

# Afghanistan Polio Eradication Initiative

MOPH / WHO / UNICEF

Annual Report Afghanistan, 2008



## **Polio Heroes Afghanistan: Dr. Shams ul Haq “Kakar” and Dr. Mamoon “Tahiri”**

*Dr. Shams ul Haq Kakar (Regional Polio Officer, Kandahar) and Dr. Mamoon Tahiri lost their precious lives in a tragic suicide attack in Spinboldak district on September 14, 2008. They were on a mission to save innocent Afghan children from the dreadful disease, Poliomyelitis and were fully committed to achieve goal of “Polio Free” Afghanistan*

January 2009

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## 1. Executive Summary:

Afghanistan is administratively divided into 7 regions and 34 provinces which are subdivided into 329 districts, the lowest administrative units. Although South and West are the largest regions area-wise but Central, Eastern and parts of Western & Northern regions are among the most densely populated areas of the country (Fig 1). Population estimate used for vaccination campaigns for children below 5 years is almost 7.5 million. WHO support each region by team of International and National Staff. Each regional team consists of International Medical Officer (TIP), Regional Polio Officer (RPO), Assistant Regional Polio Officers (ARPO) and Provincial Polio Officers (PPO).

Total of 31 confirmed polio cases were reported during 2008 of which 24 are P1 (NSL1) and 7 are P3 (NSL3) type. Of the total, 27 cases (23 NSL1 and 4 NSL3) are from the Southern region and bordering area of Farah province. Three of the confirmed cases with isolation of NSL3 are reported from Nangarhar province of Eastern region while one case of NSL1 is from Herat province of Western region (Fig 3). Main reason for continued transmission during 2007-2008 is the prevailing immunity gap in the Southern region due to compromised quality of campaigns compounded with very low routine EPI coverage, mainly due to precarious security situation. This points towards the possibility of occurrence of more cases with risk of geographic extension and underscore the need of immediate measures but more importantly work to overcome security challenges like achieving Days of Tranquility to facilitate and improve quality of campaign. At the same time and more importantly, distribution of confirmed cases by district for the last three years shows that even within the Southern Region the circulation is confined to only a block of few high density districts (Fig 6) which shows that if continued extra efforts are made, Afghanistan has an excellent opportunity and outstanding chance of stopping polio virus transmission by the end of 2009.

**Security situation**, in 2008, was worst and is expanding from South to West, South East and Central Regions. The number of incidents are on the rise and nature varies from suicide attacks, kidnapping, killing of International and national staff and harassment. Two of National Polio Officers in Southern region were martyred in a suicide attack while on their way to monitor campaign preparations in Spin Boldak district of Kandahar province. The precarious security situation adversely affect the quality of campaign particularly access by vaccination teams, supervision and monitoring by WHO PPOs and other external monitors.

Except Southern region, overall **quality of campaign** in various parts of the country is achieving coverage above 95% and has shown consistency to maintain quality in 2008. Southern region did not show any improvement despite extra efforts in 2008 rather has declined with gradual increase in districts with more than 20% clusters having coverage below 95%. The proportion of missed children is much higher among young infants of 0-11 months in general and in South in particular. Security and management issues poses the biggest challenge and continuous innovative efforts are being carried out to overcome these issues to achieve quality of campaign required to stop the circulation of polio virus. Key requirements for success will be the government commitment at implementation level, days of tranquility, improving management structures and strengthening community mobilization.

**AFP surveillance system** has country wide network of focal points and community based referral sites. Reporting and distribution of AFP cases, analysis of AFP surveillance indicators, characteristics of AFP cases and detection of wild virus in some of the difficult security affected areas reflects the presence of an overall satisfactory performing system in the country as was also

witnessed by the International Review Mission. However, continued efforts have to be carried out to sustain the sensitivity of AFP surveillance system and further improve by incorporating the recommendations International Review Mission.

**Cross-border coordination** between Afghanistan & Pakistan is exemplary and several key steps have been instituted to further strengthen the coordination. These include synchronizing campaign dates, data sharing, regular meetings, establishment of permanent vaccination posts at crossing points on the border and immediate cross notification of AFP cases.

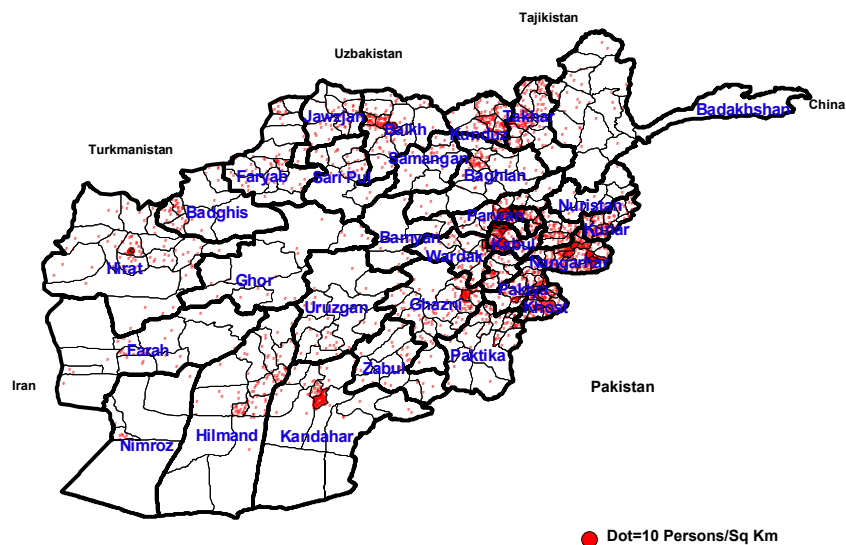
**Important priorities** for the program to stop poliovirus circulation by end of 2009, is to improve quality of campaign in Southern region and second goal is to maintain campaign quality in rest of the country to prevent establishment of any poliovirus circulation. The number of NIDs is increased and there will be 6 rounds of country wide NIDs during year 2009 compared to 4 rounds that were usually held every year in past. Additional rounds of SNIDs and mop-ups in Southern and Eastern regions with type specific monovalent vaccines will also be conducted. Continued efforts and innovative interventions are planned to overcome the security challenge and access the children in conflict affected areas of the country, mainly through involvement of BPHS NGOs, appointment of District Public Health Officers and maintaining coordination with parties of conflict through involvement of ICRC and ISAF. Communication Initiative for community mobilization through involvement of community influencers will be continued and will be expanded in areas of poliovirus circulation.

## 2. Introduction:

Afghanistan is administratively divided into 7 regions and 34 provinces which are subdivided into 329 districts, the lowest administrative units. There are 5 provinces (Kandahar, Hilmand, Uruzgan, Zabul, Nimroz) in Southern region, 4 provinces in South East (Ghazni, Paktika, Paktiya, Khost), 4 provinces in East (Nangarhar, Kunar, Nuristan, Laghman), 4 provinces in West (Hirat, Badghis, Farah, Ghor), 5 provinces in North (Jawzjan, Faryab, Balkh, Saripul, Samangan), 4 provinces in North East (Baghlan, Kunduz, Takhar, Badakhshan) and 8 provinces in Central Region (Kabul, Kapisa, Parwan, Wardak, Logar, Panjsher, Daikundi). Although South and West are the largest regions area-wise but Central, Eastern and parts of Western & Northern regions are among the most densely populated areas of the country (Fig 1). Population estimate used for vaccination campaigns for children below 5 years is almost 7.5 million while the population below 15 years of age used for AFP surveillance is almost 16 million. Polio Eradication Initiative (PEI) has developed micro-plans dividing districts into Clusters which are small geographic areas with well defined boundaries. Each Cluster is managed by a Cluster Supervisor, supervising 5-6 vaccination Teams. There are 3884 clusters and almost 22250 vaccination teams provide house to house vaccination services during vaccination campaigns. For AFP Surveillance, there is a country wide network of AFP Focal Points (FP) linked with community-based reporting volunteers (Section 6). Each district has at least one Focal Point and there are 483 focal points and over 10,000 community-based reporting volunteers all over the country. WHO PPOs are placed at the provincial level and have their assigned districts to facilitate vaccination and AFP Surveillance activities.

Figure 01

### Population Density Map Afghanistan 2007



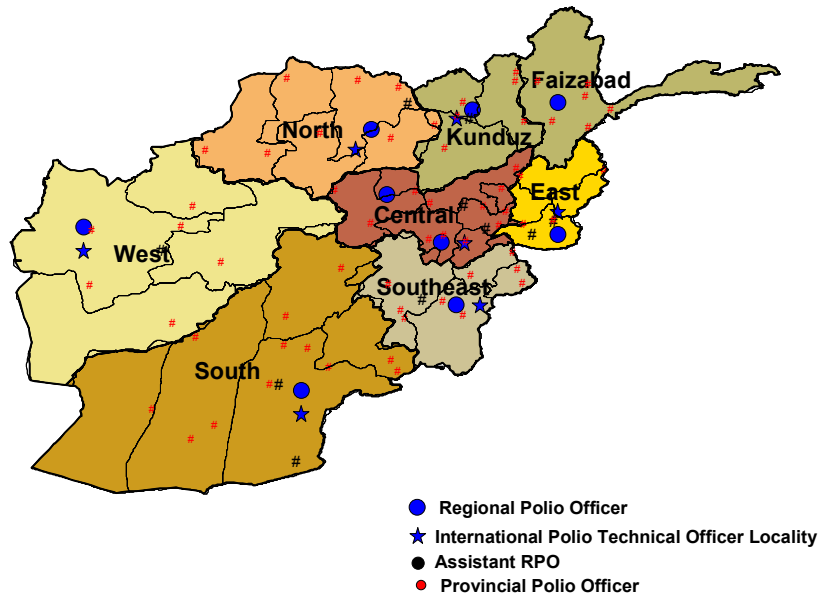
#### 2.1 PEI WHO Staff Network:

Inn each region MoPH is supported by team of International and National Staff. Each regional team consists of International Medical Officer (TIP), Regional Polio Officer (RPO), Assistant Regional Polio Officers (ARPO) and Provincial Polio Officers (PPO). RPOs and ARPOs are mainly responsible for supervisory support while PPOs carry out the field activities related to

AFP Surveillance and SIAs in their assigned provinces/districts. During 2008, additional PPOs are recruited for Southern and Eastern Regions. There are 7 TIPs, 9 RPOs, 12 ARPOs and 63 PPOs distributed in various parts of the country to carry out polio eradication activities (Fig 2).

Figure 2

### WHO Polio Eradication Staff, Afghanistan 2008



### 3. Polio Epidemiology Afghanistan:

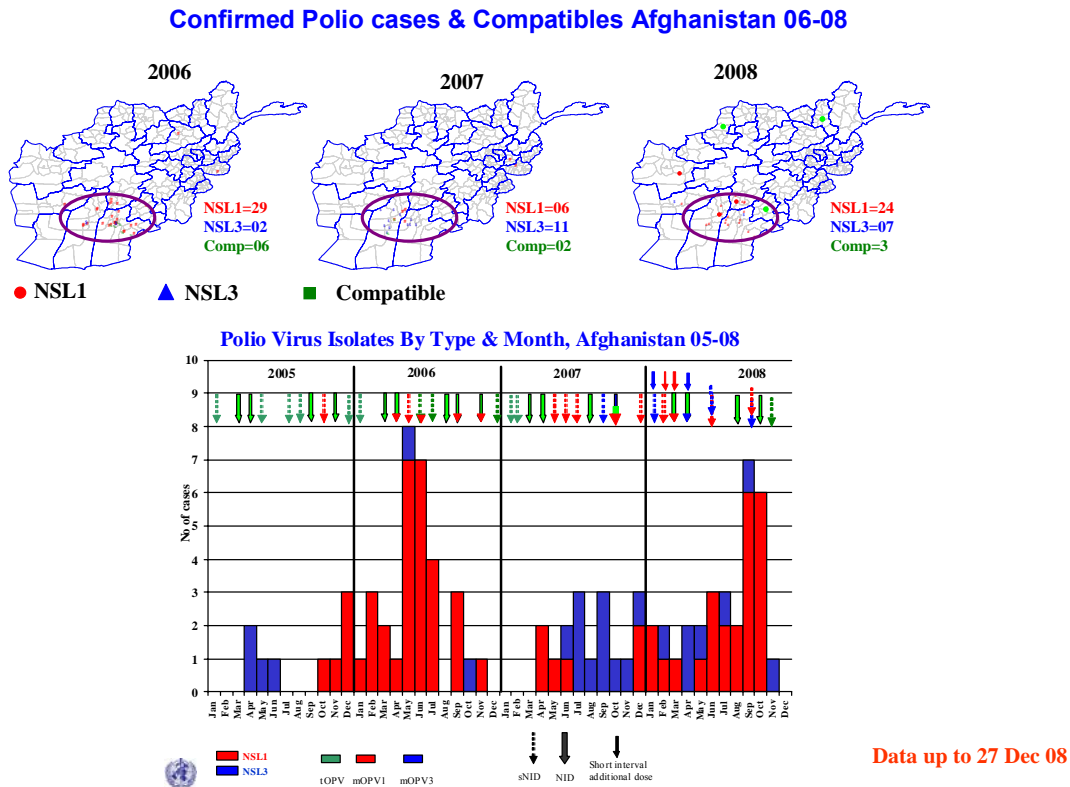
Total of 31 confirmed polio cases were reported during 2008 of which 24 are P1 (NSL1) and 7 are P3 (NSL3) type. Of the total, 27 cases (23 NSL1 and 4 NSL3) are from the Southern region and bordering area of Farah province. Three of the confirmed cases with isolation of NSL3 are reported from Nangarhar province of Eastern region while one case of NSL1 is from Herat province of Western region (Fig 3). The number of polio cases has increased compared to 17 in 2007 and number of infected districts has gone up from 13 in 2007 to 15 in 2008. Analysis of confirmed polio cases by type of strain and by month of onset reflects that unlike 2007, NSL1 is the predominant strain in 2008 and was isolated after regular intervals (Figure 3); an evidence of continued circulation.

Twenty four of the confirmed polio cases (77%) were young children of age up to 2 years. Median age of the cases was 20 months with range of 9-96 months. Proportion of male cases was higher (61%) than the females. Most of the confirmed cases (74%) were not adequately vaccinated and either received less than expected number of OPV doses (16 cases) according to their age or did not receive any doses of OPV (7 cases). Median number of OPV doses received by cases is 2 while the range is 0-17 doses. This shows that young children are being constantly missed, mainly in South, and needs extra measures to focus on this age group to minimize the risk and stop the circulation.

**Southern region** continues to be the sole reservoir of poliovirus circulation in the country and most (27/31) of the cases are from its conflict affected transmission zone (Fig3). Distribution of

confirmed cases by province shows that most of the cases were reported from three provinces of Southern region including Kandahar (13 cases), Helmand (6 cases) and Uruzgan (5 cases).

**Figure 3**

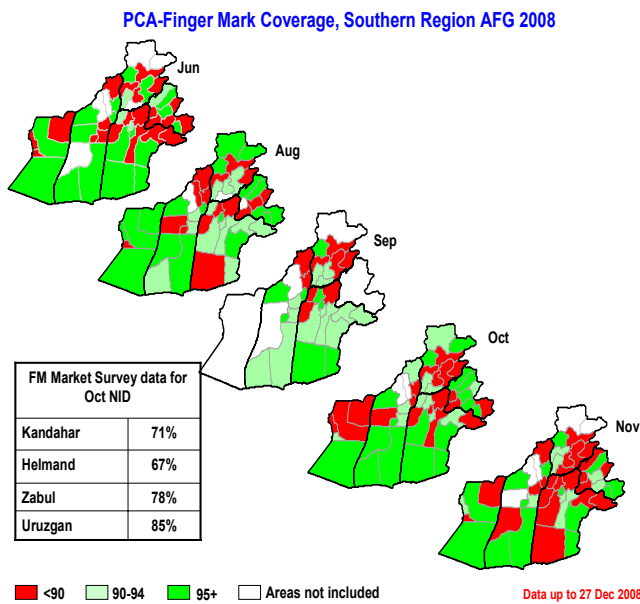


Isolation of NSL1 and NSL3 strains of poliovirus during 2007-2008, at regular intervals shows continued uninterrupted circulation of both types of poliovirus in the localized areas of the region where the quality of campaigns, despite number of efforts, remain far below the desired level. Ever deteriorating and life threatening security situation seriously affected the quality of campaigns and is the main impeding factor to stop the ongoing circulation in that area. The average number of children not accessed in each round of 2008, due to insecurity in the conflict zone ranges between 100,000 to 200,000 which constitutes almost 16% of the total target in Southern region. Moreover, the environment of fear and harassment prevail in some of those areas accessed by local vaccination teams that impede the optimal performance resulting in low coverage (coverage 70-90%). Post campaign coverage assessment, Finger Mark Market surveys and vaccination status of reported non polio AFP cases from the Southern region shows that despite continued innovative efforts to address challenge of insecurity and introduction of new interventions like Monovalent OPV (mOPV) and intensive community involvement approaches, the quality of campaign remain severely compromised in most of the 10 vaccination rounds held, mainly in Kandahar, Helmand and Uruzgan provinces of South leading to large enough pool of susceptible children that may allow ongoing transmission.

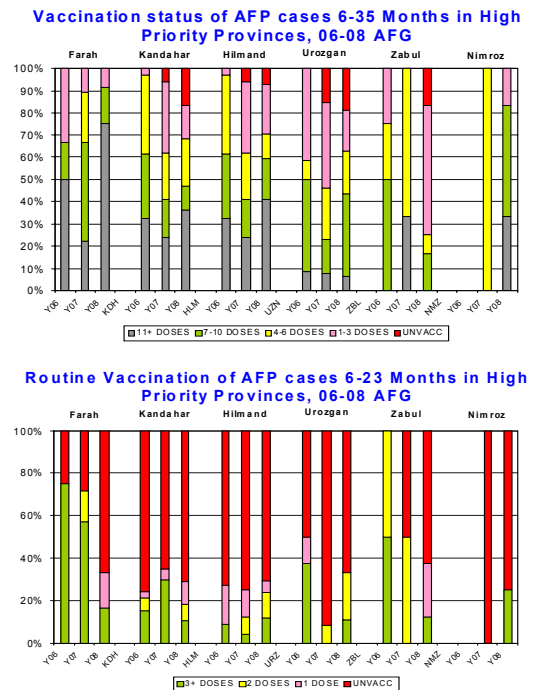
Secondly, isolation of NSL1 from neighboring districts across the border in Baluchistan province of Pakistan having genetic links with polio cases from Kandahar and Helmand reflects the traditional back and forth “infection and re-infection” phenomenon that exist in this common

corridor and axis of transmission from southern Afghanistan, through Baluchistan, to Northern Sindh which altogether constitute a single epidemiologic block. This is due to large and frequent population movement between Killa Abdullah and Quetta area of Pakistan and different districts of Kandahar and Helmand province in Afghanistan. Genetic sequencing also shows that the diversity of lineages seen in this block, particularly in Southern Afghanistan, in past has reduced and A-3A is the only genetic cluster circulating in the area.

**Figure 4**

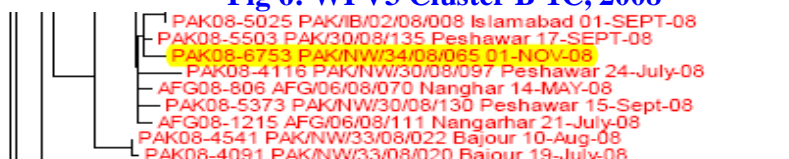


**Figure 5**



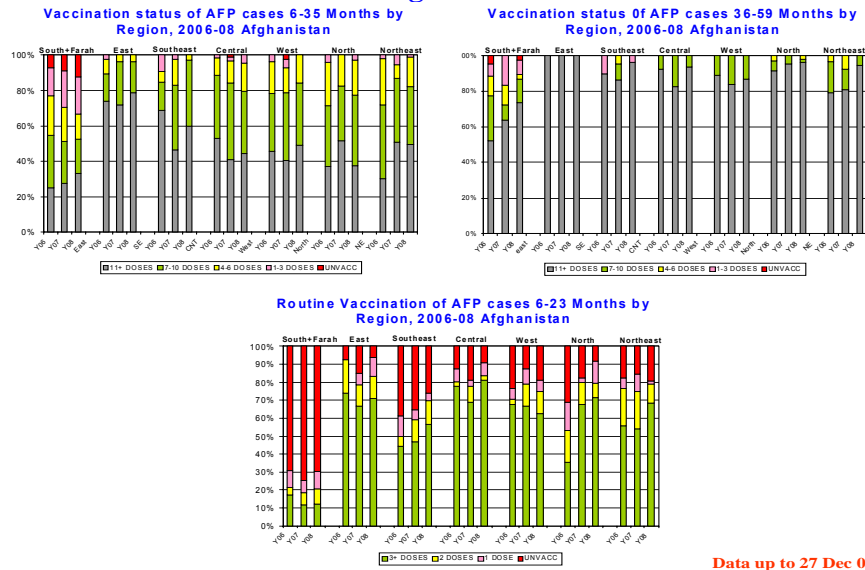
**In Eastern Region,** there are 3 confirmed cases of P3 type reported from Jalalabad district of Nangarhar Province with onset in May, July and November, 2008. However, no NSL1 is isolated from Eastern region since the occurrence of last case in June 2007. Field observations, analysis of post campaign assessment data and vaccination status of non polio AFP cases are suggestive of adequate quality of campaign and routine coverage in general in the Eastern region. Polio cases of NSL3 type also reported in 2007 from the Eastern region but recent cases did not show evidence of genetic linkage with those in 2007 in Eastern Region. However, there is a large outbreak of NSL3 in the neighboring areas of Pakistan including Peshawar Valley. The occurrence of NSL3 cases in Jalalabad seems to have genetic links with outbreak across the border (Fig 6) due to heavy population movement, repatriation camps and displaced population due to security reasons from bordering areas of Pakistan towards Eastern Region as well as one of the case linked, on genetic sequencing, with the P3 circulation of transmission Zone in South (Farah). Genetic studies show that only cluster of P3 type poliovirus is B-1C in the area.

**Fig 6: WPV3 Cluster B-1C, 2008**



One of the key successes of the program is that despite the continued circulation in South and occurrence of cases in East, most of the country, in the presence of a sensitive surveillance system (Section 6) did not have any evidence of polio virus circulation. Data from various sources, including finger mark market surveys, other campaign quality indicators and vaccination status of AFP cases (Fig 7) are indicating presence of, most probably, adequate immunity levels that prevails in most part of the country and may prevent the establishment of poliovirus circulation. This also shows that in areas of lesser security threats, the program has made significant progress and quality of campaign is consistently of satisfactory levels.

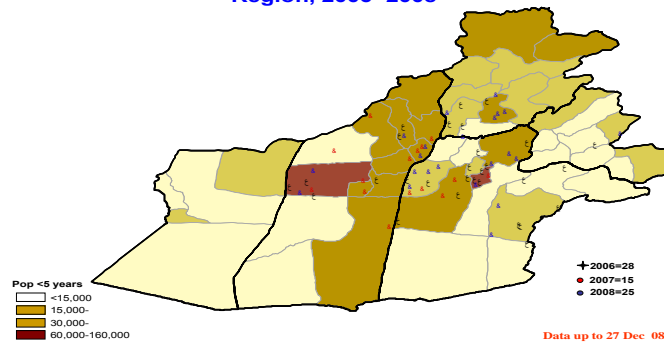
**Figure 7**



**In Summary**, main reason for continued transmission during 2007-2008 is the prevailing immunity gap in the Southern region due to consistent compromised quality of campaigns compounded with very low routine EPI coverage, mainly due to precarious security situation. This points towards the possibility of occurrence of more cases with risk of geographic extension towards neighboring areas and underscore the need of immediate adequate measures but more importantly work to overcome security challenges like achieving Days of Tranquility to facilitate and improve quality of campaign. At the same time and more importantly, distribution of confirmed cases by district for the last three years shows that even within the Southern Region the circulation is confined to only a block of few high population density districts (Fig 8) which shows that if continued extra efforts are made, Afghanistan has an excellent opportunity and outstanding chance of stopping polio virus transmission by the end of 2009.

**Figure 8**

**Polio Cases & Population < 5 year by District, Southern Region, 2006- 2008**



#### 4. Security Situation: Impact on Program

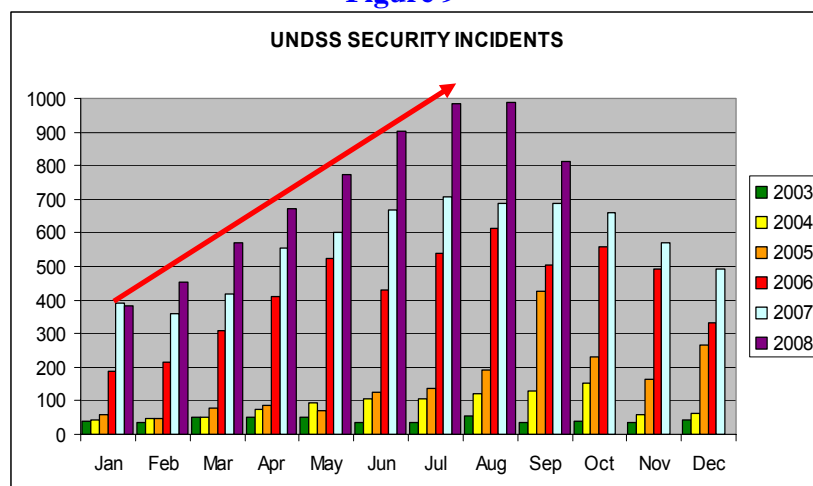
Two of National Polio Officers in Southern region were martyred in a suicide attack while on their way to monitor campaign preparations in Spin Boldak district of Kandahar province. Two other Internationals and one National staff had a narrow escape in the same incident. Southern region along with Farah province of West are the worst security affected areas in the country where the security situation changes on almost day to day basis with frequent eruption of active fighting in various parts of Southern region. The precarious security situation adversely affect the quality of campaign particularly access by vaccination teams, supervision and monitoring by WHO PPOs and other external monitors. Although a number of interventions has been done but security still poses a major challenge in achieving quality of campaign required to interrupt the circulation.

The security affected areas in the country looks to be on the expansion from the Southern to the Western and South-eastern regions. The other worst security affected areas are the Kunar province and Khost provinces of Eastern and Southeastern regions respectively. During 2008, the security has seriously deteriorated in Herat of Western region and Wardak, Logar and parts of Kapisa and Kabul province of Central region which is restricted for movement of International staff as well as poses difficulty to monitor campaign by national staff. The number of incidents are on the rise (Fig 9) and nature varies from suicide attacks, kidnapping, killing of International and national staff and an environment of fear and harassment.

In the last quarter of 2008, after the suicide incident of Spin Boldak, the movement of WHO PPOs was restricted to their duty stations only due to the nature of their contracts thus adding further difficulties to locally supervise the program activities. Country team along with EMRO and HQ has recently solved the issue by changing the contract nature from 2009.

Program is facing difficulty in accessing the children. We have conducted 10 vaccination rounds in the southern region but quality remained questionable because of the active fight, insurgency, intimidation creating an environment of suspicion and fear. Need of the Days of Tranquility (DOT) is increasing because of the current deteriorating security situation. Program is looking forward the DOT when the vaccination teams can go, access all the children and vaccinate them safely.

Figure 9



## **5. Political Commitment**

Eradicating polio is no longer a technical issue alone. Polio eradication hinges on vaccine supply, community acceptance, funding and, above all, continued political commitment and support from political leaders at all levels. Success is now most of all depending on maintaining the political will at national, provincial and district level. It is critical that this political will translates itself into efficient programme management and coordination at the service delivery level so that every child under the age of five years gets two drops of the Oral Polio Vaccine (OPV) during every polio immunisation round.

H.E President Hamid Karzai took direct oversight of the national polio eradication initiative Advisor to President on Health and Education and H.E Minister of Public Health continues to guide and monitor progress towards Polio Eradication in the country. WHO and UNICEF country and Regional offices coordinate closely with Ministry of Public Health. H.E Minister holds briefing on PEI with cabinet members and parliamentarians.



In April 2008, Director General WHO and Regional Director EMRO region, visited Afghanistan and had meetings with H.E President of Afghanistan, Minister of Public Health, ISAF/NATO, SRSG and Polio donors in Afghanistan. Aim of these meetings was to explain the polio situation, importance of urgency to finish the task and to maintain high level political commitment towards achieving the target of Polio Eradication in Afghanistan.

## **6. Challenges, Priorities and Interventions in 2008**

For 2008, the program priority was to increase access to vaccinate children and ensuring staff safety in the insecure areas with the aim to completely interrupt type 1 circulation and take additional measures to stop type3 circulation and minimize its further spread to other provinces. Second priority was to maintain high immunity in “polio-free” areas of the country to prevent establishment of any poliovirus circulation.

Following important measures were taken in 2008

- 04 rounds of **NIDs** across the country using trivalent OPV (tOPV) in all the rounds except South and East where monovalent OPV1 (mOPV1) and monovalent OPV3 (mOPV3) was used in March and April NIDs respectively (Table 1).
- Additional Vaccination rounds (SNIDs) conducted in high risk areas.
  - **Sub-NIDs (SNIDs)**
    - 03 rounds of mOPV3 (Jan, Jun, Sep), 2 rounds of mOPV1 (Feb, Jun) and 1 round of tOPV (Nov) are conducted in Eastern region (Table 1). No NSL1 is isolated since June 2007 in Eastern region.
    - 03 rounds mOPV1 (Feb, Jun, Sep), 02 rounds of mOPV3 (Jan, Jun) and 1 round of tOPV (Nov) conducted in Southern region including Farah Province (Table1).
    - 02 rounds of mOPV1 (Jan, Jun), 02 mOPV3 rounds (Jan. Jun) and 01 tOPV round conducted in Southeastern region (Table 1).
  - **Short Interval Additional Dose (SIAD)**
    - 02 rounds additional doses within short interval (2 weeks) of mOPV1 and 02 rounds of mOPV3 conducted in selected districts of Southern Region (Table 1)
- In order to improve the access in the security compromised areas, close coordination was maintained with ICRC to approach and negotiate with Talibans to allow the access for vaccination teams. As result letter of support was issued and also announced through media their support for polio campaign. The letter was quite effective in East, South East but only parts of Southern region and access remain a challenge in districts of conflict particularly in parts of Kandahar (Maiwand, Panjwai, Shahwalikot), Helmand (Musa Qala, Nowzad, Baghran, Nad Ali) and Uruzgan (Trin Kot, Shaheed Hassas). Number of inaccessible children in South remains above 100,000 in most of the rounds held in 2008.
- Continued efforts were made to achieve some degree of de-conflict environment during campaign days by coordinating with ISAF/NATO offices and providing prior information on the dates and areas of immunization.
- *Despite number of effort, the Program is still looking forward to the agreement of all the parties of conflict for Days of Tranquility when vaccination teams can access and vaccinate each child safely in the field.*
- Short Interval Additional Dose (SIAD): In districts with access problem and uncertain fluctuating security situation, the program provided another opportunity to vaccinate children with mOPV within short interval (within 2 weeks).
- High-Risk Cluster Approach (HRCA): In order to improve campaign planning and management within selected clusters, this approach was adapted through community involvement
- Special communication strategy designed in selected districts of Eastern, Southern and South-Eastern regions through involvement of community influencers including Mullahs, Teachers, Health Workers, Elders and Courtyard Women. This intervention is working well in East and South east and program is achieving coverage above 95% in the districts of East and South-East but coverage in intervention areas of South is still far below the desired levels.

- Involving community network of other Ministries: Community Development Council of Ministry of Rural Reconstruction and Development (MRRD) are included in planning and implementation of vaccination campaign in one district of Kandahar province.
- Special round of Focus District Strategy was adapted to implement the campaign in one day and minimize the security risk in selected districts of Southern region

The quality of vaccination campaigns is still not reaching satisfactory levels in the Southern region, particularly in the province of Kandahar, Helmand and Uruzgan. In spite of considerable efforts and financial inputs, the southern region did not achieve desired result of interrupting wild poliovirus transmission. Issues pertaining to security, staff selection, management and coordination persisted and hampered the progress in the south.

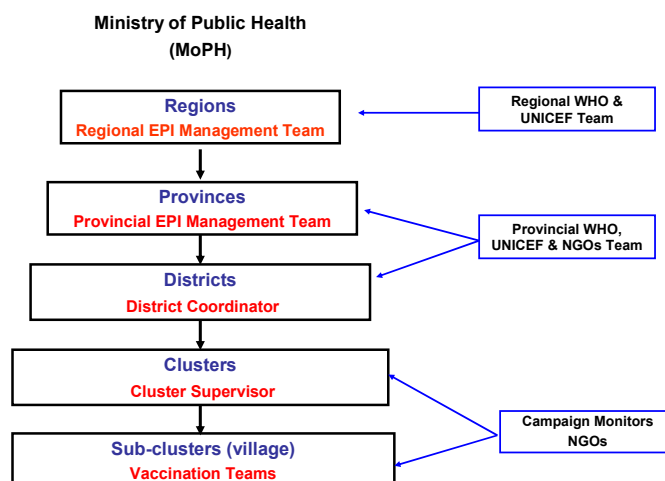
### 7. Supplemental Immunization Days:

Although district is the lowest administrative sub-unit of the country but for operation of house to house vaccination campaign, the district is further subdivided into well demarcated areas called *Clusters*. Each cluster has one supervisor with 5-6 vaccination teams. The area of assignment for each team is termed as sub-cluster which consists of number of villages to be covered by each team each day. Each district has at least one District Coordinator (D.C) who is responsible for district level advocacy and social mobilization, training of supervisors, review of plans with cluster supervisors, vaccine and logistic supply and campaign monitoring (Fig 10).

Campaign activities are monitored in three phases; first, before the campaign looking at the preparedness like reviewing the micro-plans and the trainings of the vaccination staff, second, during the campaign to assess the quality of campaign and take action in the field, third, monitoring after the campaign through Finger mark market survey and independent monitors to assess coverage and identify poorly covered areas and take immediate corrective actions.

**Figure 10**

#### Structure of Service Delivery during Immunization Days



During 2008, four rounds (March, April, August and October) of House to House National Immunization Days (NIDs) were held, targeting almost 7.5 million children below 5 years of age in the country. Vitamin A was also administered during April and October NID rounds to children of eligible age (6-59 months). Trivalent OPV (tOPV) was used country wide in NIDs

except in South and Eastern region where mOPV1 was used in March and mOPV3 was used in April round. Besides the NIDs, six additional vaccination rounds, Sub NIDs, were conducted in Southern, Farah province of Western, South eastern and Eastern regions of the country during months of January, February, June, July, September and November 2008.

In South, mOPV1 was used in 3 rounds while mOPV3 was used in 2 rounds of SNIDs. In East, mOPV3 was used in 3 rounds and mOPV1 was used in 2 rounds of SNIDs (Table 1). In the selected security affected districts of South 4 Short intervals additional dose (SIAD) were also conducted (Table 1).

**Table 1**

Eastern, Southeastern and Southern Regions SIAs in 2008 (date, type of vaccine)													
NIDS													
Region				Mar 9-11		Apr 13-15				Aug 3-5		Oct 19-21	
East				mOPV1		mOPV3				tOPV		tOPV	
Southeast				tOPV		tOPV				tOPV		tOPV	
South				mOPV1		mOPV3				tOPV		tOPV	
SNIDS													
Region		Jan 20-22	Feb 09-11					Jun 1-3	Jun 28-30		Sep 28-30		Nov 23-25
East		mOPV3	mOPV1					mOPV1	mOPV3		mOPV3		tOPV
Southeast		mOPV3	mOPV1					mOPV1	mOPV3				tOPV
South		mOPV3	mOPV1					mOPV1	mOPV3		mOPV1		tOPV
Mop Up													
Region	Jan 08-10			Feb 17-19		Mar 16-18		Apr 20-22					
East													
Southeast													
South	mOPV3			mOPV1		mOPV1		mOPV3					

**7.1 Post Campaign Coverage Assessment (PCA):**

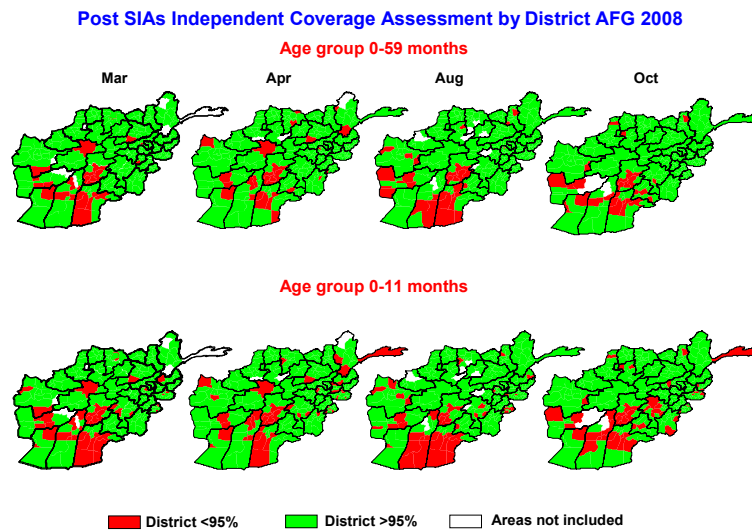
Independent monitors (University, Medical Schools Students, Teachers, and NGOs Staff) are trained according to guidelines to carry out PCA. All the districts are subjected to PCA and 25-50 % clusters are sampled in each district while 100% clusters are sampled in districts labeled as “high-risk”. At least three team areas (Sub-clusters) are sampled within the selected cluster. Ten houses are sampled in each team areas to assess the coverage.

Analysis of PCA data for the last four NIDs rounds from March 2008 to October 2008 is carried out by District and Cluster levels and by age group. Snow bound areas in Central, Western and Northern regions and Badakhshan were not included in March and April NIDs, due to heavy snow fall and the campaign in these areas was delayed and conducted in May and June 2008.

Analysis by district and age group shows that overall quality of campaign in the country was of satisfactory level with most of the districts achieving coverage above 95% among children of both age groups (0-11 and 12-59 months). However, the proportion of districts with PCA

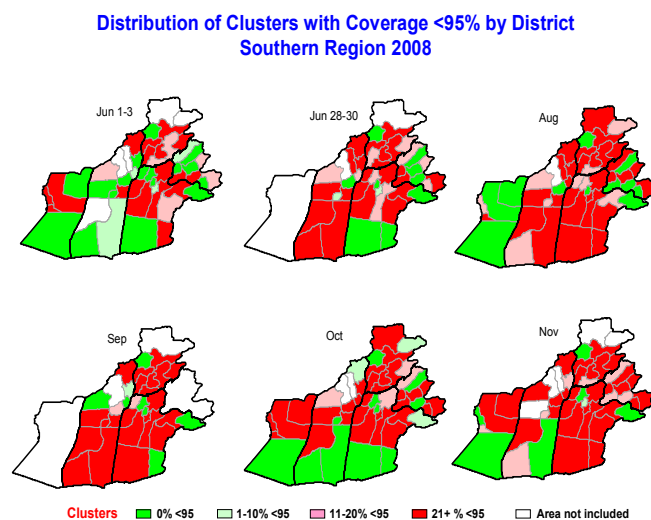
coverage less than 95% was higher in Southern, and parts of Farah province. Generally the coverage among very young (0-11 m) children was lower compared to children of 12-59 months of age, particularly in Southern region (Fig 11), reflecting that this age group has higher probability for being missed by the teams due to different reasons mainly because most teams are of male volunteers who can't enter the house, inadequate IPC at household level to search for young children and also the attitude of some of the parents not to disturb their sleeping and newborns for vaccination.

**Figure 11**



An in-depth analysis of SIAs data for **Southern region** for the last six rounds by cluster was carried out to assess the degree of homogeneity in coverage and districts with higher proportion of clusters having coverage below 95%. The quality of campaigns, particularly in Kandahar, Helmand and Uruzgan province remain severely compromised and inconsistent. The proportion of districts with more than 20% clusters below 95% is increasing (Figure 12) reflecting that the campaign quality in these provinces has declined substantially and is not good enough to stop the circulation.

**Figure 12**



## 7.2 SIAs Challenges:

- Quality of campaign is consistent and reaching the desired level in most of the country but is not achieving satisfactory levels in Kandahar, Helmand, Uruzgan, Zabul and Farah provinces. Prevailing worst security situation in these areas poses the biggest challenge to access children living in these areas of conflict. In spite of considerable efforts and financial inputs, the Southern region is yet to achieve the desired result of interrupting wild poliovirus transmission. Issues pertaining to security, staffing, management and coordination still persist and are hampering progress in the south.
- The security situation in South is used as a ‘smoke screen’ to cover up mismanagement, particularly in the selection of District Coordinators, Cluster Supervisors and vaccination teams in some of the districts.
- The support from NGOs implementing the Basic Package of Health Service (BPHS) in selecting appropriate staff to implement campaigns, such as District Coordinators (DC), Cluster Supervisors (CS) and the vaccination team Volunteers is still below optimal level. The NGOs are facing pressure from various groups including even members of parliament. There is no performance evaluation and accountability of implementing staff.
- Political commitment at the highest level is excellent but currently not being transformed into action at the implementation level; the provincial Polio Action Group has not been meeting regularly and urgently needs to happen.

**In Summary**, the overall quality of campaign in Southern region did not show any improvement despite extra efforts in 2008 rather has declined with gradual increase in districts with more than 20% clusters having coverage below 95%. The proportion of missed children is much higher among young infants of 0-11 months in general and in South in particular. Security and management issues poses the biggest challenge and continuous innovative efforts are being carried out to overcome these issues to achieve quality of campaign required to stop the circulation of polio virus. Key requirements for success will be the government commitment at implementation level, days of tranquility, improving management structures and strengthening community mobilization.

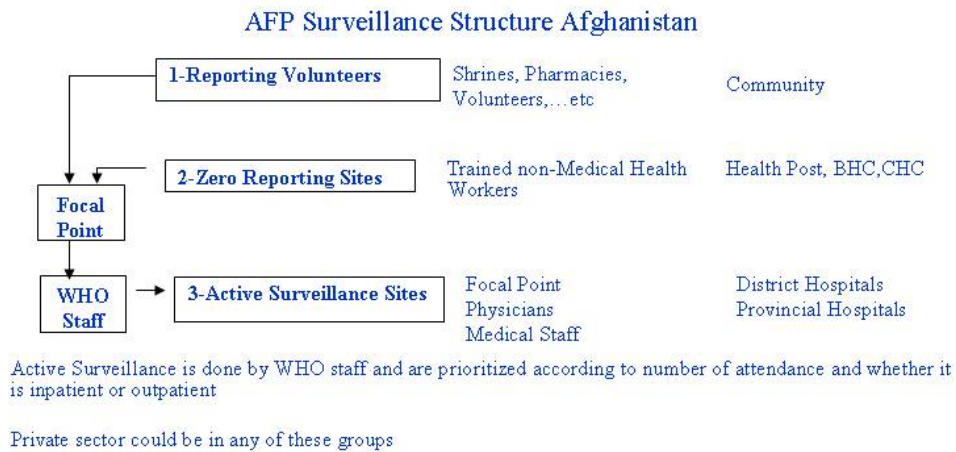
## 8. AFP Surveillance:

Health care services in Afghanistan are delivered through public and private sectors. Most of the health care services in public sector are provided by NGOs, in accordance to Basic Package of Health Services (BPHS), through Provincial hospitals, Comprehensive Health Centers (CHC) and Basic Health Centers (BHC). Private medical practitioners, Quacks, Faith healers and Shrine keepers are the main service provider in private sector. AFP surveillance network includes most of the main health care providers and is spread all over the country. Besides this, network also includes community based Reporting Volunteers including pharmacies, teachers, Mullahs and community notables (Fig 13).

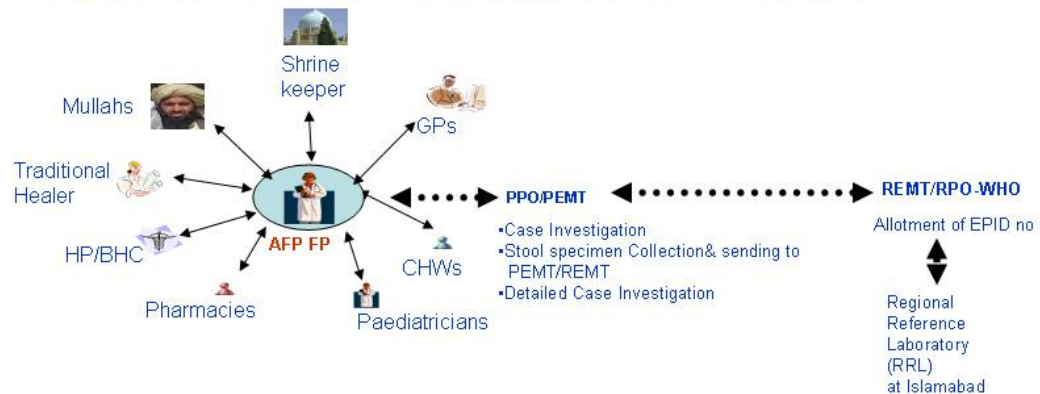
Each district have at least one AFP surveillance Focal Point (FP), who is usually the in-charge of Health facility or a pediatrician and is responsible for case notification, investigation, facilitating specimen collection and shipment process and submission of zero reports. AFP cases detected by health facilities, private practitioners or community based reporting volunteers (pharmacies, faith healers etc) are referred to concerned focal point in their district. Tertiary care hospitals and Provincial Hospitals usually have more than one focal point. Focal points are also responsible for

timely notification of AFP cases to Provincial EPI Team including WHO PPO, who carries out the field visit in the area of residence of reported case for detailed investigation and to ensure that all steps of investigation are carried out by the focal points.

**Figure 13**



**Network of Reporting Categories at district level and Process of Case Investigation.**



### 8.1 Characteristics of AFP cases

Expected annual number of AFP cases for Afghanistan was at least 329 @ of 2/100000 children below 15 years of age. Total of 1374 AFP cases are reported during 2008 as on December 31, compared to 1111 AFP cases reported in 2007. Out of total 1374 cases, there were 31 confirmed and 3 compatibles, 1307 are discarded as non polio while 36 are pending for classification, mainly due to laboratory results.

The characteristics of AFP cases show (Table 2) that all age groups were reported with range of 0-180 months. Comparison of median age for confirmed/compatible cases with non polio AFP cases shows that the confirm cases were significantly younger than the non polio and received considerably lower number of doses (Median Doses 2) compared to non polio AFP cases (Median Dose 12) in 2008. Analysis by gender reflects that male and female AFP cases were reported with predominance of male cases (54%) among the non Polio AFP cases but among the confirmed cases the proportion of male is 61% than female (39%).

**Table 2**  
**Characteristics of Confirmed , Compatible & NP AFP cases Afghanistan 05-08**

Criteria	Confirmed				Compatible				Non Polio AFP				
	Y05 n=9	Y06 n=31	Y07 n=17	Y08 n=31	Y05 n=4	Y06 n=6	Y07 n=2	Y08 n=3	Y05 n=814	Y06 N=952	Y07 n=1097	Y08 n=1236	
Age in month	Mean	23	24	20	27	52	19	40	34	51	52	51	49
	Median	20	18	18	20	23	18	40	36	36	36	36	36
	Range	10-42	8-120	3-96	9-96	7-156	14-24	30-50	18-48	0-179	0-179	0-179	0-180
Gender	M%	69	55	71	61	75	60	50	33	51	58	56	54
	F%	31	45	29	39	25	40	50	67	49	42	44	46
OPV/Doses	Mean	9	5	5	5	7	9	13	12	12	12	12	13
	Median	9	3	2	2	5	9	13	13	12	12	12	12
	Range	4-17	0-16	0-16	0-17	2-15	2-17	10-15	9-14	0-34	0-36	0-32	0-36

Data up to 27 Dec 08

### 8.2 AFP Surveillance Indicators:

Analysis of AFP surveillance indicators at national and regional levels shows the system is achieving the desired level of targets for **Non Polio AFP rate** per 100,000 children below 15 years of age and percent of **adequate specimens** (Table 3).

**Table 3**  
**AFP Surveillance indicators by Region, Afghanistan 07- 08**

Region	EXP @ Rate of 2	Non Polio AFP Rate		Stool Adequacy %		No of M/F		EV%		Median OPV <60m		NP AFP Age Range
		07	08	07	08	07	08	07	08	07	08	
		2008										
South	57	5.0	6	87	86	91/65	120/72	30	23	8	8	2-168
S.E	34	6.1	5	89	96	61/40	45/44	19	25	13	17	0-168
East	29	8.4	12	94	91	62/60	86/93	22	29	15	18	0-168
West	54	5.2	6	95	97	81/57	81/82	22	23	12	12	2-168
Cent	62	7.0	9	96	96	107/106	173/115	21	18	13	12	1-178
North	46	7.9	9	92	93	97/81	113/100	23	21	11	12	1-180
N.E	38	8.9	11	86	91	94/72	123/94	24	25	10	12	2-174
AFG	319	6.8	8	92	93	620/496	754/623	23	23	12	12	0-180

REC file 17, Jan 2009

**Percent of specimens with Entero Virus** is well above the required level of 10% in each region (Table 3). Sabin like (SL) is also isolated from at least 5% of specimens in each region both these indicators shows that the technique and process of stool specimen collection and shipment is of satisfactory level, in general. Overall early case detection rate (Cases detected within 7 days) has improved from 77% in 2007 to 82 % in 2008 and more than 80% cases reported within 7 days of

onset in each region except Northeast and South where it was 76% and 73% respectively. This indicates the integrity of community based referral system. The proportion of male and female reported AFP cases in South shows substantial predominance of male cases which may indicate the possibility of under reporting of female AFP cases.

Moreover, and in-depth analysis of surveillance indicators by province for Southern region (Table 4) shows that all the provinces are meeting the desired level of surveillance indicators but there is a decline in the stool adequacy % of Kandahar province which has gone down from 89% in 2007 to 78% in 2008. There is also predominance of male AFP case in all the provinces except Nimroz province which points towards the possibility of under reporting of female cases. It also important to mention that most of the confirmed cases are detected and reported from some of the worst security affected districts indicating that surveillance network is functional even in those difficult districts.

**Table 4**

**AFP Surveillance indicators Southern Region 07- 08**

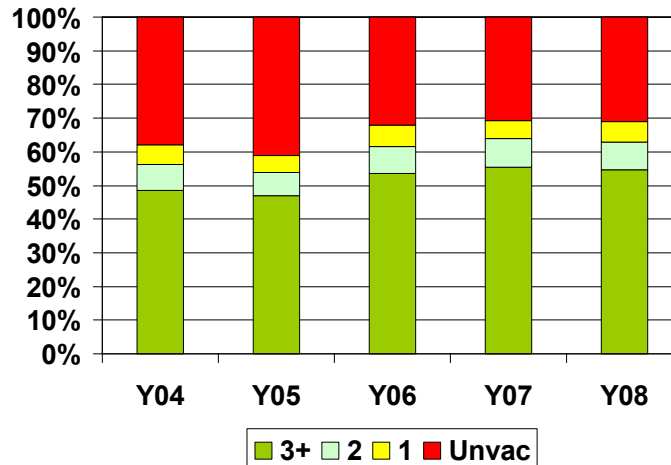
PROVINCE	EXP @ Rate of 2	Non Polio AFP Rate		Stool Adequacy %		M/F		EV%		Median OPV in <60 m		Non-Polio AFP Age range	
		07	08	07	08	07	08	07	08	07	08	07	08
KDH	17	5.8	7.6	89	78	35/18	44/33	29	23	9	8	3-168	2-168
HLMD	21	5.6	3.5	86	95	33/31	29/14	32	24	7	8	1-179	5-157
URZ	11	4.6	6	84	93	16/9	26/14	13	21	5	8	8-174	7-156
ZBL	5	4.0	7.5	90	81	6/4	15/6	50	16	9	2	13-144	2-144
NMRZ	3	4.8	9	100	100	1/3	6/5	50	36	9	13	5-72	9-156
Total	57	5.0	6	87	86	91/65	120/72	30	23	7	8	1-179	2-168

REC file 17, Jan 2009

**8.3 Routine Immunization Status of AFP Cases:**

Overall vaccination status of AFP cases discussed in Section 3 (Figure 5, 6) which shows inconsistent quality of campaigns in South but rest of the country is maintaining high campaign quality. The analysis of routine immunization status of AFP cases and comparison over period of years shows that overall routine immunization coverage has steady improvement (Figure 10) but there is almost a reverse trend in South and percent of AFP cases between 6-59 months who has received at 3 doses of OPV has gone down to almost 10% (Fig 14) reflecting the weakness of Routine EPI in the Southern region.

**Figure 14**  
**Routine OPV Vaccination Status**  
**AFP cases 6-59 months 04- 08**

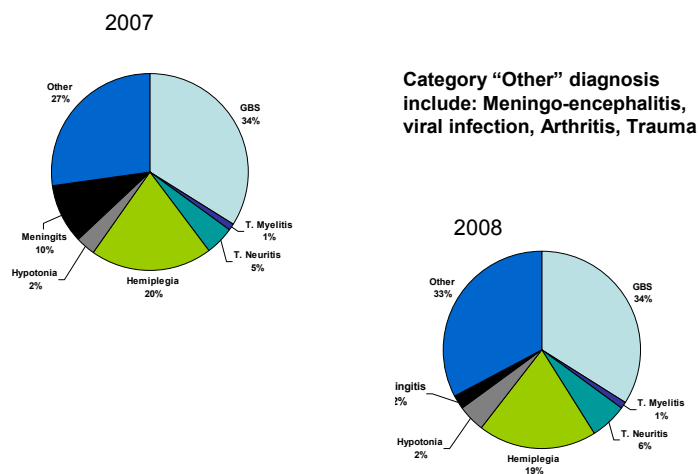


Data up to 31 Dec 08

**8.4 Diagnosis of Non polio AFP cases:**

Thirty four percent of discarded AFP cases were labeled as GBS during 2008 which gives GBS rate of 1.6 per 100, 000 among children below 15 years of age (Figure 15). Other important diagnosis of discarded cases is Hemiplegic (19%), Traumatic neuritis (6%), Transverse Myelitis (2%), Meningitis (2%) and “Other” 33%. Although rate of GBS remain around 30% during last 3 years but due to lack of expertise at district and provincial level, the quality of diagnosis remain a challenge in Afghanistan.

**Figure 15**  
**NP-AFP Diagnosis Afghanistan 07-08**



Data up to 31 Dec 08

### **8.5 Quality of Active Surveillance and Zero Reporting:**

Completeness of Active surveillance and Zero reporting was above 80% for most of the regions but the field reviews shows that quality Active Surveillance visits, documentation of active surveillance and Zero reports need further improvement. Moreover it was also observed that the linkage between the focal points and community based reporting sites needs further strengthening.

### **8.6 International AFP Surveillance Review**

A team of 12 International independent reviewers visited the country from August 28-Sept 7, 2008 to review the AFP surveillance system in 4 of the 7 regions of the country. These regions are Central, Northern, North-Eastern and Western Regions which largely remain “polio free” since last more than 3 years and there was a need to assess the sensitivity of AFP surveillance system and to exclude if the system is missing any poliovirus circulation in these regions of the country.

**Methodology:** This was an extensive field and desk review. Mission members independently selected the provinces and the districts within the provinces to be reviewed in each of the region and travel plan for each reviewer was finalized. The field review included interviews with PHDs, PPOs, PEMTs, focal points, other health facility staff, community based reporting volunteers (pharmacist, shrine keepers, private practitioners, CHSs, Mullahs), and parents of selected AFP cases. Quality of active surveillance and Zero reporting were also critically assessed by interviewing and reviewing active surveillance sheets, indoor and door hospital registers, Zero reports at focal point level. Case files and quality of documentation at focal point, provincial and regional level were also reviewed.

**Findings:** An overall presence of strong AFP surveillance network was found with high level of awareness among AFP focal points, different health facility staff and community based reporting volunteers. There was good coordination on AFP surveillance between different polio partners. Technique, process of specimen collection and its shipment was up to the mark in most of the reviewed areas. The quality of documentation including case files, active surveillance and zero reporting was also of satisfactory levels.

**Conclusion:** Based on these findings, the International team concluded that AFP surveillance system in the reviewed areas is highly sensitive and it is very unlikely to miss any poliovirus transmission in these areas.

**Recommendations:** Important area of further improvement recommended by the team was proper documentation and outlined national strategy for excluded non AFP cases. It was also recommended to review the newly established private hospitals at different provincial headquarters and revise to list of active surveillance sites to include these private facilities systematically. Immediate printing of revised version of National AFP surveillance guidelines was also suggested.

**In summary,** reporting and distribution of AFP cases, analysis of AFP surveillance indicators, characteristics of AFP cases and detection of wild virus in some of the difficult security affected areas reflects the presence of an overall satisfactory performing system in the country as was also witnessed by the International Review Mission. However, continued efforts have to be carried out

to sustain the sensitivity of AFP surveillance system and further improve by incorporating the recommendations International Review Mission.

## **9. Cross Border Coordination**

Afghanistan & Pakistan are considered as one epidemiological block because of the very high population movement back and forth across the AFG-PAK border. This phenomenon is also evident when reviewing genetic sequence data from polioviruses, which demonstrates a close link between transmission in the Southern Region of Afghanistan and three transmission zones in Pakistan (the zone in Baluchistan, the northern Sindh transmission zone, and the southern Punjab zone). Second shared corridor of transmission includes NWFP province of Pakistan and Eastern region of Afghanistan (Annex 1, 2).

Both country programs are coordinating activities in an exemplary way, sharing data and planning vaccination campaigns together. Regular cross border meetings are held between Southern Region and Baluchistan team at Quetta and Chaman while Eastern Region and NWFP teams met at Peshawar and Torkham border. Moreover, bordering district teams also shares the campaign plans with each other before each campaign.

To improve cross-border coordination between the two countries, several key steps have been instituted. The cross-notification of acute flaccid paralysis (suspect polio) cases has been standardized resulting in improvement of surveillance quality. Permanent cross border vaccination posts have been established at entry points to Baluchistan at Spinboldak/Chaman and NWFP at Torkham. Around 1.5 million children were vaccinated by the teams working at cross border points.


The campaign schedule has been synchronized between Afghanistan and Pakistan. To ensure optimal campaign quality and prevent that children are missed, the border areas of both countries are mostly covered on the same day of the campaign.


## **10. Risk Prediction Model: Use of Surveillance and Campaign Data**

Afghanistan team worked to develop a probability model to predict risk for wild polio virus (WPV) transmission by district by considering important variables of campaign, surveillance, Security and management. Main aim of this probability model was to be used at National and Regional level teams to identify districts at high to moderate risk of polio virus and take actions in advance to improve the program quality. Important variables included in this model could be divided in to 3 parts – immunization, surveillance and other indicators. The main immunization indicators used in the exercise include zero Dose AFP Cases, Median OPV Dose, Routine EPI status, PCA and Finger marking estimates of last two rounds. The surveillance indicators used include AFP cases with positive cardinal Signs, Sex ratio, good AFP cases, NSL / Compatible Cases, Adequacy of stool specimen, EV and SL isolation. Population density, Security, Population movement and Campaign management were additional variables included in the model. The data used for risk prediction of 2009 was for the period of January 2007 to September 2008. Each indicator was assigned score from 0.25 to 1 considering their relevance and importance.

Probability of WPV transmission in other districts estimated relative to highest scoring district in a region. Probability of occurrence of wild polio virus was categorized as minimum ( $P \leq 0.25$ ), mild ( $P=0.26-0.50$ ), moderate ( $P=0.51-0.75$ ) and high ( $P \geq 0.76$ ).

Limitation of model was validity of assumptions like correct scores and weights of variables, validity of AFP and SIAs data and subjective values of some of the variables like campaign management or population movement.

<p><b>Results:</b> on basis of above methodology (assuming data to be valid and given values and weightage as correct), the risk status of district by region in Afghanistan is calculated and shown (Map).</p> <p><b>Way forward:</b> as this was a program exercise therefore all the indicators used in the model (if found weak) need to be further analyzed for identification of 2-3 main reasons by districts by using monitoring matrix. Further planning for taking appropriate action to address identified reasons was necessary. Further actions need to follow in the field as per need accordingly.</p>	<p>Map 1: WPV risk status Afghanistan by district, 2009</p>  <p><b>Probability WPV</b></p> <table border="0"> <tr> <td>P ≤ 0.25</td> <td>Minimum</td> </tr> <tr> <td>P 0.26-0.5</td> <td>Mild</td> </tr> <tr> <td>P 0.51-0.75</td> <td>Moderate</td> </tr> <tr> <td>P ≥ 0.76</td> <td>High</td> </tr> </table>	P ≤ 0.25	Minimum	P 0.26-0.5	Mild	P 0.51-0.75	Moderate	P ≥ 0.76	High
P ≤ 0.25	Minimum								
P 0.26-0.5	Mild								
P 0.51-0.75	Moderate								
P ≥ 0.76	High								

<p><b>Simulation Exercise:</b> Using the same methodology, assumptions, values and weights. The data from January 2006 to December 2007 was used to assess the sensitivity of the model in predicting risk of WPV by district in 2008. In fact, all the districts where confirmed cases of polio occurred during 2008 (Map 2), appeared as high risk in this simulation exercise, showing that the assumptions and data used in the model was of reasonably good quality and the model can be helpful in planning in advance for 2009.</p> <p><b>Recommendations:</b> It will be important to use this model at Regional level thereby changing the reference category for comparison and identify high-risk districts within regions to take timely appropriate actions.</p>	<p>Map2: WPV risk status Afghanistan by district, 2008</p>  <p><b>Probability WPV</b></p> <table border="0"> <tr> <td>P ≤ 0.25</td> <td>Minimum</td> </tr> <tr> <td>P 0.26-0.5</td> <td>Mild</td> </tr> <tr> <td>P 0.51-0.75</td> <td>Moderate</td> </tr> <tr> <td>P ≥ 0.76</td> <td>High</td> </tr> </table>	P ≤ 0.25	Minimum	P 0.26-0.5	Mild	P 0.51-0.75	Moderate	P ≥ 0.76	High
P ≤ 0.25	Minimum								
P 0.26-0.5	Mild								
P 0.51-0.75	Moderate								
P ≥ 0.76	High								

## **11. Goals for 2009**

There are two important priorities for the program to reach the target of stopping poliovirus circulation by end of 2009. First priority is to improve quality of campaign in Southern region to interrupt the transmission and second goal is to maintain campaign quality in rest of the country to prevent establishment of any poliovirus circulation.

### **Supplementary Immunization Activities Calendar:**

Six rounds of NIDs are planned for 2009 and tOPV will be used in these rounds. These rounds are planned in January (11-13), March (15-17), May (17-19), July (27-29), October (12-14) and December (14-16).

Three rounds of SNIDs are planned with type specific monovalent vaccine in South including Farah, East and Southeastern Region. These rounds are planned in April (12-14), June (21-23) and November (15-17).

### **Increase reaching the target children in Southern Region:**

Increase involvement and accountability of health NGOs is critical in improving the access as these BPHS NGOs are contracted out by MoPH to deliver the health care services and have network of service providers at district level as well as community level committees. There is an urgent need to revise the contract of these BPHS NGOs to include planning and implementation of NIDs in their areas of assignments.

Expand appointment of District Public Health Officers (DPHO) in high risk districts. MoPH has taken the initiative of strengthening of health system through appointment of DPHOs to coordinate and provide leadership in health related activities at each district level. Since Polio Eradication is one of the highest priority program, MoPH has decided to accelerate the appoint of DPHOs in high risk districts, with priority for Southern region.

Expansion of partnership with other line departments like MRRD to use their community development councils for PEI activities in districts where these councils are functional.

Continue to coordinate with ICRC to seek the support of AGE in accessing the children in conflict affected districts. Local negotiation will be carried out with AGE/Taliban to encourage involvement and training their own teams to implement SIAs. At the same time close coordination will be maintained with NATO, ISAF before each campaigns to achieve de-conflict situation during vaccination days.

Continue to use any “Window of opportunity” to vaccinate children in conflict areas irrespective of dates of campaigns with innovative approaches like High-Risk Cluster Approach (HRCA).

Reconciliation Offices which are spread in various parts of country including Southern Region and Farah province will be contacted to facilitate local level support for the vaccination campaigns and improving the access.

Communication Initiative for community mobilization through involvement of community influencers will be continued and will be expanded in areas of poliovirus circulation.

Based on the epidemiological situation, additional rounds of SNIDs and mop-ups in Southern and Eastern regions with type specific monovalent vaccines will be conducted during 2009.

While putting efforts on new interventions to improve access in security compromised areas, districts of South with comparatively better access will also be focused to minimize management issues through improving quality of training, supervision and monitoring.

**Maintaining Immunity level in “Polio free” non transmission areas of country:**

The number of NIDs is increased and there will be 6 rounds of country wide NIDs during year 2009 compared to 4 rounds that were usually held every year in past.

Extra efforts will be made to maintain and further improve quality of campaigns through focus on planning, strengthening campaign monitoring, improving recording and recovering of absent children and exercise to validate post campaign assessment data. Training sessions will focus to improve coverage in very young children below 1 year of age.

Strengthening of routine immunization to improve and sustain coverage above 80% will be critical to maintain the immunity level in the non transmission zone of the country. NIDs volunteer will be trained to encourage parents during their house to house visit for routine vaccination of their eligible children. AFP surveillance data will be constantly used to identify areas of low or no routine coverage. PPOs will monitor fixed centers while visiting health facilities and will also encourage minimizing “missed opportunities” reducing the drop-out.

**Revision and Printing of guidelines and advocacy materials:**

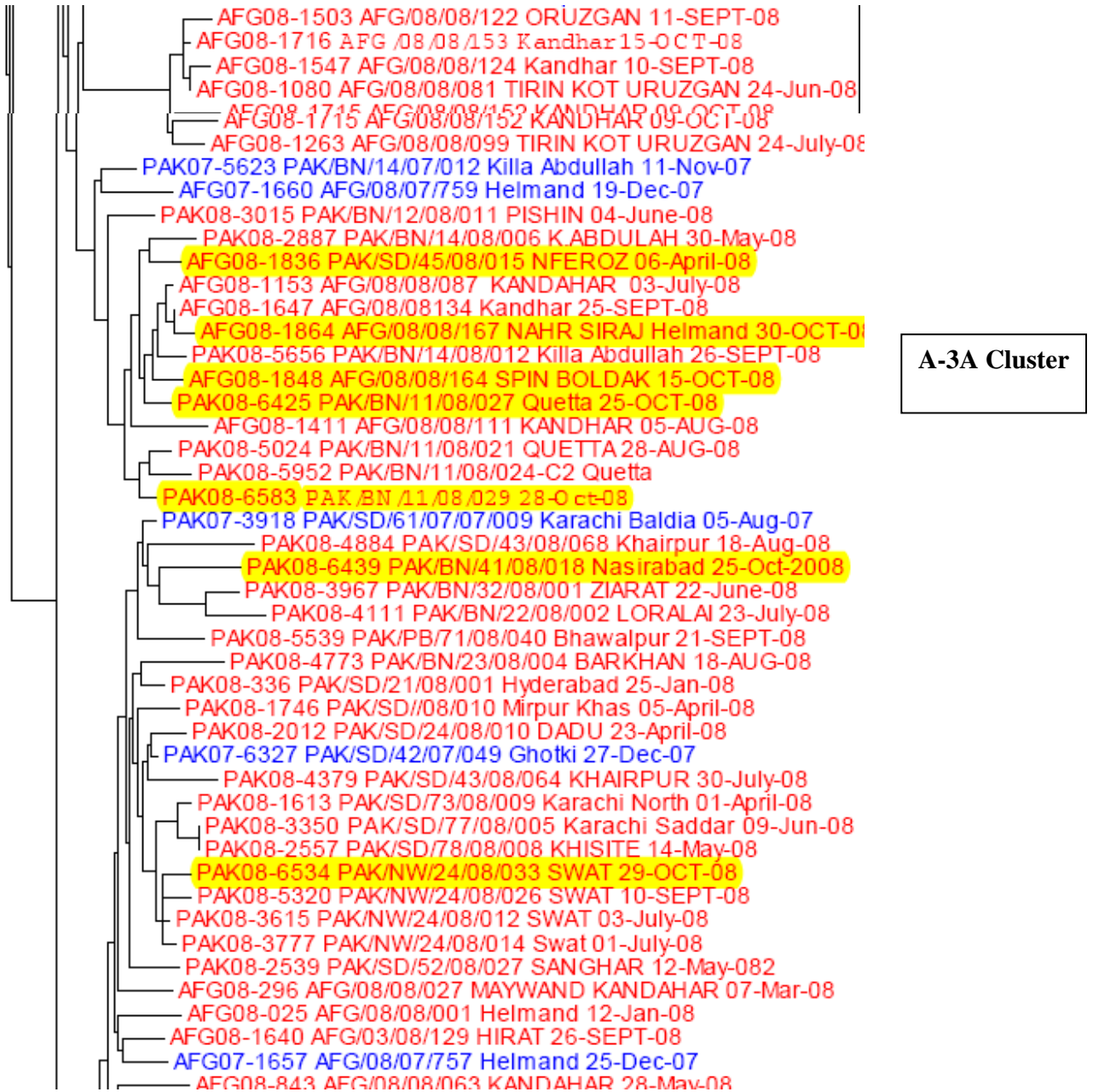
National guidelines on AFP surveillance and vaccination campaigns are being revised to take into account various new strategies and concept introduced in the program during the course of time. These guidelines are expected to be ready, printed and distributed during the first quarter of 2009.

A Quarterly PEI Bulletin will be published to share progress towards polio eradication and update on polio epidemiology, AFP surveillance and campaign quality in Afghanistan. First volume is expected to be ready by March 2009. This Bulletin is designed to advocate decision makers in MoPH, Polio partners, Provincial Health Directors and to share information in field with PEMTs and PPOs and Focal Points at district level.

Other promotional materials including Polio Pens, Pocket diaries AFP Posters and yearly planners are also planned to be printed in 2009 for its distribution at provincial and district level.

Annexure 1

**Pakistan – Afghanistan – Pakistan PV1 Wild Isolates**



## Annexure 2

### Afghanistan – Pakistan PV3 Wild Isolates

