



World Health  
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newsletter

## PROGRAMME FOR IMMUNIZATION PREVENTABLE DISEASES

A Collaboration of Government of Nepal/MoHP and World Health Organization (WHO)

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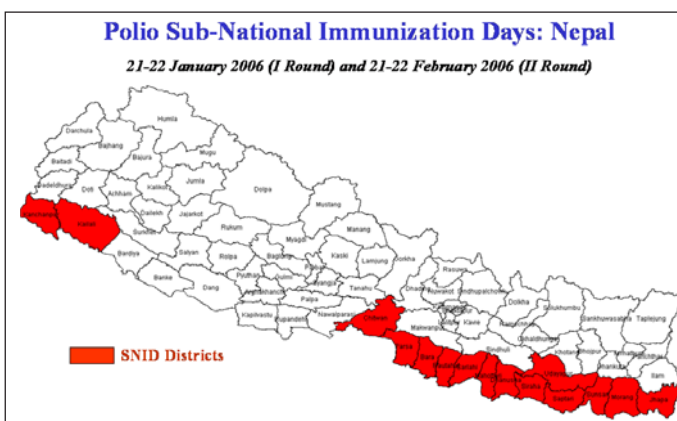
Jan – June, 2006

### Sub-National Immunization Days (SNID) In Nepal

Dr. Jagat Narain Giri, Mr. Om Prasad Gautam, WHO/IPD

Nepal is one of the signatories of World Health Assembly 1988, when the goal of Polio Eradication initiative was declared. In this process, Nepal successfully conducted 8 rounds of National Immunization Days (NIDs) in all 75 districts between 1996 and 2004. However, Nepal still considers few areas as high risk for polio transmission due to the proximity of indigenous cases across the border and the status of routine immunization of these districts. These high-risk areas are being addressed effectively through strengthening routine immunization and conducting small-scale supplementary immunization activities e.g. Sub-national Immunization Days (SNIDs) and Mopping-up Activities.

In Nepal, no cases of wild poliovirus were detected from November 2000 through July 2005, however four wild polio cases (2 in Sarlahi District and 2 in Rautahat District) were detected from August-October 2005. Bihar and Uttar Pradesh state in India (just at the border of Nepal) also detected cases of wild poliovirus during that period.



In response to wild poliovirus in Sarlahi and Rautahat districts and as per the Outbreak Response Protocol, Nepal effectively implemented three rounds of mopping-up activity in 5 Teraidistricts. In close coordination with WHO (IVD/SEARO & IPD) and UNICEF, the Government of Nepal also conducted polio SNIDs in 15 bordering districts including 5 districts where the mopping-up activities were recently conducted.

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### Measles and Rubella in Nepal

Dr. Prakash Ghimire, Dr. Jeffrey Partridge, WHO/IPD

Measles is a disease caused by a RNA virus of the genus *Morbivirus* in the family *Paramyxoviridae*. After an incubation period of 10-12 days, there is a prodromal stage, which is marked by fever, malaise, conjunctivitis, coryza and a cough, which is then followed a few days later by a maculopapular rash that spreads from the head over the trunk and to the extremities. However, the non-specific nature of the signs and the existence of mild cases make clinical signs unreliable as the sole diagnostic criteria of measles disease, i.e. measles resembles infections with rubella, dengue, ECHO, coxsackie, parvovirus B19, herpes virus 6, and some bacterial and rickettsial diseases.

Rubella is a disease caused by infection with the rubella virus, which is a RNA virus of the *Rubivirus* genus of the *Togaviridae* family. After an incubation period of 14-21 days, this illness may begin with 1 or 2 days of mild fever and swollen tender lymph nodes, usually at the back of the neck or behind the ears. On the second or third day, rash appears that begins on the face and spreads downward. As it spreads down the body, it usually clears on the face. This rash, which can look like many other viral rashes, is often the first sign of illness that a parent notices, and although it is a cause of worry for parents, it is typically not a serious illness. The public health issue of importance with rubella is congenital rubella syndrome (CRS), which encompasses a list of severe birth defects. CRS results from intrauterine infection of the fetus with the rubella virus. When a rubella-susceptible woman is infected with the rubella virus during the first trimester of pregnancy, there is 80% chances of transmission to the fetus,<sup>1</sup> causing fetal death or CRS. Deafness is the most common outcome, but CRS can also cause defects in the eyes, heart, or brain. It is estimated that there are 700 000 deaths due to CRS each year.<sup>2</sup> WHO reported a CRS incidence of 0.6–2.2 per 1000 live births during epidemics in developing countries,<sup>3</sup> a rate similar to that of industrialized countries before vaccination. The problem of CRS has been largely overlooked in many developing countries, where it is a significant cause of deafness, blindness, and mental retardation.

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**Sub-National Immunization Days (SNID) In Nepal... Cont**



Involvement of FCHVs and school student during Polio SNID in Bara district

Sub-national Immunization Days (SNID) are conducted where wild poliovirus is contained in small geographic areas of a country, or in areas where there is a threat of importation of wild poliovirus. To administer two doses of OPV (at a four-week interval) to all children less than five years of age regardless of their immunization status, in Nepal we developed a strategy to conduct campaigns over 2 days with booth-based immunization on the first day and a house-to-house search for and immunization of missed children on second day. On the second day activity an active search for new AFP cases is also conducted. The OPV doses that children receive during NIDs, SNIDs or mopping-up events OPV are in addition to what the children receive through Routine Immunization.

Female Community Health Volunteers (FCHVs) are the backbone of the SNID. A team comprises of one FCHV along with one other volunteer. These volunteers cover about 500-1,000 populations in their ward. In addition to FCHVs, the success of the program depends on the community participation, CBOs, NGOs, INGOs, partners, donor agencies, social institutions, journalist and civil societies plus a strong commitment of the health staff.

Nepal implemented polio SNID in 15 Terai districts of Nepal as a festival on 21-22 January 2006 (First Round) and 21-22 Feb 2006 (Second Round). SNIDs were conducted in all wards of VDCs, the Municipalities in 14 districts and partially in Udayapur district. Prior to the SNIDs supportive activities were conducted to ensure the effective implementation of the activity, e.g. a central level planning meeting, districts planning meetings, and FCHVs orientation workshops. For this SNID, a total of 22,186 volunteers (including FCHVs) and 3,613 supervisors were mobilized. Booth based vaccinations were provided at ward level from 11,093 booths. The total target for the SNID was 1,796,760 and a total of 1,756,422 (98% coverage) children were given polio vaccine during first round and

1,770,453 (99%) during second round. Almost 94% of immunized children were immunized at a fixed post (first day) and remaining 6% were immunized during house-to-house visit. Volunteers used gentian violet (GV) to mark the fingers of immunized children who were then tallied accordingly. During second day of activity, volunteers reached each & every house in search of un-immunized children and marked each house with chalk accordingly.

Despite the commitment of FCHVs and other community- and district-based immunization partners, there are many challenges to sustaining polio-free status. These challenges have been notified during districts and VDC visits and all concerned are keen to improve or address these challenges.



**Measles and Rubella in Nepal... Cont**

WHO-IPD/Government of Nepal integrated measles surveillance from 2003 as part of global strategic plan for Sustainable Measles Mortality Reduction and Regional Elimination 2001-2005. Since then, IPD has been investigating measles-like outbreaks throughout the country through 411 reporting sites and 82 active surveillance sites. WHO-IPD/NPHL/CHD is following WHO Measles surveillance guidelines, which includes an algorithm for laboratory testing for anti-rubella IgM antibodies in all serum samples collected from suspected measles cases that are negative for anti-measles IgM.<sup>4</sup> These laboratory results are important for understanding the rubella burden in the children below 15 years of age.

Countries in the measles elimination phase are finding that a high percentage of suspected measles cases are due to rubella. As part of a highly successful measles elimination strategy, the measles surveillance system in the WHO-PAHO introduced the rubella vaccine to the routine childhood immunization schedule as well as vaccination campaigns for adults, resulting in a 99.3% decline in the incidence of rubella cases: from 135,000 in 1998 to 923 in 2003.

The laboratory based surveillance data in Nepal show a major shift from measles to rubella outbreaks after the successful measles campaign conducted during 2004-2005. The surveillance data of 2003 show 41 outbreaks with 179 measles cases, but no rubella cases. During 2004, out of 196 outbreaks investigated 138 were measles, 13 were rubella and 11 were mixed measles/rubella outbreaks with 71 rubella cases among 824 serum samples investigated. In 2005, out of 46 outbreaks investigated 36 were rubella, 1 was measles and 2 were mixed measles/rubella with 161 rubella cases. During the first 6 months of 2006, among the total 29 outbreaks investigated 20 were rubella, 2 were

measles and 1 was mixed measles/rubella with a total of 89 rubella cases and 3 measles cases among the 192 serum samples tested.

The surveillance data in Nepal is similar to PAHO region in terms of an increasing proportion of rubella cases after successful measles campaigns. We believe this is the time for the concerned authorities to consider similar strategies for rubella vaccination and control. In addition, a nationwide

survey for CRS may be an alternate way to establish rubella disease burden in Nepal in order to formulate an appropriate rubella vaccination strategy.

- 1 Plotkin, Vaccines, 4th Edition, 2004, page 709
- 2 www.who.int/ivb/rubella
- 3 Best et al., JID 2005:192
- 4 WHO/V&B/00.43. Manual of best practices for measles surveillance, 2002

### News in WHO-IPD, Nepal, 2006

#### Dates of Polio SNID

Dailekh, Surkhet, Jajarkot, Achham and Kalikot.

- 24-25 June 2006 (I round, Completed)
- 29-30 July 2005 (II round)

#### Dates of Polio NID

- 2-3 September 2006 (I round)
- 14-15 October 2006 (II round)
- 18-19 November 2006 (III round)

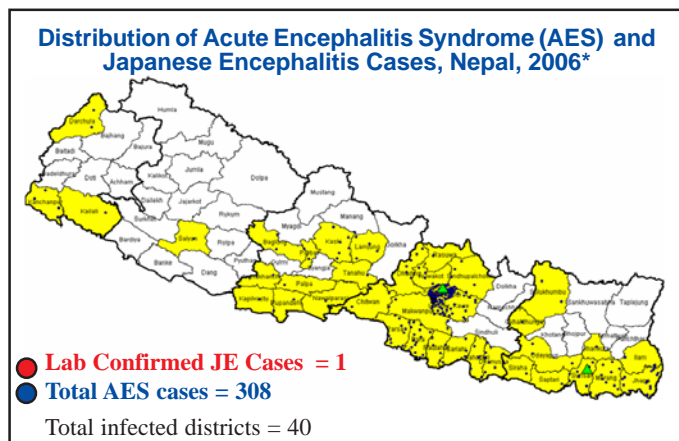
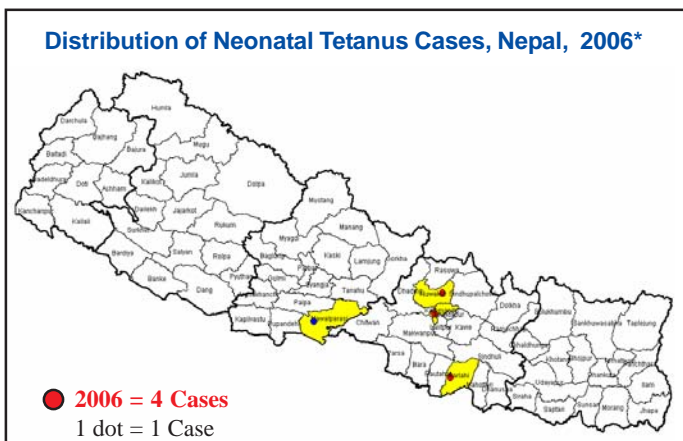
#### Dates of JE Campaign

District's Name	Date of Campaign Duration
Rupandehi	17 July 2006 to 03 Aug 2006
Dang	15 July 2006 to 05 Aug 2006
Banke	26 July 2006 to 15 Aug 2006
Bardiya	17 July 2006 to 10 Aug 2006
Kailali	08 July 2006 to 24 July 2006
Kanchanpur	14 July 2006 to 24 July 2006

- ❖ Dr. Thomas F Wierzbza, Technical Officer left for Cambodia completing his 3 years tenure with WHO-IPD in 13th June 2006.
- ❖ Dr. Jeffrey M Partridge has joined WHO-IPD as Technical Officer in June 2006.

### Measles Like Cases, Nepal, 2004-2006

Region	2004		2005		2006*													
	No. of Outbreak	Total Cases	No. of Outbreak	Total Cases	Total Cases	Routine Source						Outbreak Investigation						
						Cases	Sex		Vaccine Taken	Hospitalized	Died	No. of Outbreak	Cases	Sex		Vaccine Taken	Hospitalized	Died
							M	F						M	F			
Eastern	45	1709	8	241	80	24	13	11	16	6	0	3	56	25	31	54	1	0
Central	62	2587	27	873	653	223	120	103	163	10	0	19	430	211	219	401	4	0
Western	23	1620	5	267	113	12	9	3	8	2	0	4	101	49	52	76	0	0
Mid-Western	50	2075	4	253	8	8	5	3	4	0	0	0	0	0	0	0	0	0
Far-Western	16	681	2	63	38	16	5	11	13	1	0	3	22	11	11	18	1	0
National	196	8672	46	1697	892	283	152	131	204	19	0	29	609	296	313	549	6	0



\*Data as of 05 July 2006

Table 1: AFP surveillance performance indicators, Nepal, 2005-2006

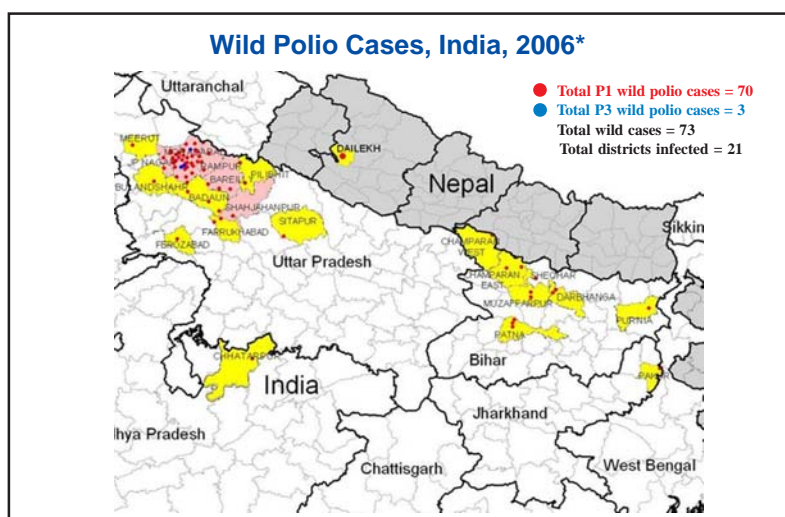
Region	2005										2006*											
	AFP Cases	Case Classification				AFP Rate		Surveillance Indicators				AFP Cases	Case Classification				AFP Rate		Surveillance Indicators			
		Confirmed Polio	Compatible	Discarded (non-polio AFP)	Pending	AFP rate	Non-Polio AFP rate <sup>1</sup>	% Invest., w/in 48 hrs of notification	% 2 specimens coll. w/in 14 days <sup>2</sup>	% 60 days F/up exam.	Confirmed Polio		Compatible	Discarded (non-polio AFP)	Pending	AFP rate	Non-Polio AFP rate <sup>1</sup>	% Invest., w/in 48 hrs of notification	% 2 specimens coll. w/in 14 days <sup>2</sup>	% 60 days F/up exam.		
Eastern	48	0	0	48	0	2.14	2.14	98	94	100	34	0	0	23	11	3.02	2.05	100	88	100		
Central	111	4	2	105	0	3.27	3.10	95	81	100	89	0	0	76	13	5.25	4.48	96	92	73		
Western	39	0	0	39	0	1.97	1.97	79	82	100	31	0	0	25	6	3.13	2.53	94	94	50		
Mid-Western	21	0	0	21	0	1.54	1.54	95	96	100	19	1	0	12	6	2.79	1.76	95	84	0		
Far-Western	12	0	0	12	0	1.20	1.20	75	83	100	9	0	0	3	6	1.80	0.60	78	67	0		
<b>National</b>	<b>231</b>	<b>4</b>	<b>2</b>	<b>225</b>	<b>0</b>	<b>2.32</b>	<b>2.26</b>	<b>92</b>	<b>84</b>	<b>100</b>	<b>182</b>	<b>1</b>	<b>0</b>	<b>139</b>	<b>42</b>	<b>3.65</b>	<b>2.79</b>	<b>95</b>	<b>90</b>	<b>58</b>		

1 Expected rate: At least 1 non-polio AFP case per 100,000 children aged <15 yrs.

2 Stool specimen collection: 2 adequate specimens within 14 days of paralysis onset from at least 80% of cases

Table 2: AFP surveillance performance indicators in South East Asia Region (SEAR) countries, 2005-2006

Country	2005								2006*									
	AFP				Surveillance Indicators				AFP					Surveillance Indicators				
	Case Classification				AFP Rate		Specimen		Case Classification					Annualized AFP Rate		Specimen		
	AFP Cases	Confirmed Polio	Compatible	Discarded (non-polio AFP)	AFP rate	Non-Polio AFP rate	% with 2 spec., 24hrs apart, w/ in 14 days	% with any specimen	AFP Cases	Confirmed Polio	Wild Poliovirus Cases	Compatible	Discarded (non-polio AFP)	Total Pending	AFP rate	Non-Polio AFP rate	% with 2 spec., 24hrs apart, w/ in 14 days	% with any specimen
Bangladesh	1458	0	0	1458	2.66	2.66	92	98	757	4	4	0	577	176	2.72	2.07	92	99
Bhutan	6	0	0	6	1.99	1.99	33	83	3	0	0	0	3	1.90	0.00	33	100	
DPR Korea	85	0	0	85	1.27	1.27	96	100	57	0	0	0	24	33	1.70	0.72	100	100
India	27051	66	390	26521	6.54	6.42	81	96	11555	73	73	33	9324	2125	5.48	4.42	85	97
Indonesia	1940	349	75	1516	3.12	2.44	80	98	672	2	2	0	506	164	2.18	1.64	82	99
Maldives	1	0	0	0	0.97	0.00	0	100	0	0	0	0	0	0	0.00	0.00	0	0
Myanmar	340	0	0	340	1.84	1.84	95	100	133	1	0	0	102	30	1.38	1.06	93	100
Nepal	230	4	2	224	2.31	2.25	84	96	173	1	1	0	138	34	3.39	2.70	88	99
Sri Lanka	106	0	0	102	2.04	1.97	78	97	56	0	0	0	47	9	2.13	1.79	79	98
Thailand	310	0	0	310	2.21	2.21	78	98	104	0	0	0	83	21	1.50	1.00	81	97
Timor-Leste	3	0	0	0	0.68	0	33	33	1	0	0	0	0	1	0.50	0.00	100	100
<b>Total</b>	<b>31530</b>	<b>419</b>	<b>467</b>	<b>30562</b>	<b>5.41</b>	<b>5.24</b>	<b>82</b>	<b>97</b>	<b>13511</b>	<b>81</b>	<b>80</b>	<b>33</b>	<b>10801</b>	<b>2596</b>	<b>4.54</b>	<b>3.63</b>	<b>85</b>	<b>97</b>



Global case count

Total cases of poliovirus worldwide: 636  
Polio cases in 2006 as of week of 27 June 2006

Nigeria (endemic)	501
India (endemic)	60
Somalia (importation)	26
Afghanistan (endemic)	14
Namibia (importation)	10
Pakistan (endemic)	7
Niger (importation)	4
Banqladesh (importation)	4
Ethiopia (importation)	3
Democratic Republic of Congo (importation)	3
Indonesia (importation)	2
Yemen (importation)	1
Nepal (importation)	1

\*Source of data: WHO, as of 05 Jul 2006