

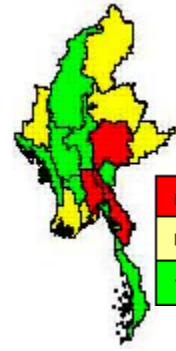


**Non-Polio AFP Rates  
2003**

# Myanmar Polio Newsletter

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**Non-Polio AFP Rates  
2004 (annualized)**

0 - 0.49  
0.50 - 0.99  
1 or above

**Table 1: Reported AFP cases against targets by State/Division and classification status of cases with onset in 2003 and 2004 (date as of 11/10/04)**

State / Division	Population 15 years	2004								2003						
		Min. non-polio AFP target	AFP		Polio		Cases Pending	No. with 2 spec. with 14 days	No. of AFP cases (80 day follow-up done)	AFP		Polio		Cases Pending	No. with 2 spec. with 14 days	No. of AFP cases (80 day follow-up done)
			Non-polio AFP cases	Reported AFP cases	Confirmed Polio	Unk Polio Vtrs				Non-polio AFP cases	Reported AFP cases	Confirmed Polio	Unk Polio Vtrs			
Ayeyarwady	2,457,890	25	13	24	0	0	11	21	10	34	34	0	0	0	33	33
Bago East	1,017,176	10	3	8	0	0	5	7	3	16	16	0	0	0	13	14
Bago West	826,605	8	6	11	0	0	5	10	6	13	13	0	0	0	13	13
Chin	174,036	2	1	1	0	0	0	1	1	5	5	0	0	0	5	5
Kachin	461,195	5	3	6	0	0	3	6	3	7	7	0	0	0	6	7
Kayah	96,444	1	1	2	0	0	1	2	1	9	9	0	0	0	9	9
Kayin	539,872	5	1	4	0	0	3	4	1	5	5	0	0	0	4	5
Magway	1,648,989	16	12	19	0	0	7	17	9	24	24	0	0	0	24	22
Mandalay	2,383,563	24	23	27	0	0	4	26	21	44	44	0	0	0	41	41
Mon	907,161	9	7	11	0	0	4	10	6	11	11	0	0	0	10	11
Rakhine	994,904	10	14	17	0	0	3	16	12	19	19	0	0	0	17	18
Sagaing	1,989,808	20	24	26	0	0	2	25	22	27	27	0	0	0	27	27
Shan North	737,323	7	4	7	0	0	3	7	1	15	15	0	0	0	15	15
Shan East	348,475	3	2	2	0	0	0	2	2	3	3	0	0	0	3	3
Shan South	684,229	7	2	5	0	0	3	5	1	9	9	0	0	0	8	9
Tanintharyi	491,651	5	7	8	0	0	1	8	7	12	12	0	0	0	12	12
Yangon	2,015,913	20	9	13	0	0	4	12	8	38	38	0	0	0	35	35
Totals	17,775,234	177	132	191	0	0	59	179	114	291	291	0	0	0	275	279

**Table 2: Selected Performance Indicators by State/Division for cases with onset in 2003 and 2004 - data as of 11/10/04**

State / Division	2004								2003							
	Annualized AFP RATE		Stool Collection		% AFP Investigated with 48 hrs.	% AFP cases with 80 days Follow-up	% Weekly zero reports received	% Weekly zero reports received on Time	Annualized AFP RATE		Stool Collection		% AFP Investigated with 48 hrs.	% AFP cases with 80 days Follow-up	% Weekly zero reports received	% Weekly zero reports received on Time
	Total AFP	Non-Polio	% with 2 spec. with 14 days	% with any specimen					Total AFP	Non-Polio	% with 2 spec. with 14 days	% with any specimen				
<b>TARGET</b>		1	80		80	80	80		1	80		80	80	80	80	
Ayeyarwady	1.25	0.68	88	100	100	77	88	80	1.42	1.42	97	100	100	100	98	91
Bago East	1.04	0.39	0	0	0	0	97	96	1.60	1.60	81	94	75	100	98	95
Bago West	1.79	0.98	91	100	91	100	97	97	1.63	1.63	100	100	100	100	100	98
Chin	0.65	0.65	0	0	0	100	90	77	2.50	2.50	100	100	100	100	100	82
Kachin	1.56	0.78	0	0	0	100	55	37	1.40	1.40	86	100	100	100	100	61
Kayah	2.60	1.30	100	100	100	100	85	77	9.00	9.00	100	100	100	100	100	87
Kayin	1.04	0.26	0	0	0	0	90	90	1.00	1.00	80	100	80	100	100	100
Magway	1.54	0.98	89	100	95	90	98	88	1.50	1.50	100	100	100	100	100	94
Mandalay	1.46	1.25	96	100	93	100	95	95	1.91	1.91	93	98	100	98	100	94
Mon	1.59	1.01	91	100	100	100	90	90	1.22	1.22	91	100	64	100	100	100
Rakhine	2.21	1.82	94	100	94	86	88	85	1.90	1.90	89	100	89	100	100	85
Sagaing	1.69	1.56	96	100	100	96	85	77	1.35	1.35	100	100	100	100	100	84
Shan North	1.30	0.74	0	0	0	0	88	83	2.14	2.14	100	100	100	100	100	79
Shan East	0.87	0.87	0	0	0	0	31	30	1.00	1.00	100	100	100	100	98	95
Shan South	0.93	0.37	0	0	0	0	83	64	1.29	1.29	89	100	100	100	100	85
Tanintharyi	2.08	1.82	100	100	100	100	98	79	2.40	2.40	100	100	83	100	100	82
Yangon	0.85	0.59	92	100	100	100	97	96	1.90	1.90	92	100	100	97	100	98
Totals	1.40	0.97	94	100	97	91	81	76	1.66	1.66	95	99	96	99	100	91

**Table 3: AFP cases by month of paralysis onset, last 13 months**

State / Division	2002 Total AFP	2003 Total AFP	2003 total AFP Jan-Sep	2004 AFP up to date	Sep-03	Oct-03	Nov-03	Dec-03	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04
Ayeyarwady	35	34	28	24	4	5	4	0	1	1	1	3	0	1	6	5	6
Bago East	15	16	12	8	0	1	1	1	0	0	0	1	0	0	2	1	4
Bago West	21	13	9	11	1	0	2	0	0	1	2	2	0	1	0	3	2
Chin	7	5	4	1	1	0	1	0	0	0	1	0	0	0	0	0	0
Kachin	6	7	7	6	1	1	0	0	0	0	1	0	0	2	0	1	2
Kayah	2	9	4	2	0	0	1	1	0	1	0	0	0	0	0	0	1
Kayin	6	5	5	4	1	1	0	0	0	0	0	0	0	0	1	1	2
Magway	28	24	18	19	6	4	2	2	2	0	1	1	0	2	4	8	1
Mandalay	31	44	28	27	7	6	4	1	1	2	5	1	3	3	6	3	3
Mon	10	11	9	11	2	0	1	0	1	1	1	0	2	0	1	3	2
Rakhine	27	19	17	17	1	4	0	1	2	0	5	0	1	2	4	0	3
Sagaing	33	27	19	26	1	1	4	2	5	4	2	2	5	2	3	1	2
Shan North	10	15	10	7	0	2	1	0	0	0	0	0	1	0	3	2	1
Shan East	4	3	3	2	1	0	0	0	0	0	0	0	0	1	1	0	0
Shan South	7	9	8	5	0	0	0	0	0	0	0	0	1	0	0	3	1
Tanintharyi	5	12	6	8	2	0	0	0	1	1	0	0	1	1	3	0	1
Yangon	59	38	22	13	6	2	5	3	5	0	0	0	1	1	1	2	3
<b>Totals</b>	<b>306</b>	<b>291</b>	<b>209</b>	<b>191</b>	<b>34</b>	<b>27</b>	<b>26</b>	<b>11</b>	<b>18</b>	<b>11</b>	<b>19</b>	<b>10</b>	<b>15</b>	<b>16</b>	<b>35</b>	<b>33</b>	<b>34</b>

**Table 4: Stool processing and Laboratory performance indicators for cases with onset in 2003 & 2004, data as of 11/10/04**

	Target	Achievement	
		2003	2004
% Specimens arriving at the Lab within 3 days after being sent	80	94	91
% Specimens arriving in the Lab in good condition	90	100	100
% Specimens with a turn-around time of 28 days or less	80	100	92
% Specimens for which non-polio enterovirus was isolated	10	20	16
% Polio-positive specimens forwarded to Ref Lab within 14 days after isolation	80	100	100

**Table 5: Laboratory Results, as reported by NHL between 9th Sept 2004 and 11th Oct 2004**

State / Division	Township	EPID number	Date Onset	Date Stool sent	Stool Condition	Date Report by NHL	Stool 1 Result	Stool 2 Result
KA CHIN	MOGA UNG	MMR011404002	12/08/2004	24/08/2004	Good	13/09/2004	NPEV	NPEV
A Y E Y A R W A D Y	P A T H E I N - E A S T	MMR141104001	25/08/2004	02/09/2004	Good	15/09/2004	NPEV	Negative
S H A N	P E K O N	MMR132404002	20/08/2004	31/08/2004	Good	20/09/2004	Negative	NPEV
B A G O	L E T P A D A N	MMR072204004	12/09/2004	17/09/2004	Good	04/10/2004	NPEV	Negative
M A N D A L A Y	K Y A U K P A D A U N G	MMR090204003	23/09/2004	27/09/2004	Good	13/10/2004	NPEV	NPEV

**N.B. If stool condition is good and laboratory finding is negative, it will not be shown in the table.**

**Table 6: Results of Intra-Typic Differentiation by NH/Bangkok, 2004**

State / Division	Township	IDCODE	Onset Date	Stool Condition	Stool 1	Stool 2
SAGAING	KALEWA	MMR050304001	27/06/2004	Good	P2S	P2S
MANDALAY	NATOEGYI	MMR090904002	11/08/2004	Good	P3S	P3S

**Note: P1, P2, P3 indicates Polio Serotype 1, 2, 3 respectively; "W" indicates "Wild Virus"; "S" indicates "Sabin (=Vaccine) Virus"**

# HEALTH-CARE WASTE MANAGEMENT

## 1. Unsafe health-care waste management leads to death and disability.

Health-care activities lead to the production of waste that may lead to adverse health effects. Most of this waste is not more dangerous than regular household waste. However, some type of health care waste represent a higher risk to health. These include infectious waste (15% to 25% of total health care waste) among which sharp waste (1%), body part waste (1%), chemical or pharmaceutical wastes (3%) and radioactive, cytotoxic or broken thermometers (less than 1%).

Sharp wastes although produced in small quantities are highly infectious. If poorly managed, it exposes health-care workers, waste handlers and the community to infections. Contaminated needles and syringes represent a particular threat and may be scavenged from waste areas and dump sites and be reused. WHO has estimated that, in 2000, injections with contaminated syringes caused:

- ▶ 21 million hepatitis B virus (HBV) infection (32% of all new infections);
- ▶ Two million hepatitis C virus (HCV) infections (40% of all new infections);
- ▶ 260 000 HIV infections (5% of all new infections).

Epidemiological studies indicate that a person who experiences one needle stick injury from a needle used on an infected source patient has risks of 30%, 1.8%, and 0.3% respectively to become infected with HBV, HCV and HIV. In 1999, WHO estimated that the proportion of health care facilities that do not use proper waste disposal methods ranges from 18% to 64% worldwide.

## 2. Health-care waste management may also represent a risk to health.

Health care waste management options may themselves lead to risks to health and no perfect readily achievable solution to manage health

care waste exists. Health-care waste whether generated at smaller rural clinics or larger facilities can be managed where adequate well-operated infrastructures exist. However, the volumes of waste generated within large facilities and targeted public efforts (e.g., immunization campaigns) are more challenging, particularly in developing countries where resources may be limited. In these difficult situations for which waste disposal options are limited, small-scale incinerators have been used and are still used as an interim solution in less developed and transitional countries. However, small-scale incinerators often operate at low temperature less than 800 degrees Celsius. This may lead to the production of dioxins, furans or other toxic pollutants as emissions and/or in bottom fly ash. Transport to centralised disposal facilities if not safely managed may also produce hazards to health-care handlers.

## 3. Balancing risks to make sound policy decisions in health care waste management.

In addition to risks to health from infectious agents, long-term low-level exposure of humans to dioxins and furans may lead to the impairment of the immune system, the impairment of the development of the nervous system, the endocrine system and the reproductive functions. Short-term high level exposure may result in skin lesions and altered liver function.

The International Agency for Research on Cancer (IARC) classifies dioxins as a "known human carcinogen". However, most of the evidence documenting the toxicity of dioxins and furans is based upon studies of populations that have been exposed to high concentrations of dioxins either occupationally or through industrial accidents. There is little evidence to determine whether chronic low-level exposure to dioxins and furans causes cancer in humans. Overall, it is not possible to estimate the worldwide burden of disease from exposure to dioxins and furans because of large areas of uncertainty.

In 1987, medical waste incinerators were estimated to be the second largest source of dioxins and furans in the United States of America, accounting for nearly 21% of the total known releases of these substances.

In the last 10 years, the enforcement of stricter emission standards for dioxins and furans by many countries significantly reduced the release of these substances into the environment<sup>1</sup>.

In several Western European countries where tight emissions restrictions were adopted in the late 1980s, dioxin and furan concentrations in many types of food (including breast milk) have decreased sharply.

#### 4. Guiding policy principles.

In view of the challenge represented by health care waste and its management, WHO activities are oriented by the following guiding principles:

- ▶ Preventing the health risks associated with exposure to health care waste for both, health workers and public;
- ▶ Supporting global efforts to reduce the amount of noxious emissions released into the atmosphere to reduce disease and defer the onset of global change;
- ▶ Supporting the Stockholm convention on Persistent Organic Pollutants (POPs) that aims to protect both human and the environment from the adverse effects of persistent organic pollutants;
- ▶ Reducing the exposure to toxic pollutants associated with the combustion process through the promotion of appropriate practices for high temperature incineration.

#### 5. Strategy

To better understand the problem of health-care waste management, WHO guidance recommends that countries conduct assessments prior to any decision as to which health care management methods be chosen. Tools are available to assist with the assessment and decision-making process so that appropriate policies lead to the choice of adapted technologies. Following assessment, options available include:

#### Short-term

- ▶ Production of all syringes components made of the same plastic to facilitate recycling;
- ▶ Selection of PVC-free medical devices;
- ▶ Identification and development of recycling options wherever possible (e.g.: for plastic, glass, etc.);
- ▶ Research and promotion on new technology or alternative to small-scale incineration;

Until transitional and developing countries have access to health care waste management options that are safer to the environment and health, incineration may be an acceptable response when used appropriately. Key elements of appropriate operation of incinerators include effective **waste reduction** and **waste segregation**, placing incinerators away from populated areas, satisfactory engineered **design**, **construction** following appropriate dimensional plans, proper **operation**, periodic **maintenance**, staff **training** and **management**.

#### Medium-term

- ▶ Further efforts to reduce the number of unnecessary injections to reduce the amount of hazardous health-care waste that needs to be treated;
- ▶ Research into the health effect of chronic exposure to low levels of dioxin and furan ;
- ▶ Risk assessment to compare the health risks associated with (1) incineration and (2) exposure to health care waste.

#### Long-term

Effective, scaled-up promotion of non-incineration technologies for the final disposal of health-care wastes to prevent the disease burden from (a) unsafe health-care waste management and (b) exposure to dioxins and furans.

