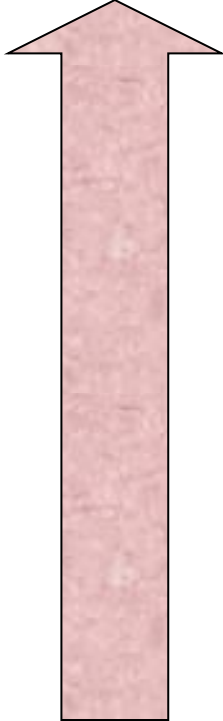


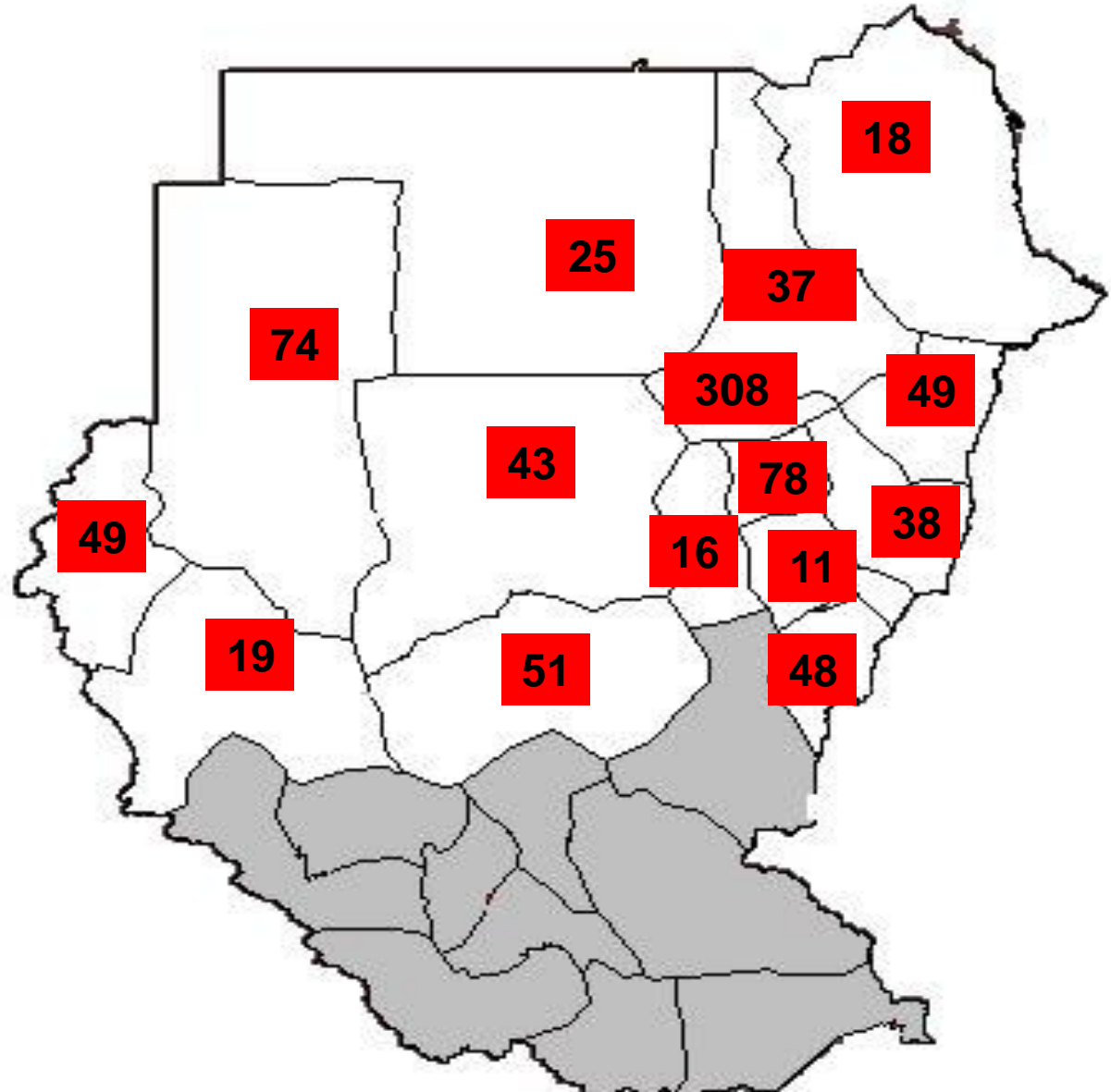
**Update**  
**Weekly Measles**  
**Surveillance Report**  
**Sudan**  
**(( Northern states))**  
**Up to**  
**Week 48**  
**(Ending On 3/12/10)**

**Figure (1): Distribution of Fever and rash Cases, (outbreak data excluded ) by State Up to W.48 (2009 -2010)**

**2010  
= 864**

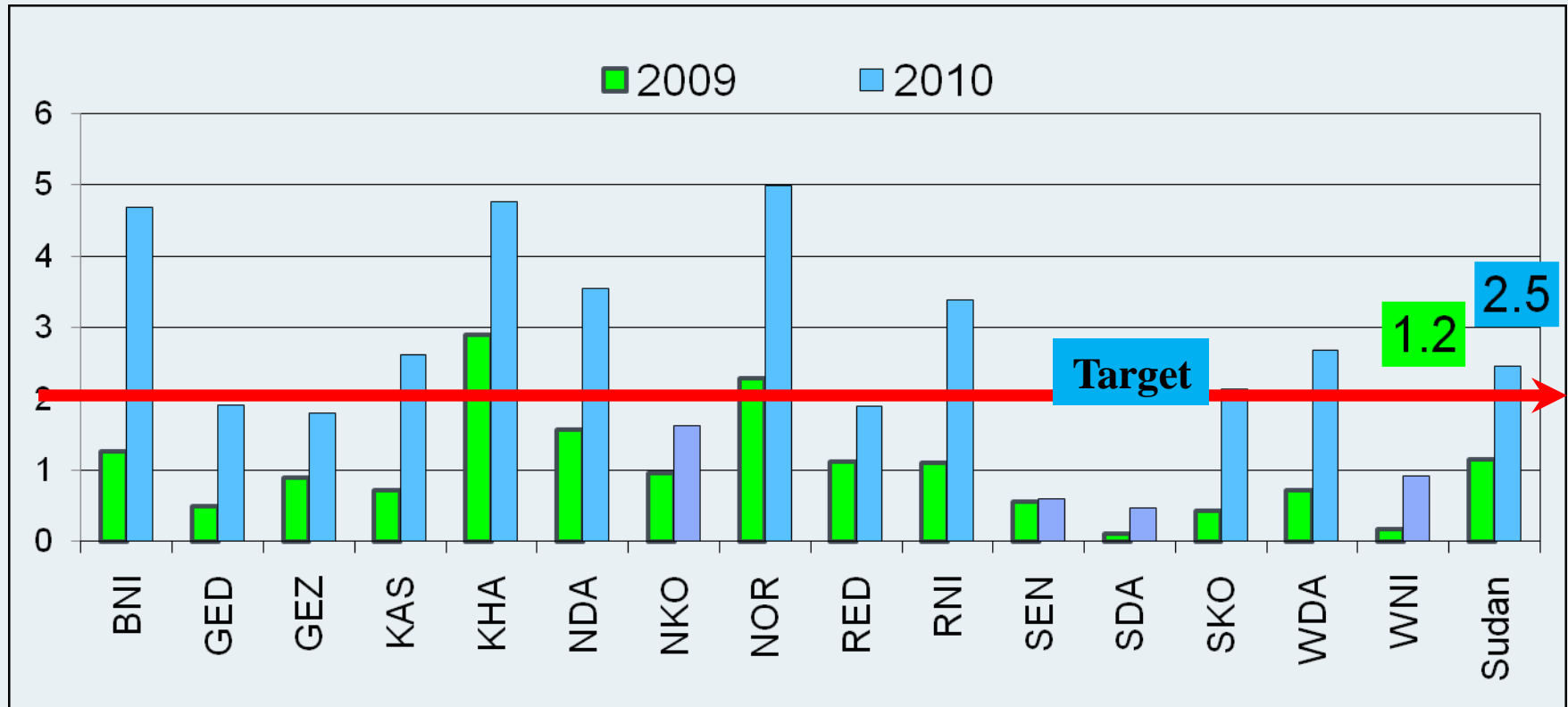


**2009  
= 431**



# Figure (2): Rate of Non-Measles Cases /100,000 Population (outbreak data excluded ) by State Up to W.48 (2009 -2010)

Target = 2/100,000 pop.



**Table (1 ): (%) of localities/sates that reported at least one suspected case with sample for IGM testing - Up to w.48 2010**

	Total No.of localities	localities with population < 100,000pop	localities with population=&>10 0,000	Reporting localities	% reported loc/total loc
<b>Sates</b>					
<b>Blue Nile</b>	6	1	5	6	100
<b>GEDARIF</b>	10	2	8	10	100
<b>GEZAIRA</b>	7	-	7	7	100
<b>KASSALA</b>	11	3	8	11	100
<b>KHARTOUM</b>	7	-	7	7	100
<b>N. Darfur</b>	16	9	7	8	50
<b>N. Kordofan</b>	13	2	11	10	77
<b>NORTHERN</b>	7	4	3	6	86
<b>RED SEA</b>	10	9	1	4	40
<b>REVER NILE</b>	7	2	5	6	86
<b>SENNAR</b>	7	1	6	5	71
<b>S.DAR</b>	15	3	12	7	47
<b>S.KOR</b>	18	8	10	13	72
<b>W.DARFUR</b>	15	9	6	10	67
<b>White Nile</b>	8	-	8	3	38
<b>Total</b>	157	53	104	113	72

**Table (2 ): Reporting Rate / levels up to w 48 2010**

<b>Level</b>	<b>Achieved</b>	<b>Target</b>
<b>National</b>	<b>2.5</b>	<b>2:100000 pop</b>
<b>State</b>	<b>73% (11)states achieved 2&amp;&gt;</b>	<b>2:100000 pop at all states</b>
<b>Locality</b>	<b>72% (113 ) loc reach 1: 100000</b>	<b>1:100000 pop at least in 80% loc</b>

**Table (3):Type of Samples Collected Form Fever and rash Cases  
(outbreak data excluded )  
by State Up to W.48 2010**

<b>State</b>	<b>Fever &amp; rash cases</b>	<b>blood samples</b>	<b>Oral fluid</b>	<b>Urine samples</b>	<b>Throat swap</b>	<b>Dry Blood</b>
<b>Blue Nile</b>	<b>48</b>	<b>34</b>	<b>14</b>	<b>39</b>	<b>7</b>	<b>0</b>
<b>Gadarif</b>	<b>38</b>	<b>35</b>	<b>2</b>	<b>34</b>	<b>8</b>	<b>0</b>
<b>Gazira</b>	<b>78</b>	<b>60</b>	<b>14</b>	<b>18</b>	<b>0</b>	<b>0</b>
<b>Kassala</b>	<b>49</b>	<b>37</b>	<b>12</b>	<b>38</b>	<b>13</b>	<b>0</b>
<b>Khartoum</b>	<b>308</b>	<b>206</b>	<b>90</b>	<b>99</b>	<b>6</b>	<b>6</b>
<b>N. Darfur</b>	<b>74</b>	<b>65</b>	<b>7</b>	<b>51</b>	<b>0</b>	<b>0</b>
<b>N. Kordofan</b>	<b>43</b>	<b>37</b>	<b>6</b>	<b>32</b>	<b>0</b>	<b>0</b>
<b>Northern</b>	<b>25</b>	<b>25</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>
<b>Red Sea</b>	<b>18</b>	<b>7</b>	<b>10</b>	<b>8</b>	<b>1</b>	<b>0</b>
<b>River Nile</b>	<b>37</b>	<b>32</b>	<b>5</b>	<b>25</b>	<b>0</b>	<b>0</b>
<b>Sennar</b>	<b>11</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>S.Darfur</b>	<b>19</b>	<b>14</b>	<b>4</b>	<b>6</b>	<b>2</b>	<b>0</b>
<b>S.Kordofan</b>	<b>51</b>	<b>50</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>0</b>
<b>W.Darfur</b>	<b>49</b>	<b>49</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>
<b>White Nile</b>	<b>16</b>	<b>14</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>0</b>
<b>Total</b>	<b>864</b>	<b>674</b>	<b>133</b>	<b>358</b>	<b>38</b>	<b>6</b>

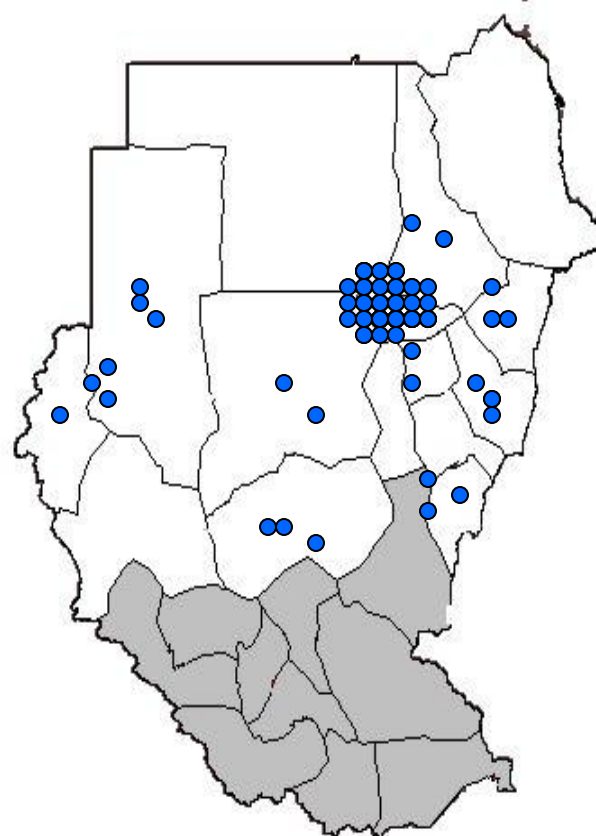
**Table (4): Classification of Fever and rash Up to W.48 - 2010  
(outbreak data excluded )**

State	Report ed cases	Samples for Antibody titre	M.	R.	Equi-Rube lla	Discarded	Clinic ally Diagn osed Measl es	Total Measl es Cases	Pending
Blue Nile	<b>48</b>	<b>48</b>	<b>3</b>	<b>7</b>	<b>1</b>	<b>37</b>	<b>0</b>	<b>3</b>	<b>0</b>
GEDARIF	<b>38</b>	<b>37</b>	<b>3</b>	<b>16</b>	<b>0</b>	<b>19</b>	<b>1</b>	<b>4</b>	<b>0</b>
GEZAIRA	<b>78</b>	<b>74</b>	<b>2</b>	<b>29</b>	<b>0</b>	<b>44</b>	<b>4</b>	<b>6</b>	<b>0</b>
KASSALA	<b>49</b>	<b>49</b>	<b>3</b>	<b>16</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>3</b>	<b>0</b>
KHARTOUM	<b>308</b>	<b>302</b>	<b>31</b>	<b>10</b>	<b>1</b>	<b>245</b>	<b>6</b>	<b>37</b>	<b>17</b>
N. Darfur	<b>74</b>	<b>72</b>	<b>6</b>	<b>17</b>	<b>0</b>	<b>48</b>	<b>2</b>	<b>8</b>	<b>1</b>
N. Kordofan	<b>43</b>	<b>43</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>2</b>	<b>0</b>
NORTHERN	<b>25</b>	<b>25</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>1</b>
RED SEA	<b>18</b>	<b>17</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>0</b>
REVER NILE	<b>37</b>	<b>37</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>2</b>	<b>0</b>
SENNAR	<b>11</b>	<b>9</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>
SOUTH DAR.	<b>19</b>	<b>18</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>0</b>
SOUTHKOR.	<b>51</b>	<b>51</b>	<b>3</b>	<b>18</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>3</b>	<b>0</b>
WEST DAR.	<b>49</b>	<b>49</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>1</b>	<b>2</b>
White Nile	<b>16</b>	<b>15</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>864</b>	<b>846</b>	<b>56</b>	<b>160</b>	<b>2</b>	<b>607</b>	<b>17</b>	<b>73</b>	<b>22</b>

**Figure (3): Distribution of sporadic Lab. Confirmed Measles Cases by States and locality up to W48 2010**

State	Localities	cases No . lab confirmed
BNI	Eldamazin	1
	Baw	1
	Elrusirs	1
GED	Mid –Gedarif	1
	E.Galabat	1
	Gala alnahal	1
GEZ	Madani	2
KSA	West Kassala	1
	Reifiy Halfa	2
KHA	karay	4
	Khartoum	4
	Bahry	11
	Sherg Alniel	4
	Umdorman	4
	Jabel Awlia	2
	Umbada	2
NDA	Elfashir	3
	Saraf Omra	3
NKO	Gabrat Elshekh	1
	Abu Zabed	1
SKO	Habella	1
	Abogebeha	2
RNI	Eldamer	2
WDA	Zalingi	1
	<b>Total</b>	<b>56</b>

**N = 56**



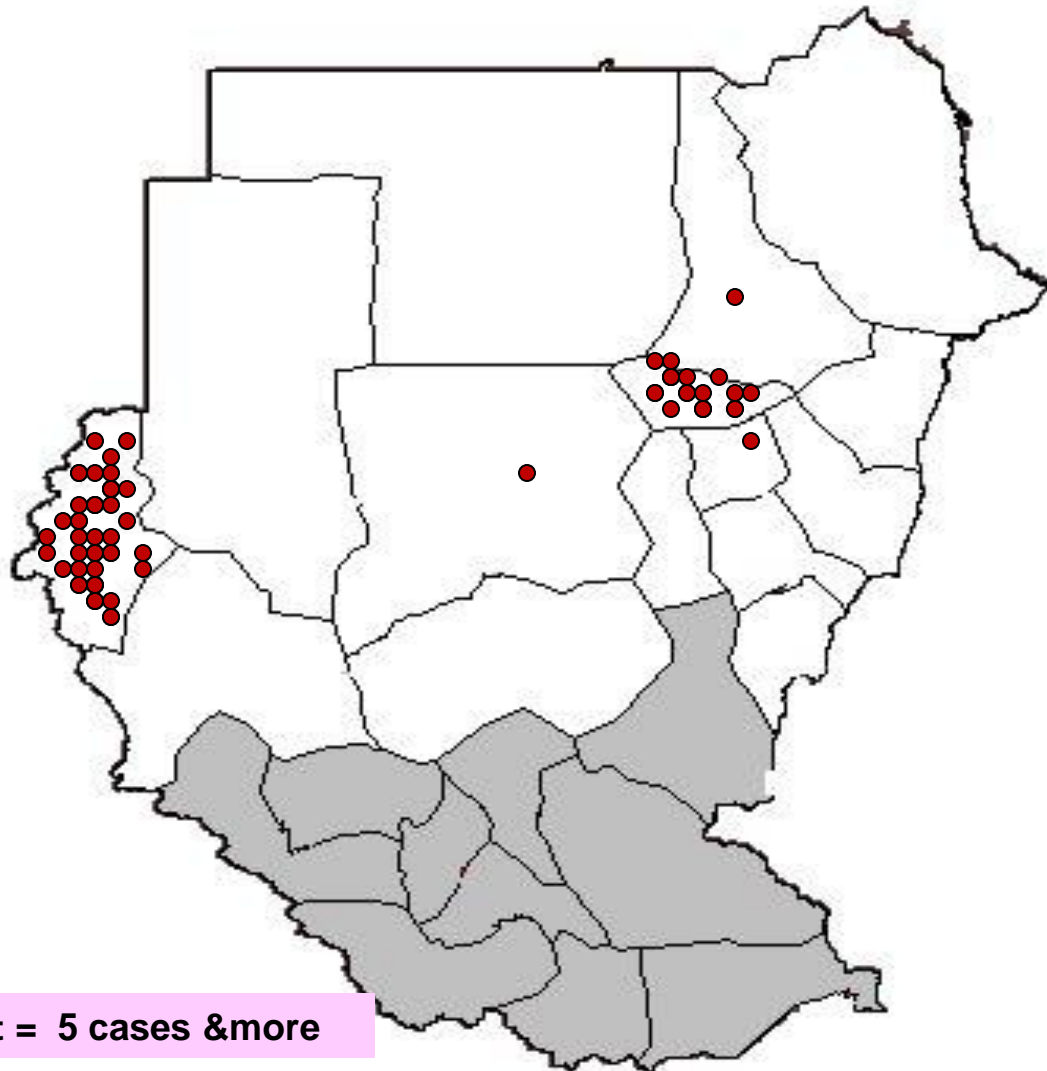
● 1 dot = 1case

**Table (5): Confirmed Measles outbreaks up to W.48 2010**

<b>State</b>	<b>Total Reported cases</b>	<b>Lab Confirmed Cases</b>	<b>EPI-LINK Cases</b>	<b>Size of the outbreak</b>	<b>D. Of Onset of the 1<sup>st</sup> case</b>	<b>D. Of Onset of the latest case</b>
<b>NKO (Sodary )</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>25-10-10</b>	<b>28-10-10</b>
<b>Gez (E.Gezira )</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>10-10-10</b>	<b>24-10-10</b>
<b>KHA (Umbada )</b>	<b>19</b>	<b>17</b>	<b>2</b>	<b>19</b>	<b>02-07-10</b>	<b>15-10-10</b>
<b>KHA (Karay )</b>	<b>24</b>	<b>6</b>	<b>18</b>	<b>24</b>	<b>06-08-10</b>	<b>18-09-10</b>
<b>KHA ( Umdorman -Khalwat Alimam Almahdi)</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>13-09-10</b>	<b>14-09-10</b>
<b>RNI (Eldamer )</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>05-08-10</b>	<b>17-08-10</b>
<b>KHA (Umdorman-Fatasha Military camp)</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>26-07-10</b>	<b>14-08-10</b>
<b>KHA (Bahry )</b>	<b>20</b>	<b>11</b>	<b>8</b>	<b>19</b>	<b>17-04-10</b>	<b>21-05-10</b>
<b>WDA</b>	<b>458</b>	<b>44</b>	<b>369</b>	<b>413</b>	<b>02-01-10</b>	<b>25-08-10</b>
<b>Total</b>	<b>549</b>	<b>101</b>	<b>400</b>	<b>501</b>		

# Figure (4): Distribution of Measles outbreak Cases by States and locality up to W48 2010

N = 501



● 1 dot = 5 cases & more

**Table (6):Distribution of Confirmed Measles cases by age group & vaccination Status up to W.48 2010**

	Un-vacc	1 dose	2 dose	Total	% cases /age group	% vaccinated
<9	54	0	0	54	9	0
9-11months	26	11	0	37	6	30
1--5	109	68	16	193	34	44
<5 yrs	189	79	16	284	49	41
6--10	32	16	6	54	9	41
15--11	47	5	0	52	9	10
>15yrs	178	6	0	184	32	3
> 5yrs	257	27	6	290	51	11
<b>Total</b>	<b>446</b>	<b>106</b>	<b>22</b>	<b>574</b>	<b>100</b>	<b>25</b>

**Table (7) : Field Surveillance Indicators By State Up to W.48  
2010 (Target = >80%)**

<b>State</b>	<b>Fever &amp; Rash cases</b>	<b>%investigated within &lt;48 h</b>	<b>% Notification&lt;7 days of rash onset</b>
Blue Nile	48	100%	100%
Gadarif	38	100%	94%
Gazira	78	100%	98%
Kassala	49	100%	100%
Khartoum	308	92%	90%
N. Darfur	74	100%	89%
N. Kordofan	43	100%	92%
Northern	25	83%	91%
Red Sea	18	93%	100%
River Nile	37	100%	93%
Sennar	11	83%	100%
S.Darfur	19	100%	73%
S.Kordofan	51	95%	71%
W.Darfur	49	94%	87%
White Nile	16	91%	100%
<b>Total</b>	<b>864</b>	<b>96%</b>	<b>90%</b>

**Table (8) : Field Surveillance Indicators by State up to W.48 2010 (Target = >80%)**

State	Fever & Rash cases	% of samples collected for IGM testing	% adequacy
Blue Nile	48	100	100
Gadarif	38	97	92
Gazira	78	92	97
Kassala	49	100	98
Khartoum	308	97	98
N. Darfur	74	96	90
N. Kordofan	43	100	100
Northern	25	100	100
Red Sea	18	83	87.5
River Nile	37	100	100
Sennar	11	86	100
S.Darfur	19	91	89
S.Kordofan	51	100	95
W.Darfur	49	100	95
White Nile	16	93	93
<b>Total</b>	<b>864</b>	<b>97</b>	<b>97</b>

**Table(9) : Measles Field Surveillance Indicators Up to W.48  
2009 - 2010**

<b>Indicators</b>	<b>2009</b>	<b>2010</b>
Rate of Non- Measles Cases/100,000pop	<b>1.2</b>	<b>2.5</b>
Confirmed	<b>45</b>	<b>73</b>
Clinically Diagnosed	<b>33</b>	<b>17</b>
Lab confirmed	<b>12</b>	<b>56</b>
% samples for IGM testing	<b>93</b>	<b>97</b>
% Adequacy of samples	<b>99</b>	<b>97</b>
% Notification<7 days of rash onset	<b>83</b>	<b>90</b>
%Investigated within 48 hrs	<b>93</b>	<b>96</b>
% results reported to EPI =< 7 days from received	<b>98</b>	<b>96</b>
(%) Proportion of localities that reported at least one suspected case with sample for IGM testing	<b>64%</b>	<b>72% (ann 78%)<sup>14</sup></b>

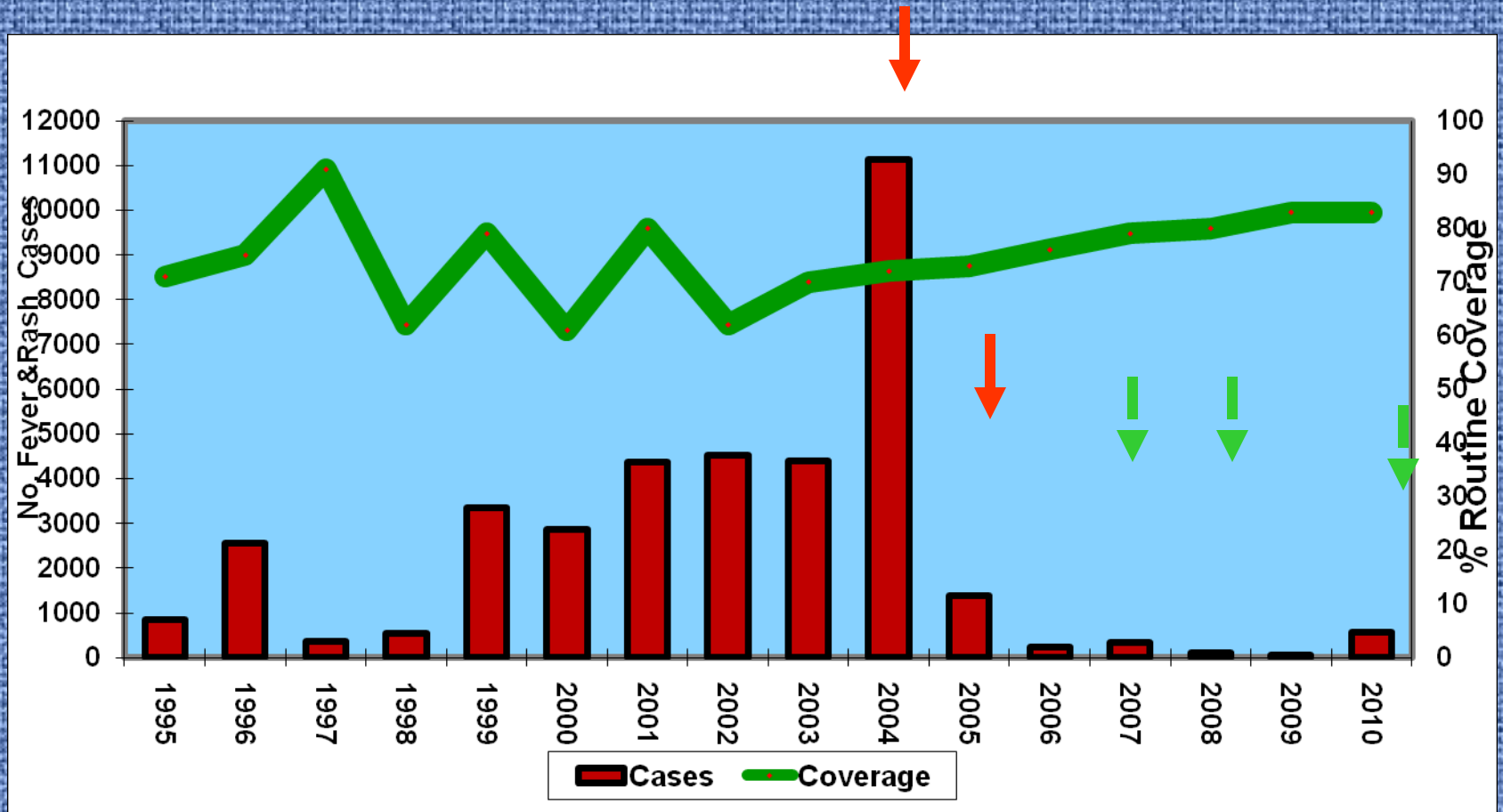
**Table(10) : Measles Field Surveillance Indicators Up to W.48  
2010**

<b>Indicator</b>	<b>#</b>	<b>%</b>
<b>%Outbreaks detected timely</b>	<b>9</b>	<b>100</b>
<b>%Outbreaks investigated timely</b>	<b>8</b>	<b>89</b>
<b>%Outbreaks Documented</b>	<b>9</b>	<b>100</b>
<b>%Outbreaks size less than 10 cases</b>	<b>5</b>	<b>56</b>

**Table (11) : Incidence Rate of Confirmed Measles Cases up to W. 48 2009-2010 (per /1,000,000)**

Target =< 1/1000,000 pop.		Annualized Measles Incidence/1,000,000 2009	Annualized Measles incidence /1,000,000 2010
State			
Blue Nile		1.2	3.2
Gadarif		0.0	2.2
Gazira		1.6	2.7
Kassala		0.0	1.7
Khartoum		1.4	19.1
N. Darfur		0.0	4.3
N. Kordofan		0.8	3.2
Northern		1.8	0.0
Red Sea		0.0	1.1
River Nile		1.0	6.8
Sennar		0.7	1.3
S.Darfur		0.0	0.3
S.Kordofan		1.1	1.5
W.Darfur		11.6	231.2
White Nile		0.6	0.0
<b>Total</b>		<b>1.4</b>	<b>17.9</b>

# Figure (5): Measles Cases Vs Measles vaccine Coverage 1995 – 2010\*



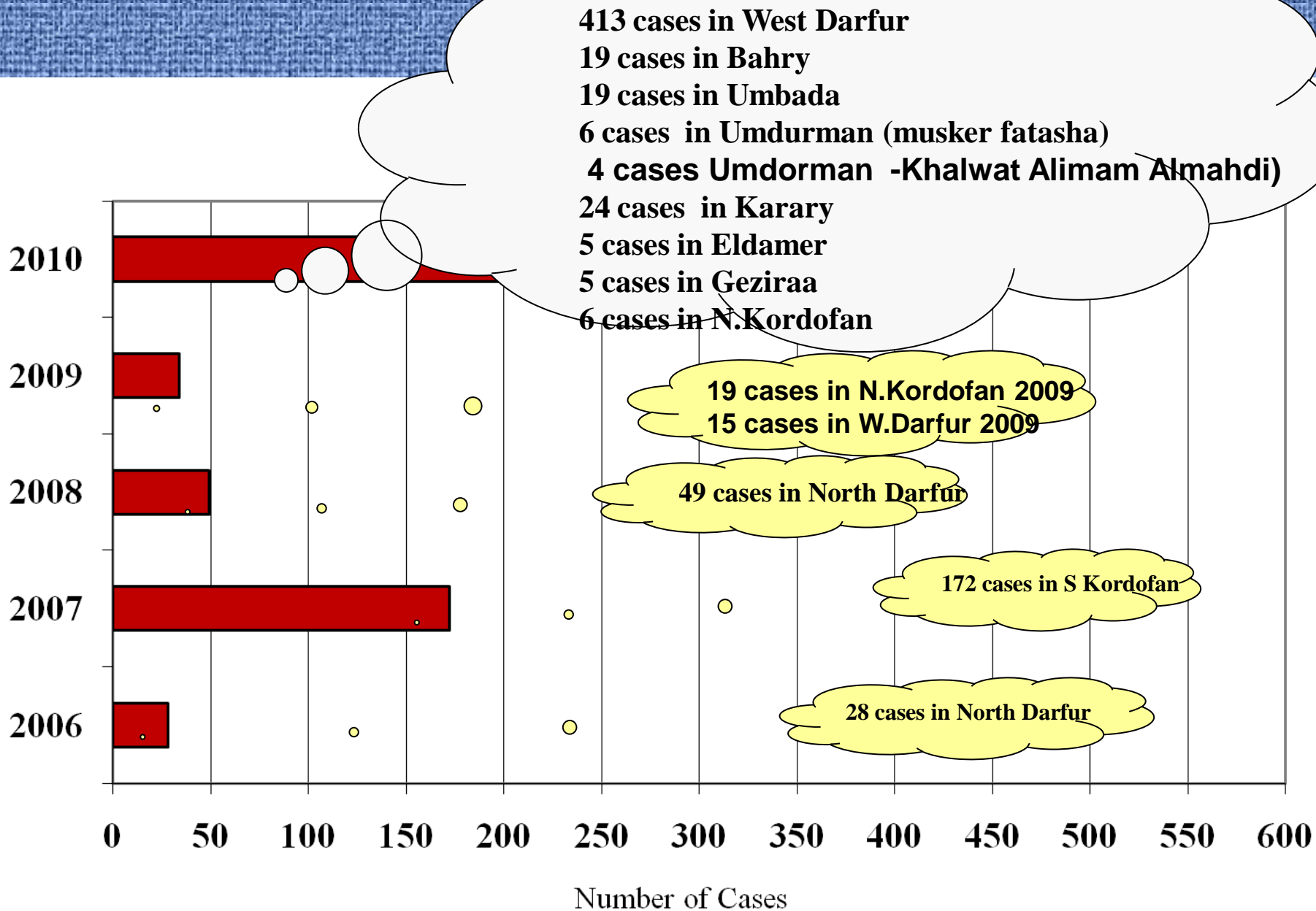
Catch up campaign



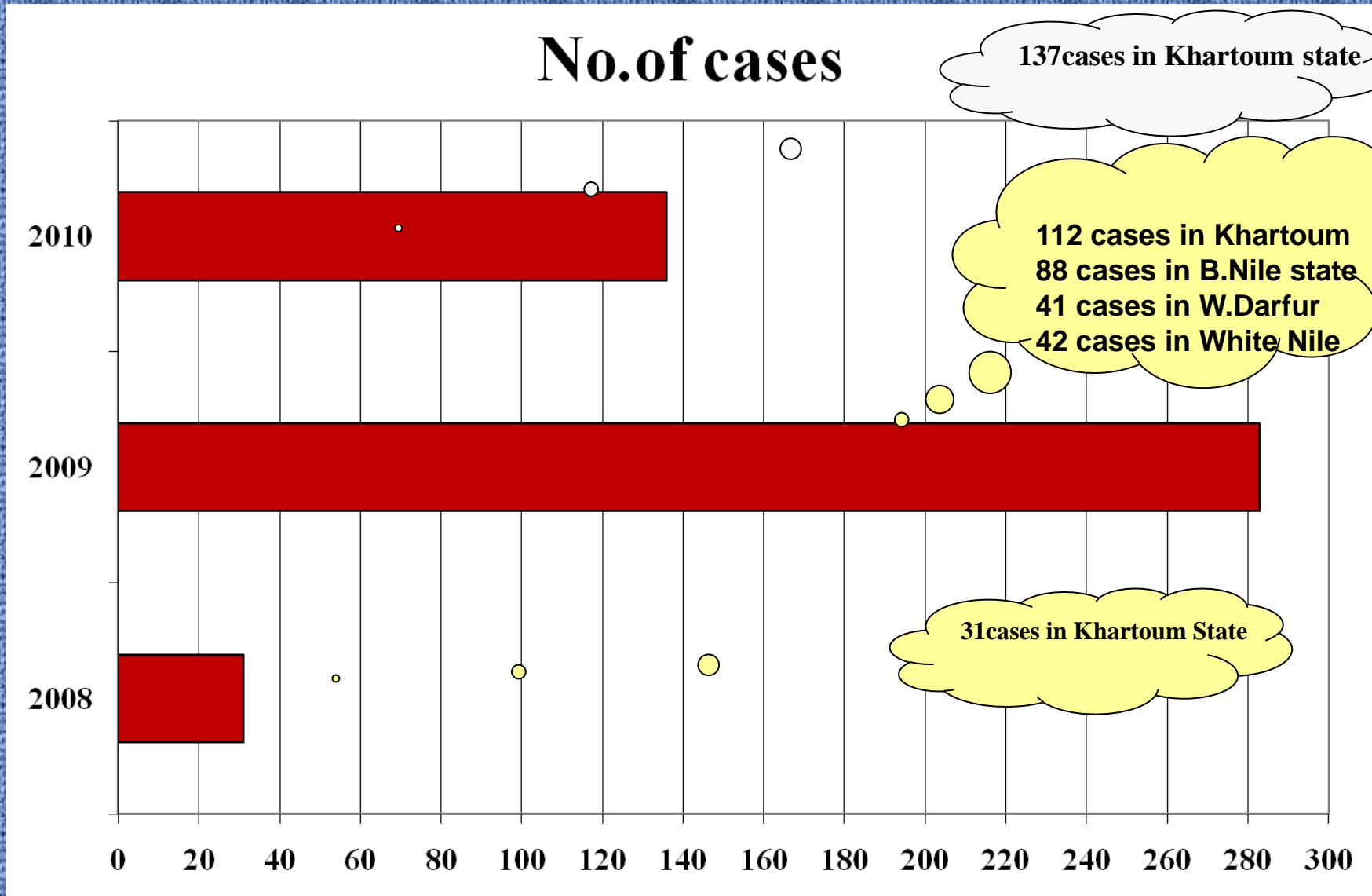
Follow up campaign

\* Ann Up to Oct 2010

# Figure (6): Measles Out breaks 2006- 2010



# Figure (7): Rubella Out breaks 2008 - 2010



# Summery

- **System Sensitivity (Reporting Rate) :**
  - **National level:** above the target (2.5 / 100000 )
  - **State level :** Four states (NKO,SDA,SEN,WNI) , reporting rate less than the target ( 2/100000 population)
  - **Locality level :** 72% of localities reported at least one fever and rash case and collect from them sample for IGM testing

# Summery

- **Measles incidence /1000000 population:**
- **National** :Annualized measles incidence 17.9 per million , above the target (target : < 1:1000000 pop)
- **States** : the incidence is high specially in states ( GED, KAS,BNI , KHA ,GEZ, , NDA, RED,SKO,RNI &WDA ,WNI )

# Summery

- **Measles Outbreaks:**

- **Confirmed outbreaks :**

1. **Measles outbreak in West Darfur state** :the total number of cases reach 413 cases.
2. **Measles outbreak in Khartoum , Bahry locality** : 19 cases
3. **Measles outbreak in Khartoum , Umbada locality** : 20 cases
4. **Measles outbreak in Khartoum , Musker Fatasha Umdurman locality** : 6 cases
5. **Measles outbreak in Khartoum , Karary locality** : 24 cases
6. **Measles outbreak in RNI, Eldamer locality** : 5 cases
7. **Measles outbreak in GEZ, E.Gezira locality** : 5 cases
8. **Measles outbreak in NKO, Sodary locality** : 6 cases
9. **Measles outbreak in Khartoum , -Khalwat Alimam Almahdi Umdurman locality):**4 cases

# Summery

- **Measles surveillance performance indicators:**
  - **All** surveillance were above the target (>80% ) except for the indicator of proportion of localities that reported at least one fever and rash case with sample for IGM testing& reporting rate at state level

# Action taken

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- **Follow up campaign in Northern and Eastern Zone States ,Oct 2010**
- **Response campaign around outbreak foci**
- **Orientation sessions in S.Darfur & W.Nile states**

# Further Action Needed

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- **Enhance system sensitivity through conducting Excessive orientation session in above mentioned four states, specially Sennar, S.Darfur and White Nile states .**

Thank You