few statements and are asked to mark the top three support contents.

The top most need is salary increase, followed by certificate after EPI training. The details on the requirements mentioned by them are listed in the table below. The support contents which they absolutely did not consider important are more frequent supervision and exclusion of meeting with male members of the community from their routine duties.

Table L23: Support required from province, district and partners

Support required	Swat Trained
Salary increase	43 (86%)
Certificate after EPI training	40 (80%)
Supervision by female and not male supervisors	19 (38%)
Provision of transportation and fuel cost	13 (26%)
Change in color and/or style of the LHWs uniform	8 (16%)
Help in convincing people to accept EPI	5 (10%)
To resolve shortage of vaccines	5 (10%)
Telephone or other means of communication	4 (8%)
More frequent EPI training	3 (6%)
Help in convincing religious leaders to accept EPI	1 (2%)
More systematic feedback after supervision	1 (2%)
More frequent supervision	0 (0%)
Exclusion of meeting with male members of the community from their routine duties	0 (0%)
N=All LHWs	50

Multiple response question

3.3.9 Negative impacts of routine EPI

Increased workload is the top negative impacts reported by LHWs (90%).

Table L24: Negative impacts of routine EPI

Negative impacts of routine EPI	Swat Trained
Increase in workload	45(90%)
Increase in expenditure that is not properly compensated	8(16%)
Relationship with local religious leaders becomes worse because they are against EPI	5(10%)
Disrupting care-taking of own family	3(6%)
Difficult working relation with EPI technicians	2(4%)
N=All LHWs	50

Multiple response question

3.3.10 Positive impacts of routine EPI

The top most positive impact mentioned by LHWs is the satisfaction they felt by serving more people.

Table L25: Positive impacts of involvement in routine EPI

Positive impacts of involvement in routine EPI	Swat Trained
Feeling better by being able to help people more	45 (90%)
Obtained more trust among people in catchment area	43 (86%)
Obtained more support from community	38 (76%)
Better working relation with EPI technician	35 (70%)
N=All LHWs	50

Multiple response question

3.3.11 Coordination in community out-post sessions

Majority of the LHWs (90%) coordinate in community out post sessions organized at mosques, schools and community leaders' houses.

Table L26: Coordination in community out-post sessions

Coordination in community out-post sessions	Swat Trained
Yes	45 (90%)
No	5 (10%)
N=All LHWs	50

3.3.12 Supervision of LHWs regarding EPI in the last three months

When asked who has supervised LHWs during the last three months regarding EPI, they said that they are supervised by LHS (100%) and EPI technicians (4%).

Table L27: Supervision of LHWs regarding EPI in the last three months

Supervision of LHWs regarding EPI in the last three months	Swat Trained
Lady Health Supervisor (LHS)	50 (100%)
EPI Technicians	2 (4%)
District EPI Coordinator	0 (0%)
National Programme Coordinator	0 (0%)
Female Assistant District Coordinator for National Programme	0 (0%)
N=All LHWs	50

Multiple response question

3.3.13 TT immunization with antenatal care

"When routine TT immunization is done to pregnant women, is it usually coordinated with ANC?"
100% of the LHWs provide TT to pregnant women in coordination with ANC.

Table L28: TT with antenatal care

TT immunization with antenatal care	Swat Trained
Yes	50 (100%)
No	0(0%)
N=All LHWs	50

Simultaneous services during outreach* EPI session
During the out reach sessions of ANC the LHWs provide various other services simultaneously which are mentioned in the table below.

***Outreach:**
Outreach sessions include sessions organized at mosques, schools, and community leader's house.

Table L29: Simultaneous services provided during outreach EPI

Simultaneous services provided during outreach EPI	Swat Trained
Folic acid tablets to postnatal mothers	50 (100%)
Advising mothers about family planning	50 (100%)
Iron supplementation to postnatal mothers	50 (100%)
Nutritional education to mothers	50 (100%)
Promotion of early breast feeding	50 (100%)
Check up of postnatal mother	50 (100%)
Antenatal care of pregnant women	50 (100%)
Examination of whole body of newborn	49 (98%)
Plotting growth monitoring sheet	45 (90%)
Baby's weight	39 (78%)
N=All LHWs	50

Multiple response question

3.3.14 Untrained LHW for routine EPI– Concerns about involvement in routine EPI

All other LHWs sampled in this survey who are not yet trained were asked to identify what would be of concern to them, if in the future they are involved in routine EPI, besides Polio and TT campaign. They were read out a few statements and their concerns were noted against each. The following table shows what statements they agreed with the most.

Table L30: Untrained LHWs for routine EPI - Concerns about involvement in routine EPI

Concerns about involvement in routine EPI	Swat Untrained	Buner	Shangla
Incentive for additional routine EPI work	44 (88%)	29 (59%)	37 (74%)
Increase of workload	9 (18%)	10 (20%)	7 (14%)
Transportation	8 (16%)	9 (18%)	6 (12%)
Opposition of the local religious leaders in conducting routine EPI	3 (6%)	0 (0%)	0 (0%)
Communities refusal to accept routine EPI	1 (2%)	0 (0%)	2 (4%)
Others: It will not affect us	1 (2%)	1 (2%)	0 (0%)
N= All those who did not obtain EPI training	50	49	50

Multiple response question

3.4 Nutritional Promotion

3.4.1 Provision of nutritional services

Almost all the LHWs mentioned that they provide nutritional services in their catchment area. The topmost responses include promotion of exclusive breast-feeding and folic acid tablets to antenatal mothers. The following table presents the details.

Table L31: Provision of nutritional services

Nutritional services	Swat Trained	Swat Untrained	Buner	Shangla
Promotion of exclusive breastfeeding	50 (100%)	50 (100%)	45 (92%)	49 (98%)
Folic acid tablets to antenatal mothers	48 (96%)	45 (90%)	45 (92%)	41 (82%)
Nutritional education to postnatal mothers	48 (96%)	45 (90%)	45 (92%)	39 (78%)
Folic acid tablets to postnatal mothers	48 (96%)	45 (90%)	41 (84%)	43 (86%)
Nutritional education to antenatal mothers	46 (92%)	46 (92%)	44 (90%)	40 (80%)
Nutritional education to mothers of young children	48 (96%)	44 (88%0	41 (84%)	40 (80%)
Nutritional education to pre-conceptive women	47 (94%)	48 (96%0	36 (73%)	42 (84%)
Iron supplementation to antenatal mothers	48 (96%)	47 (94%)	39 (80%)	38 (76%)
Iron supplementation to postnatal mothers	45 (90%)	45 (90%)	38 (78%)	39 (78%)
Extra nutritious diet	44 (88%)	43 (86%)	43 (88%)	37 (74%)
Growth monitoring	47 (94%)	42 (84%)	38 (78%)	38 (76%)
Promotion of iodine fortified salt	46 (92%)	43 (86%)	40 (82%)	33 (66%)
Vitamin A supplementation to children	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Vitamin A supplementation to post natal mothers	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All LHWs	50	50	49	50

Multiple response question

3.4.2 Education on nutritional services – Nature/frequency of sessions

Majority of the LHWs mentioned that they organize both types of sessions i.e. collective sessions and individual sessions. The average frequency of such sessions is about once a month for all three districts.

Table L32: Nature of sessions of nutrition education

Nature of sessions	Swat Trained	Swat Untrained	Buner	Shangla
Both	47 (94%)	47 (94%)	43 (88%)	49 (98%)
Individual	2 (4%)	2 (4%)	3 (6%)	1 (2%)
Collective	1 (2%)	1 (2%)	3 (6%)	0 (0%)
N=All LHWs	50	50	49	50

Table L33: Frequency of collective sessions a month

Time of sessions	Swat Trained	Swat Untrained	Buner	Shangla
Mean	1.2	1.0	1.3	1.1
Minimum	1	1	1	1
Maximum	4	2	6	2
N=All LHWs	50	50	49	50

Table L34: Frequency of individual sessions a month

Time of sessions	Swat Trained	Swat Untrained	Buner	Shangla
Mean	1.0	1.0	1.1	1.2
Minimum	1	1	1	1
Maximum	2	2	2	5
N=All LHWs	50	50	49	50

3.4.3 Main services provided simultaneously during growth monitoring

Nutritional education to mothers (95%), promotion of early breast feeding (94%) and provision of folic acid tablets to postnatal mothers (92%) are the main services provided simultaneously during growth monitoring.

Table L35: Simultaneous service provided during growth monitoring

Simultaneous service provided during growth monitoring	Swat Trained	Swat Untrained	Buner	Shangla
Nutritional education to mothers	48 (96%)	50 (100%)	43 (88%)	48 (96%)
Promotion of early breast feeding	50 (100%)	45 (90%)	43 (88%)	50 (100)
Folic acid tablets to postnatal mothers	49 (98%)	44 (88%)	44 (90%)	46 (92%)
Check up of postnatal mother	50 (100%)	47 (94%)	44 (90%)	40 (80%)
Referring child immunization	48 (96%)	42 (84%)	41 (84%)	42 (84%)
Iron supplementation to postnatal mothers	49 (98%)	43 (86%)	6 (12%)	40 (80%)
N=All LHWs	50	50	49	50

Multiple response question

3.5 Antenatal Care by LHWs

3.5.1 Tracking of all pregnancies in the catchment areas

All the LHWs in the survey mentioned that they are tracking all pregnancies in their respective catchment areas.

Table L36: Tracking of all pregnancies

	Swat Trained	Swat Untrained	Buner	Shangla
Yes	50 (100%)	50 (100%)	49 (100%)	50 (100%)
No	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All LHWs	50	50	49	50

3.5.2 Registering of all new born children in the catchment areas

Similar to the tracking of pregnancies, all LHWs mentioned that are also registering all newly-born children in their catchment areas.

Table L37: Registration of all new born children

	Swat Trained	Swat Untrained	Buner	Shangla
Yes	50 (100%)	50 (100%)	49 (100%)	50 (100%)
No	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All LHWs	50	50	49	50

3.5.3 Antenatal Care and place of care

The survey results show that antenatal care by LHWs is mostly undertaken at the house of the mothers.

Table L38: Place of antenatal care

Place of ANC	Swat Trained	Swat Untrained	Buner	Shangla
At the house of mother	47 (94%)	43 (86%)	47 (96%)	35 (70%)
At health house	7 (14%)	7 (14%)	8 (16%)	15 (30%)
In hospital	0 (0%)	0 (0%)	1 (2%)	0 (0%)
N=All LHWs	50	50	49	50

Multiple response question

3.5.4 Frequency of antenatal care and time taken

On an average the LHWs of the three districts are providing ANC to 6 to 10 people in a month. LHWs of all the three districts reported that they take above 30 minutes.

Table L39: Frequency of antenatal care (number of persons in a month)

Frequency of antenatal care (No. of persons in a month)	Swat Trained	Swat Untrained	Buner	Shangla
1-5	12 (24%)	9 (18%)	27 (55%)	29 (58%)
6-10	28 (56%)	23 (46%)	17 (35%)	16 (32%)
11-15	8 (16%)	12 (24%)	3 (6%)	4 (8%)
16 and above	1 (2%)	6 (12%)	2 (4%)	1 (2%)
Not ansared	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Average	8.3	9.8	7.0	6.0
N=All LHWs	50	50	49	50

Table L40: Time taken to conduct antenatal care

Minutes	Swat Trained	Swat Untrained	Buner	Shangla
1-15	5 (10%)	8 (16%)	8 (16%)	10 (20%)
16-30	29 (58%)	38 (76%)	30 (61%)	26 (52%)
31 or more	16 (32%)	4 (8%)	11 (22%)	14 (28%)
Average	33.2	27.3	30.4	30.2
N=All LHWs	50	50	49	50

3.5.5 Mother's card

In Shangla highest number of LHWs reported that they provide mother's card when they go for antenatal care. Where as this ratio is the lowest in District Buner.

Table L41: Mother's card

	Swat Trained	Swat Untrained	Buner	Shangla
Yes, provided mother's card	42 (84%)	37 (74%)	26 (53%)	47 (94%)
No, did not provide mother's card	8 (16%)	13 (26%)	23 (47%)	3 (6%)
N=All LHWs	50	50	49	50

3.5.6 Services provided during antenatal care visit

The following table presents the details about the main services and the other simultaneous services provided during ANC visits by LHWs.

Table L42: Services provided during antenatal care visit

Service provided during antenatal care visit	Swat Trained	Swat Untrained	Buner	Shangla
Advise mothers on danger signs i.e. bleeding, swelling, Amniotic fluid outburst, severe pain	46 (92%)	47 (94%)	39 (80%)	46 (92%)
Notify mothers their expected dates of delivery	47 (94%)	48 (96%)	30 (61%)	46 (92%)
Syphilis information	45 (90%)	43 (86%)	35 (71%)	43 (86%)
Malaria information	42 (84%)	45 (90%)	33 (67%)	36 (72%)
Advise to mothers on frequency of contact before delivery	43 (86%)	42 (84%)	32 (65%)	36 (72%)
HIV information	43 (86%)	42 (84%)	35 (71%)	33 (66%)
Advice in observing fetal movement	19 (38%)	17 (34%)	22 (45%)	8 (16)
Palpation of abdomen (babies growth, cephalic position and presentation)	10 (20%)	12 (24%)	11 (22%)	5 (10%)
Measuring of fundus (growth of the baby)	8 (16%)	14 (28%)	8 (16%)	7 (14%)
N=All LHW	50	50	49	50

Multiple response question

3.5.7 Simultaneous services provided during ANC visit

During ANC visits, LHWs mainly advise on TT vaccination for pregnant women, educate for breast feeding and folic acid tablets. The table below shows the detail of services provided simultaneously during ANC visit.

Table L43: Simultaneous services provided during antenatal care visit

Simultaneous services during antenatal care visit	Swat Trained	Swat Untrained	Buner	Shangla
Advise TT vaccination for pregnant women	50 (100%)	50 (100%)	45 (92%)	49 (98%)
Education for breast feeding	50 (100%)	50 (100%)	44 (90%)	47 (94%)
Folic acid tablets	45 (90%)	45 (90%)	40 (82%)	46 (92%)
Nutritional advise on a healthy diet	50 (100%)	44 (88%)	42 (86%)	39 (78%)
Inject TT vaccination for pregnant women	50 (100%)	43 (86%)	41 (84%)	39 (78%)
Iron supplementation	50 (100%)	44 (88%)	38 (78%)	38 (76%)
Breasts examination	50 (100%)	47 (94%)	34 (69%)	37 (74%)
N=Al LHWs	50	50	49	50

Multiple response question

3.6 Postnatal Care

3.6.1 Place of postnatal care

LHWs were asked how post natal care is provided to mothers. The results show that mostly the mother's house is visited for post natal care. The table below provides the district wise results

Table L44: Place of postnatal care

Place of postnatal care	Swat Trained	Swat Untrained	Buner	Shangla
Mothers homes are visited by LHWs	45 (90%)	49 (98%)	47 (96%)	50 (100%)
Mothers are requested to visit the health house with the baby	4 (8%)	4 (8%)	5 (10%)	3 (6%)
Mothers are requested to visit the health house without the baby	1 (2%)	1 (2%)	1 (2%)	3 (6%)
N=All LHWs	50	50	49	50

3.6.2 Visit and time taken to conduct postnatal care

Mostly LHWs visit mother's house three times within 40 days after delivery.
Mothers visiting health house with the baby always visit between the first to second weeks after delivery.

Table L45: Number of visits to the mother's house

Number of visits	Swat Trained	Swat Untrained	Buner	Shangla
1	0 (0%)	0 (0%)	3 (6%)	2 (4%)
2	5 (10%)	5 (10%)	14 (29%)	4 (8%)
3	30 (60%)	28 (56%)	23 (47%)	28 (56%)
4	14 (28%)	13 (26%)	6 (12%)	10 (20%)
5	1 (2%)	3 (6%)	2 (4%)	3 (6%)
6	0 (0%)	1 (2%)	1 (2%)	2 (4%)
8	0 (0%)	0 (0%)	0 (0%)	1 (2%)
Mean	3.2	3.3	2.9	3.4
N=All LHWs	50	50	49	50

Table L46: Frequency of PNC –Visit of health house by mothers

Frequency	Swat Trained	Swat Untrained	Buner	Shangla
1	1 (33%)	2 (50%)	0 (0%)	9 (100%)
2	2 (67%)	1 (25%)	8 (89%)	0 (0%)
3	0 (0%)	1 (25%)	1 (11%)	0 (0%)
Mean	1.67	1.75	2.11	1
N=All LHWs who said that mothers visit the health house	3	4	9	9

Base is too small for any statistical analysis

Table L47: Timing of PNC –Period of visit of health house by mothers with babies

Period of visit	Swat Trained	Swat Untrained	Buner	Shangla
1-2 weeks	1 (2%)	4 (8%)	5 (10%)	9 (18%)
1-3 weeks	2 (4%)	0 (0%)	0 (0%)	0 (0%)
2-3 weeks	0 (0%)	0 (0%)	1 (2%)	0 (0%)
4-8 weeks	0 (0%)	0 (0%)	3 (6%)	0 (0%)
Don't know	47 (94%)	46 (92%)	40 (81%)	41 (82%)
N=All LHWs who said that mothers visit the health house	50	50	49	50

Table L48: Time taken to conduct PNC

Minutes	Swat Trained	Swat Untrained	Buner	Shangla
1-15	1 (2%)	4 (8%)	2 (4%)	3 (6%)
16-30	38 (76%)	36 (72%)	35 (71%)	32 (64%)
31or more	11 (22%)	10 (20%)	12 (24%)	15 (30%)
Average	32.0	29.9	31.2	32.1
N=All LHWs	50	50	49	50

3.6.3 Services during postnatal care

Care of umbilical cord and folic acid tablets are the common services provided by LHWs to mothers during postnatal care. Beside these services, they also offer other services as illustrated in the table below.

Moreover, the other services provided simultaneously with postnatal care are "advice on child immunization", "advice on breast-feeding during the first six months" and "advice about family planning".

Table L49: Services providing during PNC

Services provided during post natal care	Swat Trained	Swat Untrained	Buner	Shangla
Care of umbilical cord	50 (100%)	47 (94%)	46 (94%)	48 (96%)
Folic acid tablets to postnatal mothers	48 (96%)	46 (92%)	44 (90%)	46 (92%)
Iron supplementation to postnatal mothers	48 (96%)	49 (98%)	38 (78%)	43 (86%)
Advice on BCG birth-dosing	48 (96%)	46 (92%)	39 (80%)	43 (86%)
Other EPI immunization	48 (96%)	44 (88%)	38 (78%)	38 (76%)
Advice on OPV birth-dosing	48 (96%)	42 (84%)	38 (78%)	39 (78%)
Examination of whole body of newborn	48 (96%)	45 (90%)	36 (73%)	38 (76%)
Eye care of newborn	45 (90%)	44 (88%)	38 (78%)	38 (76%)
Promotion of early breast feeding	47 (94%)	42 (84%)	37 (76%)	38 (76%)
Examination of whole body of mother	42 (84%)	42 (84%)	39 (80%)	39 (78%)
Plotting growth monitoring sheet	46 (92%)	39 (78%)	8 (16%)	34 (68%)
Baby's Weight	38 (76%)	41 (82%)	10 (20%)	35 (70%)
N=All LHWs	50	50	49	50

Multiple response question

Table L50: Simultaneous services provided during postnatal care

Simultaneous services during post natal care	Swat Trained	Swat Untrained	Buner	Shangla
Advice for child immunization	49 (98%)	49 (98%)	47 (96%)	47 (94%)
Advising mothers on breast feeding during the first 6 months	49 (98%)	47 (94%)	43 (88%)	50 (100%)
Advising mothers about family planning	47 (94%)	45 (90%)	44 (90%)	48 (96%)
Child growth monitoring	48 (96%)	41 (82%)	37 (76%)	36 (72%)
Advising mothers about normal development of child (physical, mental and social needs)	47 (94%)	40 (80%)	35 (71%)	38 (76%)
Baby check-up	38 (76%)	35 (70%)	33 (67%)	34 (68%)
N=All LHWs	50	50	49	50

Multiple response question

3.7 Family Planning Services

3.7.1 Households visited

The data shows that the average number of households visited by LHW is 28 to 44 a day.

Table L51: Households visited in a day for family planning services

Number of households	Swat Trained	Swat Untrained	Buner	Shangla
Less than 29	13 (26%)	15 (30%)	28 (57%)	9 (18%)
30 -59	31 (62%)	26 (52%)	19 (39%)	32 (64%)
60 and more	6 (12%)	9 (18%)	1 (2%)	8 (16%)
Not ansared	0 (0%)	0 (0%)	1 (2%)	1 (2%)
Mean	39	44	28	41
N=All LHWs	50	50	49	50

3.7.2 Time taken for providing family planning services

A majority of LHWs takes around 16-30 minute for providing family planning services.

Table L52: Time taken for providing family planning services

Minutes	Swat Trained	Swat Untrained	Buner	Shangla
1- 15	10 (20%)	16 (32%)	13 (27%)	12 (24%)
16 -30	35 (70%)	31 (62%)	30 (61%)	38 (76%)
31 and more	5 (10%)	3 (6%)	6 (12%)	0 (0%)
Mean	27	22	26	21
N=All LHWs	50	50	49	50

3.7.3 Provision of family planning services

Distribution of oral contraceptive pills, prescription of condoms and family planning education are the main family planning services that are offered by LHWs.

Table L53: Family planning services

Family planning services	Swat Trained	Swat Untrained	Buner	Shangla
Distribution of oral contraceptive pills	50 (100%)	50 (100%)	48 (98%)	50 (100%)
Prescription of condoms	39 (78%)	39 (78%)	46 (94%)	50 (100%)
Family planning education	41 (82%)	40 (80%)	36 (73%)	42 (84%)
Injection of contraceptive	9 (18%)	14 (28%)	3 (6%)	11 (22%)
N=All LHWs	50	50	49	50

3.8 Curative Services

3.8.1 Number of patients examined per month

Besides other activities of routine EPI and mother and child health, LHWs examine 42 to 55 patients on an average per month.

Table L54: Patients examined in a month

Number of patients	Swat Trained	Swat Untrained	Buner	Shangla
1-20	5 (10%)	6 (12%)	5 (10%)	6 (12%)
21-40	11 (22%)	9 (18%)	19 (39%)	11 (22%)
41-60	19 (38%)	28 (56%)	24 (49%)	13 (26%)
61 or more	15 (30%)	7 (14%)	1 (2%)	20 (40%)
Mean	55.0	49.1	42.0	54.7
N=All LHWs	50	50	49	50

3.8.2 Time taken in curative services

The data shows that in Swat on average 16 to 21 minutes are taken in providing curative services.

Table L55: Time taken in curative check up

Minutes	Swat Trained	Swat Untrained	Buner	Shangla
1- 15	18 (36%)	22 (44%)	27 (55%)	33 (66%)
16 -30	31 (62%)	28 (56%)	17 (35%)	17 (34%)
31 and more	1 (2%)	0 (0%)	5 (10%)	0 (0%)
Mean	*19.4*	*20.3*	*21.3*	*16.0*
N= All LHWs	50	50	49	50

3.9 Health service on the fee basis by LHWs

3.9.1 Fee for services

Basically health services provided by LHWs are free. The table shows that only 2% among the Swat Trained LHWs have charged any fee for providing health related service.

Table L56: Fee charged for services or not

Whether charge fees?	Swat Trained	Swat Untrained	Buner	Shangla
Yes, charge fee	2 (4%)	0 (0%)	0 (0%)	0 (0%)
No, do not charge fee	48 (96%)	50 (100%)	49 (100%)	100%
N=All LHWs	50	50	49	50

3.9.2 Prescription of non-designated drugs

The incidence of prescription of non designated drugs is very low amongst all the three districts.

Table L57: Prescription of non-designated drugs

Whether prescribe non designated drugs?	Swat Trained	Swat Untrained	Buner	Shangla
Yes	3 (6%)	2 (4%)	7 (14%)	1 (2%)
No	47 (94%)	48 (96%)	42 (86%)	49 (98%)
N=All LHWs	50	50	49	50

3.10 Workloads

3.10.1 Top routine responsibilities taking the most of time

Considerable portion of the LHWs time is going into administrative work such as record keeping and health committee meetings. In addition to these responsibilities, they are also involved in Tuberculosis control, meetings with community members and family planning services. The following table presents the details

Table L58: Top routine responsibilities

Routine responsibilities	Swat Trained	Swat Untrained	Buner	Shangla
Record keeping and report writing	34 (68%)	32 (64%)	33 (67%)	33 (66%)
Health committee (Sehat) meetings	30 (60%)	33 (66%)	30 (61%)	30 (60%)
Health education	14 (28%)	12 (24%)	15 (31%)	11 (22%)
Tuberculosis control	8 (16%)	11 (22%)	4 (8%)	15 (30%)
Meetings with community members	17 (34%)	8 (16%)	6 (12%)	6 (12%)
Family planning services	8 (16%)	11 (22%)	11 (22%)	6 (12%)
Postnatal care	7 (14%)	5 (10%)	16 (33%)	8 (16%)
Advising EPI	7 (14%)	9 (18%)	5 (10%)	12 (24%)
Antenatal care	6 (12%)	10 (20%)	10 (20%)	7 (14%)
Infant checkups	4 (8%)	7 (14%)	11 (22%)	4 (8%)
N=All LHWs	50	50	49	50

Multiple response question

3.10.2 Overall workload

Many trained LHWs in Swat and LHWs in Shangla feel that they are overloaded with work. However, in Buner it seems that mostly the LHWs are satisfied with the workload

Table L59: Overall workload

	Swat Trained	Swat Untrained	Buner	Shangla
Too much workload	35 (70%)	18 (36%)	8 (16%)	32 (64%)
Appropriate level of workload	13 (26%)	25 (50%)	34 (69%)	16 (32%)
I can do more	2 (4%)	7 (14%)	7 (14%)	2 (4%)
N=All LHWs	50	50	49	50

Annexure 4 KAP Survey

4.1 KAP Survey- Demographics

4.1.1 Age of respondents

According to the findings, the average age of mothers interviewed is 26 years.

Table K1: Age of respondents

Age of respondents	Swat	Buner	Shangla	Total
15-19 years	19 (9%)	14 (7%)	9 (4%)	42 (7%)
20-24 years	54 (26%)	53 (25%)	54 (26%)	161 (26%)
25-29 years	75 (36%)	73 (35%)	81 (39%)	229 (36%)
30 years or more	62 (30%)	69 (33%)	66 (31%)	197 (31%)
Maximum age	45	45	40	45
Minimum age	15	16	18	15
Mean	26.4	26.8	26.3	26.5
N=All respondents	210	209	210	629

4.1.2 Education level of respondents

The table below shows the number of passed classes by the respondents.

Table K2: Education level of respondents

Education	Swat	Buner	Shangla	Total
No education	169 (80%)	186 (89%)	174 (83%)	529 (84%)
Less that Grade 5	11 (5%)	9 (4%)	9 (4%)	29 (5%)
Between Grade 5 – 9	14 (7%)	7 (3%)	10 (5%)	31(5%)
Matric (Grade 10)	11 (5%)	6 (3%)	8 (4%)	25 (4%)
Intermediate (Grade 12)	5 (2%)	1 (-)	9 (4%)	15 (2%)
Mean	10.0	6.4	8.1	8.4
N=All respondents	210	209	210	629

4.1.3 Age of the youngest child

Age distribution of the youngest child is almost normal. The break up of the ages of the youngest children is illustrated in the table below.

Table K3: Age of the youngest child

Age of the youngest child	Swat	Buner	Shangla	Total
0 month	26 (12%)	8 (4%)	8 (4%)	42 (7%)
1 month	5 (2%)	14 (7%)	13 (6%)	32 (5%)
2 months	19 (9%)	19 (9%)	11 (5%)	49 (8%)
3 months	8 (4%)	20 (10%)	22 (10%)	50 (8%)
4 months	13 (6%)	10 (5%)	11 (5%)	34 (5%)
5 months	20 (10%)	16 (8%)	10 (5%)	46 (7%)
6 months	9 (4%)	12 (6%)	20 (10%)	41 (7%)
7 months	12 (6%)	14 (7%)	14 (7%)	40 (6%)
8 months	22 (10%)	21 (10%)	22 (10%)	65 (10%)
9 months	16 (8%)	13 (6%)	16 (8%)	45 (7%)
10 months	17 (8%)	13 (6%)	21 (10%)	51 (8%)
11 months	25 (12%)	35 (17%)	32 (15%)	92 (15%)
12 months	18 (9%)	14 (7%)	10 (5%)	42 (7%)
Mean score	6.43	6.6	6.8	6.7
N=All respondents	210	209	210	629

4.1.4 Age at the time of marriage

As per survey findings, most of the women got married between the ages of 15-19 years (62%).

Table K4: How old are you when you got married
Age of the respondent at the time of marriage

Age at the time of marriage	Swat	Buner	Shangla	Total
Less then 10 years	6 (3%)	4 (2%)	0 (0%)	10 (2%)
10-14 years	39 (19%)	44 (21%)	28 (13%)	111 (18%)
15-19 years	134 (64%)	128 (61%)	129 (61%)	391 (62%)
20-24 years	28 (13%)	25 (12%)	46 (22%)	99 (16%)
25-29 years	2 (1%)	7 (3%)	6 (3%)	15 (2%)
30 years or more	1 (0%)	1 (0%)	0 (0%)	2 (0%)
Not ansared	0 (0%)	0 (0%)	1 (0%)	1 (0%)
Mean score	16.4	16.5	17.3	16.8
N=All respondents	210	209	210	629

4.1.5 Number of deliveries

On an average, mothers had four (4) deliveries and maximum number of deliveries turned out to be 15.

Table K5: Total number of deliveries

Number of deliveries	Swat	Buner	Shangla	Total
Maximum number	15	14	12	15
Minimum number	1	1	1	1
Mean	4.0	4.1	3.8	4.0
N=All respondents	210	209	210	629

Table K6: Number of alive deliveries

Number of alive deliveries	Swat	Buner	Shangla	Total
Maximum number	12	12	12	12
Minimum number	1	1	1	1
Mean	3.7	3.8	3.5	3.7
N=All respondents	210	209	210	629

Table K7: Number of dead children

Number of dead children	Swat	Buner	Shangla	Total
Maximum number	4	3	2	4
Minimum number	1	1	1	1
Mean	1.6	1.3	1.2	1.4
N=All respondents	210	209	210	629

4.1.6 Number of family members in the household

Findings show that in most cases, one household has around 12 family members living in it.

Table K8: Number of family members living in the household

Number of family members living in the household	Swat	Buner	Shangla	Total
5 or Less	14 (7%)	20 (10%)	15 (7%)	49 (8%)
6-10	100 (48%)	87 (42%)	74 (35%)	261 (41%)
11-20	72 (34%)	76 (36%)	99 (47%)	247 (39%)
21 or more	24 (11%)	26 (12%)	22 (10%)	72 (11%)
Maximum number	32	36	35	36
Minimum number	3	2	3	2
Mean	12.0	12.4	12.6	12.3
N=All respondents	210	209	210	629

4.2 Sources of Information about immunization

4.2.1 Sources of information about immunization

LHWs play a critical role in providing information about immunization to the mothers. If we include "vaccinators" and "EPI team", health facility and health personnel are secondarily important. Religious leaders' speech and radio are also influential.

Table K9: Sources of information about immunization

Sources of information	Swat	Buner	Shangla	Total
Lady Health Workers (LHWs)	89 (42%)	72 (34%)	69 (33%)	230 (37%)
From health facilities	49 (23%)	50 (24%)	34 (16%)	133 (21%)
Religious leaders speeches	23 (11%)	26 (12%)	27 (13%)	76 (12%)
Radio	17 (8%)	27 (13%)	17 (8%)	61 (10%)
TV	19 (9%)	13 (6%)	7 (3%)	39 (6%)
Vaccinators	4 (2%)	1 (0%)	27 (13%)	32 (5%)
Announcements in village	2 (1%)	5 (2%)	20 (10%)	27 (4%)
Village people	4 (2%)	11 (5%)	6 (3%)	21 (3%)
EPI team	5 (2%)	0 (0%)	5 (2%)	10 (2%)
Newspapers	3 (1%)	4 (2%)	1 (0%)	8 (1%)
Meetings organized by LHWs	0 (0%)	6 (3%)	1 (0%)	7 (1%)
Gatherings with family, relatives and neighbors	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Don't know	0 (0%)	3 (1%)	2 (1%)	5 (1%)
Not ansared	0 (0%)	1 (0%)	4 (2%)	5 (1%)
N=All respondents	210	209	210	629

Multiple response question

4.3 Attitude and Practice towards vaccination

4.3.1 Administration route of vaccines

What is administration route of vaccine?

The survey findings show that mostly people think that vaccination is administered by injection or drops (34%), while one fourth (24%) of the total respondents interviewed are not aware at all about how vaccination is administered.

Table K10: Administration route of vaccines

Vaccine routes	Swat	Buner	Shangla	Total
Injections and drops both	68 (32%)	74 (35%)	72 (34%)	214 (34%)
Only drops	38 (18%)	29 (14%)	71 (34%)	138 (22%)
Only injections	48 (23%)	40 (19%)	41 (20%)	129 (21%)
Don't know	56 (27%)	66 (32%)	26 (12%)	148 (24%)
N=All respondents	210	209	210	629

4.3.2 Knowledge of objective of vaccination

We evaluated mothers' knowledge by asking:

Do you think below sentences are right?

A major knowledge prevalent in these three districts is that vaccination prevents various diseases, while some also think that vaccines cure various diseases. Here again one fourth out of the total mothers interviewed have no knowledge regarding vaccines.

Table K11: Knowledge of objective of vaccination

Knowledge of the objective of vaccines	Swat	Buner	Shangla	Total
We use vaccines for preventing diseases	127 (60%)	131 (63%)	114 (54%)	372 (59%)
We use vaccines as a cure	31 (15%)	50 (24%)	79 (38%)	160 (25%)
We use vaccines for getting energy	3 (1%)	7 (3%)	1 (0%)	11 (2%)
We use vaccines for nutrition	1 (0%)	6 (3%)	1 (0%)	8 (1%)
Vaccines cause infertility	0 (0%)	0 (0%)	1 (0%)	1 (0%)
Don't know	64 (30%)	46 (22%)	38 (18%)	148 (24%)
N=All respondents	210	209	210	629

4.3.3 Willingness towards vaccination

Do you think vaccine is generally acceptable for your child?

The survey results have shown that almost all mothers agree to have their child vaccinated, with only a small number saying otherwise.

Table K12: Willingness towards vaccination

Willingness towards vaccination	Swat	Buner	Shangla	Total
Yes	203 (97%)	203 (97%)	191 (91%)	597 (95%)
No	7 (3%)	6 (3%)	19 (9%)	32 (5%)
N=All Respondents	210	209	210	629

4.3.4 Willingness for OPV and injection vaccination

Do you want to give OPV immunization to your child?
Do you want to give injection vaccination to your child?

Almost all the respondents are willing to give OPV immunization and injection vaccination to their children. This willingness is seen equally amongst all segments of respondents. Only in District Shangla, the ratio of unwilling respondents is slightly higher than the other two districts.

Table K13: Willingness for OPV and injection vaccination

	Swat	Buner	Shangla	Total
Willingness for OPV vaccination				
Yes	203 (97%)	208 (100%)	198 (94%)	609 (96%)
No	7 (3%)	1 (0%)	12 (6%)	20 (4%)
Willingness for Injection vaccination				
Yes	202 (96%)	199 (95%)	190 (90%)	591 (94%)
No	8 (4%)	10 (5%)	20 (10%)	38 (6%)
N=All Respondents	210	209	210	629

4.3.5 Importance of immunization

How do you value the immunization using the following vaccines? Please choose one which is the nearest to your idea for each vaccine.

The respondents were asked about the importance of immunization for each of the four diseases (mentioned in the table provided below) and were asked to choose the statement nearest to their views. Data analysis shows us that mothers consider immunization for all four diseases as extremely necessary for their children. The detail of their responses can be seen as follows:

Table K14: Importance of immunization

Importance of immunization	Swat	Buner	Shangla	Total
OPV				
Essential to my child	195 (93%)	168 (80%)	191 (91%)	554 (88%)
Moderately essential to my child	0 (0%)	3 (1%)	1 (0%)	4 (1%)
Not necessary for my child	1 (0%)	0 (0%)	1 (0%)	2 (0%)
Do not know/indecisive	14 (7%)	38 (18%)	17 (8%)	69 (11%)
Measles Vaccine – injection				
Essential to my child	193 (92%)	167 (80%)	187 (89%)	547 (87%)
Moderately essential to my child	0 (0%)	3 (1%)	2 (1%)	5 (1%)
Not necessary for my child	2 (1%)	2 (1%)	2 (1%)	6 (1%)
Do not know/indecisive	15 (7%)	37 (18%)	19 (9%)	71 (11%)
DPT-Hepatitis B (Injection)				
Essential to my child	192 (91%)	165 (79%)	186 (89%)	543 (86%)
Moderately essential to my child	0 (0%)	1 (0%)	3 (1%)	4 (1%)
Not necessary for my child	3 (1%)	4 (2%)	2 (2%)	9 (1%)
Do not know/indecisive	15 (7%)	39 (19%)	19 (9%)	73 (12%)
BCG (Injection)				
Essential to my child	194 (92%)	152 (73%)	187 (89%)	533 (85%)
Moderately essential to my child	0 (0%)	3 (1%)	2 (1%)	5 (1%)
Not necessary for my child	1 (0%)	3 (1%)	2 (1%)	6 (1%)
Do not know/indecisive	15 (7%)	51 (24%)	19 (9%)	85 (14%)
N=All respondents	210	209	210	629

4.3.6 Concerns and reasons for unwillingness towards vaccination

The major concerns about vaccinations are "family members' un-willingness" (2.2%); it's "available at far off places (1.4%)" and fear of infertility (0.8%). The responses are written in the table below.

Table K15-1: Proportion of mothers having concerns regarding vaccination

	Swat	Buner	Shangla	Total
Yes, I have concerns	8 (4%)	10 (5%)	20 (10%)	38 (6%)
No, I don't have any concern	202 (96%)	199 (95%)	190 (90%)	591 (94%)
N=All respondents	210	209	210	629

Table K15-2: Concerns regarding vaccination

Concerns regarding vaccination	Swat	Buner	Shangla	Total
Family members unwillingness	3 (1.4%)	4 (1.9%)	7 (3.3%)	14 (2.2%)
Because it is available at far off places	0 (0%)	1 (0.5%)	8 (3.8%)	9 (1.4%)
It may cause infertility	1 (0.5%)	0 (0%)	4 (1.9%)	5 (0.8%)
It may cause side effects	1 (0.5%)	3 (1.4%)	1 (0.5%)	5 (0.8%)
Because vaccination causes pain	1 (0.5%)	1 (0.5%)	2 (1.0%)	4 (0.6%)
Religious leaders advised not to immunize	2 (1.0%)	0 (0%)	1 (0.5%)	3 (0.5%)
Because I do not like it	0 (0%)	0 (0%)	3 (1.4%)	3 (0.5%)
Because my husband is abroad	0 (0%)	1 (0.5%)	0 (0%)	1 (0.2%)
N=All respondents	210	209	210	629

4.3.7 Importance of vaccination course to prevent disease

What is important for vaccination timing to prevent diseases?

Considerable portions (79%) of the total interviewed mothers are aware that it is important to complete the vaccination course; with 8% of the opinion that even half the course is fine. Similar trend is amongst each of the three districts.

Table K16: Importance of vaccination course to prevent disease

Importance of vaccination course	Swat	Buner	Shangla	Total
Complete the immunization course	164 (78%)	160 (77%)	173 (82%)	497 (79%)
Do at least half of the immunization course	25 (12%)	12 (6%)	14 (7%)	51 (8%)
I don't know	21 (10%)	37 (18%)	23 (11%)	81 (13%)
N=All respondents	210	209	210	629

4.3.8 Importance of vaccination timings to prevent disease

What is important for immunization to prevent diseases?

Mothers are then asked what is important for vaccination in order for them to prevent disease. Majority knew that it must be administered in predefined intervals to be effective. Following are the results:

Table K17: Importance of vaccination timings to prevent disease

Importance of vaccination timings	Swat	Buner	Shangla	Total
Give vaccine in a timely manner	132 (63%)	125 (60%)	163 (78%)	420 (67%)
It should be given as soon as possible	11 (5%)	27 (13%)	12 (6%)	50 (8%)
I don't know	67 (32%)	57 (27%)	35 (17%)	159(25%)
N=All respondents	210	209	210	629

4.4 Knowledge of EPI

4.4.1 Knowledge of disease preventable by EPI

Which of the following disease do you understand are preventable by EPI?

Respondents are asked to identify what diseases are preventable by EPI, as per their knowledge and awareness. Polio, Measles and Pertusis are the main diseases that are mentioned. The detail of the responses is shown in the table below.

Knowledge of Hepatitis B and Tetanus as EPI preventable diseases is also mentioned but the ratio of knowledge is very low. A little over one third (36%) of the total respondents from the three districts are unaware of diseases that can be prevented through immunization.

Table K18: Knowledge of diseases preventable by EPI

Diseases	Swat	Buner	Shangla	Total
Polio	91 (43%)	116 (56%)	131 (62%)	338 (54%)
Measles	101 (48%)	115 (55%)	126 (60%)	342 (54%)
Malnutrition	5 (2%)	5 (2%)	10 (5%)	20 (3%)
Pertussis	64 (30%)	61 (29%)	94 (45%)	219 (35%)
Pneumonia	0 (0%)	3 (1%)	0 (0%)	3 (0%)
Diarrhea	1 (0%)	1 (0%)	0 (0%)	2 (0%)
Diphtheria	4 (2%)	8 (4%)	5 (2%)	17 (3%)
Tetanus	35 (17%)	41 (20%)	32 (15%)	108 (17%)
Mental diseases	0 (0%)	2 (1%)	1 (0%)	3 (0%)
Hepatitis B	49 (23%)	47 (22%)	44 (21%)	140 (22%)
Hepatitis C	13 (6%)	18 (9%)	23 (11%)	54 (9%)
Malaria	1 (0%)	2 (1%)	1 (0%)	4 (1%)
Tuberculosis	4 (2%)	11 (5%)	25 (12%)	40 (6%)
Don't know	88 (42%)	71 (34%)	66 (31%)	225 (36%)
N=All respondents	210	209	210	629

Multiple response question

4.4.2 Knowledge about place where vaccines are available

Do you know where EPI vaccines are available?

Across the three districts, majority of mothers are aware of the place where vaccines are available.

Table K19: Knowledge about the place where vaccines are available

	Swat	Buner	Shangla	Total
Yes	198 (94%)	191 (91%)	189 (90%)	578 (92%)
No	12 (6%)	18 (9%)	21 (10%)	51 (8%)
N=All respondents	210	209	210	629

If your answer is yes to the previous question, where do you get routine EPI?

Almost all mothers who are aware of the place where vaccines are available. In most cases, (in all three districts) the answer is health center. Only in Buner and Shangla the respondents also mentioned "LHWs' health house". Although LHWs of these two districts have not started administering routine EPI.

Table K20: Place of availability

Places of availability	Swat	Buner	Shangla	Total
Health Center, Government Health Facility	194 (92%)	178 (85%)	144 (67%)	516 (82%)
LHWs' health house	0 (0%)	2 (1%)	9 (5%)	11 (2%)
Own house	0 (0%)	4 (2%)	28 (13%)	32 (5%)
In 'Hujra'	0 (0%)	7 (3%)	3 (2%)	10 (2%)
Vaccinator	4 (2%)	1 (1%)	3 (2%)	8 (1%)
In mosque	0 (0%)	0 (0%)	3 (2%)	3 (1%)
In the village	0 (0%)	0 (0%)	4 (2%)	4 (1%)
School	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Private hospital	0 (0%)	0 (0%)	0 (0%)	0 (0%)
N=All respondents	210	209	210	629

4.4.3 Place where their child received immunization

Where has your child under 1 year of age actually received routine immunization?

Majority of the mothers mentioned that their child under one year received immunization at a health center, government health facility. In Shangla however, "own house" and "LHWs health house" are also mentioned as the venue for immunization.

Table K21: Place where the child under 1 year received routine immunization

Place where child received immunization	Swat	Buner	Shangla	Total
Health Center, Government Health Facility	195 (93%)	180 (86%)	138 (66%)	513 (82%)
LHWs health house	0 (0%)	2 (1%)	9 (4%)	11 (2%)
Own house	0 (0%)	3 (1%)	24 (11%)	27 (4%)
In 'Hujra'	0 (0%)	4 (2%)	3 (1%)	7 (1%)
Vaccinator	4 (2%)	1 (0%)	9 (4%)	14 (2%)
Mosque	0 (0%)	0 (0%)	3 (1%)	3 (0.5%)
In the village	0 (0%)	0 (0%)	4 (2%)	4 (1%)
We don't get our children injected	2 (1%)	7 (3%)	2 (1%)	11 (2%)
Don't know	9 (4%)	12 (6%)	18 (9%)	39 (6%)
N=All respondents	210	209	210	629

4.5 Insistence on using new disposable syringes

Do you ask health workers (EPI Technicians, LHWs) use new disposable syringes for your children to give routine immunization?

Only 41% responded positively while the remaining 45% mentioned that they never asked the vaccinators to do this. 14% mentioned "don't know". The segment analysis shows that mothers in Swat are more careful and aware of using new syringes, and this ratio is very low for mothers in Shangla district. The table below explains the same in detail.

Table K22: Insistence on using new disposable syringes

	Swat	Buner	Shangla	Total
Yes	131 (62%)	80 (38%)	45 (21%)	256 (41%)
No	60 (29%)	87 (42%)	137 (65%)	284 (45%)
Don't know	19 (9%)	42 (20%)	28 (13%)	89 (14%)
N=All respondents	210	209	210	629

4.6 Side effects after immunization

4.6.1 Experience of side effects

Do your children have experiences of any side effect after immunization?

81% of the mothers said that their children experienced side effects after immunization.

Table K23: Experience of side effects

	Swat	Buner	Shangla	Total
Yes	166 (79%)	170 (81%)	173 (82%)	509 (81%)
No	30 (14%)	18 (9%)	11 (5%)	59 (9%)
Don't know	14 (7%)	21 (10%)	26 (12%)	61 (10%)
N=All respondents	210	209	210	629

4.6.2 Side effects after immunization

Most common side effect after immunization is fever.

Table K24: Side effects after immunization

Side effects	Swat	Buner	Shangla	Total
Fever	164 (99%)	166 (98%)	173 (100%)	503 (99%)
Swelling at the place where injection administered	3 (2%)	1 (1%)	5 (3%)	9 (2%)
Infertility	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Rash	0 (0%)	1 (1%)	0 (0%)	1 (0%)
Cough	3 (2%)	3 (2%)	0 (0%)	6 (1%)
Paralysis	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Headache	0 (0%)	2 (1%)	0(0%)	2 (0%)
N= Mothers who mentioned that their children experienced side effects	166	170	173	509

Multiple response question

4.6.3 Knowledge about side effects after immunization

What kind of side effects do you know after immunization?

Mothers were asked about their awareness regarding side effects after immunization. They mentioned:

Table K25: Knowledge about side effects after immunization

Side effects	Swat	Buner	Shangla	Total
Fever	27 (90%)	16 (89%)	2 (18%)	45 (76 %)
Infertility	1 (3%)	0 (0%)	0 (0%)	1 (2 %)
Don't know	2 (7%)	2 (11%)	9 (82%)	13 (22 %)
N=Mothers who mentioned that their child did not experience any side effects	30	18	11	59

Multiple response question

4.6.4 Concern about mild fever after DPT-Hep B vaccine

In order to understand whether mothers understood fever after DPT-Hepatitis B Vaccine, they were asked the following two questions

Supposed your child is caused mild fever for a short period after the injection of DPT-Hep. B vaccine, are you concerned that it may cause harm to your child?

Table K26: Concern about mild fever after DPT-Hep B vaccine

	Swat	Buner	Shangla	Total
Yes, will be concerned	3 (1%)	29 (14%)	3 (1%)	35 (6%)
No, will not be concerned	191 (91%)	122 (58%)	168 (80%)	481 (76%)
Don't know	16 (8%)	58 (28%)	39 (19%)	113 (18%)
N=All respondents	210	209	210	629

Do you think that it is a sign that vaccine is taking effect in the body?

Table K27: Sign that mild fever after DPT-Hep B vaccine is taking an effect in the body

	Swat	Buner	Shangla	Total
Yes this is sign of vaccine taking effect	131 (62%)	110 (53%)	92 (44%)	333 (53%)
No, this is not a sign of vaccine taking effect	7 (3%)	15 (7%)	8 (4%)	30 (5%)
Don't know	72 (34%)	84 (40%)	110 (52%)	266 (42%)
N=All respondents	210	209	210	629

4.6.5 Concern about swelling and redness of 3cm radius after DPT-Hep B vaccine

Once again in order to check their understanding of reaction of the vaccine, they were first asked for their concerns about swelling and redness and later whether they believe that this is a sign of the vaccine taking effect in the body.

According to the respondents, swelling and redness of 3cm radius at the place of injection (left thigh) is natural and a sign of medicines taking effect in the body.

Suppose your child caused swelling and redness with 3cm radius (showing card) at the injection site (left thigh) after the injection of DPT-Hep. B vaccine, are you concerned that it may cause harm to your child?

Table K28: Concern about swelling and redness with 3cm radius after DPT-Hep B vaccine

	Swat	Buner	Shangla	Total
Yes, concerned	6 (3%)	19 (9%)	5 (2%)	30 (5%)
No, not concerned	186 (89%)	120 (57%)	166 (79%)	472 (75%)
Don't know	18 (9%)	70 (33%)	39 (19%)	127 (20%)
N=All respondents	210	209	210	629

Table K29: Sign that swelling and redness with 3cm radius after DPT-Hep B vaccine is taking an effect in the body

Do you think that it is a sign that vaccine is taking effect in the body?

	Swat	Buner	Shangla	Total
Yes this is sign of vaccine taking effect	124 (59%)	108 (52%)	93 (44%)	325 (52%)
No, this is not a sign of vaccine taking effect	10 (5%)	14 (7%)	3 (1%)	27 (4%)
Don't know	76 (36%)	87 (42%)	114 (54%)	277 (44%)
N=All respondents	210	209	210	629

4.7 Acceptability of Lady Health Worker in Routine EPI

4.7.1 Acceptability of LHWs in routine EPI

If LHWs in your village/town work for routine EPI activities such as measles vaccine injection, do you accept them?

Almost all the mothers have shown their acceptability for LHWs being assigned the duty of working for EPI (96%).

Table K30: Acceptability of LHWs in routine EPI

	Swat	Buner	Shangla	Total
Yes	202 (96%)	203 (97%)	197 (94%)	602 (96%)
No	8 (4%)	6 (3%)	13 (6%)	27 (4%)
N=All respondents	210	209	210	629

4.7.2 Reasons for acceptability

If you choose to accept LHWs for routine EPI, please specify your idea?

The main reason behind this high acceptability ratio by the mothers is shown in the table below.

Table K31: Reasons for acceptability of LHWs in routine EPI

Reasons for acceptability	Swat	Buner	Shangla	Total
I do not have to go to the health center	190 (94%)	163 (80%)	196 (99%)	549 (91%)
LHWs can come to vaccinate their children at my home	4 (2%)	39 (19%)	0 (0%)	43 (7%)
Because I want to meet LHWs more often	0 (0%)	1 (0%)	1 (1%)	2 (0%)
Because I want to visit LHWs health house	0 (0%)	1 (0%)	0 (0%)	1 (0%)
LHW is not available	7 (3%)	0 (0%)	0 (0%)	7 (1%)
No need to go to hospital	1 (0%)	1 (0%)	0 (0%)	2 (0%)
N= Mothers showing acceptability	202	203	197	602

4.7.3 Reasons for unacceptability

If you choose not to accept LHWs for routine EPI, please specify your idea?

A very negligible portion that showed unacceptability have following reasons to state:

Table K32: Reasons for unacceptability of LHWs in routine EPI

Reasons for unacceptability	Swat	Buner	Shangla	Total
Because I don't want LHWs coming to my house	3 (38%)	2 (33%)	3 (23%)	8 (30%)
Because I don't want to give vaccine to my child	1 (13%)	3 (50%)	3 (23%)	7 (26%)
Because my family member(s) don't like LHWs	0 (0%)	1 (17%)	4 (31%)	5 (19%)
Because hospital is at a distant	1 (13%)	0 (0%)	2 (15%)	3 (11%)
Because my family member(s) don't like vaccination	2 (25%)	0 (0%)	0 (0%)	2 (7%)
Because I don't want to visit LHWs health house	0 (0%)	0 (0%)	1 (8%)	1 (4%)
Because our religious leaders say "no vaccines"	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Because our community leaders say "no vaccines"	0 (0%)	0 (0%)	0 (0%)	0 (0%)
LHW don't come/ visit	1 (13%)	0 (0%)	0 (0%)	1 (4%)
N=Mothers showing unacceptability	8	6	13	27

4.7.4 Preferred place of vaccination

If your child gets immunization by LHWs, where do you like to be vaccinated?

Majority of the mothers prefer that LHWs come to their house for vaccination. This statement is seen almost equally amongst mothers belonging to all districts.

Table K33: preferred place of vaccination by LHW

Preferred place of vaccination	Swat	Buner	Shangla	Total
At my own house	199 (95%)	187 (89%)	192 (91%)	578 (92%)
Both own house or LHWs house are OK	3 (1%)	11 (5%)	0 (0%)	14 (2%)
Hospital	2 (1%)	0 (0%)	2 (1%)	4 (1%)
At LHWs health house	0 (0%)	2 (1%)	0 (0%)	2 (0%)
Others	2 (1%)	0 (0%)	1 (0%)	4 (1%)
Don't know	4 (2%)	9 (4%)	15 (7%)	28 (4%)
N=All respondents	210	209	210	629

Multiple response question

4.8 Antenatal Care

4.8.1 Place of receiving antenatal care

According to the survey findings, mostly the mothers receive antenatal care at their own house (50%) or at the health house (20%).

Table K34: Place of receiving antenatal care

Place of receiving antenatal care	Swat	Buner	Shangla	Total
At own house	135 (64%)	80 (38%)	97 (46%)	312 (50%)
At the health house	28 (13%)	33 (16%)	65 (30%)	126 (20%)
At the hospital	5 (2%)	6 (3%)	1 (0%)	12 (2%)
At lady doctor's clinic	6 (3%)	2 (1%)	0 (0%)	8 (1%)
Do not get antenatal care	9 (4%)	41 (20%)	1 (0%)	51 (8%)
Others	8 (4%)	2 (1%)	1 (0%)	11 (2%)
Don't Know	19 (9%)	45 (21%)	46 (22%)	110 (17%)
N=All respondents	210	209	210	629

Multiple response question

4.8.2 Frequency of antennal care

As per the data, antenatal care is taken 4 times on average. Amongst the three districts, this is lowest in District Shangla, which has a reported average of 2.7.

Table K35: Frequency of antenatal care received during last pregnancy

Frequency	Swat	Buner	Shangla	Total
Zero	52 (25%)	67 (32%)	14 (7%)	133 (21%)
Once	17 (8%)	8 (4%)	19 (9%)	44 (7%)
Twice	24 (11%)	16 (8%)	42 (20%)	82 (13%)
Thrice	10 (5%)	10 (5%)	5 (2%)	25 (4%)
Four times	8 (4%)	4 (2%)	6 (3%)	18 (3%)
Don't know	57 (27%)	83 (40%)	115 (55%)	255 (41%)
Mean	5.2	4.6	2.7	4.2
N=All respondents	210	209	210	629

4.8.3 Duration of antenatal care

The average duration of antenatal care is 13 minutes. The following table provides the district wise data.

Table K36: Time taken to conduct antenatal care

Time taken	Swat	Buner	Shangla	Total
1-15 minutes	91 (43%)	88 (42%)	89 (42%)	268 (43%)
16-30 minutes	19 (9%)	4 (2%)	17 (8%)	40 (6%)
31 minutes and more	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Don't know	96 (46%)	108 (52%)	91 (43%)	295 (47%)
Mean	13.3	10.9	14.1	12.9
N=All respondents	210	209	210	629

4.8.4 Mother's card

Did you receive mother's card at the first visit during your last pregnancy?

Less than one fifth of the mothers in all the three districts mentioned that they have received mother's card at the first ANC visit of the LHW during their last pregnancy. The ratio of receiving mother's card is lower in Buner and Shangla as compared to Swat.

Table K37: Mother's card

Mother's card	Swat	Buner	Shangla	Total
Yes, I did receive	43 (20%)	29 (14%)	31 (15%)	103 (16%)
No, I didn't	108 (51%)	124 (59%)	125 (60%)	357 (57%)
Don't know	59 (28%)	56 (27%)	54 (26%)	169 (27%)
N=All respondents	210	209	210	629

4.8.5 Services received during antenatal care

Majority of the mothers don't remember/know what kind of services they received. Some mother remembered "Referral to health facility" (11%), "notification about the expected dates of delivery" (8%) and Syphilis information (5%).

Table K38: Services received during antenatal care visit

Services received during antenatal care visit	Swat	Buner	Shangla	Total
Referral to health facility	30 (14%)	19 (9%)	22 (10%)	71 (11%)
Notification to mothers of their expected dates of delivery	13 (6%)	4 (2%)	34 (16%)	51 (8%)
Syphilis information	2 (1%)	3 (1%)	24 (11%)	29 (5%)
Advise to mothers on danger signs i.e. bleeding, swelling, Amniotic fluid outburst, severe pain	5 (2%)	0 (0%)	33 (16%)	38 (6%)
Measuring of fundus (growth of the baby)	3 (1%)	6 (3%)	0 (0%)	9 (1%)
Palpation of abdomen (babies growth, cephalic position and presentation)	9 (4%)	4 (2%)	2 (1%)	15 (2%)
Advice in observing fetal movement	4 (2%)	5 (2%)	3 (1%)	12 (2%)
Malaria information	1 (0%)	1 (0%)	4 (2%)	6 (1%)
HIV information	2 (1%)	0 (0%)	4 (2%)	6 (1%)
Advise to mothers on frequency of contact before delivery	2 (1%)	3 (1%)	6 (3%)	11 (2%)
Hospitals	3 (1%)	0 (0%)	1 (0%)	4 (1%)
Don't know/remember	155 (74%)	171 (82%)	140 (67%)	466 (74%)
N=All respondents	210	209	210	629

4.9 Postnatal Care

4.9.1 Place of postnatal care

Postnatal care is mostly provided by family member at own house. The ratio of postnatal care by LHWs is relatively higher in Shangla as compared to the other two districts.

Table K39: Place of postnatal care

Place of postnatal care	Swat	Buner	Shangla	Total
Family member provided this care	130 (62%)	80 (38%)	84 (40%)	199 (32%)
LHW visited the house	25 (12%)	20 (10%)	49 (23%)	94 (15%)
Visited the health house with the baby	1 (0%)	2 (1%)	0 (0%)	3 (0%)
Visited the health house without the baby	0 (0%)	2 (1%)	2 (1%)	4 (1%)
Hospital	3 (1%)	1 (0%)	1 (0%)	5 (1%)
Doctor's clinic	0 (0%)	1 (0%)	0 (0%)	1 (0%)
No post natal care is undertaken	14 (7%)	27 (13%)	13 (6%)	54 (9%)
Don't know	35 (17%)	72 (34%)	61 (29%)	168 (27%)
N=All respondents	210	209	210	629

Multiple response question

4.9.2 Frequency and time taken of postnatal care

Mothers are visited by LHWs for PNC two times on average and mothers visited health house for PNC after the last pregnancy.

Table K40: Number of visits of LHWs to mothers for PNC

	Swat	Buner	Shangla	Total
1	7 (28%)	4 (20%)	7 (14%)	18 (19%)
2	9 (36%)	7 (35%)	32 (65%)	48 (51%)
3	1 (4%)	2 (10%)	5 (10%)	8 (9%)
4	1 (4%)	1 (5%)	3 (6%)	5 (5%)
5	1 (4%)	0 (0%)	0 (0%)	1 (1%)
Don't know	1 (4%)	3 (15%)	2 (4%)	6 (6%)
LHW not available	5 (20%)	3 (15%)	0 (0%)	8 (9%)
Mean	2.0	2.0	2.1	2.0
N=Mothers who are visited by LHWs	25	20	49	94

Table K41: Number of visits of mothers to LHWs for PNC

	Swat	Buner	Shangla	Total
0				
1	19 (9%)	7 (3%)	23 (11%)	49 (8%)
2	14 (7%)	14 (7%)	10 (5%)	38 (6%)
Don't know	36 (17%)	97 (46%)	70 (33%)	203 (32%)
Not visited health house	129 (61%)	33 (16%)	93 (44%)	255 (41%)
Health house is not available	2 (1%)	14 (7%)	1 (0%)	17 (3%)
Mean score	1.8	1.9	1.4	1.7
N=All respondents	210	209	210	629

Table K42: Time taken in postnatal care

Minutes	Swat	Buner	Shangla	Total
1-15	10 (5%)	8 (4%)	24 (11%)	42 (7%)
16-30	4 (2%)	4 (2%)	15 (7%)	23 (4%)
More than 30	0 (0%)	2 (1%)	1 (0%)	3 (0%)
Don't know	196 (93%)	195 (93%)	170 (81%)	561 (89%)
Mean	14.6	12.9	15.4	14.8
N=All respondents	210	209	210	629

4.9.3 Services received during postnatal care

Post natal services mostly include examination of mother, care of umbilical cord and promotion of early breast feeding. Following table presents the details.

Table K43: Services received during postnatal care

Services received during postnatal care	Swat	Buner	Shangla	Total
Examination of the whole body of mother	31 (15%)	12 (6%)	33 (16%)	76 (12%)
Care of umbilical cord	16 (8%)	7 (3%)	34 (16%)	57 (9%)
Promotion of early breast feeding	19 (9%)	13 (6%)	24 (11%)	56 (9%)
Eye care of newborn	6 (3%)	6 (3%)	29 (14%)	41 (7%)
Advice on BCG birth-dosing	4 (2%)	3 (1%)	31 (15%)	38 (6%)
Iron supplementation to postnatal mothers	7 (3%)	13 (6%)	9 (4%)	29 (5%)
Examination of whole body of newborn	1 (0%)	3 (1%)	29 (14%)	33 (5%)
Folic acid supplementation to postnatal mothers	11 (5%)	11 (5%)	12 (6%)	34 (5%)
Advice of OPV birth dosing	4 (2%)	2 (1%)	9 (4%)	15 (2%)
Other EPI immunization	1 (0%)	0 (0%)	6 (3%)	7 (1%)
Plotting growth monitoring sheet	1 (0%)	1 (0%)	6 (3%)	8 (1%)
Others	4 (2%)	6 (3%)	1 (0%)	11 (2%)
Don't know	147 (70%)	162 (78%)	139 (66%)	448 (71%)
N=All respondents	210	209	210	629

4.10 Health Service on fee basis by LHWs

When asked whether LHWs charged any amount for providing medical services to the mothers, very few said that they have received fee-based services from LHWs. Only in Buner, a high number of mothers mentioned that LHWs charged fee for providing health services.

Table K44: Fee charged by LHWs

Whether fee charged	Swat	Buner	Shangla	Total
Yes	2 (1%)	24 (11%)	1 (0%)	27 (4%)
No	177 (84%)	123 (59%)	157 (75%)	457 (73%)
LHW is not available	4 (2%)	42 (20%)	27 (13%)	73 (12%)
Don't know	27 (13%)	20 (10%)	25 (12%)	72 (11%)
N=All respondents	210	209	210	629

Annexure 5. 30 cluster sampling

This method meets the following standards of reliability:

- The results of the survey will have a level of accuracy of (within) plus or minus 10%.
- The level of confidence is 95%.

Sample size
Within each cluster, seven mothers were selected for the interviews. 210 mothers are selected in each district and 630 were selected in total.

Sampling methodology
- Lists of Villages as per the 1998 Census are used as the sampling frame.
- By calculating the cumulative population of villages in each district using **Excel sheet, sampling interval** was identified as follows:

$$\frac{\text{Population of the district}}{30} = \text{Sampling Interval (SI)}$$

- Using ***EPI info***, a random number was selected.
  - Villages with cumulative population equal to or beyond the random numbers are selected as Cluster 1.
  - To identify Cluster 2 location, the formula below was used:
    **Random number + sampling interval = Cluster 2*
  - To Identify Clusters 3-30, the formula below was used:
    **The number, which identified the Sampling Location of the previous cluster +sampling interval*

Sampling of seven subjects in each cluster (house to house visit)
- The starting household for the survey within the village was selected randomly from the latest voters list (2004) of the village. Voters' lists were obtained from District Election Office.
- The next household was the nearest to the previous. Surveyors continued visiting the households until SEVEN mothers in each cluster were complete.
- For multi-family dwellings: a house hold is defined as a group of people sharing the same kitchen.
- Spin bottle method* is adopted if the first contact could not be found.

Spin bottle method:
The first household for interview was selected via spin bottle method; this method uses a bottle which is spun around. The direction where it points when it stops spinning is the first selected household for the interview.

Annexure 6. Kish Grid

Kish grid was used if we came across more than one mother with a child less than 12 months of age within the same household. In that case, the names of all such members were listed down with respect to their ages in descending order. Target person was selected randomly using following computer generated random chart.

CONTACT	Number of Mothers with child less than 12 months											
No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	1	2	2	2	2	6	6	2	3	6	5	10
2	1	1	1	3	2	3	5	6	9	2	2	8
3	1	2	1	3	4	3	5	6	3	9	5	10
4	1	2	2	4	1	1	5	1	5	5	5	10
5	1	1	2	4	3	5	6	6	2	4	6	4
6	1	2	2	2	2	4	1	3	9	8	10	4
7	1	2	3	1	4	2	3	8	9	1	10	9
8	1	1	3	1	3	5	1	3	5	5	7	8
9	1	1	3	2	4	2	3	2	1	3	7	7
10	1	1	1	2	5	1	3	4	1	7	9	11

Suppose we are going to the fourth household and the number of our target respondent in that household is five. The cell representing fourth contact number and five number of female in the above chart will show the serial number of person to be contacted in the household which in this case will be the first person in the ordered list.

Annexure 7. Questionnaires

7.1 Questionnaire for EPI Center

Date: _____

1. Background information

Name of Facility:

Type of Facility: BHU/CD/RHC/THQ/CH/DHQ/ other ( )

*Basic Health Center, Civil Dispensary, Teshil Head Quarter, Civil Hosp, District Head Quarter

Total catchment population:

Catchment population <1 year old:

2. Human Resource

	EPI Tech.	Medical Tech.	LHS	LHV	Medical Officer	Dispenser	Other ( )	Other ( )
No. of staff								
No. of staff who administers EPI when EPI tech. is busy or not available.								

Profile of EPI technicians

	EPI Technician1	EPI Technician2	EPI Technician3
Age			
Sex			
Years of experience as EPI Technician			
When is the last refresher training on routine EPI? year of ( ), I can't remember, No refresher training			

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3. Facility/Infrastructure

Distance from EDO (H) Office ( ) km

By car (a)	By walk (b)	Total (a)+(b)
Minutes	Minutes	minutes

Electricity failure: Frequency;
( ) No supply
( ) 3 days or more/week,
( ) 1 to 2 days/week,
( ) <1 day/w

Duration of no electricity;
( ) always half day or less,
( ) some times more than half day

Water supply: Yes / No

Telephone

Fixed phone in the FLCF	Your own mobile phone	Mobile phone of other staff in the same FLCF	PCO with in 5 minutes walking distance
Y / N	Y / N	Y / N	Y / N

4. Transportation

No. of transportation of EPI technicians

	Car	Motorbike	Bicycle	Others ( )
Official				
Private				

Payment/budget a month for your routine work. (NOT including polio campaign, other events)

	POL	Public transportation
From your pocket	Rs.	Rs.
From district/donors	Rs.	Rs.

5. Cold chain equipment **Observation**

Detail of Cold chain equipment that requires power/energy

Type*1				
Maker Model				
Power*2				
Refrigerator Capacity	liter	liter	Liter	liter
Freezer Capacity	liter	liter	Liter	liter
Total Capacity *3	liter	liter	Liter	liter
Year of installation				
Condition*4				
If NR, when?				

*1 A: Upright type, B: Chest type,
*2 E: Electricity, G: Gas, K: Kerosene, S: Solar power, EG: E+G, EK; E+K
*3 If data of capacity of refrigerator and freezer individually, fill in only "Total Capacity". If the data of capacity is not available, write "NA".
*4 F: Function well, R: Not function well but repairable, NR: Not Reparable

Equipment	Available	Function well	Not function well but repairable	Not Repairable
Cold Box				
Vaccine Carrier				
Thermometer*5				
Stabilizer				

*5 NOT including thermometers fixed on the door of refrigerators

5. Do you have shortage of equipment/material now? **(Read one by one)**

Stationary Y / N
Reporting forms of EPI Y / N
Register books of EPI Y / N
Furniture Y / N
Others ( )

6. Involvement of LHWs

In your area, how many LHW? ( )
LHWs have started to administer routine EPI after completion of 1st batch training? Y / N
If yes, how many LHWs? ( )

7. Outreach/mobile activity/ fixed cite session by EPI technician

How many days a week do your EPI center have fixed cite session? ( )

Which days of week do you provide BCG at EPI center? (Mon, Tue, Wed, Thu, Fri, Sat)

Which days of week do you provide measles at EPI Center? (Mon, Tue, Wed, Thu, Fri, Sat)

	Population covered by outreach/mobile activity	Population covered by outreach/mobile activity where LHWs are available	Population covered by outreach/mobile activity where LHWs are NOT available
Population			
Number of Areas			
Days*			

* How many days do you need to cover the population?

7. Safe injection

a) Do you have shortage of safety boxes now? Y / N

b) Do you have shortage of AD syringes now? Y / N

c) Used syringes are disposed out of safety boxes? **Observation** Y / N

8. Communication/social mobilization

8-1. How does your EPI center encourage/convince/inform community people to bring children to fixed cite session at EPI center? (NOT ask one by one, just ask "anything else?")

Door to door visit Y / N

Through LHWs Y / N

Through LHV Y / N

Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose. Y / N

Requesting clients of EPI to encourage/inform their neighbors/friends /relatives Y / N

Communicate with community leaders/religious leaders Y / N

Communicate with teachers Y / N

Mosque announcement Y / N

Local radio Y / N

Printed materials Y / N

Other ( )

10-2. How does your EPI center encourage/convince/inform community people to bring children to out-reach session in the village? (NOT ask one by one, just ask "anything else?")

Door to door visit Y / N

Through LHWs Y / N

Through LHV

Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose. Y / N

Requesting clients of EPI to encourage/inform their neighbors/friends /relatives Y / N

Communicate with community leaders/religious leaders Y / N

Communicate with teachers Y / N

Mosque announcement Y / N

Local radio Y / N

Printed materials Y / N
Other ( )

9. What major difficulties do you have during your daily activities of routine EPI except equipment and refusal cases? (Write as many as possible) (Do NOT read one by one)

(1). Low salary
(2). No or insufficient POL
(3). Hard to reach areas
(4). Shortage of vaccine, vaccine stock out
(5). Over workload, too busy, shortage of number of EPI technicians
(6). Frequent campaign (Polio campaign, TT campaign)
(7). Less awareness of people on EPI
(8). Because EPI technicians are not local, so they are not accepted/welcomed by the local people.
(9). Negative propaganda of EPI/polio by religious leaders
(10). Others ( )

10. What contents do you want to learn during the next refresher training? Please mark top three contents.(Show Card)

(1). Social mobilization and communication to persuade people to accept EPI
(2). Communication skill with religious/community people
(3). Organization of EPI sessions
(4). Record keeping
(5). Management of drop-out
(6). About new vaccines which have not been used in EPI
(7). Clinical aspects of the EPI target diseases
(8). Knowledge to answer to frequently asked questions from people
(9). How to store and transport vaccines
(10).Cold chain management/minor repair
(11).Vaccine side effects
(12).How to estimate the target population
(13).How to calculate the EPI coverage
(14).Safe injection
(15).Mutual learning from other EPI technicians
(16).How to provide health education to community people
(17).Others ( )

11. What kind of support from district, province and partners do you need besides equipment ? (Write as many as possible)(Do NOT read one by one)

(1). Salary, incentive
(2). POL
(3). Refresher training
(4). Regular supervision
(5). District team convinces people on EPI
(6). Others ( )

12. Documentation/record keeping **Observation**

Monthly Progress Chart 2006 is pasted on the wall Y / N

Monthly Progress Chart 2007 is pasted on the wall Y / N

	Inventory Sheet	Stock register	Daily EPI register	Permanent EPI register	List of defaulter	Outreach plan for routine EPI
Available or not	A/NA	A/NA	A/NA	A/NA	A/NA	A/NA
Updated	Y*1/N	Y*2/N	Y*3/N	Y*3/N		A/NA for this month

*1 be filled in until yesterday
*2 to be filled in until last delivery
*3 to be filled in until last session

13. Vaccine logistics

Diluent is kept in refrigerator? Y / N

Observation

Comparing amount of vaccine in the record and exact amount of vaccine in the cold chain

	BCG	BCG Diluent	OPV Polio	Combo DPT-Hep B	TT	Measles	Measles Diluent
Record							
Exact amount							
If the difference is two or more, check.							

14. Supervision

How many times of supervision confirmed by signatures of supervisors did you received in the last three months for routine EPI? (Count signatures on Daily EPI register)

Observation

EDO (H)	EPI Coordinator	DSV	TSV	MO in the FLCF

7.2 Questionnaire for LHWs

General information

1. How old are you?
   ____ years old.
2. How long have you been educated in school?
   __ years
3. How many years have you been working as a LHW?
   ___years
4. What is the current population of your catchment area?
   _____persons
5. What is the current population of <1 children in your catchment area?
   _____persons
6. What is the total number of deliveries in your catchment area you are registering in 2006?
   _____persons
7. How many days do you work a week?
   _____days
8. From what time to what time do you work except report writing a day except Friday?
   From __:__ to __:__

EPI

1. Do the followings belong to your formal job tasks?

Monthly Progress Chart 2006 is pasted on the wall	Y / N
Polio immunization campaign	Y / N
TT immunization campaign	Y / N
Educating mothers on EPI	Y / N
Providing referral slips for children due for routine EPI doses	Y / N
Assistance to EPI technicians in outreach routine EPI sessions	Y / N
Following up defaulters of routine EPI	Y / N

2. Have you experienced refusal cases of Polio campaign? Y / N
   (If no, skip to question 4

3. If yes, do the following reason(s) of refusal apply to the OPV campaign?

Religious leaders are against polio immunization	Y / N
People think getting vaccine is against God's will	Y / N
People are skeptical why vaccinate even before catching disease	Y / N
People and/or religious leaders think that OPV contain family planning Substances	Y / N
People and/or religious leaders think that OPV contain prohibited substances for Muslims such as pork components	Y / N
People and/or religious leaders link OPV with foreign NGOs some of which are Christian based organization, therefore doubt their relevance	Y / N
People fear vaccine side-effects	Y / N
People refuse to take babies out of their house to immunize	Y / N
Other reasons (specify_____)	

4. Have you experienced any of the following negative impact of the OPV campaign?

Too much additional workload Y / N
You have to travel to out of your catchment area Y / N
Because some religious leaders are against OPV, it hurts your reputation Y / N
The refusal of OPV is causing refusal of other vaccines as well Y / N
Others (specify _____)

5. Has any TT campaign conducted while you have been on duty as LHW? Y / N

6. Have you experienced refusal cases during last TT campaign (December 2006)?
If no, skip to question 8. Y / N

7. If yes, do the following reason(s) of refusal apply to the TT campaign in your catchment area?
Religious leaders are against TT immunization Y / N
People think getting vaccine is against God's will Y / N
People are skeptical why vaccinate even before catching disease Y / N
People and/or religious leaders think that TT contain family planning Substances Y / N
People and/or religious leaders think that TT contain prohibited substances for Muslims such as pork components Y / N
People and/or religious leaders link TT with foreign NGOs some of which are Christian based organization, therefore doubt their relevance Y / N
People fear vaccine side-effects Y / N
Women are afraid of the pain caused by injection Y / N
Other reasons (specify_____)

8. Have you been trained for routine EPI vaccinations? Y / N
If 'No', please skip to No. 25.

9. If yes, are you now conducting the actual inoculation of routine EPI? Y / N
If 'No', please skip to No. 25.
If the LHW is currently conducting the actual inoculation of routine EPI vaccines, continue to the next questions. If not, skip to question No. 25.

10. Is the six months training enough to conduct routine EPI? Y / N

11. Have you experienced any shortage of below equipment/materials/medicine for your activities in past one year?
Vaccine(s) Y / N
Specify which vaccine(s) if yes _____
Vaccine carriers Y / N
Icepacks Y / N
Stationary (e.g. pens and papers) Y / N
AD syringes Y / N
Safety boxes Y / N
Reporting and recording forms for EPI Y / N
Others (specify_____)

12. Have you experienced any refusal of routine EPI? If no, skip to question 14. Y / N

13. Do the following reason(s) of refusal apply to your catchment area?
Religious leaders are against injection vaccines for children Y / N
People think getting vaccine is against God's will Y / N

People are skeptical why vaccinate even before catching disease	Y / N
People and/or religious leaders think that some injection vaccines for children contain family planning substances	Y / N
People and/or religious leaders think that injection vaccines for children contain prohibited substances for Muslims such as pork components	Y / N
People and/or religious leaders link vaccines with foreign NGOs some of which are Christian based organization, therefore doubt their relevance	Y / N
People fear vaccine side-effects	Y / N
People are afraid of pain caused to their child	Y / N
People refuse to take babies out of their house to immunize	Y / N
Other reasons (specify_____)	

14. What difficulties do you have during your daily activities of routine EPI except equipment and refusal cases? (Write as many as possible)

Increased workload caused by routine EPI	Y / N
Shortage of remuneration of the routine EPI activity	Y / N
Mothers don't bring children out of house to get service due to superstition	Y / N
Because some religious leaders are against EPI, it hurts your reputation	Y / N
Difficult working relation with EPI technician	Y / N
Have to iste a lot of vaccine doses because the target population is minimal	Y / N
Others (specify _____)	

15. Do you need refresher training on EPI? Y / N

16. Which are the contents do you want to learn most in the next refresher training? Please mark the top three contents you want to learn.

1) Social mobilization and communication to persuade people to accept EPI
2) About new vaccines
3) Clinical aspects of the EPI target diseases
4) Organization of EPI sessions
5) Knowledge to answer to frequently asked questions from people
6) How to store and transport vaccines
7) How to reach to un-reached population
8) Vaccine side effects
9) How to estimate the target population
10) How to calculate the EPI coverage
11) Safe injection
12) Others (specify_____)

17. What kind of support from district, province and partners do you need besides equipment? Please mark the top three support contents you need the most.

More frequent supervision	Y / N
More systematic feedback after supervision	Y / N
Supervision by FEMALE supervisors, not male	Y / N
More frequent EPI training	Y / N
Certificate after EPI training	Y / N
To resolve shortage of vaccine(s)	Y / N
Help convincing people to accept EPI	Y / N
Help convincing religious leaders to accept EPI	Y / N
Provision of transportation mean and fuel cost	Y / N
Telephone or other means of communication	Y / N
Exclusion of meeting with male members of the community from their routine duties	Y / N
Change colour and/or shape of the LHWs uniform	Y / N
Salary increase	Y / N
Others (specify _____)	

18. What kind of negative impacts have you received by your administrating routine EPI (note: not polio or TT campaigns but only routine EPI)?

Increase of workload	Y / N
Disrupting your care-taking of your family	Y / N
Increase of expenditure that are not properly compensated	Y / N
Relation with local religious leaders becomes worse because they are against EPI	Y / N
Difficult working relation with EPI technician	Y / N
Others (specify_____)	

19. What kind of positive impacts have you received in your involvement of routine EPI?

Obtained more trust among people in catchment area	Y / N
Obtained more support from community	Y / N
You feel better by being able to help people more	Y / N
Better working relation with EPI technician	Y / N
Others (specify_____)	

20. In routine EPI, aside from the health house sessions, do you coordinate in community out-post sessions such as those organized at mosques, schools, community leaders' houses, etc.? Y / N

21. How many days do you organize for routine EPI?

Health house sessions:	__ days/month
House-to-house routine EPI sessions:	__ days/month

22. Who have supervised you during the last 3 months regarding EPI?

EPI technician	Y / N
District EPI Coordinator	Y / N
National Programme Coordinator	Y / N
Female Assistant District Coordinator for National Programme	Y / N
LHS	Y / N

23. When routine TT immunization is done to pregnant women, is it usually coordinated with antenatal care? Y / N

24. During outreach EPI sessions (both in health house and outreach sessions) you participate, do you provide the following services simultaneously?

Nutritional education to mothers	Y / N
Advising mothers about family planning	Y / N
Antenatal care of pregnant women	Y / N
Check up of postnatal mother	Y / N
Iron supplementation to postnatal mothers	Y / N
Folic acid tablets to postnatal mothers	Y / N
Examination of whole body of newborn	Y / N
Weighing of babies	Y / N
Plotting growth monitoring sheet	Y / N
Promotion of early breast feeding	Y / N
Others (specify _____)	

Please skip to "Nutritional Promotion" section.

Questions for LHWs not involved in routine EPI

25. Suppose you will be involved in the routine EPI aside from polio and TT campaigns in the future. Are the following things concern you in that case?

Increase of workload	Y / N
Community people's refusal of the routine EPI	Y / N
Opposition of the local religious leaders in conducting routine EPI	Y / N
Remuneration for the additional routine EPI work	Y / N
Transportation	Y / N
Others (specify_____)	

Nutritional Promotion

1. Are you providing the following nutritional services in your catchment area?

Nutritional education to pre-conceptive women	Y / N
Nutritional education to antenatal mothers	Y / N
Nutritional education to postnatal mothers	Y / N
Nutritional education to mothers of young children	Y / N
Growth monitoring	Y / N
Promotion of exclusive breastfeeding	Y / N
Supplementary feeding	Y / N
Vitamin A supplementation to children	Y / N
Vitamin A supplementation to postnatal mothers	Y / N
Iron supplementation to antenatal mothers	Y / N
Folic acid tablets to antenatal mothers	Y / N
Iron supplementation to postnatal mothers	Y / N
Folic acid tablets to postnatal mothers	Y / N
Promotion of iodine fortified salt	Y / N
Others (specify_____)	

2. For nutritional education, do you organize collective educational sessions or do you rather provide education on individual basis?
   1) Collective session
   2) Individual session
   3) Both

3. In either way, how many times a month do you conduct the session?

	times/month
Collective session	
Individual session	

4. During growth monitoring, is any of the following services simultaneously provided?

Nutritional education to mothers	Y / N
Check up of postnatal mother	Y / N
Iron supplementation to postnatal mothers	Y / N
Folic acid tablets to postnatal mothers	Y / N
Referring child immunization	Y / N
Promotion of early breast feeding	Y / N
Others (specify _____)	

Antenatal Care

1. Are you tracking all pregnancies in your catchment area? Y / N

2. Are you registering all newborns born in your catchment area? Y / N

3. Where do you provide antenatal care?
   1) At health house
   2) At the house of mothers
   3) Others (specify_____)

4. How often do you provide antenatal care per month? ___persons

5. How long (how many minutes) does it take to conduct an antenatal care for each mother?
   ___minutes.

6. Do mothers receive mothers' card during the first visit? Y / N

7. What kind of service did you give during ANC visits:

Notify mothers their expected dates of delivery	Y / N
Measuring of fundus (growth of the baby)	Y / N
Palpation of abdomen (babies growth, cephalic position and presentation)	Y / N
Advice in observing foetal movement	Y / N
Malaria information	Y / N
HIV information	Y / N
Syphilis information	Y / N
Advise to mothers on frequency of contact before delivery	Y / N
Advice to mothers on danger signs i.e. bleeding, swelling, amniotic fluid outburst, severe pain	Y / N
Others (Specify_____)	

8. During antenatal care, is any of the following service simultaneously provided?

Advice TT vaccination for pregnant women	Y / N
Inject TT vaccination for pregnant women	Y / N
Education for breast feeding	Y / N
Breasts examination	Y / N
Nutritional advise on healthy diet	Y / N
Iron supplementation	Y / N
Folic acid tablets	Y / N
Others (Specify_____)	

Postnatal care

1. After delivery, how is the postnatal follow up conducted? Please select as many as that apply:
   1) Mothers' homes are visited by LHW Y / N
   2) Mothers are instructed to visit health house with baby Y / N
   3) Mothers are instructed to visit health house without baby Y / N
   4) Others (Specify_____))

2. During 40 days after the delivery, how many times do you visit?
   ____times.

3. If mothers and babies are expected to visit health house, which period do they usually visit and how many times?
   From _____weeks to _____weeks from delivery, ____times.

4. How long (how many minutes) does it take to conduct a postnatal care for each mother?
   ___minutes.

5. What kind of services do you give during postnatal care:

Examination of whole body of mother	Y / N
Iron supplementation to postnatal mothers	Y / N
Folic acid tablets to postnatal mothers	Y / N
Advice of BCG birth-dosing	Y / N
Advice of OPV birth-dosing	Y / N
Other EPI immunization	Y / N
Care of umbilical cord	Y / N
Eye care of newborn	Y / N
Examination of whole body of newborn	Y / N
Plotting growth monitoring sheet	Y / N
Promotion of early breast feeding	Y / N
Others (Specify_____)	

6. During the postnatal care, do you provide the following services simultaneously?

Advice child immunization	Y / N
Advising mothers breast feeding during the first 6 months	Y / N
Advising mothers about normal development of child (i.e. physical, mental and social needs)	Y / N
Advising mothers about family planning	Y / N
Child growth monitoring	Y / N
Baby check-up	Y / N

Family planning

1. On average how many households do you visit for either family planning education or contraceptive distribution in a month?
   _____households
2. On average how long (how many minutes) does it take to complete a visit for family planning to a household?
   _____minutes
3. Do you provide the following family planning services by yourself?

Distribution of oral contraceptive pills	Y / N
Prescription of condom	Y / N
Injection of contraceptive	Y / N

Family planning education Y / N

Curative services

1. On average, how many patients of diseases (not including pregnancy and postnatal) do you examine/treat a month?

____ cases

2. On average how long (how many minutes) does it take to complete a consultation?

_____minutes

Fees

1. Are you getting fee-for-services? Y / N

2. Aside from the designated essential drugs, are you prescribing other drugs? Y / N

Workloads

1. Please tick the top three ROUTINE works (not including temporary ones like polio campaign) that are taking the most of your time and efforts among the following tasks.

1) Health education ( )
2) Meetings with community members ( )
3) Health committee (Sehat) meetings ( )
4) Record keeping and report writing ( )
5) Growth monitoring ( )
6) Infant checkups ( )
7) Antenatal care ( )
8) Postnatal care ( )
9) Family planning services ( )
10) Curative services ( )
11) Advising EPI ( )
12) Administering EPI ( )
12) Tuberculosis control ( )
13) Malaria control ( )
14) Others (specify_____ ( )

2. How do you assess your current overall workload (regardless of their current involvement in the routine EPI)?

1) Too much workload
2) Appropriate level of workload
3) I can do more

7.3 Questionnaire of KAP Survey for Mothers of Children under One Year

Date ___/___/2007
(day) (month)

Venue _____
Village: _____
Union Council: _____
Thesil: _____
District: _____

Nearest Health Center:_____ which is located: __ minutes from your house by foot
Surveyors' name

Introduction

Asalam-o-Alaikum, I am ..... from ACNielsen, a market research company, which takes people's opinions on many different subjects so that manufacturers/service providers can offer customers what they really need. Today we will be asking you a few questions about EPI, mother and child health from you.
Could you spare a few minutes of your time to answer some questions for us?

S-1 Have you participated in any of the similar survey during the last six months/

Yes	Continue with interview
No	Terminate the interview

S-2 (Show card) Do you or any member of your household work in any of the following

Marketing research/ company	Terminate interview
advertising agency	Terminate interview
Media/TV/Newspaper/Magazine	Terminate interview
None of the above	Continue with interview

Urban SEC

S-3 Who is the chief wage earner of the household? By chief wage earner I mean the person who bears the most expenses of the household?

- Name of the chief wage earner._____
- Relationship of the respondent with the chief wage earner _____

S-4 What is the name of the employer/organization, designation and nature of work, of the chief wage earner of your household?

Interviewer: Extract all the details from the respondent and write them in his/her own words.

- Name of the organization:_____
- Designation (Job title)/grade:_____
- Nature of work: _____

Interviewer: With the help of the code list, circle the correct response from the 15 codes below

Unskilled worker	[1]	
Petty trader	[2]	
Skilled worker	[3]	
Non-executive staff	[4]	
Supervisor	[5]	
Small shopkeeper/Businessman	[6]	
Lower/middle officer/Executive	[7]	
Professionals (self employed or in service}	[8]	
Medium Businessman	[9]	
Senior Executive	[10]	
Large Businessman/Factory Owner	[11]	
Retired	[12]	go to (S-5a)
Student	[13]	go to (S-5b)
Housewife	[14]	go to (S-5b)
Unemployed	[15]	go to (S-5b)

S-5a What is the occupation of the chief wage earner of your house before his/her retirement?

Interviewer: Write the detailed response in the space under S-4, circle the relevant code and then move to S-6

S-5b How does he cover household expenses? Does he get income from house/building rent, interest on the money in bank, or agricultural/cultivated land?

- Rent/interest Go to S-5c
- Land Go to S-5d

S-5c Who is the chief wage earner of your household who left land or money in the bank for the rest of the household? What is his/her occupation/designation etc.

Interviewer: Note the detailed response in the space under S-4, circle the relevant code then go to S-6. In this ask the educational qualification of the person who left behind property or money in the bank for the rest of the household

S-5d You said that household expenses are covered by income coming from agricultural land. Can you tell how much cultivable land the chief wage earner possesses?

- Less then 12 ½ acre.....[1] (In this case the occupation of finance head should be considered "unskilled worker")
- Between 121/2 to 49 acre... [2] (In this case the occupation of finance head should be considered "skilled worker")
- 50 acre or more .....[3] In this case the occupation of finance head should be considered "middle officer"

S-6 What is the educational qualification of the chief wage earner of your household?

Illiterate..... [01]
Less than primary..... [02]
School 5-9..... [03]
Matric..... [04]
Intermediate..... [05]
Graduate..... [06]
Post Graduate..... [07]

Interviewer: With the help of responses from S-4 and S-6, circle the relevant section in S-7 grid and also circle the code given below.

S- 7

Occupation of Chief Earner	Education of Chief						
	Illiterate	Less than 5 classes	5-9 classes	Metric	Intermediate	Graduate	Post Graduate
Unskilled Worker	E2	E2	E1	E1	D	D	C
Petty Trader	E2	E2	E1	E1	D	C	C
Skilled Worker	E2	E2	E1	D	D	C	C
Non-Executive Staff	E2	E2	D	D	D	C	C
Supervisor	D	D	C	C	B	B	B
Small/Shopkeeper/Businessman	D	D	C	C	B	B	A2
Lower/Middle Officer/ Executive	D	D	C	C	B	B	A2
Professionals (Self Employed or in Service	A1	A1	A2	A2	A2	B	A2
Medium Businessman	B	A2	A2	A2	A2	A1	A1
Senior Executive/Officer	B	A2	A2	A2	A1	A1	A1
Large Businessman/ Factory Owner	A2	A2	A2	A1	A1	A1	A1

S-8 Note the class SEC of the respondent

A1....[1] D.....[5]
A2....[2] E1.....[6]
B.....[3] E2.....[7]
C.....[4]

Rural SEC

R-1 Can you please tell me who is the head of your household? By household head I mean, the person who usually makes the important decisions for your household? By important decisions I mean decisions related to marriage, capital expenditure (buying of a house/car/tractor/livestock, major home renovations, etc), expenditure on children's education etc.

Self	1
Other (please mention)	[ ]

R-2 Record education of the HEAD OF THE HOUSEHOLD

Illiterate	1
Up to primary	2
School 6 – 9 years	3
Matric	4
Intermediate	5
	6
Post Graduate	7

R-3 What is the roof of most of the rooms in the house made of?

(Pukki)

Concrete Slab (RCC) ..... (1)

Iron girder, wooden beams/bricks, stones .... (2)

Made of Iron Sheets ..... (3)

Made of Mud & Stone ..... (4)

Prefabricated Slab .....(5)

Made of Girder, TR & bricks ..... (6)

(Kuchhi)

Made of Mud ..... (7)

Made of Wood & Mud ..... (8)

Made of Wood & Bamboo .... (9)

Made of Grass, Leaves & Straws .... (10)

R-4 What are most of the walls in the house made of?

(Pukki)

Brick / Plastered ..... (1)

Made of Wood, Mud & Stone ..... (2)

Made of Iron or other metal Sheets ..... (3)

Made of Concrete ..... (4)

(Kuchhi)

Made of Mud ..... (5)

Made of Wood ..... (6)

Made of Grass, Leaves Grass Fences ..... (7)

Note for the recruiter: Check from R-3 and R-4 and in case of Pukki "roofs of rooms" and "walls" ask next questions otherwise go to R-7

R-5 Please tell if there is a separate kitchen in your house i.e. separate room which is only used for cooking
purposes?

Yes ..... (1)
No ..... (2)

R-6 Is there a Latrine in your house?

Yes ..... (1)
No ..... (2)

R-7 (Note for the surveyer: Please note the type of house in the grid below, from answers in R3, R4,R5 and R6)

Type of House	Code	Definition
Kuchha	1	Roof & Walls, both non-concrete
Semi Pukka	2	Roof & Walls, any one concrete
Pukka Lower	3	Roof & Walls, both concrete but either Kitchen or Toilet missing.
Pukka Upper	4	Roof & Walls, both concrete and both Kitchen & Toilet present.

Note for the recruiter: With the help of R-2 and R-7 write the SEC of the respondent in the Grid provided below

Head of Household Education	Type of House			
	Kuchha	Semi Pukka	Pukka Lower	Pukka Upper
Illiterate	E	D	D	C
Less than Primary	E	D	C	C
School 6 – 9 years	D	C	C	B
Matric	D	C	B	B
Intermediate	C	C	B	A
Graduate	C	C	A	A
Post Graduate	B	B	A	A

R-8 please, note the SEC from above grid.

A....[1]
B....[2]
C....[3]
D...[4]
E...[5]

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Mother's information

Q1. How old are you? __ __ years old

Q2. How old is your youngest child? __ years __ __ months old
Surveyors should exclude mothers of children 12 months or more at this point.

Q3. How old were you when you get married? __ __ years old

Q4. How many deliveries do you have in total? __ __ children

Their current condition?

Alive __ children, Died __ children

Q5. How many family members currently living with?
(in this question, 'family' indicates people who share kitchen with you)

Q6. How long have you educated in school? __ __ years

Q7. How do you get information regarding immunization?

1. TV	Y / N
2. Radio	Y / N
3. Newspaper	Y / N
4. Religious leader's speech	Y / N
5. LHWs	Y / N
6. Meeting organized by LHW	Y / N
7. Gathering with family, relative, and neighbour	Y / N
8. Others please indicate ( )	

Questions for KAP

Q1. What is administration route of vaccine? **Choose only one from below.**
1. It is only administered by injection.
2. It is only administered by drop.
3. It is administered by injection or drop.
4. I don't know.

Q2. Do you think below sentences are right?

1. We use vaccine for nutrition.	Y / N
2. We use vaccine for cure.	Y / N
3. We use vaccine for preventing diseases.	Y / N
4. We use vaccine for getting energy.	Y / N
5. Vaccine causes infertility.	Y / N
6. If you have any idea not mentioned above, please indicate ( )	

Q3. Do you think vaccine is generally acceptable for your child? Y / N

Q4. Do you want to give OPV immunization to your child? Y / N

Q5. Do you want to give injection vaccination to your child? Y / N

Q6. Do you have any concern that .....?

1. Vaccine may cause side effects Y / N
2. Vaccine may cause infertility Y / N
3. My family member doesn't want vaccine to my child Y / N
4. Religious leader advises not immunized Y / N
5. Because vaccination causes pain Y / N
6. Others: Please indicate ( )

Q7. What is important for vaccination timing to prevent diseases?

1. Do at least half of the immunization course. Y / N
2. Complete the immunization course. Y / N
3. I don't know.

Q8. What is important for immunization to prevent diseases?
1. Give all of them as soon as possible including measles. Y / N
2. Give vaccine in a timely manner. Y / N
3. I don't know.

Q9. Which of the following diseases do you understand are preventable by EPI?
1. Polio Y / N
2. Measles Y / N
3. Malnutrition Y / N
4. Pertussis Y / N
5. Pneumonia Y / N
6. Diarrhea Y / N
7. Diphtheria Y / N
8. Tetanus Y / N
9. Mental diseases Y / N
10. Hepatitis B Y / N
11. Hepatitis C Y / N
12. Malaria Y / N
13. Tuberculosis Y / N
14. Rabies Y / N
15. AIDS Y / N
16. Others (Please specify) ( )
17. I don't know

Q10. Do you know where EPI vaccines are available? Y / N

Q11. If your answer is 'Yes', for Q10,
Where can you get routine EPI immunization?

1. Health Center, Government Health Facility	Y / N
2. LHWs health house	Y / N
3. School	Y / N
4. Your house	Y / N
5. Private Hospital (=Clinic)	Y / N
6. Others: please indicate	

Q12. Where has your child under 1 year of age actually received routine immunization?

1. Health Center, Government Health Facility	Y / N
2. LHWs health house	Y / N
3. School	Y / N
4. Your house	Y / N
5. Private Hospital (=Clinic)	Y / N
6. Others: Please indicate	

Q13. Do you ask to use health workers (EPI technicians, LHWs) use new disposable syringes for your children to give routine immunization? Y / N

Q14. Do your children have experiences of any side effect after immunization? Y / N

Q15. If you answer 'yes' to Q14, circle what you observe.
1. Fever
2. Swelling of injection site
3. Infertility
4. Rash
5. Cough
6. Paralysis
7. Headache
8. Others: please indicate

Q16. What kind of side effect do you know after immunization?

1. Fever	Y / N
2. Swelling of injection site	Y / N
3. Infertility	Y / N
4. Rash	Y / N
5. Cough	Y / N
6. Paralysis	Y / N
7. Headache	Y / N
8. Others : Please indicate	

Suppose your child caused mild fever for a short period after the injection of DPT-HepB vaccine.

Q17. D Are you concerned that it may cause harm to your child? Y / N

Q18. Do you think that it is a sign that vaccine is taking effect in the body? Y / N

Suppose your child caused swelling and redness with 3cm radius (showing card) at the injection site (left thigh) after the injection of DPT-HepB vaccine.

Q19. D Are you concerned that it may cause harm to your child? Y / N
Q20. Do you think that it is a sign that vaccine is taking effect in the body? Y / N
Q21. How do you value the immunization using the following vaccines? Please choose one which is the nearest to your idea for each vaccine.

OPV
1. Essential to my child
2. Moderately essential to my child
3. Not necessary for my child
4. Should stop using this vaccine to anyone
5. Do not know/ un-decisive.

Measles vaccine (injection)
1. Essential to my child
2. Moderately essential to my child
3. Not necessary for my child
4. Should stop using this vaccine to anyone
5. Do not know/ un-decisive.

DPT-Hep B (injection)
1. Essential to my child
2. Moderately essential to my child
3. Not necessary for my child
4. Should stop using this vaccine to anyone
5. Do not know/ un-decisive.

BCG (injection)
1. Essential to my child
2. Moderately essential to my child
3. Not necessary for my child
4. Should stop using this vaccine to anyone
5. Do not know/ un-decisive.

Q22. If LHWs in your village/town work for routine EPI activities such as measles vaccine injection, do you accept them?
1. Yes
2. No
3. I don't know.

Q23. If you choose 'Yes' for Q22, please specify your idea. (choose as many as possible)
1. Because I don't have to go Health Center.
2. Because I want to meet LHWs more often
3. Because LHWs can come to my house
4. Because I want to visit LHWs' health house
5. Others Please indicate

Q24. If you choose 'No' for Q19, please specify your idea. (choose as many as possible)
1. Because I don't want LHWs come to my house
2. Because I don't want to visit LHWs health house
3. Because I don't want to give vaccine to my child
4. Because my family member(s) don't like LHWs
5. Because my family member(s) don't like vaccination
6. Because our religious leader says 'no vaccine'
7. Because our community leader says 'no vaccine'
8. Others: Please indicate

Q25. If your child gets immunization by LHWs, where do you like to be vaccinated?
1. At my house
2. At LHWs health house
3. Both of them are OK
4. Others: Please indicate

26. Where did you receive antenatal care?
1) At health house
2) At your house
3) Others (specify_____)

27. How many times did you receive antenatal care while the last pregnancy for your youngest child?
___ times

28. How long (how many minutes) did it take to receive an antenatal care for each time?
___ minutes.

29. Did you receive mothers' card at the first visit during your last pregnancy? Y / N

30. What kind of service did you receive during ANC visits during the last pregnancy?

Refer to health facility	Y / N
Notify mothers their expected dates of delivery	Y / N
Measuring of fundus (growth of the baby)	Y / N
Palpation of abdomen (babies growth, cephalic position and presentation)	Y / N
Advice in observing fetal movement	Y / N
Malaria information	Y / N
HIV information	Y / N
Syphilis information	Y / N
Advise to mothers on frequency of contact before delivery	Y / N
Advise to mothers on danger signs i.e. bleeding, swelling, Amniotic fluid outburst, severe pain	Y / N
Others (Specify_____)	

31. After delivery, how did you receive postnatal follow up after the delivery of your youngest child? Please select as many as that apply:

1) LHW visited your house	Y / N
2) You visited health house with your baby	Y / N

3) You visited health house without baby Y / N
4) Others (Specify_____)

32. During 40 days after the last delivery, how many times did LHW visit your house?
____ times.

33. When and how many times did you visit health house for PNC after the last pregnancy?
From _____weeks to _____weeks from delivery, ____times.

34. How long (how many minutes) did it take to receive a postnatal care for each time? ___minutes.

35. What kind of services did you receive during postnatal care:

Examination of whole body of mother	Y / N
Iron supplementation to postnatal mothers	Y / N
Folic acid supplementation to postnatal mothers	Y / N
Advice of BCG birth-dosing	Y / N
Advice of OPV birth-dosing	Y / N
Other EPI immunization	Y / N
Care of umbilical cord	Y / N
Eye care of newborn	Y / N
Examination of whole body of newborn	Y / N
Plotting growth monitoring sheet	Y / N
Promotion of early breast feeding	Y / N
Others (Specify_____)	

36. Have you received any health service on the fee-for-services basis from LHW? Y / N

ANNEX VIIII

Report of Situation Survey in Haripur District

JICA EPI/Polio Control Project

November, 2008

Table of Contents

LIST OF TABLES

Acronyms

AD	Auto-Disable (Syringes)
BHU	Basic Health Unit
CD	Civil Dispensary
CH	Civil Hospital
CHC	Community Health Center
DD EPI	Deputy Director Expanded Program on Immunization
DHQ	District Head Quarter
DSV	District Superintendent Vaccination
DG (H)	Director General (Health)
EDO (H)	Executive District Officer (Health)
EPI	Expanded Programme on Immunization
JICA	Japan International Cooperation Agency
LHS	Lady Health Supervisor
LHV	Lady Health Visitor
LHW	Lady Health Worker
MO	Medical Officer
OPV	Oral Polio Vaccine
PCO	Public Call Office
POL	Petrol, Oil and Lubricants
RHC	Rural Health Center
SHC	Sub Health Center
THQ	Tehsil Head Quarter
TSV	Tehsil Superintendent Vaccination
TT	Tetanus Toxoid
UC	Union Council

1.1 Background Information of EPI Centers

1.1.1 Number of Health facilities

Table E1: Number of Health facilities

Health facility	
Basic Health Unit (BHU)	29
Civil Dispensary (CD)	6
Tehsil Head Quarter (THQ)	1
Rural Health Center (RHC)	5
Civil Hospital (CH)	3
District Head Quarter (DHQ)	1
Community Health Center (CHC)	1
Sub Health Center (SHC)	2
Private EPI Center	2
Women and Children Hospital (WCH)	1
N=All centers	51*

The total number of Health Facilities in Haripur is 51 but CD Neela Bhoto was not visited during the survey therefore the data of only 50 EPI Centers has been included in this report.

1.1.2 Total catchment population of EPI centers

Table E2: Total catchment population (population under one year old) of EPI centers

Mean	15,782 (558)*
Minimum	1,924 (68)
Maximum	30,409 (1,074)

**catchment population of only 46 EPI Center available*

1.2 Human Resource for EPI at EPI centers

1.2.1 Number of EPI technicians

Most of the EPI centers have only one EPI technician, But 3 EPI centers (BHU Hattar, BHU Gadwalian and MCH Talokar) are without any EPI Technician. 6 EPI Centers (BHU Ghumanwan, CHC Halli, CD Hamlet, BHU Kaotri, CD Teer and BHU Nallah) are covered by EPI Technicians posted at other EPI Center as additional responsibility due to shortage of EPI Technician in District Haripur.

Table E3: Number of EPI technicians at EPI center

Number of technicians	Haripur
3 or more	0 (0%)
2	0 (0%)
1	41 (82%)
0	9 (18%)
N=All EPI centers	50*

**Centers with no EPI technicians*

- *In EPI Centers where there is no EPI technician, Medical Technician and or LHV takes care of vaccination services.*
- *In Haripur, 6 EPI technicians cover more than one EPI center, which they visit one day in a week.*

1.2.2 EPI Supporters

Supporters refer to those who conduct EPI activities when EPI technician is busy or not available. This includes medical technicians, Malaria supervisor, Midwife, EPI Trainee LHV, medical officer and dispenser.

Table E4: Number of supporters of EPI at EPI centers which have only one EPI technician

No. of supporters	Haripur
2 or more	24 (51%)
1	13 (28%)
0	10 (21%)
N=Number of EPI Centers with one EPI Tech.	47

Table E5: Total number of supporters (and their type) of EPI at all EPI centers

EPI supporters	Haripur
Medical technicians	37 (47%)
Lady Health Visitors	29 (37%)
Dispenser	5 (6%)
Lady Health Supervisor (LHS)	0 (0%)
Medical Officers	1 (1%)
Others*	7 (0%)
Total	79

**Others*
Others include: Midwife, EPI trainee and Malaria supervisor.

1.2.3 Profile of EPI technicians

- The survey findings show that most of the EPI technicians are over 30 years old.
- Majority of the EPI technicians are males.
- Around 51% EPI technicians are having an experience of EPI up to 21-30 years.
- Most of the EPI technicians (54%) have not attended any refresher training and only 36 % of EPI Technicians have attended some kind of refresher training from the year 1980 to 2008.

Table E6: Age of EPI technicians (numbers of EPI Technicians)

Age	Haripur
-20 years	0 (0%)
21-30 years	6 (15%)
Above 30 years	35 (85%)
Average age	38
N=EPI Technicians	41

Table E7: Gender of EPI technicians

Gender	
Male	36 (88%)
Female	5 (12%)
N=EPI Technicians	41

Table E8: Years of experience as EPI technicians

Years of experience	
Up to 10 year	12 (29%)
11-20 year	8 (20%)
21-30 year	21 (51%)
N=EPI Technicians	41

Table E9: Year of last refresher training

Years	
1980-1989	1 (2%)
1990-1999	1 (2%)
2000 – 2008	13 (32%)
No Training	22 (54%)
Do Not Remember	4 (10%)
N=EPI Technicians	41

1.3 Infrastructure and Facility

1.3.1 Distance between EPI centers and EDO (H) – Kilometers and hours

The average distance from EDO (H) office is 37 Kilometers (Km.) as highlighted in the table below.

Table E10: Distance in KM between EPI centers and EDO (H)

Distance in Km	
1-10 km	9 (18%)
11-20 km	15 (31%)
21-50 km	11 (22%)
51 km or more	14 (29%)
Don't Know/No answer	0 (0%)
Mean	37
N=All EPI centers	49*

**One EPI Center located within the premises of EDO (H) Office*

Table E11: Distance in Time between EPI centers and EDO (H)

Distance in time	
Less than 1 hour	19 (39%)
1 or more	12 (24%)
2 or more	13 (27%)
3 or more	5 (10%)
Don't Know/No answer	0 (0%)
Mean	1.6
N=All EPI Centers	49*

**One EPI Center located within the premises of EDO (H) Office*

1.3.2 Electricity - Frequency and duration of breakdown

Frequency and duration of electricity breakdown

In district Haripur 11 (22%) EPI Centers have no electricity supply. In 39 (78%) EPI Centers there is always a daily breakdown of electricity.

Table E12: Frequency and duration of electricity breakdown

Frequency	
No supply	11 (22%)
Electricity breakdown	39 (78%)
N= All centers	50
Duration	
Always half day or less	36 (92%)
Sometimes more than half day	3 (8%)
N=Centers with electricity supply	39

1.3.3 Water supply

Only 12% of EPI centers do not have water supply.

Table E13: Water supply

Whether have water supply	
Have water supply	38 (76%)
Do not have water supply	12 (24%)
N=All EPI centers	50

1.3.4 Phone facility

Only 14% of the EPI Centers have fixed telephone whereas 86% EPI centers don't have fixed telephone.

Table E14: Fixed phone at EPI centers

Whether have fixed phones	
Yes have fixed phones	7 (14%)
No, do not have fixed phones	43 (86%)
N=All EPI centers	50

Table E15: Other phone facilities* among EPI centers which have no fixed phone

Whether have other phone facilities	
Yes, have other phone facilities	42 (98%)
No, do not have other phone facilities	1 (2%)
N=EPI centers with no fixed phones	43

Other phone facilities
Mobile phones
PCO within 5 minutes walking distance

5

1.4 Transportation

1.4.1 Official vs. Personal vehicles

Around 24(48%) of EPI centers have official motorbikes. Only one 1(4%) EPI Technician has private motorbike. While 25 EPI centers have no mobility.

Table E16: Official motorbikes at EPI centers

Whether have official motorbikes	
Official motorbikes are available	24 (48%)
Official motorbikes are not available	26 (52%)
N=All EPI centers	50

Table E17: Private motorbikes at EPI centers where official motorbikes are not available

Whether have private motorbikes	
Private motorbikes are available	1 (4%)
Private motorbikes are not available	25 (96%)
N= All respondents who didn't have official bike	26

Table E18: Private cars/official bicycles at EPI centers where official/private motorbikes are not available

Vehicles available	
Both private cars and official bicycle	0 (0%)
Only private cars	0 (0%)
Only official bicycles	0 (0%)
N= All respondents who don't have official and or private motorbike	25

1.4.2 Transportation expenditure for routine work

Most EPI technicians do not receive any allowance for POL, Whereas a very minimal amount of POL is provided to only 40% of the motorbike holder which is a very meager amount.

Table E19: Monthly POL given by district/donors among motorbike holders

Whether POL is given	
Yes POL is given	10* (40%)
No POL is not given	15 (60%)
N= All those having motorbike	25

**Only 30-45 Rs. Per month are given*

Table E20: Monthly average POL (Rs.) given to/paid by motorbike holders

POL from district/donors	17
POL from Pocket (Rs.)	1840
N= All motorbike holders	15

Table E21: Transportation expenditure for routine EPI work

Motorbike holders	1856*
Non-motorbike holders	1743**
N=All EPI technicians	41

**there are only 25 motorbike holders*
***there are 16 non-motorbike holders who are spending on transportation from own pocket*

1.5 Cold Chain Equipment

1.5.1 Refrigerators – working condition

Most of the EPI centers have at least one functional refrigerator. But 36% (18) EPI Centers are without refrigerators or having non-functional refrigerators.

Table E22: Functional refrigerators at EPI centers

EPI centers with two or more functional refrigerators	1 (2%)
EPI centers with only one functional refrigerator	31 (62%)
EPI centers with non-functional refrigerators	5 (10%)
Don't have refrigerators	13 (26%)
N= EPI centers	50

1.5.2 Refrigerators – Year of installation

Table E23: Year of installation of refrigerators

Year	
2002 – 2007	7 (18%)
1997 – 2001	0 (0%)
1996 -	0 (0%)
Unknown	31 (82%)
N=Number of refrigerators	38

1.5.3 Other cold chain equipments

The requirement of vaccine carrier for fixed EPI center is two whereas only 30% of EPI centers have 2 vaccine carriers.

Table E24: Other cold chain equipment – Vaccine carrier

EPI centers with two or more functional vaccine carriers	15 (30%)
EPI centers with only one functional vaccine carriers	31 (62%)
Not available	4 (8%)
N= EPI centers	50

Table E25: Other cold chain equipment – Thermometer

EPI centers with two or more functional Thermometers	0 (0%)
EPI centers with only one functional Thermometers	19 (38%)
Not available	31 (62%)
N= EPI centers	50

Table E26: Other cold chain equipment – Stabilizer

EPI centers with two or more functional stabilizer	1 (2%)
EPI centers with only one functional stabilizer	25 (30%)
Not available	24 (48%)
N= EPI centers	50

1.6 Shortage of Equipment/Materials

1.6.1 Shortage of Equipments/ Materials

Mostly the centers face shortage of furniture, stationery and reporting forms.

Table E27: Shortage of equipment/materials

Equipments/Materials	
Furniture	26 (52%)
Stationery	33 (66%)
Reporting forms of EPI	39 (78%)
Register books of EPI	40 (80%)
N=All EPI centers	50

Multiple response question

1.7 Number of LHWs in the catchment area

1.7.1 LHWs in the catchment areas

Around (30%) of the EPI centers have no LHWs in their catchment area.

Table E28: LHWs in the catchment area

Number of LHWs	Haripur
0	15 (30%)
1 – 5	0 (0%)
6 or more	35 (70%)
Don't know/no response	0 (0%)
Mean	19.3
N=All EPI centers	50

1.8 Fixed Site/Out-reach/Mobile activity by EPI Technicians

1.8.1 Days fixed for fixed site session (BCG and Measles).

Most of the EPI Centers (84%) have one day fixed for BCG and Measles.

Table E29: Days for fixed site sessions

Number of days	EPI Centers with only one EPI Technician
0	2 (4%)
1	42 (84%)
2	4 (8%)
3	0 (0%)
4	0 (0%)
5	2 (4%)
6	0 (0%)
Mean	1.2
N=EPI centers	50

Table E30: Days for fixed site sessions

Number of days	EPI Center with only one EPI Technician and no supporter	EPI Centers with one EPI technicians and one or more supporters	Total
0	1 (10%)	0 (0%)	1 (2%)
1	8 (80%)	32 (86%)	40 (85%)
2	0 (0%)	4 (11%)	4 (9%)
3	0 (0%)	0 (0%)	0 (0%)
4	0 (0%)	0 (0%)	0 (0%)
5	1 (10%)	1 (3%)	2 (4%)
6	0 (0%)	0 (0%)	0 (0%)
Mean	1.3	1.2	1.2
N=EPI centers with one EPI technician	10	37	47

1.8.2 Days fixed for BCG and Measles

In Haripur mostly Thursday (35%) is fixed for BCG and Measles vaccination.

Table E31: Days fixed for BCG and Measles

Days fixed for BCG	
Monday	4 (8%)
Tuesday	5 (10%)
Wednesday	5 (10%)
Thursday	35 (70%)
Friday	1 (2%)
Saturday	8 (10%)
Days fixed for measles	
Monday	4 (8%)
Tuesday	5 (10%)
Wednesday	5 (10%)
Thursday	35 (70%)
Friday	1 (2%)
Saturday	8 (16%)
N= All EPI centers	50

Multiple response question

1.9 Safe Injection

1.9.1 Shortage of safety boxes and AD syringes now

Majority of EPI Centers do not face shortage of safety boxes and AD Syringes.

Table E32: Shortage of safety bxes now

	Haripur
Shortage of safety boxes now	7 (14%)
No shortage of safety boxes now	43 (86%)
N=All EPI centers	50

Table E33: Shortage of AD syringes now

	Haripur
Shortage of AD syringes now	12 (24%)
No shortage of AD syringes now	38 (76%)
N=All EPI centers	50

1.9.2 Disposing used syringes out of safety box

It is observed that at 60% EPI Centers the syringes are disposed off out of safety box.

Table E34: Disposing off used syringes out of safety box
(Based on interviewers' observation)

	Haripur
Yes, dispose used syringes out of safety boxes	30 (60%)
No, do not dispose used syringes out of safety boxes	20 (40%)
N=All EPI centers	50

1.10 Communication/Social mobilization

1.10.1 Means of communication

Table below shows means of communication utilized by EPI Technicians to encourage and informs community people to bring children to fixed site sessions. The major ways are Through LHWs (89%), Communication with community leaders/religious leaders (49%) and Mosque Announcement (47%).

Table E35: Communication and encouragement to bring children to EPI fixed site sessions

	Haripur
Mosque announcements	22 (47%)
Communicate with community leaders/religious leaders	23 (49%)
Through LHWs	42 (89%)
Door to door visits by EPI technician	8 (17%)
Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose	12 (26%)
Communicate through teachers	10 (21%)
Through LHVs	4 (9%)
Requesting clients of EPI to encourage/inform their neighbors/friends/relatives	17 (36%)
Local radio	0 (0%)
Printed materials	1 (2%)
N=All respondents	47

Multiple response question

Table E36: Communication and encouragement to bring children to out-reach sessions

	Haripur
Mosque announcements	28 (82%)
Communicate with community leaders/religious leaders	21 (45%)
Door to door visit	3 (6%)
Through LHWs	30 (64%)
Communicate through teachers	4 (9%)
Through LHV	0 (0%)
Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose	1 (2%)
Requesting clients of EPI to encourage/inform their neighbors/friends/relatives	12 (26%)
Local radio	0 (0%)
Printed materials	0 (0%)
N=All respondents	34*

Multiple response question

***Thirteen respondents are not doing any out-reach/mobile activity.**

1.10.2 Major difficulties in daily routine EPI work

Table E37: Major difficulties in daily routine EPI work

Major difficulties	Haripur
Hard to reach areas	16 (36%)
Negative propaganda of EPI/polio by religious leaders	0 (0%)
No or insufficient POL	34 (72%)
Low salary	20 (43%)
Over workload , too busy, shortage of number EPI technicians	11 (23%)
Shortage of vaccine, vaccine stock-out	8 (17%)
Others (Transportation etc)	34 (72%)
Less awareness of people on EPI	2 (40%)
Frequent campaigns (Polio, TT etc.)	4 (9%)
Because EPI technicians are not local, so they are not accepted/welcomed by the local people	0 (0%)
N= All respondents	45*

Multiple response question
*Two EPI Technicians mentioned that they have no difficulty.

1.10.3 Contents for next refresher training

Majority of respondents require information about new vaccine which have not been used in EPI. Many respondents want to acquire communication skills with religious/community people along with record keeping skills.

Table E38: Main contents for refresher training

Main contents for refresher training	Priority			Total
	1	2	3	
Communication skill with religious/community people	5 (12%)	6 (14%)	0 (0%)	11
Information about new vaccines which have not been used in EPI	6 (14%)	3 (7%)	5 (12%)	14
Social mobilization and communication to persuade people to accept EPI	7 (16%)	3 (7%)	0 (0%)	10
How to provide health education to community people	2 (5%)	0 (0%)	6 (14%)	8
Clinical aspects of the EPI target diseases	1 (2%)	4 (9%)	3 (7%)	8
Record keeping	5 (12%)	3 (7%)	3 (7%)	11
Management of drop-out	4 (9%)	0 (0%)	4 (9%)	8
Vaccine side effects	1 (2%)	3 (7%)	3 (7%)	7
How to estimate the target population	1 (2%)	1 (2%)	1 (2%)	3
Knowledge to answer to frequently asked questions from people	1 (2%)	4 (9%)	2 (5%)	7
Safe injection	3 (7%)	0 (0%)	6 (14%)	9
How to calculate the EPI coverage	3 (7%)	2 (5%)	3 (7%)	8
How to store and transport vaccines	2 (5%)	3 (7%)	4 (9%)	9
Organization of EPI sessions	1 (2%)	1 (2%)	1 (2%)	3
Cold chain management/minor repair	0 (0%)	1 (2%)	1 (2%)	2
Mutual learning from other EPI technicians	0 (0%)	5 (12%)	0 (0%)	5
Others	0 (0%)	0 (0%)	0 (0%)	0
N=All respondents	43	43	43	43

Multiple response question

1.10.4 Support required from district, province and partners

Table E39: Support required from district, province and partners

Support required from district, province and partners	Haripur
Salary/incentives	31 (66%)
POL	33 (70%)
Others (Transportation/ motorcycle/ vehicle, Repair)	41 (87%)
Refresher training	22 (47%)
Regular supervision	6 (13%)
District team convince people on EPI	6 (13%)
N=All respondents	47

Multiple response question

1.11 Documentation/Record checking

1.11.1 Availability of documents and their updates

Table E40: Availability of documents and their updates

	Haripur
Inventory Sheet	
Availability	
Yes	33 (66%)
No	17 (34%)
Records Completely Entered *	
Yes	29 (58%)
No	21 (42%)
Stock Register	
Availability	
Yes	21 (42%)
No	29 (58%)
Records Completely Entered **	
Yes	17 (34%)
No	33 (66%)
Daily EPI Register	
Availability	
Yes	43 (86%)
No	7 (14%)
Records Completely Entered ***	
Yes	40 (80%)
No	10 (20%)
Permanent EPI Register	
Availability	
Yes	41(82%)
No	9 (18%)
Records Completely Entered ***	
Yes	34(68%)
No	16(32%)
Records Properly Entered****	
Yes	28 (56%)
No	22 (44%)
List of Defaulter	
Availability	
Yes	16 (32%)
No	34 (68%)
Outreach plan for routine EPI	
Availability (for the current month, November 2008)	
Yes	27 (54%)
No	23 (46%)
N=All EPI centers	50

** To be filled in until yesterday*
*** To be filled in until last delivery*
**** To be filled in until last sessions*
***** Five entries are selected randomly from permanent EPI register and checked whether there are discrepancies with entries in daily register. If there are two or less discrepancies, it is judged as properly recorded.*

1.11.2 Monthly progress chart

It was found that 32% of EPI Centers did not display monthly progress chart of both 2007 and 2008.

Table E41: Display of monthly progress chart at EPI centers (based on interviewers' observation)

	Haripur
Both of 2007 and 2008	25 (50%)
Only 2007	26 (52%)
Only 2008	33 (66%)
Neither	16 (32%)
N=All EPI centers	50

1.11.3 Location of diluents and mismatch number of vaccine vials

The survey also checked for the diluents and found that at 62% EPI centers, it is placed in refrigerators. About half of EPI Centers have mismatch number of vaccine vials between record and actual availability.

Table E42: Storage of diluent in refrigerator

	Haripur
Yes	31 (62%)
No	19 (38%)
N= All EPI centers	50

Table E43: Number of EPI centers with mismatches of number of vaccine vials between record and actual availability

Vaccines	Haripur
BCG	23 (46%)
BCG diluents	29 (58%)
OPV	25 (50%)
Combo (DPT-Hep B)	25 (50%)
TT	28 (56%)
Measles	25 (50%)
Measles diluents	29 (58%)
N= All EPI centers	50

Multiple response question

1.11.4 Supervision confirmed by signature

Data corresponds to the last 3 months from the day of the survey.

Table E44: Number of supervisory visit per EPI center during last three months for routine EPI

	No. of Signatures	No. of Centers Visited
EDO (H)	11	11
EPI coordinator	0	0
DSV	21	11
TSV	0	0
MO in the FLCF	0	0
DD EPI	4	3
DG (H)	1	1
Total	37	26

Questionnaire for EPI Center

Date:

1. **Background information**

Name of Facility:

Type of Facility: BHU (1)/CD(2)/RHC(3)/THQ(4)/CH(5)/DHQ/(6) other(7) ( )

*Basic Health Center, Civil Dispensary, Teshil Head Quarter, Civil Hosp, District Head Quarter

Total catchment population:

Catchment population <1 year old/year:

Catchment population 15-45 years females (CBA's)

2. **Human Resource**

	EPI Tech.	Medical Tech.	LHS	LHW	LHV	Medical Officer	Dispenser	Other ( )	Other ( )
No. of staff									
No. of staff who administers EPI when EPI tech. is busy or not available.									

Profile of EPI technicians

	EPI Technician1	EPI Technician2	EPI Technician3
Age			
Sex*			
Years of experience as EPI Technician			
When is the last refresher training on routine EPI? year of ( ), I can't remember(1), No refresher training(2)			

*Male(1) Female(2)

3. **Facility/Infrastructure**

Distance from EDO Office ( )km

By car (a)	By walk (b)	Total (a)+(b)
minutes	minutes	minutes

Electricity failure: Frequency; ( )No supply (1)
( )3 days or more/week, (2)
( )1 to 2 days/week, (3)
( )<1 day/w (4)

Duration of no electricity; ( )always half day or less, (1)
( )some times more than half day (2)

Water supply: Yes (1) / No(2)

Telephone:

Fixed phone in the FLCF	Your own mobile phone	Mobile phone of other staff in the same FLCF	PCO with in 5 minutes walking distance
Y(1) / N(2)	Y(1) / N(2)	Y(1) / N(2)	Y(1) / N(2)

4. **Transportation**

Number of transportation in the facility for EPI activities

	Car	Motorbike	Bicycle	Others ( )
Official				
Private				

Payment/budget a month for your routine work. (NOT including campaigns, other events)

	POL	Public transportation
From your pocket	Rs	Rs
From district/donors	Rs	Rs

5. **Cold chain equipment** **OBSERVATION**

Detail of Cold chain equipment that requires power/energy

Type*1				
Maker Model				
Power*2				
Year of Manufacture				
Condition*3				

*1 Freezer (1) ILR (2) Others(3)

*2 Electricity(1), Gas(2), Kerosene(3), Solar power(4), E+G(5), E+K(6)

*3 Functional (1) Non-Functional (2)

Equipment	Available(1)	Not Available(2)
Cold Box		
Vaccine Carrier		
Thermometer*4		
Stabilizer		

*4 NOT including thermometers fixed on the door of refrigerators

6. Do you have shortage of equipment/material now? (Read one by one)

1. Stationary Y(1) / N(2)
2. Reporting forms of EPI Y (1)/ N(2)
3. Register books of EPI Y(1) / N(2)
4. Furniture Y (1)/ N(2)
5. Others ( )

7. Outreach/mobile activity/ fixed cite session by EPI technician

How many days a week do your EPI center have fixed site session? ( )

Which days of week do you provide BCG at EPI center? Mon (1), Tue(2), Wed(3), Thu(4), Fri(5), Sat(6)

Which days of week do you provide measles at EPI Center? Mon (1), Tue(2), Wed(3), Thu(4), Fri(5), Sat(6)

	Population covered by outreach/mobile activity
Population	
Days*	

* How many days do you need to cover the population?

8. Safe injection

a. Do you have shortage of safety boxes now? Y (1)/ N(2)
b. Do you have shortage of AD syringes now? Y (1)/ N(2)
c. Used syringes are disposed out of safety boxes? **Observation** Y (1)/ N (2)

9. Communication/social mobilization

9-1. How does your EPI center encourage/convince/inform community people to bring children to fixed cite session at EPI center? (NOT ask one by one, just ask "anything else?")

1. Door to door visit Y(1) / N(2)
2. Through LHWs Y(1) / N(2)
3. Through LHV
4. Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose. Y(1) / N(2)
5. Requesting clients of EPI to encourage/inform their neighbors/friends/relatives Y(1) / N(2)
6. Communicate with community leaders/religious leaders Y(1) / N(2)
7. Communicate with teachers Y(1) / N(2)
8. Mosque announcement Y(1) / N(2)
9. Local radio Y(1) / N(2)
10. Printed materials Y(1) / N(2)
11. Other ( )

9-2. How does your EPI center encourage/convince/inform community people to bring children to out-reach session in the village? (NOT ask one by one, just ask "anything else?")

1. Door to door visit Y(1) / N(2)
2. Through LHWs Y(1) / N(2)
3. Through LHV Y(1) / N(2)
4. Through MO in the FLCF, MO encourages/informs care-takers when they come to FLCF as patients or for other purpose. Y(1) / N(2)
5. Requesting clients of EPI to encourage/inform their neighbors/friends/relatives Y(1) / N(2)
6. Communicate with community leaders/religious leaders Y(1) / N(2)
7. Communicate with teachers Y(1) / N(2)
8. Mosque announcement Y(1) / N(2)
9. Local radio Y (1)/ N(2)
10. Printed materials Y(1) / N(2)
11. Other ( )

10. What major difficulties do you have during your daily activities of routine EPI except equipment and refusal cases? (write as many as possible)(Do NOT read one by one)

(1). Low salary
(2). No or insufficient POL
(3). Hard to reach areas
(4). Shortage of vaccine, vaccine stockout
(5). Over workload, too busy, shortage of number of EPI technicians
(6). Frequent campaign (Polio campaign, TT campaign)
(7). Less awareness of people on EPI
(8). Because EPI technicians are not local, so they are not accepted/welcomed by the local people.
(9). Negative propaganda of EPI/polio by religious leaders
(10). Others ( )

11.What contents do you want to learn during the next refresher training? Please mark top three contents.**(Show Card)**

1. Social mobilization and communication to persuade people to accept EPI
2. Communication skill with religious/community people
3. Organization of EPI sessions
4. Record keeping
5. Management of drop-out
6. About new vaccines which have not been used in EPI

7. Clinical aspects of the EPI target diseases
8. Knowledge to answer to frequently asked questions from people
9. How to store and transport vaccines
10. Cold chain management/minor repair
11. Vaccine side effects
12. How to estimate the target population
13. How to calculate the EPI coverage
14. Safe injection
15. Mutual learning from other EPI technicians
16. How to provide health education to community people
17. Others( )

12.What kind of support from district, province and partners do you need besides equipment? (write as many as possible) (Do NOT read one by one)

(1). Salary, incentive
(2). POL
(3). Refresher training
(4). Regular supervision
(5). District team convince people on EPI
(6). Others ( )

13.Documentation/record keeping **Observation**

Monthly Progress Chart 2007 is pasted on the wall Y (1) / N (2)
Monthly Progress Chart 2008 is pasted on the wall Y (1) / N (2)

	Inventory Sheet	Stock register	Daily EPI register	Permanent EPI register	List of defaulter	Outreach plan for routine EPI
Available or not	A/NA	A/NA	A/NA	A/NA	A/NA	A/NA
Updated	Y*1/N	Y*2/N	Y*3/N	Y*3/N		A/NA for this month
Properly recorded				Y*4/N		

*1 be filled in until yesterday *2 to be filled in until last delivery *3 to be filled in until last session.
*4 Five entries are selected randomly from permanent EPI register and checked whether there are discrepancies with entries in daily register. If there are two or less discrepancies, it is judged as properly recorded.

A=1 Y=1
NA=2 N=2

14. Vaccine logistics

Diluent is kept in refrigerator? Y (1)/ N(2)

Observation

Comparing amount of vaccine in the record and exact amount of vaccine in the cold chain

	BCG	BCG Diluent	OPV Polio	Combo DPT-Hep B	TT	Measles	Measles Diluent
Record							
Exact amount							

15.Supervision

How many times of supervision confirmed by signatures of supervisors did you received in the last three months for routine EPI? (Count signatures on Daily EPI register) **Observation**

EDO	EPI Coordinator	DSV	TSV	MO in the FLCF

ANNEX X

Date: April 13, 2011

Evaluation sheet for JICA−P-NIH project on QCL

#	Evaluation Item	Section or field	Before Project or training	Intermediate evaluation							At end of the project
				2005	2006	2007	2008	2009	2010	2011	
1	No. of staff received the JICA training course at BIKEN	Bacteriology sec.	01	-	01	01	-	01	-	-	
		Virology sec.	Nil	-	-	-	-	-	-	-	
		Chemistry sec.	Nil	-	-	01	-	-	-	-	
		Total	01	-	01	02	-	01	-	-	
2	No. of staff attended to the meeting for the report on the JICA training course at BIKEN	Bacteriology sec.	01	-	01	01	-	01	-	-	
		Virology sec.	Nil	-	-	-	-	-	-	-	
		Chemistry sec.	Nil	-	-	01	-	-	-	-	
		Total	01	-	01	02	-	01	-	-	
3	No. of items that QCL has introduced the knowledge obtained through the JICA training at BIKEN (e, g. statistical analysis for the tests etc.)	Bacteriology sec.	Nil	-	02	03	-	01	-	-	
		Virology sec.	Nil	-	-	-	-	-	-	-	
		Chemistry sec.	Nil	-	-	01	-	-	-	-	
		Total	Nil	-	02	04	-	01	-	-	
4	No. of test items that QCL has introduced to the topic(s) of the training at P-NIH	Assay validation	Nil	-	-	2	-	-	4	1	
		Trend Analysis	Nil	-	-	2	5	5	6	1	
			Nil	-	-	-	-	-	-	-	
			Nil	-	-	-	-	-	-	-	
			Nil	-	-	-	-	-	-	-	
			Nil	-	-	-	-	-	-	-	

5	No. of equipments supplied by JICA	Bacteriology sec.	Nil	-	-	03	09	-	-	-	
		Virology sec.	Nil	-	-	03	07	-	-	-	
		Chemistry sec.	Nil	-	-	02	06	-	-	-	
		Total	Nil	-	-	08	22	-	-	-	
6	No. of items that QCL has introduced new technologies through the supply of equipments by JICA (e.g. total organic analyzer, Carl Fisher method etc.)	Bacteriology sec.	Nil	-	02	-	-	01	-	-	
		Virology sec.	Nil	-	-	-	01	-	-	-	
		Chemistry sec.	Nil	-	-	-	01	-	-	-	
		Total	Nil	-	02	-	02	01	-	-	
7	Progress on No. of in-valid tests (including re-test)	Bacteriology sec.	Nil	NA	NA	NA	NA	NA	NA	NA	
		Virology sec.	Nil	NA	NA	NA	NA	NA	NA	NA	
		Chemistry sec.	Nil	NA	NA	NA	NA	NA	NA	NA	
		Total	Nil	NA	NA	NA	NA	NA	NA	NA	
8	No. of established and amended SOP relating to the project.	Bacteriology sec.	Nil	-	-	-	-	-	05	-	
		Virology sec.	Nil	-	-	-	-	-	07	-	
		Chemistry sec.	Nil	-	-	-	-	03	03	-	
		Total	Nil	-	-	-	-	03	15	-	

ANNEX XI

EXPANDED PROGRAMME ON IMMUNIZATION
Ministry of Health, Government of Pakistan

Federal EPI Cell, National Institute of Health, Park Road, Chak Shahzad, Islamabad
Tel: 00 92 51 9255101, 9255360 & 9255370 Fax: 9255086, 9255460 altafbosan@gmail.com

F. NPM-EPI (2010)/7 February 4, 2011

1. Dr. Arshad Iqbal Dar
   Director Health Services, EPI
   Directorate of Health Services, Punjab,
   Lahore
2. Dr. Mazhar Ali Khamisani
   Project Director, EPI
   Department of Health, Sindh,
   Karachi
3. Dr. Jan Baz Afridi
   Deputy Director, EPI
   Department of Health, KPK,
   Peshawar
4. Dr. Mohammad Ayub Kakar
   Provincial Coordinator, EPI
   Department of Health, Baluchistan,
   Quetta

Subject: Guidelines/ Recommendations on Vaccine Stock Management

Dear All,

The Federal Expanded Program on Immunization (EPI) has been conducting series of workshops on vaccine Stock Management in collaboration with JICA to enhance the capacity of EPI persons from districts (4 per selected districts) a list of trained persons is attached for ready reference please.

2. Based on the re analysis on stock registers of four provinces and data collected during the workshops specific recommendations recommendations for vaccine & logistics management are developed.

3. You are kindly requested to circulate the recommendations/guidelines on vaccine stock management to all districts to assure compliance.

Dr Altaf Hussain Bosan
National Programme Manager

Copy to:
1. PS to Secretary, Ministry of Health, Islamabad
2. PS to Secretary, Health Department, Government of Punjab, Lahore
3. PS to Secretary, Health Department, Government of Sindh, Hyderabad
4. PS to Secretary, Health Department, Government of KPK, Peshawar
5. PS to Secretary, Health Department, Government of Balochistan, Quetta
6. Director General, Ministry of Health, Islamabad
7. Director General Health Services, Punjab, Lahore
8. Director General Health Services, Sindh, Hyderabad
9. Director General Health Services, Khyber Pakhtunkhwa, Peshawar
10. Director General Health Services, Balochistan, Quetta
11. Country Representative, WHO, Islamabad
12. Country Representative, UNICEF, Islamabad
13. Country Representative, JICA, Islamabad
14. Store Officer, EPI, Islamabad

ANNEX-1

GUIDELINES / RECOOMENDATIONS ON VACCINE STOCK MANAGEMENT

The Federal Expanded Programme on Immunization (EPI) has been conducting series of workshops on Vaccine Stock Management in collaboration with JICA to enhance the capacity of EPI persons from districts (4 per selected districts) a list of trained persons is attached for ready reference in the reference letter please.

Based on the re analysis on stock registers of four provinces and data collected during the workshops specific recommendations for vaccine & logistics management are developed . You are kindly requested to circulate the recommendations to all districts to assure compliance.

1. Implementation of Physical Inventory: There were several mistakes on the calculation of stock balance in the stock register. However, the calculation was continued without correcting the mistakes and this is very common problem in vaccine logistics. In such case, no one knows about the actual quantity of stock balance which is crucial for calculation of requirement and to avoid any stock-out. Responsible staff should know how to carry out a systematic physical stock count and how to reconcile any discrepancies found in the stock record.

Therefore, it is strongly recommended to implement "physical inventory" at quarterly at district and sub-district stores and monthly at UC stores. The inventory should include all vaccines (routine and SIA), syringes and safety boxes. Inventory of other equipments like ILR, freezer, vaccine carrier, cold box etc. can be done once in a year. The physical inventory to be done by a team headed by a responsible officer and the stock register to be reconciled accordingly and signed by the head of the inventory team.

2. Maintenance of vaccine & logistics stock registers and separate record for Campaign from Routine vaccines. Following stock registers to be maintained at every level:

a) Vaccines and Injection equipment stock registers: This register would have record of transaction of all vaccines, Diluents, AD syringes, Reconstitution syringes and safety boxes. All pages to be numbered and each vaccines and logistics to be recorded at separate section of the book. Vaccines for use in routine and SIAs to be recorded separately at different sections. However, a separate register can be maintained for campaign vaccine only. In an emergency case, if vaccine supplied for SIA to be used for routine or vice versa, it is recommended to put a note in the "remark" column with details e.g. date, quantity received or issued as campaign or routine, etc.
b) Logistics stock register: stock of all other logistics e.g. ILR, freezer, refrigerator, cold box, vaccine carrier, ice box, voltage stabilizer, generator, furniture would be recorded in this registers in different sections.

Every supply and receive of every item to be recorded as a separate entry on the same day and that to be signed by the assigned person. At the last date of every month, all transactions of the vaccine register to be compiled, end balance of that month (which is the starting balance of the day 1 of the next month) to be determined. The respective officer in-charge of that store should countersign at the end and beginning balance of the stock. The officer in-charge would also countersign any new entry in the logistics register. Reconciliation of the stock register after periodic physical inventory also to be countersigned by the officer in-charge of that respective store.

3. Count quantity by "Dose": Some province counts the quantity of vaccine by "Vial" and other counts by "Dose". It also makes the confusion for controlling and making plan for the future procurement. Especially, TT has the products of two kinds, one is 20 doses and the other is 10 doses. Then if it is counted by vial, it makes confusion very easily. Therefore, it is recommended that quantity of all vaccines to be counted by "Dose", not by "Vial". However, in the description of the product column dose per vial can be mentioned.

4. Stock-out at provincial EPI storage: According to the result of study by JICA expert, all of provincial EPI storage is repeating stock-out or nearly stock-out frequently. Stock-out is the most harmful factor to interrupt the improvement of vaccine coverage. Federal EPI is now making effort to improve the situation, especially, increasing the procurement of BCG and preparing buffer stock for all of vaccines and introducing VSSM software at all provincial stores. Therefore, also provincial EPI stores are advised to submit their demand well ahead before stock-out occurs.

5. Expiry of vaccine: There were Expiry of Measles and TT in some province which is an indication of very inefficient vaccine management that results in wastage of huge amount of tax payers' money. This is to remind all that all vaccines except part of the Pentavalent vaccine are procured by the Government of Pakistan with its own resources. Following recommendations are made to avoid expiry of vaccine.

a) Always use/supply vaccines which expiry date is earlier.
b) Make demand based on consumption of the previous month/quarter, NOT based on target population.

If any vaccine or logistics pass its expiry date, record those during next physical inventory remove from the store, dispose following official procedure and reconcile the stock register.

6. Data inconsistency: Data inconsistency in different immunization reports was a frequent observation. Some districts reported higher number of immunization in a particular period than the quantity of that vaccine they had at that period. This kind of report gives the doubt and destroys the trust between district and province, province and Federal EPI storage. Therefore, it is recommended that the district EPI team should verify any such in consistency in their monthly report and would correct that before sending to the provincial office. The provincial EPI office also should verify reports and demand send from districts more carefully before onward submission to federal EPI

7. Bundle supply of vaccine and injection equipments: Bundle supply of vaccine and injection equipments at regular interval is one of the most important and essential factor to establish effective vaccine logistics management system. The Federal EPI store is now trying to improve the situation and planning to implement regular bundle supply based on annual plan. Then it is also recommended for provincial and district EPI stores to supply vaccines and logistics in bundle and at certain interval. Timely submission of demand at higher level is also required to ensure timely supply.

8. Utilize Max/Min Vaccine stock management: To improve the situation of above problems and subjects, Max/Min Vaccine stock management theory is a very useful tool. Therefore, it is recommended for EPI stores at all levels including Federal, provincial and district to utilize this management system. This is further recommended that the VSSM software to be used at every provincial stores ASAP for ensuring more efficient management.

Annex XII

LIST of Products

1	Poster for immunization	Mar-09	Project developed and printed for awareness of vaccination schedule, Distributed to FLCFs in 4 target district (20000copies)
2	Vaccine Carring Bag for LHS	Apr-10	To carry vaccines by LHS's for delivering LHW's health house immuniztion. Distributed to LHSs in District Haripur (30 bags)
3	EPI monthly Planner	Mar-11	technician. Disributed to all EPI technicians in district Haripur
4	Vaccine Demand form	Feb-10	Project developed the unified format for vaccine demand and destributed all the district on the training. Monitoring on provincial level is on going.
5	Guidelines- Recommendations on Vaccine Stock Mamagement	Oct-10	Shot term expert's recommendations were issued as guidlines of vaccine stock management in a official letter by Federal EPI to provincial EPI
6	Material for Vaccine Stock Management Training	Feb-10	Distributed on trainig
7	Material for EPI data management Training	Mar-11	Distributed on training
8	LHW immunization reporting form(LHW to LHS, EPI techinician)	Sep-10	LHWs. Distributed to all trained LHWs in Haripur. (Trial since September 2009)
9	LHW immunization reporting form(LHS to District NP office)*	Mar-11	To make EPI data more reliable, aiming at the effective EPI data management, forms are consented among Provincial EPI, National Program and the Project at the meeting on April 2011.Trial use will start from May 2011 to spread all the districts in KPK province after July 2011. *Draft
10	LHW immunization reporting form(District to Province)*	Mar-11	
11	EPI monthly reporting form(FLCFs to District)*	Mar-11	
12	EPI monthly reporting form(District to Province)*	Mar-11	
13	Report on Baseline Survey in Haripur District	Oct-07	
14	Report on Situation Survey in Project Target District	Nov-08	

ANNEX XIII

Plan of Operations (PO) Output 1 : EPI services are properly provided in the target districts.

	Activities for output 1	Responsible Organizations				2006				2007												2008		
		Federal Level	Provincial Level	District Level		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1-1	Conduct Baseline Survey, Mid-term Review, and Terminal Evaluation.	—	EPI Coorinator NP Coordinator		Plan																			
					Actual																			
1-2	Formulate a micro plan in each district, including the allocation of EPI personnel.	—		EDO-H EPI Coordinator	Plan																			
					Actual											quarterly								
1-3	Conduct training needs assessment as part of Baseline Survey.	—	NP Training Coordinator		Plan																			
					Actual																			
1-4A	Conduct TOT for master trainer on LHW involvement in EPI services (For master trainer)	—	NP Coordinator NP Training Coordinator	NP Coordinator	Plan																			
					Actual																			
1-4B	Conduct TOT at FLCF level on LHW involvement in EPI services for EPI technicians, Lady Health Supervisors (LHSs), etc.	—	NP Coordinator NP Training Coordinator	NP Coordinator	Plan																			
					Actual																			
1-5	Conduct training on EPI service delivery for LHWs.	—		NP Coordinator	Plan																			
					Actual															Jutec Shanta				
1-6	Conduct refresher training for EPI technicians.	—	EPI Coordinator		Plan																			
					Actual																	Shanta		
1-7	Develop a module for the training on supportive supervisory skills.	—	NP Training Coordinator		Plan																			
					Actual																			
1-8	Conduct training on supportive supervisory skills for LHSs.	—	NP Training Coordinator		Plan																			
					Actual																			
1-9	Formulate an inventory of cold chain equipment, power and water supply, and facilities in EPI centers.	—	EPI Coordinator		Plan																			
					Actual																			
1-10	Conduct equipment needs assessment as part of Baseline Survey.	—	EPI Coordinator		Plan																			
					Actual																			
1-11	Procure and install necessary equipment.	—	EPI Coordinator		Plan																			
					Actual																			
1-12	Revise the existing Standard Operation Procedure (SOP) for EPI logistics management as necessary.	—	EPI Coordinator		Plan																			
					Actual																			
1-13	Conduct training on EPI logistics.	—	EPI Coordinator		Plan																			
					Actual																			
1-14	Conduct training on maintenance and repair of EPI-related equipment.	—	EPI Coordinator		Plan																			
					Actual																			
1-15	Conduct needs assessment on mobile/outreach activities as part of Baseline Survey.	—	EPI Coordinator	EPI Coordinator	Plan																			
					Actual																			
1-16	Conduct training on data management at district level.	—	EPI Coordinator	EPI Coordinator	Plan																			
					Actual																			
1-17	Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at FLCF.	—	EPI Coordinator	EPI Coordinator NP Coordinator	Plan																			
					Actual																			
1-18	Formulate checklists on EPI activities, including reported coverage, adverse events, vaccine wastage, and stock-outs at provincial, district, and community level.	—	EPI Coordinator NP Coordinator		Plan																			
					Actual																			
1-19	Ensure monitoring of EPI activities at EPI centers.	—	EPI Coordinator NP Coordinator	EPI Coordinator NP Coordinator	Plan																			
					Actual																			

ANNEX XIII

Plan of Operations (PO) Output 2 : Parents ensure their children to be vaccinated in the target districts.

Activities for output 2	Responsible organization in charge				2006				2007												2008		
	Federal Level	Provincial Level	District Level		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2-1 Conduct a Knowledge, Attitudes, and Practices (KAP) survey as part of Baseline and Evaluation Study.	—	EPI Coordinator NP Coordinator		Plan																			
				Actual																			
2-2 Formulate a communication strategy for EPI.	—	EPI Coordinator		Plan																			
				Actual																			
2-3 Develop or revise advocacy and Behavioral Change and Communication (BCC) materials as necessary.	—	EPI Coordinator NP Training Coordinator		Plan																			
				Actual																			
2-4 Hold seminars and workshops on child immunization for health workers, maleks, TBAs, school teachers, religious and community leaders, and policymakers.	—	EPI Coordinator NP Training Coordinator		Plan																			
				Actual																			
2-5 Conduct health education on child immunization for parents, caretakers of children, etc. through health workers, LHWs, school teachers, religious and community leaders.	—	EPI Coordinator NP Training Coordinator	EPI Coordinator NP Coordinator	Plan																			
				Actual																			
2-6 Raise awareness of pregnant women on child immunization during ANC through Lady Health Visitors (LHVs) and Women Medical Officers.	—	EPI Coordinator NP Training Coordinator	EPI Coordinator NP Coordinator	Plan																			
				Actual																			

Plan of Operations (PO) Output 3: EPI disease surveillance including using AFP (Acute Flaccid Paralysis) surveillance system is strengthened.

Activities for output 3	Responsible organization in charge				2006				2007												2008		
	Federal Level	Provincial Level	District Level		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
3-1 Develop guidelines on EPI disease surveillance.	NSC Coordinator	—	—	Plan																			
				Actual																			
3-2 Conduct training on EPI disease surveillance.	NSC Coordinator	—	—	Plan																			
				Actual																			
3-3 Monitor the EPI disease surveillance by reviewing the admission records in health facilities in order to detect unreported cases.	NSC Coordinator	—	—	Plan																			
				Actual																			

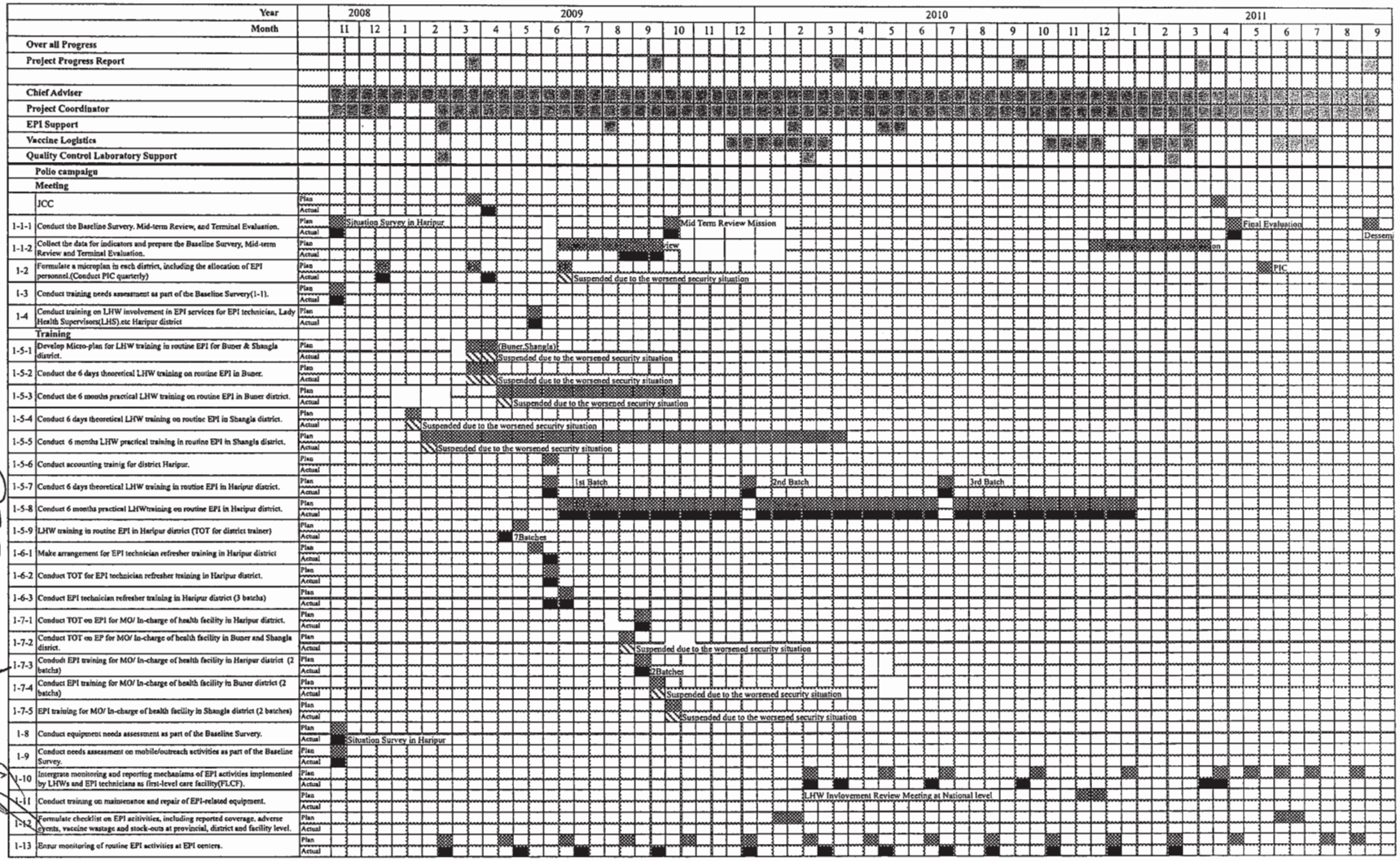
Plan of Operations (PO) Output 4 : Quality control capacity of QCL/NIH is enhanced.

Activities for output 4	Responsible organization in charge				2006				2007												2008		
	Federal Level	Provincial Level	District Level		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
4-1 Formulate a procurement plan based on the needs assessment.	Chief in QCL	—	—	Plan																			
				Actual																			
4-2 Procure and install the equipment.	Chief in QCL	—	—	Plan																			
				Actual																			
4-3 Conduct training on use and maintenance of the equipment.	Chief in QCL	—	—	Plan																			
				Actual																			
4-4 Conduct training on quality control of vaccines.	Chief in QCL	—	—	Plan																			
				Actual																			
4-5 Monitor QCL activities.	Chief in QCL	—	—	Plan																			
				Actual																			

ANNEX XIII

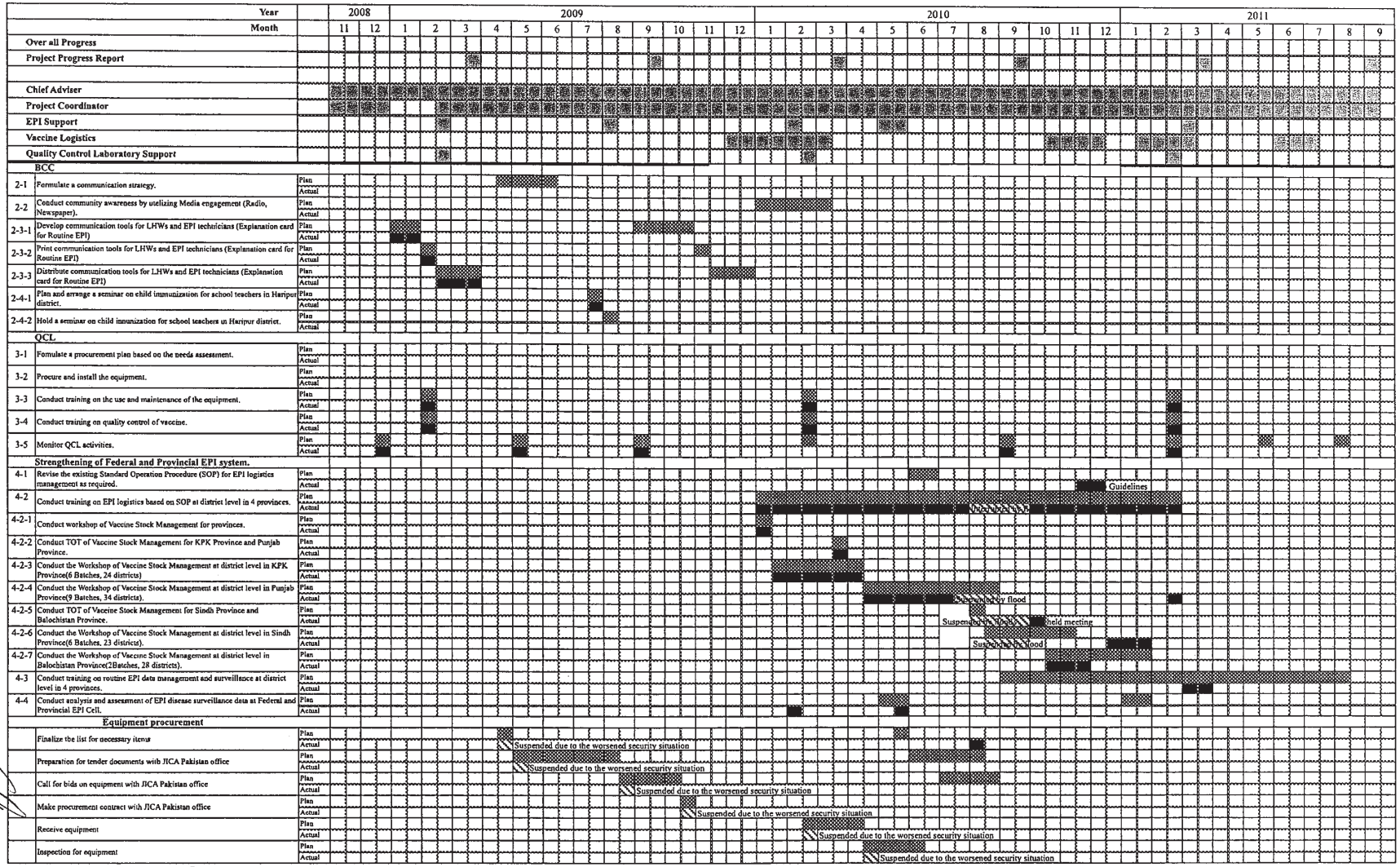
Plan of Operations Nov. 2008- Sep 2011

4/28/11



ANNEX XIII

Plan of Operations Nov. 2008- Sep 2011



Project Design Matrix （PDM）

Ver1　作成日：2009 年 10 月

プロジェクト名：パキスタン EPI/ ポリオ対策プロジェクト　　ターゲットグループ：対象県における２歳以下の乳幼児

対象地域：北西辺境州 4 県（スワット，ブネール，シャングラ、ハリプール）　　プロジェクト期間：５年間

プロジェクト要約	指標	評価方法	前提条件
上位目標： 対象県において定期予防接種にて予防可能な疾患の罹患率が減少する．	1. ポリオ発生患者ゼロが維持される． 2. 麻疹の発症数が減少する． 3. 新生児破傷風の発症数が減少する．	1. ナショナルサーベイランス広報 2. 県保健局長報告 3. 同上	北西辺境州において EPI プログラムと LHW プログラムの連携と協力が維持される．
プロジェクト目標： 対象県における 2 歳未満の乳幼児が予防接種を受けられるようになる．	1. 麻疹と 5 価ワクチンの予防接種を受けた 1 歳未満児の数が増加する． 2. 定期予防接種率（5 価ワクチン）が増加する． 3. 5 価ワクチン接種におけるドロップアウト率の減少（EPT1-DPT3>DPT1）	1. 県保健局長報告 2. 同上 3. 同上	1. ワクチンの品質・効果が維持される． 2. 乳幼児の栄養状態が悪化しない． 3. ポリオキャンペーンが継続される．
成果 1. 対象県において定期予防接種（EPI）サービスが適切に実施される．	1-1 EPI サービスの提供に関する研修を受講した LHW や EPI 従事者の比率が 80% 以上となる． 1-2 LHW による予防接種数の増加． 1-3 機能する冷蔵庫を有する EPI センターの数の増加． 1-4 一次医療施設レベルでの活動計画（アウトリーチプラン）の適切な策定・実施がなされる．	1-1 出席者リスト 1-2 EPI パーマネント・レジスター 1-3 プロジェクト・モニタリング報告書 1-4 一次医療施設のアウトリーチ計画	1. LHW による予防接種実施の EPI プログラム方針が維持される． 2. EPI ワクチンが継続的に北西辺境州に供給される． 3. 自然災害や地域紛争がプロジェクトの活動を阻害しない．
2. 対象県において両親が乳幼児に定期予防接種を受させるようになる．	2-1 住民啓蒙活動に参加した宗教指導者，コミュニティリーダー，両親，政策策定者の数が増加する． 2-2 スケジュール通りに定期予防接種（8 疾患）を完了させるべきであることを認識している 1 歳未満児の両親や後見人の比率の向上． 2-3 ポリオキャンペーンに加えて定期予防接種が重要であることを認識している 1 歳未満の乳幼児の両親及び養育人の数が増加する．	2-1 出席者リスト 2-2 質問表調査 2-3 質問表調査	
3. ワクチン品質管理検査室（QCL）が強化される．	3-1 研修を受講した QCL 職員の数が増加する． 3-2 GMP（Good Manufacturing Practice）を含めた検査基準に沿った知識と技術を QCL 職員が習得する． 3-3 調達機材の適切な活用及び維持管理がなされている．	3-1 質問表調査 3-2 質問表調査	
4. 連邦 EPI と州 EPI の定期予防接種システムが強化される．	4-1 州および県における在庫切れ日数及び受け取り最大日数が減少する． 4-2 研修モニタリング・評価の実施数が増加する． 4-3 定期予防接種データの質が向上する． 4-4 州 EPI 局及びナショナルプログラムによるモニタリング数が増加する．	4-1 プロジェクト・モニタリング報告書 4-2 研修モニタリング評価報告書 4-3 EPI データ 4-4 州モニタリング報告書	

活動 1-1　ベースラインサーベイ・中間レビュー・終了時評価を実施する. 1-2　各対象県におけるマイクロプランの作成・不足人員の補充計画（四半期毎の PIC 開催）を策定する. **＜人材育成＞** 1-3　ベースライン・サーベイにおいて研修のニーズ評価を実施する（1-1 にて実施）. 1-4　EPI テクニッシャン及び Lady Health Supervisor（LHS）を対象とした LHW 研修におけるトレーナー研修を実施する. 1-5　EPI プログラムに関する LHW 研修を実施する. 1-6　EPI テクニッシャンの再研修を実施する. 1-7　メディカルオフィッサーに対する EPI 研修を実施する. **＜ロジスティクス支援＞** 1-8　ベースライン調査時に機材のニーズ評価を実施する. 1-9　必要な機材を調達、設置する. **＜遠隔地における EPI サービスへのアクセス＞** 1-10 ベースライン調査時にアウトリーチ活動に関するニーズ評価を実施する. **＜モニタリング活動＞** 1-11 LHW 及び EPI テクニッシャンのモニタリングと報告システムの統合を行なう. 1-12 EPI 関連機材の維持管理に関する研修を実施する. 1-13 州、県及び 1 次医療施設において報告率、副反応、ワクチンの廃棄率及び在庫切れを含めた EPI 活動に関するチェックリストを作成する. 1-14 EPI センターにおけるモニタリング強化する.	投入 日本側投入 1.　専門家派遣 A）長期専門家 ・チーフアドバイザー ・プロジェクト調整員 B）短期専門家 ・ワクチン品質管理 ・EPI 疾患サーベイランス ・EPI 支援 ・ワクチン在庫管理 2.　本邦研修及びパキスタン国内研修 3.　供与機材 / 研修機材	パキスタン側投入 1.　職員配置 プロジェクトダイレクター プロジェクトマネージャー カウンターパート職員 2.　オフィス及びプロジェクト実施に必要な施設の提供 3.　その他 管理費・運用コスト 電気水道等の施設維持管理費	1.　車両燃料費が北西辺境州保健局の予算に確保される. 2.　ポリオキャンペーン等により EPI テクニシャンや LHW の仕事量が増加しない.

＜コミュニティ啓発＞ 2-1 住民啓発の戦略計画を開発する . 2-2 啓蒙・啓発用のポスター・コミュニケーションツールを改訂する . 2-3 学校の教師 , コミュニティリーダー ,LHW, 宗教指導者を対象とした定期予防接種に関するセミナー / ワークショップを実施する . 2-4 学校の教師 , コミュニティリーダー ,LHW, 宗教指導者を対象とした定期予防接種に関する健康教育の実施する . 2-5 LHV や医師を通して予防接種に関する啓蒙を妊娠女性対象に実施する .		
<QCL 支援＞ 3-1 EPI 疾患のサーベイランスガイドラインを開発する . 3-2 機材を調達し、施設にインストールする . 3-3 機材の使用及び維持管理に関する研修を実施する . 3-4 ワクチン品質管理検査の研修を実施する . 3-5 QCL 活動のモニタリングを実施する .		
＜連邦 EPI 支援＞ 4-1 ワクチン在庫管理に関して必要に応じて SOP を改訂する . 4-2 SOP を基にしたワクチン在庫管理研修を 4 州の県レベルで実施する 4-3 定期予防接種におけるデータ管理とサーベイランスに係る研修を 4 州の県レベルで実施する . 4-4 連邦及び州の EPI において、予防接種関連疾患に関するサーベイランスデータの分析とアセスメントを実施する .		

EPI: Expanded Program on Immuniztion(予防接種拡大事情計画)
KAP survey: Knowledge, Attitude and Practice Survey(知識・行動変容調査)
LHW: Lady Health Worker(女性地域保健従事者)
QCL:Quality Control Laboratory(ワクチン品質管理検査室)

Revised Project Design Matrix (PDM)

Version 1. Date of revision : October 9, 2009

Project Name : EPI/Polio Control Project in Pakistan

Target Group : Children under the age of two in the target districts

Target Area : 4 districts (Buner, Shangla, Swat and Haripur) in North West Frontier Province (NWFP)

Project Period : 5 years

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal: Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.	1. Polio free is maintained. 2. The incidence of measles is reduced. 3. The incidence of NT is reduced.	1. National Surveillance Bulletin (National Surveillance Cell) 2. Report by EDO Health Offices (Annual Report of Federal EPI Cell) 3. Same above	Collaboration between EPI program and LHW program is maintained in NWFP.
Project Purpose: Children under the age of two are vaccinated in the target districts.	1. The number of immunized children with measles or Pentavalent vaccine under one year-old is increased. 2. Reported routine EPI coverage (Pentavalent) is increased. 3. Drop-out rate of Pentavalent is reduced [(Penta 1-Penta 3)/ Penta 1].	1. Report by EDO Health Offices 2. Report by EDO Health Offices 3. Report by EDO Health Offices	1. Potency of EPI vaccine is 2. assured. 3. The nutrition status of children does not worsen. Polio campaigns are
Outputs: 1. EPI services are properly provided in the target districts.	1-1. More than 80% of LHWs, EPI technicians and medical doctors are trained on EPI service provision.	1-1. Participant list	1. Role of LHWs in EPI" of the National EPI Policy remains unchanged.
	1-2. The number of immunizations administered by LHWs is increased.	1-2. EPI Permanent Register	
	1-3.. The number of EPI centers having functional refrigerator is increase.	1-3. Project Monitoring Report (From Activity 1-19)	2 EPI vaccines are constantly supplied to NWFP.
	1-4. Out Reach Plan is formulated and implemented at FLCF level.	1-4. Out Reach Plans of FLCFs	3. The natural disasters or conflicts do not affect project activities.
2. Parents ensure their children to be vaccinated in the target districts.	2-1. The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased.	2-1. Participant list	
	2-2 The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from 8 dangerous diseases, availing the services to complete the course in a timely.	2-2 Questionnaire survey	
	2-3 The percentage of parents/caretakers of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs /SNIDs.	2-3 Questionnaire survey	
3. Quality control capacity of QCL/NIH is enhanced.	3-1. The number of trained QCL staff is increased.	3-1. Participant list	
	3-2. The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP.	3-2. Questionnaire survey	
	3-3. Procured equipment of the QCL is properly utilized and maintained.	3-3. Questionnaire survey	

4. Federal and Provincial routine EPI system is strengthened.	4-1 Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage 4-2 The number of training monitoring and evaluation is increased. 4-3 The quality of routine EPI data is improved. 4-4 The number of monitoring by provincial EPI Cell and Provincial National Program is increased.	4-1 Project Monitoring Report (From Activity 1-13) 4-2 Training monitoring and evaluation report 4-3 Routine EPI data 4-4 Provincial monitoring report	
Activities: 1-1. Conduct the Baseline Survey, Mid-term Review, and Terminal Evaluation. 1-2. Formulate a micro plan in each district, including the allocation of EPI personnel. ＜Human Resources Development ＞ 1-3. Conduct training needs assessment as part of the Baseline Survey (1-1). 1-4. Conduct training on LHW involvement in EPI services for EPI technicians, Lady Health Supervisors (LHSs), etc. 1-5. Conduct training on EPI service delivery for LHWs. 1-6. Conduct refresher training for EPI technicians. 1-7. Conduct EPI training for medical officers. <Assessment of Logistics Management> 1-8. Conduct equipment needs assessment as part of the Baseline Survey. 1-9. Procure and install the necessary equipment(1-1) <Access to EPI Services in Remote Areas> 1-10. Conduct needs assessment on mobile/outreach activities as part of the Baseline Survey (1-1). <Monitoring Activities> 1-11. Integrate monitoring and reporting mechanisms of EPI activities implemented by LHWs and EPI technicians at first-level care facility (FLCF). 1-12. Conduct training on maintenance and repair of EPI-related equipment. 1-13 Formulate checklists on EPI activities, including reported coverage, adverse events, vaccine wastage, and stock-outs at provincial, district and facility level. 1-14. Ensure monitoring of routine EPI activities at EPI centers. <Community Awareness> 2-1 Formulate a communication strategy for EPI. 2-2 Develop or revise advocacy and Behavioral Change and Communication (BCC) materials as necessary.	**Inputs:** **Japanese side** 1. Personnel ・Long-term experts Chief Advisor/EPI Project Coordinator ・Short-term experts QCL Vaccine Logistics Management EPI Support EPI disease surveillance As required 2. Training of project personnel in Japan and Pakistan 3. Equipment/training materials	**Pakistani side** 1. Personnel Project Director Project Manager Counterpart personnel 2. Provision of the project office and facilities necessary for the implementation of the project 3. Others Administrative and operational costs Running costs for electricity, water, etc.	1. POL for activities is secured in the recurrent budget of the NWFP Health Department. 2. The workload of EPI vaccinators and LHWs, such as NIDs and polio rounds, does not increase. **Pre-conditions**

2-3 Hold seminars and workshops on child immunization for health workers, maleks, TBAs, school teachers, religious and community leaders, and policymakers. 2-4 Promote health education on child immunization for parents, caretakers of children, etc. through health workers, LHWs, school teachers, religious and community leaders. 2-5 Raise awareness of pregnant women on child immunization during ANC through Lady Health Visitors(LHVs) and Women Medical Officers <Quality Control Laboratory Support> 3-1. Formulate a procurement plan based on the needs assessment. 3-2. Procure and install the equipment. 3-3. Conduct training on the use and maintenance of the equipment. 3-4. Conduct training on quality control of vaccines. 3-5. Monitor QCL activities. <Federal EPI Support> 4-1 Revise the existing Standard Operation Procedure (SOP) for EPI logistics management as required. 4-2 Conduct training on EPI logistics based on SOP at district level in 4 provinces. 4-3 Conduct training on routine EPI data management and surveillance at district level in 4 provinces 4-4 Conduct analysis and assessment of EPI disease surveillance data at Federal and Provincial EPI Cell.		

*: If the areas and organizations are not specified in the Objectively Verifiable Indicators, the target values are supposed to be achieved in the target districts (Buner, Shangla, Swat and Haripur). Haripur district has been newly included as target districts since April 2009.

評価項目	評価設問 大項目	小項目（指標）	判断基準・方法	必要なデータ	情報源	データ 収集方法
実績の検証	**上位目標の達成度** 対象県において定期予防接種にて予防可能な疾患の罹患率が減少する 。	1. ポリオ発生患者ゼロが維持される.	・ ポリオ発生患者数	・ ポリオ発生患者数の記録	ナショナルサーベイランス広報／県保健局長報告／専門家・C/P	資料レビュー/インタビュー
		2. 麻疹の発症数が減少する.	・麻疹発症数	・麻疹発症数の記録		
		3. 新生児破傷風の発症数が減少する.	・ 新生児破傷風の発症数	・ 新生児破傷風発症数の記録		
	プロジェクト目標の達成度 対象県における2歳児未満の乳幼児が予防接種を受けられるようになる。	1. 麻疹と5価ワクチンの予防接種を受けた1歳未満児の数が増加する.	・麻疹と5価ワクチンの予防接種を受けた1歳未満児の数	・麻疹と5価ワクチンの予防接種を受けた1歳未満時の数の記録	県保健局長報告／専門家･C/P	資料レビュー/インタビュー
		2. 定期予防接種率(5価ワクチン)が増加する.	・定期予防接種率（5価ワクチン）数	・定期予防接種率（5価ワクチン）数の記録		
		3. 5価ワクチン接種におけるドロップアウト率の減少(EPT1-DPT3>DPT1)	・5価ワクチン接種におけるドロップアウト率	・5価ワクチン接種におけるドロップアウト率の記録		
	成果の達成度 1. 対象県において定期予防接種(EPI)サービスが適切に実施される.	1. EPIサービスの提供に関する研修を受講したLHWやEPI従事者の比率が80%以上となる.	・EPIサービス提供に関する研修の受講の有無	･研修受講者数記録	出席者リスト	資料レビュー/インタビュー/現場視察
		2. LHWによる予防接種数の増加.	・LHWによる予防接種数の増減	･LHWによる予防接種数	EPIパーマネント・レジスター	
		3. 機能する冷蔵庫を有するEPIセンターの数の増加.	・ 機能する冷蔵庫とEPIセンターの数の増減	･機能する冷蔵庫とEPIセンターの数	プロジェクト・モニタリング報告書，県・現場レベルの台帳	
		4. 一次医療施設レベルでの活動計画(アウトリーチプラン)の適切な策定･実施がなされる.	・ アウトリーチプランの策定・実施の有無	･アウトリーチプランとその策定実施状況	一次医療施設のアウトリーチ計画とその報告書	
	２．対象県において両親が乳幼児に定期予防接種を受させるようになる.	1. 住民啓蒙活動に参加した宗教指導者，コミュニティリーダー，両親，政策策定者の数が増加する.	･住民啓蒙活動の実施回数とその評価	･住民啓蒙活動の実施記録	啓蒙活動実施記録、出席者リスト／専門家・C/P	資料レビュー/インタビュー/現場視察・WS
		2. スケジュール通りに定期予防接種(8疾患)を完了させるべきであることを認識している1歳未満児の両親や後見人の比率の向上.	･比率の向上度合い	･インタビュー･WS結果	WS／専門家・C/P	
		3. ポリオキャンペーンに加えて定期予防接種が重要であることを認識している1歳未満の乳幼児の両親及び養育人の数が増加する.	･認識の増加度合い	･インタビュー･WS結果	WS／専門家・C/P	
	3. ワクチン品質管理検査室（QCL）が強化される.	１．技術を習得したQCL職員が増加する。	･技術を習得したQCLスタッフの数	･出席者リスト、専門家報告書、インタビュー結果	専門家・C/P	資料レビュー/インタビュー
		２．GMPを含めた検査基準に沿った知識と技術をQCL職員が習得する.	･QCL職員の知識･技術の習得状況	･専門家報告書、インタビュー結果	専門家・C/P	
		３．調達機材の適切な活用及び維持管理がなされている.	･調達機材の維持管理状況	･機材リスト管理帳簿、専門家報告書、インタビュー結果	専門家・C/P	
	4. 連邦EPIと州EPIの定期予防接種システムが強化される.	1. 州および県における在庫切れ日数及び受け取り最大日数が減少する.	･在庫切れ日数及び受け取り最大日数の増減。	･在庫管理帳簿	プロジェクト･モニタリング報告書／専門家報告書	資料レビュー/インタビュー
		2. 研修モニタリング･評価の実施数が増加する.	･研修モニタリング･評価の実施数の増減	･研修モニタリング･評価の実施数	研修モニタリング評価報告書／専門家報告書	
		3. 定期予防接種データの質が向上する.	･定期予防接種データ	･定期予防接種データ	EPIデータ／専門家報告書	
		4. 州EPI及びナショナルプログラム(家族計画＆PHC)によるモニタリング数が増加する	･モニタリング数の増減	･モニタリング結果	州モニタリング報告書／専門家報告書	

実施プロセスの検証	**活動の進捗状況** 活動の進捗状況	活動は計画通りに行われたか.		・活動の実施状況 ・活動計画に修正があった場合、その理由や対応方法	専門家報告書／専門家・C/P／質問票	資料レビューインタビュー/質問票
	モニタリングの実施状況	モニタリングは行われていたか モニタリングの仕組みは適当か 関係機関・組織の役割は明確か		・プロジェクト全体のモニタリングの仕組み ・計画の修正内容 ・フィードバックの体制	専門家報告書／専門家・C/P	資料レビューインタビュー/質問票
	専門家とカウンターパートの関係性	コミュニケーションの状況 選択されたC/Pの適性さ 問題や計画変更が生じた際の対応方法など カウンターパートの変化（主体性・積極性） ＪＣＣが機能していたか？ ＪＩＣＡパキスタン事務所、本部人間開発部の機能は？		・コミュニケーションの頻度、方法 ・問題や計画変更が生じた際の対応 ・C/Pのプロジェクトへの貢献度合い（提案の数や内容など）	専門家報告書／専門家・C/P	資料レビューインタビュー/質問票
	プロジェクトとターゲットグループのかかわり方	MOH, QCL(NIH), NWFP-health, ハリプール県保健局、PHC幹部の認識・関与 各機関の認識・関与		・各ターゲットグループのプロジェクトへの期待 ・各ターゲットグループのプロジェクトへの貢献度合い ・会議、研修やワークショップへの参加の度合い ・各ターゲットグループの業務の改善例	専門家報告書／専門家・C/P	資料レビューインタビュー/質問票
	相手国実施機関のオーナーシップ	カウンターパート配置の適性度 予算手当て 実施機関関係者の参加の度合い		・C/Pの配置状況 ・C/Pのプロジェクト参加度 ・予算措置状況 ・各機関のプロジェクト支援の内容	専門家報告書／専門家・C/P	資料レビューインタビュー/質問票

評価項目	評価設問 大項目	小項目	判断基準・方法	必要なデータ	情報源	データ 収集方法
妥当性	プロジェクトは対象地域・社会のニーズに合致しているか？	プロジェクト目標と上位目標は「パ」国のEPI実施状況、関連疾患の罹患状況に照らして、そのニーズと合致していたか？	プロジェクトの方向性と「パ」国のニーズとの整合性	・「パ」国の国家戦略 ・「パ」国家保健政策 ・主要ドナーの支援状況	事前評価報告書／「パ」国の国家保健政策／主要ドナーの報告書／運営指導報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	プロジェクトはターゲットグループのニーズと合致しているか？	シャングラ県、スワット県、ブネール県、ハリプール県において、EPIによって予防可能な疾病による健康負担が解決すべき問題として優先度が高いか？ EPIサービスにおいて、ターゲットグループはどのような役割を果たしているか ターゲットグループの規模は適切か	プロジェクト対象地域におけるプロジェクトの必要性	・各県EPIの現状と課題 ・各県ターゲットグループの役割と能力（現状と今後の展望） ・受益者数 ・裨益者数	事前評価報告書／専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	わが国開発課題、援助重点分野と合致しているか	援助重点課題との関連性はあるか	対パキスタンODA政策、JICA事業実施計画との整合性の確認	・日本／JICAの対パキスタン国別援助計画および対保健分野援助計画 ・日本のODA方針	事前評価報告書／国別支援政策	資料レビュー/インタビュー/質問票
有効性	プロジェクト目標「対象県における2歳児未満の乳幼児が予防接種を受けられるようになる。」の達成度は現時点において適性範囲内か	プロジェクト目標達成の見込み		・「実績の検証」に同じ	「実績の検証」に同じ	資料レビュー/インタビュー/質問票
	成果はプロジェクト目標を達成するために十分であったか	成果の数、内容、質の適正度		・成果の数、内容、質の適正度 ・プロジェクト目標と各成果の関連性	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	プロジェクト目標の達成の妨げとなっている要因はあるか。	プロジェクト目標の達成状況／外部条件／阻害要因		・外部条件の状況 ・阻害要因の有無・内容	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	プロジェクト目標の達成を促進している要因はあるか	プロジェクト目標の達成状況／外部条件／貢献要因		・外部条件の状況 ・貢献要因の有無・内容	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
効率性	各成果の達成度は現時点において適正範囲内か	成果の達成度合いの適性度		・「実績の検証」に同じ	「実績の検証」に同じ	資料レビュー/インタビュー/質問票
	活動は成果を出すのに十分であったか	活動の数、内容、質の適正度		・活動の数、内容、質の適正度（注：PDMに記載されていない活動がないか要確認。） ・成果と活動の関連性	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	投入された資源量に見合った成果が達成されているか	投入された人材・研修・機材の適性度		・日本人専門家の数・専門分野 ・C/Pの数・専門性 ・国内研修の回数・参加者数と内容 ・本邦研修の回数・参加者数と内容 ・機材の数・種類	専門家報告書／研修参加報告書／機材供与ﾘｽﾄ／専門家・C/P	資料レビュー/インタビュー/質問票
		投入（人・研修・機材）の活用度		・研修参加者数 ・供与機材の利用状況	研修参加報告書／機材供与ﾘｽﾄ／各種研修の記録／専門家・C/P	資料レビュー/インタビュー/質問票
		投入のタイミングの適性度		・投入実績（予定との比較）	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	効率性を阻害あるいは貢献した要因はあったか	阻害・貢献要因の有無		・成果の達成状況 ・外部要因（阻害・貢献）の有無とその内容	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票

インパクト	上位目標「対象県において定期予防接種にて予防可能な疾患の罹患率が減少する。」は達成される見込みか	プロジェクトの経験が、連邦ＥＰＩを通じて、「パ」国内の他地域に波及するか		・展開計画	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	ターゲットグループ以外への波及はあるか。	波及事例の有無		・該当する事例	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
	その他の正負のインパクトはないか	その他のインパクトの有無		・該当する事例	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
自立発展性	組織・制度的側面からみて、自立発展の見込みは高いか。	プロジェクトに係る各組織は、協力終了後も効果をあげていくための活動を実施するに足る組織能力をつけているか？（人材配置、意思決定プロセス等）	NWFP保健局は、プロジェクトを通してEPIに係るトレーナー育成を行い、そのモニタリングを行える運営能力を身につけたか？ 県保健局は、プロジェクトを通してEPIに係る研修運営を行える組織能力を身につけたか？ NWFP保健局は、EPIトレーニング後のLHWをモニタリングする能力を身につけたか？ 県保健局は、プロジェクトを通してコミュニティの人員に啓発を実施(ツールの開発・セミナー実施等)する組織能力を身につけたか？ QCLが品質管理に係るモニタリング能力を身につけているか？ 連邦EPI・州EPIが定期予防接種システムのモニタリング能力を身につけているか？	・組織の特徴（職員数、職員の専門性等） ・県保健局報告書 ・モニタリング報告書 ・インタビュー結果	「パ」国政府と県の資料各種／専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票
		プロジェクト終了後の政府からの制度的な支援の有無		・ 政府のEPI・ポリオ支援策（補助金等を含む）		
	財政的側面からみて、自立発展の見込みは高いか。	経常経費を含む予算の確保は行われているか？予算措置は十分行われているか？		・予算規模	MOH資料／専門家・C/P／関係機関財務諸表	資料レビュー／インタビュー
		現在EPI対策において他ドナーによって行われているEPIに係る援助が今後も継続される予定があるか？		・歳入状況		
	技術的側面からみて、自立発展の見込みは高いか	ＣＰの技術レベルを配慮した適切な技術の開発・移転がなされたか C/Pは、移転された技術、知識を十分身につけたか。 機材、移転技術などが、今後も広く活用されるか	関係諸機関にとってプロジェクトで用いられる技術移転の手法は受容されつつあるか？(技術レベル、社会的・慣習的要因など) EPI従事者及びLHWを指導するための人材育成が行われ、彼(女)らが、研修講師としてLHWに対して研修を実施することができるようになったか？ NIHのQCLでは、ワクチンの品質管理が体系的に実施できるようになったか？ 連邦EPIと州EPIの定期予防接種システムは自転する見込みが高いか？ プロジェクトで供与された資機材の維持管理は適切に行われているか？	・プロジェクト実施の過程や研修等に際し、C/Pが習得した技術（その利用状況） ・ プロジェクトで実施した活動の展開・継続状況 ・ワクチン品質管理実施状況 ・システムの運営状況 ・投入機材の利用状況	専門家報告書／専門家・C/P	資料レビュー/インタビュー/質問票

Item	Evaluation Questions Questions	Sub-questions(indicators)	criterion of judgment	Data of necessity	Information source	Means of data collection
Verification of performance	**Achievement of Overall Goal** Morbidity due to EPI-targeted vaccine-preventable diseases is reduced in the target districts.	1. Polio free is maintained.	・Number of Polio case	・The record of Polio case	National Surveillance Bulletin (National Surveillance Cell) ／ Report by EDO Health Offices (Annual Report of Federal EPI Cell) ／ Japanese Experts・C/P	Data review/interview
		2. The incidence of measles is reduced.	・Number of measles case	・The record of measles case		
		3. The incidence of NT is reduced.	・Number of NT case	・The record of NT case		
	Achievement of Project Purpose Children under the age of two are vaccinated in the target districts.	1. The number of immunized children with measles or Pentavalent vaccine under one year-old is increased.	・The number of immunized children with measles or Pentavalent vaccine under one year-old	・The record of number of immunized children with measles or Pentavalent vaccine under one year-old	Report by EDO Health Offices ／ Japanese Experts・C/P	Data review/interview
		2. Reported routine EPI coverage (Pentavalent) is increased.	・The number of routine EPI coverage (Pentavalent)	・The record of routine EPI coverage (Pentavalent)		
		3. Drop-out rate of Pentavalent is reduced [(Penta 1-Penta 3)/ Penta 1].	・Drop-out rate of Pentavalent	・The record on Drop-out rate of Pentavalent		
	Achievement of the Outputs 1. Children under the age of two are vaccinated in the target districts.	1. More than 80% of LHWs, EPI technicians and medical doctors are trained on EPI service provision.	・With or without of taking the training course on EPI service provision	・record of trainees	Participant list	Data review/interview/site visits
		2. The number of immunizations administered by LHWs is increased.	・The number of immunizations administered by LHWs	・The number of immunizations administered by LHWs	EPI Permanent Register	
		3. The number of EPI centers having functional refrigerator is increase.	・The number of EPI centers having functional refrigerator	・The number of EPI centers having functional refrigerator	Project Monitoring Report (From Activity 1-19) , Other reports of Province and the sites	
		4. Out Reach Plan is formulated and implemented at FLCF level.	・Formulated and implemented Out Reach Plan	・Our Reach Plan and its formulation and implementation status	Out Reach Plans of FLCFs	
	2. Parents ensure their children to be vaccinated in the target districts.	1. The number of religious and community leaders, policy makers, parents, caretakers of children, maleks, etc. who have participated in social mobilization activities in this project is increased.	・The number of Implementation of social mobilization activities and their evaluations	・Implementation records of social mobilization activities	Implementation records of social mobilization activities, participants list／Japanese experts・C/P	Data review/interview/site visits&WS
		2. The percentage of parents/caretakers of children under one year who recognize that routine immunization course protects children under one year from 8 dangerous diseases, availing the services to complete the course in a timely.	・improvement of the rate	・Results of interviews and WS	WS／Japanese experts・C/P	
		3. The percentage of parents/caretakers of children under one year who accept that routine immunization is essential in addition to Polio drops during NIDs /SNIDs.	・Increase of the rate on awareness	・Interviews and the results of WS	WS／Japanese experts・C/P	
	3. Quality control capacity of QCL/NIH is enhanced.	1. The number of trained QCL staff is increased.	・Number of trained QCL	・Participant list, Japanese experts report, Results of interviews	Japanese experts・C/P	Data review/interview
		2. The knowledge and skill level of QCL staff is increased according to the set criteria, including GMP.	・Acquirement of knowledge and skill for QCL staff	・Japanese experts report, Results of interviews	Japanese experts・C/P	
		3. Procured equipment of the QCL is properly utilized and maintained.	・Status of maintenance on procured equipments	・Control sheet/report of procured equipments, Japanese experts reports, results of interviews	Japanese experts・C/P	
	4. Federal and Provincial routine EPI system is strengthened	1. Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage is reduced.	・Stock-out days of vaccines and maximum interval of vaccine receipt at provincial and district vaccine storage	・Inventory control sheets/reports	Project monitoring reports ／ Japanese experts reports	Data review/interview
		2. The number of training monitoring and evaluation is increased.	・The number of training monitoring and evaluation	・number of monitoring and evaluation on trainings	Evaluation reports of monitoring on trainings／Japanese experts reports	
		3. The quality of routine EPI data is improved.	・Routine EPI data	・Routine EPI data	EPI data／Japanese experts reports	
		4. The number of monitoring by provincial EPI Cell and Provincial National Program is increased.	・Number of monitoring	・Results of monitoring	Province monitoring reports／Japanese experts reports	

Verification of Implementation Process	**Implementation status of activities** Implementation status	Were activities implemented as planned?		・Implementation status of activities ・ Reasons and correspondence when action plans is revised	Japanese experts reports／Japanese experts C/P／List of questions(Question sheet)	・Data review/interview/List of questions(Question sheet)
	Implementation status of monitoring	Has monitoring been carried out? Is the monitoring mechanism appropriated? Are responsibilities shared clearly among relevant organizations?		・Mechanism of monitoring for Project as a whole ・Revised contents of plan ・Feedback system	Japanese experts reports／Japanese experts C/P	・Data review/interview/List of questions(Question sheet)
	Relationship between Pakistani C/Ps and Japanese experts	Status of communication Appropriateness of selected C/Ps Ways to handle challenges and problems Change in C/Ps' attitude (Independence and activeness) Do JCC, JICA Pakistan Office and Human development dept. of JICA HQ appropriately function?		・ Frequency and means of communication ・ Ways to handle challenges and problems ・C/P's contribution to Project (number of proposals and their contents)	Japanese experts reports／Japanese experts C/P	・Data review/interview/List of questions(Question sheet)
	Involvement of beneficiaries	Change in attitude and awareness of MOH, QCL(NIH), NWFP-health, Haripur-health. Change in attitude and awareness of the C/Ps		・expectation of Project by each target group ・Contribution to Project by each target group ・ Participation to meetings, trainings and WS ・ case of work improvement for each target group	Japanese experts reports／Japanese experts C/P	・Data review/interview/List of questions(Question sheet)
	Ownership of C/P organizations	Appropriateness of allocation and assignment of C/Ps Budget allocation Degree of participation of C/P organization		・Allocation of C/P ・Participation of C/P to the Project ・Budget allocation ・ Status of participation of C/P organization	Japanese experts reports／Japanese experts C/P	・Data review/interview/List of questions(Question sheet)

Criteria	Evaluation Questions Questions	Sub-questions	criterion of judgment	Data of necessity	Information source	Means of data collection
Relevance	Is the project consistent with the needs of the target region and society?	Are the Overall goal and the Project Purpose consistent with the needs in consideration with EPI sisuation and health statistics in Pakistan?	Consistency between direction of the Project and the needs of Pakistan.	・National Strategy of Pakistan ・National Health Policy of Pakistan ・Supports of major donors	Preparatory study reports ／ National health policy of Pakistan ／ Reports of donors ／ Operational advisory report ／ Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	Is the project consistent with the needs of target group?	Is the priority high that Shangla, Swat, Buner and Haripur should decrease the burden of the preventable disease by EPI? Do target groups play important roles in EPI service? Is the size of the target group appropriate?	Necessity of Project at Project target area.	・Current situation and challenge of each province's EPI ・Role and capacity of target groups in each province（current situation and future） ・Number of beneficiary	Preparatory study reports ／Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	Is the Project consistent with Japan's foreign aid policy?	Is the Project related with any prioritized areas of ODA strategy?	Consistency to ODA for Pakistan and JICA implementation plan, and political priority to support this field.	・Japan/JICA's country policy for Pakistan and Health policy ・Japanese ODA policy	Preparatory study reports／Country assistance policy	Data review/interview/List of questions(Question sheet)
Effectiveness	Is the achievement level of the Project Purpose adequate at this stage?	Adequacy of the achievement level of the Project Purpose		・Please refer to "the verification of achievement" for details.	Please refer to "the verification of achievement" for details.	Data review/interview/List of questions(Question sheet)
	Were the outputs sufficient to achieve the Project Purposes?	Numbers, contents, qualities of the outputs and relations among outputs		・Adequacy of number of Outputs, contents and quality ・Relation between Project purpose and each Output	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	What are the inhibiting factors for the achievement of the Project Purposes?	Any changes in external factors		・Situation of external factors ・existence of inhibiting factors	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	What are the promoting factors for the achievement of the Project Purposes?	Any changes in external factors		・Situation of external factors ・existence of contributory factors	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
Efficiency	Is the achievement level of the outputs adequate at this stage?	Adequacy of the achievement level of the outputs		・Please refer to "the verification of achievement" for details.	・Please refer to "the verification of achievement" for details.	Data review/interview/List of questions(Question sheet)
	Are the activities adequate and enough to produce five outputs?	Numbers, contents and qualities of the activities		・Adequacy of number of Activities, contents and quality ・Relation between Outputs and Activities	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	Is the output production adequate compared to the inputs?	Adequacy of human resources, trainings and equipment invested		・Number of Japanese experts and their expertise ・Number of C/Ps, their expertise ・Number of training and participants, and their contents (Domestic) ・Number of training and participants, and their contents (Training in Japan) ・Number and kinds of equipments	Japanese experts reports ／ Training participation reports ／ List of provided equipment／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
		Level of utilization of inputs (human resources, trainings, equipment)		・Number of participants in trainings ・Status of provided equipments	Training participation reports／List of provided equipment ／ other records of trainings ／ Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
		Adequacy of timing of inputs		・Input（comparison with the plan）	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	What are the inhibiting and promoting factors?	with or without of the inhibiting and promoting factors		・Achievement of Outputs ・External assumption（the inhibiting and promoting factors	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)

Impact	Are there prospects that the Overall Goal will be achieved as an effect of the Project?	Experience of Project will spread to other area in Pakistan through Fed. EPI.		・development plan	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	Are there any ripple effects to people or organizations other than the target groups?	any ripple effects		・corresponding case	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
	Any other impacts, either positive or negative?	other impacts		・corresponding case	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
Sustainability	By considering organizational and institutional aspects, are there prospects that the sustainability is secured?	Has each organization developed capacity to maintain the effect of the Project? From the organizational aspects, is the sustainability of the Project expected after the completion of the project? Has each organization developed capacity to maintain the effect of the Project?	Has EDO acquired the capacity to conduct TOT training and monitor the performance of them? Has EDO acquired the capacity to manage the training systematically? Has NWFP health office acquired the capacity to monitor the performance of activities of LHW for EPI? Province-Health Office, as a organization, acquired how to conduct the community awareness (development of tools and conducting seminars etc...)? Has QCL in NIH developed the capacity for monitoring of vaccine quality control? Has Federal and Provincial EPI developed the capacity for monitoring of EPI system?	・Feature of organization (number of staff, expertise etc...) ・Province-health reports ・Monitoring reports ・Results of interview	Various data of Pakistan government and provinces／Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)
		Are supports from the Government expected?		・National EPI・Polio control support policy (inclu. Subsidiary etc…)		
	By considering financial aspects, are there prospects that the sustainability is secured?	Will the Ministry of health and NWFP health office obtain enough budget to continue promoting EPI control after the completion of the project?		・Budget scale	MOH data／Japanese experts・C/P／financial data of related institutions	Data review/interview
		Will the donors continue to support EPI control in Pakistan in future?		・Situation of revenue		
	By considering technical aspects, are there prospects that the sustainability is secured?	Are appropriate technologies developed and transferred, in consideration of the technical level of the relevant organizations? Have C/Ps acquire knowledge and the transferred technology enough? Will the transferred technology and equipment be used widely?	Means and technology transferred by the Project are accepted by related institutions(technical level, social factor and customs etc...)? EPI staff and LHW trainer are able to conduct trainings as a results of capacity development? Is the capacity of staff in QCL in NIH developed to conduct vaccine quality control systematically? EPI service system of Fed. EPI and Prov.EPI will continue to properly function. Are the equipment provided by the Project maintained properly?	・Techniques acquired by CPs through the Project and trainings. ・Development and continue of the activities conducted as the Project ・Current status of Vaccination quality control ・Status of the system operation ・Status of utilization of provided equipments	Japanese experts reports／Japanese experts・C/P	Data review/interview/List of questions(Question sheet)

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