

# **Introduction**

AFP surveillance up to 1999 was passive surveillance. The activities were depending only on cases referred from clinical units passively , for lab investigation. At the beginning of the year 2000 WHO made tremendous inputs to establish an efficient system and thus provided transport means, communication, supplies & equipment's, staff and running costs.

AFP surveillance in Sudan has reached and maintained certification level quality indicators since the beginning of 2001, and shifted to the virological classification by the end of 2001. Different reviewers confirmed that the AFP surveillance system is sensitive enough to detect any transmission or importation of wild poliovirus in Sudan. This was proved when the system efficiently picked the imported Nigerian/ Chad virus in Forbrunga; a remote and insecure town in West Darfur state, in May 2004.

This is the annual technical report for the year 2006. The contents of the report includes results, analysis, and interpretations of the AFP surveillance data for Sudan including OLS areas. It also include background information about the surveillance system in and the main activities conducted by the central unit.

The improvement of the system as reflected by the high quality performance indicators is very clear. The first draft certification document was accepted by the RCC in Oct. 2003. Also annual updates were prepared and forwarded to EMRO for consideration by the RCC. This is discontinued after the importation mentioned above and instead report in the consequent epidemic was written and disseminated.

During 2005 and 2006 the system is implementing community surveillance and expanding the zero reporting sites aiming to more perfection particularly for remote population groups and nomads.

## **POLIO ERADICATION IN SUDAN**

Sudan started its efforts to eradicate poliomyelitis in 1994. EPI is the responsible body to carry out the activities of the program in the country. In areas of the country under SPLA, the activities were conducted by the WHO under the umbrella of the Operation Life-line Sudan (OLS). After peace arrangements have to be done yet.

The program has adopted 4 strategies:

- Boosting the routine immunization.
- Conducting supplementary immunization activities ( SIAs).
- Conducting of AFP surveillance, to the required certification level.
- Effectively respond to and contain importation of wild poliovirus.

## **BACKGROUND INFORMATION**

Sudan lies in central Africa and has borders with nine countries namely Egypt, Libya, Chad, Central Africa, Uganda, Zaire, Kenya, Ethiopia and Eritrea. The border tribes often have the same families and other ties that there is a continuous movement across the borders. This movement had affected the health situation through a long history and currently is having a great impact on the spread of diseases in the country.

The area of Sudan is 2.5 million square kilometers, making it the largest country in

Africa. The climate ranges from desert in the north, extending south through semi desert, poor savannah, savannah, rich savannah and ending into rainy equatorial forests in the south. This affects type and persistence of diseases in the country.

The population is estimated to be 34 512 000 for the year 2004 with an under 15 year population of about 14 769 566. About 35% of the population are urban, 63% rural and 2% nomads.

Administratively, the country is divided into 26 states and these are divided into 134 localities.

For AFP surveillance purposes the table below shows the name of each state, the code used for AFP surveillance purpose, the number of localities in that state and the under 15 years population.

# Sudan by States

(Map – 1)



## **AFP SURVEILLANCE IN 2005**

### **ORGANIZATION:**

Diagram No. 1; shows the organization of AFP surveillance at national and states level. It also indicates the relation between the program, WHO, UNICEF and different committees

### **STAFF:**

26 surveillance officers are posted through out the country assisted by 7 WHO/Sacs and 9 NMO holding SSA/WHO to oversee a surveillance network involving 366 reporting sites including health care institutions, private clinics and traditional healers.

### **TRANSPORT & COMMUNICATION:**

46 cars, 68 motorcycles, 45 bicycles, and one motor boat (Malakal) provide an efficient net work for Tran potion. In each states fax and telephone services were made available. Some cars were provided with radio sets. The 19 Nissan cars provided in 2000 are now often outofroad and needed continuous expensive maintenances.

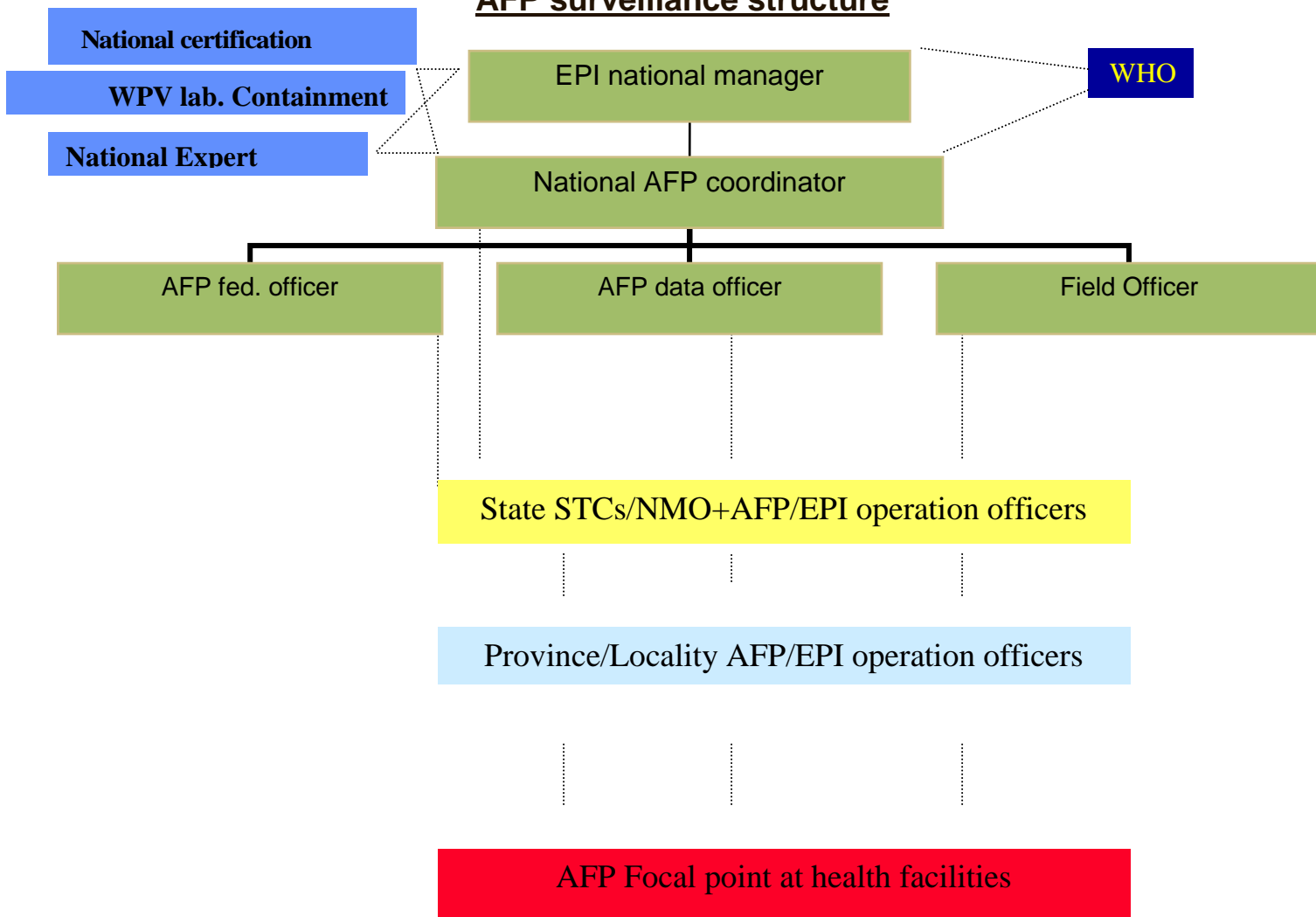
### **REPORTING SITES:**

Reporting sites in the government-controlled areas during 2006 were:

- 107 high priority sites – mainly paediatric and specialized hospitals
- 110 medium priority sites – busy hospital and health centre
- 91 low priority sites – other less busy facilities and traditional healers

The 308 sites involve ; 346 public Institutions , 16 private clinics, and 4 traditional healers places.

## AFP surveillance structure



## **AFP SURVEILLANCE MAIN INDICATORS IN 2005**

### **NON-POLIO AFP RATE:**

The global standard for any population the Non-polio AFP rate is one per 100 000 under 15 years children. For Sudan it was suggested by the TAG to aim at 2 or more because of the high occurrence of malaria and meningitis.

The expected number of AFP cases for 2006 was 127, and during the year 302 cases had been reported This gives a rate of 2.3 cases per 100 000 under 15 years children. Compatible cases were 6 (see table 4).

When looking to the data from the whole country (table 4) 11 states reported a rate of 2 and more, and one state (West Darfur / South Darfur /Sennar / White Nile ) reported a rate of 1.5 (table 4 & map 1).

### **ADEQUATE STOOL SAMPLES:**

Adequate specimens are defined as " two stool specimens collected from a case, at least 24 hours apart within 14 days of paralysis onset: each specimen must be of adequate volume (8 – 10 grams) and arrive in the National Polio Laboratory in "good" condition". Good condition; is defined as no desiccation, no leakage, adequate documentation and evidence that the reverse cold chain was maintained. The global standard is that 80% of AFP cases should have adequate stool samples.

93% of the 302 cases had adequate adequate stool specimens. All stool samples arriving at the lab. in good condition (100%).

Stool samples adequacy rate was 100% in five states, between 80% - 99% in 10 states, (Table 5 & Map 3)

## **REPORTING AND INVESTIGATION:**

The objective of the AFP surveillance is to investigate 80% of AFP cases within 48 hours of being notified and 80% of Stool specimens arriving at the lab < 3 days of being sent.

The percentage of AFP cases investigated within 48 hours of being notified was 100%. Stool samples arriving the laboratory within 3 days of being sent was 98% (table 11).

## **NON-POLIO ENTEROVIRUS:**

The non-polio entero-viruses detection rate among all stool samples was 18% with random distribution over the country (Table 11)

## **SPECIMENS RESULTS TURN ROUND TIME:**

The specimens results received from the National Polio Lab. by the EPI within 28 days from samples being received is 99% of specimens, while the required standard is 80%. (Table 11).

## **WEEKLY (ZERO) REPORTING:**

The completeness of weekly (zero) reporting from all reporting sites was 86%, and out of that the timeliness was 93%. The completeness of weekly (zero) reporting was 86% from high priority sites, 88% from medium priority sites and 82% from low priority sites. Table No.: 16 and Figure No.: 9 show the completeness and timeliness of reporting from the states.

## **ACTIVE SURVEILLANCE VISITS:**

The completeness of active AFP surveillance visits for the high priority sites was 95 and the timeliness was 88% (table 15 & figure 8).

## **DIAGNOSIS OF AFP CASES**

A list of 19 diseases and conditions were classified as causes of AFP. GBS was one of the main causes of AFP cases (35%). Complicated malaria cases were 19%. Traumatic neuritis 14%, meningo encephalitis 7% and Child hoodhemiplegia caused 8%, 11.1% and 4.9% respectively of AFP cases in Sudan . Others (27.1%) included acute rhumatic fever, artheritis, brain abcess, CVA, contex of congenital dis., degenerating neuritis, dehydration , diarrhoea, diphtheria, dysatry, external deg.of cns, h.p.joint arthritis, hypokalamia, lymphoma, pneumonia, potts diseases, rheumatic chorea, sickle cell anemia, typhoid, viral causes, etc (Table No.: 16)

## **SUMMARY OF AFP SURVEILLANCE CENTRAL UNIT ACTIVITIES**

Here are the main activities conducted by the Central unit regarding supervisory visits, IEC materials, meetings and workshops, training and orientation. ect.

### **SUPERVISORY VISITS:**

Nineteen supervisory visits were conducted from the CU to the peripheral levels; the National coordinator participate in 15 of them, field officer (FO) 5 visits 2 of them with the national coordinator (the FO was appointed in September 2003).

The states visited were Gezira (3 visits), Red Sea (3 visits), Gedarif (2 visits), Kassala (2 visits), Sennar (2 visits), one visit to River Nile, Khartoum, North Kordofan, White Nile, West Kordofan, and West Darfur states.

### **MEETINGS AND WORKSHOPS:**

During the year 2003 AFP surveillance Central Unit had participate actively in so many meetings and workshops. The main meetings were:

- Four AFP surveillance national expert committee meetings. The committee had review 22 cases, all of them were discarded except one compatible case from Upper Nile state.
- Three National Certification Committee meetings.
- WPV Containment committee in laboratories (plus tow field visits to lab. In Wad Medani and Khartoum)
- Three meetings of WHO/STC and polio NMO.
- Three EPI states operational officers evaluation and planning meetings.
- Tow planning meetings for measles catch-up campaign in Red Sea, Kassala, River Nile and Northern states.
- Participate in the weekly (Monday) EPI academic sessions and the weekly EPI administrative meetings.

### **ORIENTATION AND TRAINING:**

- Training of all newly appointed NMO, AFP surveillance Officers, and orientation STCs and STOP teams members. In all workshops and meetings orientation on the AFP surveillance activities and performance was done.



## **IEC MATERIALS:**

- Four issues of (Sharh) were produced, 750 copies of each distributed timely to partners and states level as feed back.
- Reprinting of boosters and working forms.
- Distribution of the IEC materials to the states. A total of 4700 copy of the investigation form, 4700 copy of the lab. Request form, 1500 copy of Form 6, 1790 copy of the AFP case files, 1200 copy of the monthly reporting form, 3750 copy of the weekly reporting form, 1720 copy of the immediate reporting form, 470 copy of the line list booster, 213 copy of the weekly reporting monitoring booster, 350 copy of the Out Patient Department registration books, 1225 copy of an education booster, and 213 copy of the active visits monitoring booster were distributed.

## **OTHERS:**

- Development of the measles surveillance guidelines (3<sup>rd</sup> draft).
- Integration of Measles surveillance with the AFP surveillance system.
- Distribution of 22 bicycle, 10 motor cycle, 7 faxes, 7 electricity stabilizer.
- The National AFP surveillance coordinator participate in the review of the Yemen AFP surveillance system mission.
- Updating the importation preparedness plan.

STATES	STATE CODE	Hihg priority	Medium priority	Low priority	Total
Blue Nile	BNI	5	4	4	13
Gedarif	GED	7	9	4	20
Gezira	GEZ	12	7	11	30
Kassala	KAS	5	5	6	16
Khartoum	KHA	20	28	6	54
North Darfur	NDA	3	6	3	12
North Kordofan	NKO	8	3	5	16
Northern	NOR	6	7	9	22
Red Sea	RED	3	13	6	22
River Nile	RNI	6	6	7	19
Sennar	SEN	5	2	6	13
South Darfur	SDA	8	6	2	16
South West Kordofan	SWKO	7	4	4	15
South East Kordofan	SEKO	4	1	3	8
West Darfur	WDA	3	3	8	14
White Nile	WNI	5	6	7	18
<b>SUDAN</b>	<b>SUD</b>	<b>107</b>	<b>110</b>	<b>91</b>	<b>308</b>

SUDAN / States code, Localities, Population < 15 years ,Expected AFP Cases 2006

STATES	STATE CODE	Localities	Population <15 year	Expected NO. OF AFP CASES
Blue Nile	<b>BNI</b>	5	316591	3
Gedarif	<b>GED</b>	5	738715	7
Gezira	<b>GEZ</b>	7	1582961	16
Kassala	<b>KAS</b>	5	738715	7
Khartoum	<b>KHA</b>	7	2005086	20
North Darfur	<b>NDA</b>	7	738715	8
North Kordofan	<b>NKO</b>	7	1129607	11
Northern	<b>NOR</b>	4	211061	3
Red Sea	<b>RED</b>	4	316592	3
River Nile	<b>RNI</b>	6	422124	4
Sennar	<b>SEN</b>	3	633184	6
South Darfur	<b>SDA</b>	9	1477433	15
South Kordofan	<b>SKO</b>	8	876239	9
West Darfur	<b>WDA</b>	7	844245	8
White Nile	<b>WNI</b>	4	738716	7
<b>SUDAN</b>	<b>SUD</b>	<b>88</b>	<b>12769984</b>	<b>127</b>

AFP Surveillance Summary in Sudan for year 2006 ( OLS not included )

	<b>North Sudan States</b>	<b>ALL SUDAN (INCLUDED OLS)</b>
EXPECTED AFP CASES	<b>127</b>	
<b>REPORTED AFP CASES</b>	<b>302</b>	
CONFIRMED POLIO CASES	<b>0</b>	
COMPATIBLE CASES	<b>6</b>	
DISCARDED CASES	<b>296</b>	
CASES WITH 2 SPECIMENS	<b>298</b>	
CASES WITH 1 SPECIMENS	<b>1</b>	
CASES WITH NO SPECIMENS	<b>3</b>	
<b>TOTAL SPECIMENS COLLECTED</b>	<b>597</b>	
SPECIMENS IN GOOD CONDITION	<b>597</b>	
SPECIMENS IN POOR CONDITION	<b>0</b>	
<b>AFP CASES WITH ADEQUATE SPECIMENS</b>	<b>93%</b>	
SPECIMENS WITH POSITIVE RESULTS	<b>0</b>	
SPECIMENS WITH NEGATIVE RESULTS	<b>597</b>	
AFP CASES INVESTIGATED <=48 HOURS	<b>100%</b>	
SPECIMENS ARRIVED LABORATORY <= 3 DAYS OF BEING SENT	<b>98%</b>	
SPECIMENS ARRIVED LABORATORY 3 DAYS OF BEING COLLECTED	<b>78%</b>	
SPECIMENS RESULTS TURN ROUND <= 28 DAYS	<b>99%</b>	
SPECIMENS WITH ENTERO-VIRUS	<b>18%</b>	
CASES WITH RES WEEKNESS	<b>96</b>	
CASES WITHOUT RES WEEKNESS	<b>162</b>	
CASES LOST FOLLOW-UP	<b>18</b>	
CASES DIED BEFORE FOLLOW-UP	<b>28</b>	
<b>NON-POLIO AFP RATE</b>	<b>2.3</b>	

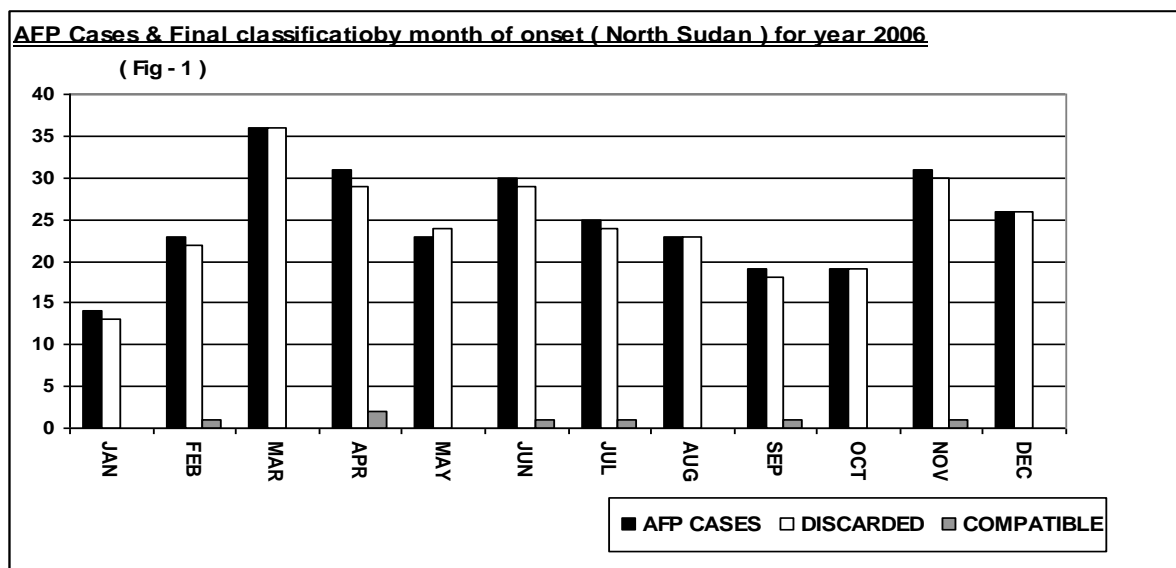
(Table – 4)  
 Expected number of AFP and reported AFP cases and final classification  
 For year 2006 ( OLS not included)

STATES	EXP	AFP	CLASSIFICATION			NON-POLIO AFP RATE
			Confirmed	Compatible	Discarded	
			( Wild )			
BLUE NILE	3	9	0	0	9	3.0
GEDARIF	7	17	1	16	0	2.3
GEZIRA	16	43	0	1	42	2.6
KASSALA	7	17	0	0	17	2.4
KHARTOUM	20	44	0	1	43	2.2
NORTH DARFUR	8	36	0	2	34	4.0
NORTH KORDOFAN	11	33	0	0	33	2.8
NORTHERN	3	7	0	0	7	2.3
RED SEA	3	12	0	0	12	4.3
RIVER NILE	4	11	0	0	11	2.5
SENNAR	6	10	0	0	10	1.7
SOUTH DARFUR	15	23	0	0	23	1.5
SOUTH KORDOFAN	9	17	0	0	17	2.0
WEST DARFUR	8	13	0	1	12	1.5
WHITE NILE	7	10	0	0	10	1.4
<b>TOTAL SUDAN</b>	<b>127</b>	<b>302</b>	<b>0</b>	<b>6</b>	<b>296</b>	<b>2.3</b>

Localities Reported Compatible Polio cases

Efashir 2 cases( NDA) / Egelabat 1 case (GED) / Elginana 1 case (WDA) /  
1 case (GEZ) / Sharg Eneel 1 case (KHA) /

Hasahisa

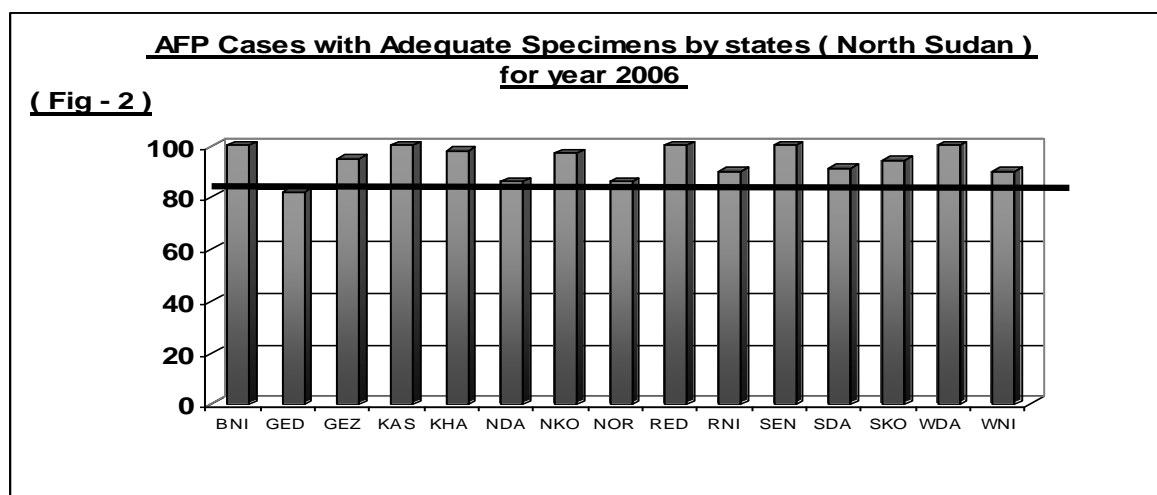


(Table – 5)

**LABORATORY INVESTIGATION FOR AFP CASES BY STATES**

**IN SUDAN FOR YEAR 2006 ( OLS not included )**

STATES	AFP Cases Reported	Cases With Adequate Specimens %	SPECIMENS			Stool Condition		LAB. RESULTS		Enterovirus %
			By cases			Good	Poor	Posi-Tive	Nega-Tive	
			With 2 Specimen	With 1 Specimen	No Specimen					
BLUE NILE	9	100%	9	0	0	18	0	0	18	22%
GEDARIF	17	82%	17	0	0	34	0	0	34	32%
GEZIRA	43	95%	42	0	1	84	0	0	84	19%
KASSALA	17	100%	17	0	0	34	0	0	34	0.0
KHARTOUM	44	98%	43	0	1	86	0	0	86	21%
NORTH DARFUR	36	86%	34	1	1	69	0	0	69	17%
N .KORDOFAN	33	97%	33	0	0	66	0	0	66	15%
NORTHERN	7	86%	7	0	0	7	0	0	14	14%
RED SEA	12	100%	12	0	0	24	0	0	24	8%
RIVER NILE	11	90%	11	0	0	22	0	0	22	18%
SENNAR	10	100%	10	0	0	20	0	0	20	20%
SOUTH DARFUR	23	91%	23	0	0	46	0	0	46	4%
South KORDOFAN	17	94%	17	0	0	34	0	0	34	26%
WEST DARFUR	13	100%	13	0	0	26	0	0	26	23%
WHITE NILE	10	90%	10	0	0	20	0	0	20	30%
<b>SUDAN</b>	<b>302</b>	<b>94%</b>	<b>298</b>	<b>1</b>	<b>3</b>	<b>597</b>	<b>597</b>	<b>0</b>	<b>597</b>	<b>18%</b>



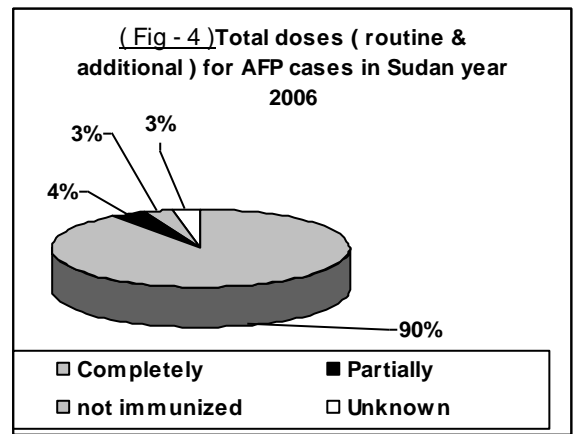






( Table – 7 )  
IMMUNIZATION STATUS OF AFP CASES BY AGE IN MONTHS  
FOR YEAR 2006 (OLS NOTINCLUDED)

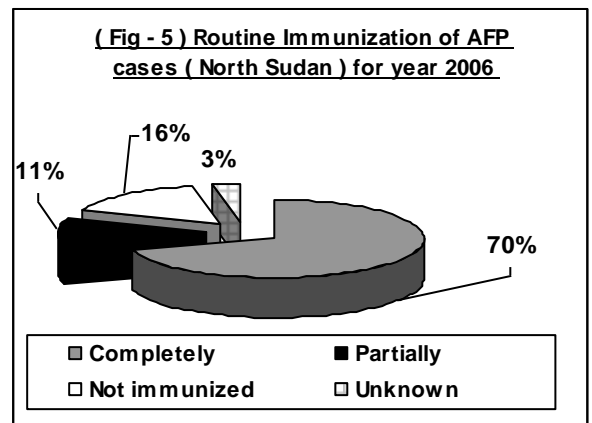
AGE BY MONTHS	AFP	Completely	Partially	Not immunized	Unknown
0 – 11	23	78%	17%	4%	0
12 – 23	61	97%	3%	0	0
24 – 35	57	98%	2%	0	0
36 – 47	37	97%	3%	0	0
48 – 59	26	96%	4%	0	0
60 +	98	80%	6%	6%	8%
<b>TOTAL</b>	<b>302</b>	<b>90%</b>	<b>4%</b>	<b>3%</b>	<b>3%</b>



(Table – 8)

Routine Doses for AFP for year 2006

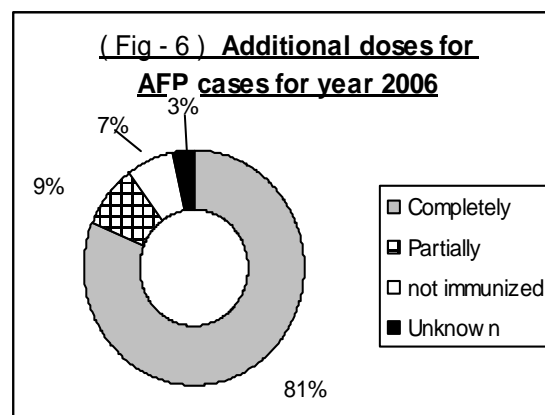
	Confirmed Polio Cases	Completely	Partially	Not immunized	Unknown
0 – 11	23	48%	35%	17%	0.0
12 – 23	61	80%	7%	13%	0.0
24 – 35	57	80%	13%	7%	0.0
36 – 47	37	78%	8%	14%	0.0
48 – 59	26	86%	4%	10%	0.0
60 +	98	55%	10%	26%	9%
<b>TOTAL</b>	<b>302</b>	<b>70%</b>	<b>11%</b>	<b>16%</b>	<b>3%</b>



(Table – 9)

Additional doses for AFP cases for year 2006

	Confirmed Polio Cases	Completely	Partially	Not immunized	Unknown
0 – 11	23	52%	39%	9%	0.0
12 – 23	61	88%	10%	2%	0.0
24 – 35	57	93%	5%	2%	0.0
36 – 47	37	97%	0.0	3%	0.0
48 – 59	26	93%	3.5%	0.0	3.5%
60 +	98	67%	9%	16%	8%
<b>T O T A</b>	<b>302</b>	<b>81%</b>	<b>9%</b>	<b>7%</b>	<b>3%</b>



(Table – 10)

Final classification of AFP cases by immunization status in Sudan for year 2006

Immunization status	AFP Cases	Final classification		
		Confirmed	Compatible	Discarded
Completely immunized	272	0	3	269
Partially	14	0	1	13
Not immunized	8	0	1	7
Unknown	8	0	1	7
<b>Total</b>	<b>302</b>	<b>0</b>	<b>6</b>	<b>296</b>

(Table – 11)

Time table of specimens by states for North Sudan year 2006 )

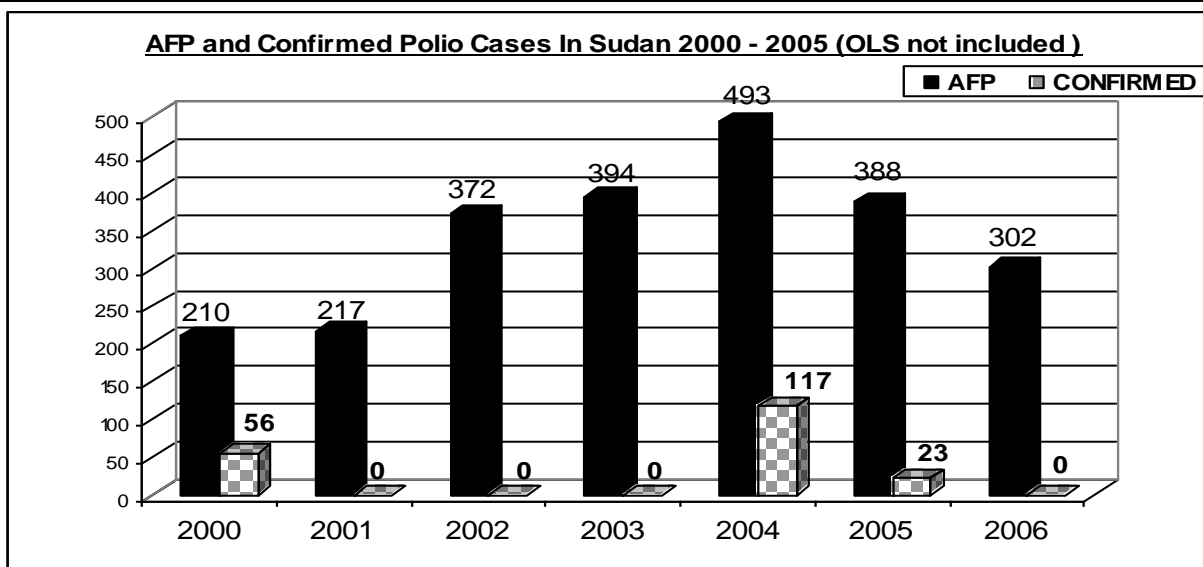
STATES	AFP Cases	Specimens collected	Investigated within 48 hours	Received 3 days of being collected	Received 3 day of being send	Result received within 28 days	Following up done 60 day
BLUE NILE	9	18	100%	100%	100%	89%	100%
GEDARIF	17	34	100%	94%	100%	100%	88%
GEZIRA	43	84	100%	100%	100%	95%	73%
KASSALA	17	34	100%	100%	100%	100%	100%
KHARTOUM	44	86	100%	98%	100%	98%	84%
NORTH DARFUR	36	69	100%	63%	90%	97%	89%
NORTH KORDOFAN	33	66	100%	82%	100%	100%	45%
NORTHERN	7	14	100%	100%	100%	100%	71%
RED SEA	12	24	100%	92%	100%	100%	75%
RIVER NILE	11	22	100%	80%	100%	100%	100%
SENNAR	10	20	100%	80%	100%	90%	90%
SOUTH DARFUR	23	46	100%	48%	100%	91%	70%
SOUTH KORDOFAN	17	34	100%	67%	94%	100%	76%
WEST DARFUR	13	26	100%	15%	77%	85%	61%
WHITE NILE	10	20	100%	100%	100%	100%	70%
<b>TOTAL SUDAN</b>	<b>302</b>	<b>596</b>	<b>100%</b>	<b>78%</b>	<b>98%</b>	<b>97%</b>	<b>77%</b>

( Table – 14 )

**AFP PERFORMANCE INDICATORS IN SUDAN 2000 - 2006**

INDICATORS	2000	2001	2002	2003	2004	2005	2005
EXPECTED AFP CASES	134	137	143	143	146	149	127
REPORTED AFP CASES	210	217	372	394	494	388	302

CONFIRMED POLIO CASES	56	0	0	0	119	23	0
CASES WITH WILD POLIOVIRUS ISOLATED	4	0	0	0	119	23	0
CONFIRMED POLIO CASES BY FOLLOW-UP	34	0	0	0	0	0	0
COMPATIBLE CASES	0	1	1	1	23	0	6
CASES LOST FOLLOW-UP	5	0	0	4	0	0	0
CASES DIED	13	0	0	37	0	0	0
DISCARDED CASES	154	216	370	393	352	354	296
TOTAL CASES WITH SPECIMENS COLLECTED	193	215	371	391	490	381	299
CASES WITH 2 SPECIMENS	187	213	367	388	481	376	298
CASES WITH 1 SPECIMENS	6	3	4	3	9	5	1
CASES WITH NO SPECIMENS	17	1	0	3	4	7	3
TOTAL SPECIMENS COLLECTED	380	429	738	779	971	757	697
SPECIMENS IN GOOD CONDITION	333	422	738	779	969	757	697
SPECIMENS IN POOR CONDITION	47	7	0	0	2	0	0
CASES WITH ADEQUATE SPECIMENS	108	180	332	350	87.6%	88%	93
SPECIMENS WITH POSITIVE RESULTS	17	24	0	0	203	39	0
SPECIMENS WITH NEGATIVE RESULTS	363	405	738	779	768	718	597
AFP CASES INVESTIGATED ≤ 48 HOURS	154	204	338	383	99.6%	99%	100%
SPECIMENS ARRIVED LABORATORY ≤ 3DAYS OF BEING SEND	161	409	-	99.2%	99.1%	96%	98%
SPECIMENS RESULTS TURN ROUND ≤ 28 DAYS	169	309	-	95%	90%	96%	99%
NON-POLIO AFP RATE	1.14	1.6	2.6	2.7	2.4	2.4	2.3



( Table – 15 )

**Finding at follow-up for AFP Cases in North Sudan for year 2006**

Res Weekness	No Res Weekness	Lost follow-up	Died before follow-up
96 (31%)	162 (54%)	17 (6%)	27 (9%)



BAHR ELGABAL	2	7	86%	100%	100% +OLS	OLS		0	0	7	29%	
BLUE NILE	3	9	100%	100%	100%	100%		0	0	9	22%	
EAST EQUATORIA	2	7	100%	57%	OLS	OLS		0	0	7	7%	
ELBOHYRAT	2	19	84%	83%	OLS	OLS		0	0	19	31%	
GEDARIF	7	17	82%	100%	100%	94%		0	1	16	32%	
GEZIRA	16	43	95%	100%	100%	100%		0	1	42	19%	
JONGLAI	4	23	74%	87%	OLS	OLS		0	0	22	35%	
KASSALA	7	17	100%	100%	100%	100%		0	0	17	0.0	
KHARTOUM	20	44	98%	100%	100%	98%		0	1	43	21%	
N. BAHR ELGAZAL	3	12	75%	90%	OLS	OLS		0	0	12	50%	
NORTH DARFUR	7	36	86%	100%	90%	63%		0	2	34	17%	
N..KORDOFAN	11	33	97%	100%	100%	82%		0	0	33	15%	
NORTHERN	2	7	86%	100%	100%	100%		0	0	7	14%	
RED SEA	3	12	100%	100%	100%	92%		0	0	12	8%	
RIVER NILE	4	11	90%	100%	100%	80%		0	0	11	18%	
SENNAR	6	10	100%	100%	100%	80%		0	0	10	20%	
SOUTH DARFUR	15	23	91%	100%	100%	48%		0	0	23	4%	
S. KORDOFAN	9	18	94%	100%	94%	67%		0	0	18	26%	
UNITY	1	5	80%	100%	OLS	OLS		0	0	5	20%	
UPPER NILE	2	5	60%	60%	100%	OLS		0	1	4	50%	
WARAP	4	16	69%	93%	OLS	OLS		0	1	14	50%	
W. BAHR ELGAZAL	1	4	100%	100%	OLS	OLS		0	0	4	50%	
WEST DARFUR	8	13	100%	100%	77%	15%		0	1	12	23%	
WEST EQUATORIA	1	9	89%	100%	OLS	OLS		0	0	9	22%	
WHITE NILE	7	10	90%	100%	100%	100%		0	0	10	30%	
<b>TOTAL SUDAN</b>	<b>147</b>	<b>410</b>		<b>96%</b>	<b>98%+</b> <b>OLS</b>	<b>78%+</b> <b>OLS</b>		<b>0</b>	<b>8</b>	<b>400</b>	<b>27%</b>	

**1\* AFP cases investigated within 48 hours**

**2\* Specimens received LAB. 3 days of being sent**

**3\* Specimens received LAB. 3 days of being collected**

**4\* specimens results received EPI 28 days of being received to the LAB.**



**Weekly report ( Completeness & Timeliness ) in North Sudan for year 2006**

**( Fig - 10 )**

