✓
⑤国立結核センターの活動（主に検査室）

Activities of CENAT (mainly Lob.)

- TB activities from 1966 - 1996
- Implemented supervision 1996 and 1997
- Result of Quality control by provinces 1997
- Number of sputum examination 1997

(14)

TB activities from 1966 - 1996

Year	*Estimated* Population growth rate 2.8 %	*Case detection* Smear+ TBP	Smear− TBP	Extra Pulm.	Relaps	TOTAL TB case	Detection rate per 100.000 inhabitants S+ TBP	All forms TBP	TB units with DOTS over 120 units numb. (% tot)	Decentralisation of case managment province % of total TB cases	district	*% Declared cured* without cohort analysis (before 1994)
1966	5,521,169	457				1,011	8	18				
1967	5,675,762	837				2,103	15	37				
1968	5,834,684	738				2,454	13	42				
1980	5,998,055	571				2,567	10	43				
1981	6,166,000	630				1,980	10	32				43.5%
1982	6,338,648	5,579	2,663	233		8,475	88	134				20.2%
1983	6,516,130	5,316	1,823	433		7,572	82	116				30.8%
1984	6,698,582	5,507	3,160	2,007		10,674	82	159				35.2%
1985	6,886,142	5,235	3,891	1,019		10,145	76	147				35.6%
1986	7,078,954	8,715	1,295	271		10,281	123	145				45.4%
1987	7,277,165	7,173	1,406	1,027		9,606	99	132				63.0%
1988	7,480,926	8,246	1,714	731		10,691	110	143				56.0%
1989	7,690,392	6,740	2,251	965		9,956	88	129				47.3%
1990	7,905,723	5,132	1,630	672		7,434	65	94				46.5%
1991	8,127,083	8,507	990	1,406		10,903	105	134				30.7%
1992	8,354,641	12,685	2,491	972		16,148	152	193				45.1%
1993	8,588,571	9,560	2,417	902		12,879	111	150		57%	43%	44.7%
1994	8,829,051	11,058	2,195	1,319	540	15,112	131	171	23 (23%)	45%	55%	
1995	9,076,264	11,101	1,465	1,428	605	14,599	129	161	67 (57%)	34%	66%	
mid 199	9,330,400	5,925	417	721	304	7,367	134	158	94 (78%)	30%	70%	

SUPERVISION IN 1996

DATE	TIME	PROVINCE	SUPERVISOR
?/ 01 / 96	5days	PHNOM PENH	TORK NAN
? / 02 / 96	5days	Kg. CHHNANG	TORK NAN
30 / 05 / 96	2days	Pr.VIHEAR + MONDOLKIRI	NGUON SAN
4/7/96	3days	RATTANAKIRI	NGUON SAN
21 /11 / 96	2days	Pr. VIHEAR+ MONDOLKIRI	NGUON SAN
3/6/96	5days	PREY VENG	YANG SAM OL
29/ 01 / 96	5days	TAKEO	YANG SAM OL
15/ 05 / 96	5days	KRATIE	YANG SAM OL
12/8/96	5days	PURSAT	YANG SAM OL
28/ 03 / 96	3days	Kg. THOM	AN SOKHENG
10/6/96	3days	STUNG TRENG	AN SOKHENG
22/01/ 96	5days	PREY VENG	UCH VANORIN
15/05 /96	3days	Kg. SOM	UCH VANORIN
18/ 11/ 96	5days	SVAY RIENG	UCH VANORIN
22/ 12/ 96	5days	BANTEAY MEANCHEY	UCH VANORIN
/3/96	5days	Kg. CHAM	SEAM SOK AUN
2 /01/ 96	5days	BATTAMBANG	SEAM SOK AUN
? / 5 / 96	2days	KAH KONG	SEAM SOK AUN
16/7/ 96	5days	BATTAMBANG	SEAM SOK AUN
9 / 9 / 96	5days	Kg. CHAM	SEAM SOK AUN
10/6/96	5days	Kg. SPEU	PRAK SOKUN THEA
21/ 10 / 96	5days	Kg. SPEU	PRAK SOKUN THEA
29/ 05/ 96	5days	KAMPOT	PRAK SOKUN THEA
8/7/96	5days	TAKEO	TON CHHAVIVANN
19/ 07 / 96	5days	SVAY RIENG	TON CHHAVIVANN
2/12/96	5days	TAKEO	TON CHHAVIVANN
29/ 07/ 96	5days	KANAL	SUN NASY
12/8/96	5days	SIEMREAP	SUN NASY

3/

SUPERVISION IN 1997

	SIEMREAP	B.MEANCHEY	BATTAMBANG	PURSAT	KG. THOM	TAKEO	KG. SPEU	KAMPOT	KG. SOM	KOH KONG
FIRST.Q		NARIN 17-22/03/97	SOK AUN 2-28/03/97			CHHAVY 24-29/03/97	KUNTHEAR 31-04/03/97	KUNTHEAR 31/03-04/04/97	NARIN 10-15/03/97	
SECOND.Q			SOK AUN 23-27/06/97	N.SAN 31-03/5/97						
THIRD.Q				N.SAN 25-30/08/97		Y.SAM OL 01-06/09/97	SOKKHENG* 28-30/07/97			
FORTH.Q	NASY 20-25/10/97		SOK AUN 24-29/11/97		SOKKHENG 20-24/10/97					PHANPHOM 19/11/97

	PREY VENG	KG.CHHNANG	KRATIE	KG.CHAM	S.TRENG	P.VIHEAR	MONDOLKIR	RATTANAKIR	KANDAL	SVAYRIENG
FIRST.Q		TORK NAN 17-22/03/97	Y.SAM OL 05-10/02/97	SOK AUN 10-14/3/97	SOK KHENG 10-16/3/97	N.SAN 16-20/03/97				
SECOND.Q	Y.SAM OL 07-12/4/97									
THIRD.Q	Y.SAM OL 21-26/7/97		YANG SAMOL 18-24/08/97		KUNTHEAR* 9-13/9/97 (kHENG)				PHANPHOM* 28/08/97	SOK KHENG* 18-24/8/97
FORTH.Q			YANG SAMOL 18-23/11/97		SOK KHENG 15-19/12/97			PHANPHOM 16/12/97	N.SAN* 19/11/97	SOK KHENG 18-24/08/97

PHNOM PENH

	KETMEALEA	SIHANOUK.H	NAT.PEDIAT.	R.KEO	DANGKOR	MEANCHEY
FIRST.Q						
SECOND.Q	TORK NAN 26/6/97	TORK NAN 26/6/97	TORK NAN 26/7/97	N.SAN 26/6/97	N.SAN 26/6/97	N.SAN 26/7/97
THIRD.Q	TORK NAN 7/8/97	TORK NAN 8/8/97	TORK NAN 9/8/97	N.SAN 7/8/97	N.SAN 8/8/97	N.SAN 9/8/97
FORTH.Q	TORK NAN 7/11/97	TORK NAN 8/11/97	TORK NAN 9/11/97	N.SAN 7/11/97	N.SAN 8/11/97	N.SAN 9/11/97

* TO REPLACE WHO IS ABSENT

NATIONAL TUBERCULOSIS PROGRAMME QUALITY CONTROL RESULTS FOR 1997

Cross check (slides re-examined by CENAT)

1st Quarter

PROVINCE	No. of slides	True Pos	True Neg	False Pos	False Neg	Sencitivity	Specificity	ppv	npv	Agreement	False Pos rate	False Neg rate
Kandal	2991	56	0	5	73	43%	0%	92%	0%	42%	8%	100%
Svay Rieng	2529	29	0	0	41	41%	#DIV/0!	100%	0%	41%	0%	100%
P.Penh	5189	25	0	0	26	49%	#DIV/0!	100%	0%	49%	0%	100%
Pursat	482	55	1	1	79	41%	50%	98%	1%	41%	2%	99%
Battambang	2308	25	2	0	21	54%	100%	100%	9%	56%	0%	91%
B.Meanchey	2152	80	5	3	127	39%	63%	96%	4%	40%	4%	96%
Siem Reap	2553	35	0	2	36	49%	0%	95%	0%	48%	5%	100%
Kg. Thom	2061	57	0	0	43	57%	#DIV/0!	100%	0%	57%	0%	100%
Takeo	2118	105	3	15	209	33%	17%	88%	1%	33%	13%	99%
KG Speu	1450	31	0	2	83	27%	0%	94%	0%	27%	6%	100%
Kampot	1380	132	0	4	91	59%	0%	97%	0%	58%	.3%	100%
Kg. Som	408	6	0	2	24	20%	0%	75%	0%	19%	25%	100%
Prey Veng	2824	31	5	13	54	36%	28%	70%	8%	35%	30%	92%
Kg.Chhang	1951	55	1	10	83	40%	9%	85%	1%	38%	15%	99%
Kg. Cham	2455	63	18	22	135	32%	45%	74%	12%	34%	26%	88%
Rattanakiri	20	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Koh Kong	81	0	0	0	4	0%	#DIV/0!	#DIV/0!	0%	0%	#DIV/0!	100%
Preah Vihear	70	50	1	13	134	27%	7%	79%	1%	26%	21%	99%
Mondul Kiri	159	0	5	0	5	0%	100%	#DIV/0!	50%	50%	#DIV/0!	50%
Stung Treng	266	24	1	13	134	15%	7%	65%	1%	15%	35%	99%
Kratie	395	17	0	0	33	34%	#DIV/0!	100%	0%	34%	0%	100%
TOTAL	33842	876	42	105	1435	38%	29%	89%	3%	37%	11%	97%

NATIONAL TUBERCULOSIS PROGRAMME QUALITY CONTROL RESULTS FOR 1997

Cross Check (slides re-examined by CENAT)

2nd Quarter

PROVINCE	No.slides	True POS	True NEG	False POS	False NEG	Sens	Spec	ppv	npv	Agree.rate	F.POS rate	F.NEG rate
Kandal	2793	198	12	22	410	33%	35%	90%	3%	33%	10%	97%
Svay Rieng	2500	207	2	16	568	27%	11%	93%	0%	26%	7%	100%
P.Penh	4684	44	2	10	130	25%	17%	81%	2%	25%	19%	98%
Pursat	824	124	1	13	197	39%	7%	91%	1%	37%	9%	99%
Battambang	1894	127	2	8	172	42%	20%	94%	1%	42%	6%	99%
B.Meanchey	1941	144	0	7	218	40%	0%	95%	0%	39%	5%	100%
Siem Reap	2835	53	0	8	283	16%	0%	87%	0%	15%	13%	100%
Kg. Thom	1794	41	2	1	141	23%	67%	98%	1%	23%	2%	99%
Takeo	2144	293	6	16	560	34%	27%	95%	1%	34%	5%	99%
KG Speu	1750	79	4	9	163	33%	31%	90%	2%	33%	10%	98%
Kampot	1352	10	0	1	17	37%	0%	91%	0%	36%	9%	100%
Kg. Som	545	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Prey Veng	3269	46	1	9	93	33%	10%	84%	1%	32%	16%	99%
Kg.Chhang	1521	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Kg. Cham	2795	179	29	27	485	27%	52%	87%	6%	29%	13%	94%
Rattanakiri	81	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Koh Kong	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Preah Vihear	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mondul Kiri	106	3	4	0	2	60%	100%	100%	67%	78%	0%	33%
Stung Treng	178	20	0	5	73	22%	0%	80%	0%	20%	20%	100%
Kratie	437	46	4	4	116	28%	50%	92%	3%	29%	8%	97%
TOTAL	33443	1614	69	156	3628	31%	31%	91%	2%	31%	9%	98%

NATIONAL TUBERCULOSIS PROGRAMME QUALITY CONTROL RESULTS IN 1997

Cross check

(slides taken and re-examined by CENAT)

3rd Quarter

PROVINCE												
Kandal	No.slides	True POS	True NEG	False POS	False NEG	Sens	Spec	ppv	npv	Agree.rate	F.POS rate	F.NEG rate
Svay Rieng	3412	94	0	0	98	49%	#DIV/0!	100%	0%	49%	0%	100%
P.Penh	1860	195	4	17	303	39%	19%	92%	1%	38%	8%	99%
Pursat	4007	40	2	5	113	26%	29%	89%	2%	26%	11%	98%
Battambang	957	37	0	1	55	40%	0%	97%	0%	40%	3%	100%
B.Meanchey	2175	168	4	8	217	44%	33%	95%	2%	43%	5%	98%
Siem Reap	1552	124	11	9	228	35%	55%	93%	5%	36%	7%	95%
Kg. Thom	2397	63	5	6	278	18%	45%	91%	2%	19%	9%	98%
Takeo	1625	82	0	9	231	26%	0%	90%	0%	25%	10%	100%
KG Speu	0	86	2	13	117	42%	13%	87%	2%	40%	13%	98%
Kampot	2020	147	8	13	312	32%	38%	92%	3%	32%	8%	98%
Kg. Som	978	36	2	11	106	25%	15%	77%	2%	25%	23%	98%
Prey Veng	0	43	1	6	57	43%	14%	88%	2%	41%	12%	98%
Kg.Chhang	2275	22	2	1	43	34%	67%	96%	4%	35%	4%	96%
Kg. Cham	1510	66	1	19	60	52%	5%	78%	2%	46%	22%	98%
Rattanakiri	2776	87	2	5	99	47%	29%	95%	2%	46%	5%	98%
Koh Kong	0	2	1	0	20	9%	100%	100%	5%	13%	0%	95%
Preah Vihear	42	12	2	1	28	30%	67%	92%	7%	33%	8%	93%
Mondul Kiri	73	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Stung Treng	117	2	0	0	6	25%	#DIV/0!	100%	0%	25%	0%	100%
Kratie	197	11	0	0	32	26%	#DIV/0!	100%	0%	26%	0%	100%
TOTAL	0	32	8	32	111	22%	20%	50%	7%	22%	50%	93%
	27973	1349	55	156	2514	35%	26%	90%	2%	34%	10%	98%

NATIONAL TUBERCULOSIS PROGRAMME QUALITY CONTROL RESULTS IN 1997

Cross-Check

4th Quarter (slides re-examined by CENAT)

PROVINCE												
Kandal	No.slides	True POS	True NEG	False POS	False NEG	Sens	Spec	ppv	npv	Agree.rate	F.POS rate	F.NEG rate
Svay Rieng	3368	268	4	15	440	38%	21%	95%	1%	37%	5%	99%
P.Penh	2051	157	1	4	303	34%	20%	98%	0%	34%	2%	100%
Pursat	4639	38	3	9	213	15%	25%	81%	1%	16%	19%	99%
Battambang	0	177	3	28	304	37%	10%	86%	1%	35%	14%	99%
B.Meanchey	2381	184	1	9	217	46%	10%	95%	0%	45%	5%	100%
Siem Reap	1526	143	5	16	181	44%	24%	90%	3%	43%	10%	97%
Kg. Thom	3394	65	1	15	242	21%	6%	81%	0%	20%	19%	100%
Takeo	1648	97	3	4	136	42%	43%	96%	2%	42%	4%	98%
KG Speu	2863	96	6	19	130	42%	24%	83%	4%	41%	17%	96%
Kampot	1952	95	17	13	228	29%	57%	88%	7%	32%	12%	93%
Kg. Som	1652	46	1	1	120	28%	50%	98%	1%	28%	2%	99%
Prey Veng	375	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Kg.Chhang	3131	15	0	5	39	28%	0%	75%	0%	25%	25%	100%
Kg. Cham	1577	65	2	2	44	60%	50%	97%	4%	59%	3%	96%
Rattanakiri	3418	229	0	23	543	30%	0%	91%	0%	29%	9%	100%
Koh Kong	78	4	0	0	47	8%	#DIV/0!	100%	0%	8%	0%	100%
Preah Vihear	44	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Mondul Kiri	90	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Stung Treng	61	3	1	0	3	50%	100%	100%	25%	57%	0%	75%
Kratie	299	30	1	1	26	54%	50%	97%	4%	53%	3%	96%
TOTAL	631	19	1	1	44	30%	50%	95%	2%	31%	5%	98%
	35178	1731	50	165	3260	35%	23%	91%	2%	34%	9%	98%

NATIONAL TUBERCULOSIS PROGRAMME QUALITY CONTROL RESULTS IN 1997

Cross-Check

Annual (slides re-examined by CENAT)

PROVINCE												
Kandal	No.slides	True POS	True NEG	False POS	False NEG	Sens	Spec	ppv	npv	Agree.rate	F.POS rate	F.NEG rate
Svay Rieng	12564	616	16	42	1021	38%	28%	94%	2%	37%	6%	98%
P.Penh	8940	588	7	37	1215	33%	16%	94%	1%	32%	6%	99%
Pursat	18519	147	7	24	482	23%	23%	86%	1%	23%	14%	99%
Battambang	2263	216	5	43	365	37%	10%	83%	1%	35%	17%	99%
B.Meanchey	8758	504	8	25	627	45%	24%	95%	1%	44%	5%	99%
Siem Reap	7171	491	21	35	754	39%	38%	93%	3%	39%	7%	97%
Kg. Thom	12179	216	6	31	839	20%	16%	87%	1%	20%	13%	99%
Takeo	7128	277	5	14	551	33%	26%	95%	1%	33%	5%	99%
KG Speu	7125	494	17	31	1016	33%	35%	94%	2%	33%	6%	98%
Kampot	7172	352	29	37	786	31%	44%	90%	4%	32%	10%	96%
Kg. Som	5362	224	3	17	334	40%	15%	93%	1%	39%	7%	99%
Prey Veng	1328	49	1	8	81	38%	11%	86%	1%	36%	14%	99%
Kg.Chhang	11499	114	8	28	229	33%	22%	80%	3%	32%	20%	97%
Kg. Cham	6559	186	4	31	187	50%	11%	86%	2%	47%	14%	98%
Rattanakiri	11444	558	49	77	1262	31%	39%	88%	4%	31%	12%	96%
Koh Kong	179	6	1	0	67	8%	100%	100%	1%	9%	0%	99%
Preah Vihear	167	12	2	1	32	27%	67%	92%	6%	30%	8%	94%
Mondul Kiri	233	50	1	13	134	27%	7%	79%	1%	26%	21%	99%
Stung Treng	443	8	10	0	16	33%	100%	100%	38%	53%	0%	62%
Kratie	940	85	2	19	265	24%	10%	82%	1%	23%	18%	99%
TOTAL	1463	114	13	37	304	27%	26%	75%	4%	27%	25%	96%
	131436	5307	215	550	10567	33%	28%	91%	2%	33%	9%	98%

External Quality Control (except CENAT)

Year	Total No. of exam.	No. of Cross checked slides	Cross checked rate	Sensitivity	Specificity	Agreement rate	False (+) rate	False(-) rate
1994	66,606	1,615	2.4%	95%	96%	97%	5%	1%
1995	102,996	4,045	3.9%	98%	95%	96%	6%	2%
1996	122,623	6,558	5.3%	94%	96%	95%	6%	4%
1997	108,062	17,218	15.9%	91%	98%	95%	4%	5%

Internal Quality Control (CENAT)

Year	Total No. of exam.	No. of Cross checked slides	Cross checked rate	Sensitivity	Specificity	Agreement rate	False (+) rate	False(-) rate
1994	13,728	122	0.9%	99%	98%	98%	2%	1%
1995	15,640	2,241	14%	99%	99%	99%	1%	1%
1996	16,651	3,025	19%	99%	100%	99%	0%	1%
1997	14,994	2,916	19%	92%	99%	97%	1%	3%

Number of sputum examination

Year	Total no. of exam.	No. of exam. for detection	No. of 1st exam.	No. of 2nd exam.	No. of 3rd exam.	1st slide (+) rate	No. of follow up exam.	follow up exam. (+) rate
1994	82,329					30%		
1995	121,236	112,621	31,948	28,222	26,236	29%	8,615	3%
1996	141,620	104,396	35,767	33,569	33,015	31%	37,224	2%
1997 (9months)	81,047	55,326	19,174	18,272	17,880	39%	25,721	1.6%

EQUIPMENT	MANUFACTURER	MODEL	QUANTITY	CONDITION
X-RAY Apparatus	ACOMA X-RAY INDUSTRY CO., LTD.	KXR-5-150KV	1	A
Lead Plywood	NISHIMOTO SANGYO CO., LTD.	NIL	1	A
X-Ray Protective Aprons	MIWA CO., LTD.	MA-2	2	A
X-Ray Protective Screen	MIWA CO., LTD.	MA-2	1	A
Accessories for Dark Room	NISHIMOTO SANGYO CO., LTD.	NH-7	1	A
Small Sterilizer	SAKURA FINETECHNICAL CO., LTD.	ASV - 3022	2	A
Hematocrit Centifuge	KUBOTA CORPORATION	3100	1	A
Refractometer	ATAGO CO., LTD.	T-2	1	A
Centrifuse	KOKUSAN ENSHINKI CO., LTD.	H-108M2	1	A
Dring Oven	SANKO ELECTRIC CO., LTD.	MOV-212F	1	A
Microscope	ERMA INC.	ARMAX-1	4	A
Waterbath	KAYAGAKI IRIKA KOGYO CO., LTD.	KTM-30S	1	A
Water Distiller	ADVANTEC TOYO KAISHA LTD.	GS-200	1	A
Refigirator	TOSHIBA CORPORATION	GR-A41EC	3	A
Incubator	SANYO ELECTRIC CO., LTD.	MIR-262	2	A
Pipette Wash and Drier	KAYAGAKI IRIKA KOGYO CO., LTD.	A242	2	A
Hematocrit gauge	KUBOTA CORPORATION	3100	1	A
Hemacytometers, Neubauer	KAYAGAKI IRIKA KOGYO CO., LTD.	A121	5	A
Hemometer, Sahli	KAYAGAKI IRIKA KOGYO CO., LTD.	A301	3	B
Blood Sedimentation Set	KAYAGAKI IRIKA KOGYO CO., LTD.	A327	5	A
Balance	TOA BALANCE CO., LTD.	NO. 26	1	A
Diffrerencial Leucocyte Counter	KAYAGAKI IRIKA KOGYO CO., LTD.	KYG-8	1	B
Boiling Sterilizer	TOMA MEDICAL CO., LTD.	NIL	6	A
E.C.G. (1ch)	FUKUDA DENSHI CO., LTD.	FX-1201	2	A
Icecube Machine	SANYO ELECTRIC CO., LTD.	SIM-S60	1	A

EQUIPMENT	MANUFACTURER	MODEL	QUANTITY	CONDITION
Printer	HEWLETT PACKARD	DESTJET 600	1	A
Hot oven	PROLABO		1	B
Microscope	NIKON	SE - B-2	30	A
Fluorescence Microscpe	NIKON	Y2F - EFD3	2	A
Vehicle	Mitsubishi	W32WNHC	2	A
Clean bench	Dalton	BGB - 1000S	2	A
Coagrator	HIRASAWA	C - 200 CP	1	A
Computer	Apple	Macintosh Perform 6400	1	A
Printer	Epson	Stylus Color 500	1	A
Computer	ICLASSIC		1	A
Computer	PRVIEW		1	A
Printer	HEWLETT Packard	Laser Jet 4l	1	A
Printer	HEWLETT Packard	Desk jet 600	1	A
Vehicle	Toyota	Land Cruser	2	A
Vehicle	Toyota	Pick up	1	A
Vehicle	Toyota	Desel	2	A
Copymachin	Cannon	NP 1215	1	B
Motor cycle	Honda	76cc	6	A
OHP	KinderMan	Famulas2	1	B
Generator			2	A
TV Monitor (29inch)	JVC	AV-S29X1	1	A
Video Camera W/tripod	HITACHI CO., LTD.	VM-2580E	1	C
Videocassette Deck	HITACHI CO., LTD.	VT-F787EM	1	C
Laudry Machine	TOSHIBA CORPORATION	VH-3370E	3	A

EQUIPMENT	MANUFACTURER	MODEL	QUANTITY	CONDITION
Tube Rack for 20 tubes	IUCHI		10	A
Tube Rack for 50	IUCHI		20	A
Pippet-Aid	KAYAGAKI	7566	2	A
Pippet Case	IUCHI		2	A
Pipette Sterilizing Box	KAYAGAKI		10	A
Dressing Drum, dia. 18 x 12 m	KAYAGAKI	G715-26	2	A
Test Tube Wire Case	KAYAGAKI		6	A
Slide Glass Rack	KAYAGAKI	E131	2	A
Test Tube Mixer	IUCHI	NS-603E	2	A
Timer	IUCHI		2	A
Stainless Steel Pots with Lid	IUCHI		4	A
Gas Burner	KAYAGAKI		4	A
Aspirator	IUCHI		6	A
Microscope	NIKON	Labophoto II Y2F16	1	A
Micrographer	NIKON	H - III - 35	1	A
Paper Culter	KOKUYO		1	A
Seal Making Machine		HS - 305	1	A
Black board	KOKUYO		1	A
UPS	SUNPAC	500 Va	2	A
Auto Voltage Regulator	LION	1000Va	2	A
Auto Voltage Regulator	LION	2000Va	2	A
Auto Voltage Regulator	LION	3000Va	2	A
Copy machine	CANON	NP6016	1	A
OHP	3M	M9050	1	A
OHP	3M	2770 100V	1	A
Computer	COMPAC	CONTURA 3420C	1	A

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Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 1			2nd Quarter									
1997	Average Sp. exam.	20%up	Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
KG CHNNANG (7 Hop)												
KG CHNNANG HtPr	233	279	300	36	700	100	1	1	1	1	2	1
ROLEAR PHEA	145	174	300	24	400	100	1	1	1	1	2	1
KG TRALACH	369	443	300	54	1200	100	2	1	2	1	4	2
BARIBO	589	707	300	84	2000	100	3	2	3	2	6	3
KG LENG	88	105	300	12	300	100	1	1	1	1	2	1
CHUL KIRI	55	66	300	12	200	100	1	1	1	1	2	1
TOEK PHOS	164	196	300	24	500	100	1	1	1	1	2	1
sub-total province	**1642**	**1971**	**2100**	**246**	**5300**	**700**	10	8	10	**8**	**20**	**10**
SVAY RIENG (7 Hop)												
SVAY RIENG HtPr	463	555	300	66	1400	100	2	2	2	2	4	2
RUMDOURL	288	346	300	42	900	100	2	1	2	1	4	2
KG RO	302	363	300	48	900	100	2	1	2	1	4	2
SVAY Chroum	450	540	300	66	1400	100	2	2	2	2	4	2
SVAY TEAP	318	382	300	48	900	100	2	1	2	1	4	2
ROMEAS HEK	341	409	300	54	1100	100	2	1	2	1	4	2
CHANTREA	187	224	300	30	600	100	1	1	1	1	2	1
sub-total province	**2347**	**2817**	**2100**	**354**	**7200**	**700**	**13**	**9**	**13**	**9**	**26**	**13**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 1

1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
PHNOM PENH (5 Hop)												
CENAT	3612	4334	300	522	10000	2000	18	10	18	13	36	18
CALMETTE												
N.SIHANOUK	824	989	300	120	1000	100	4	2	4	3	8	4
MEAN CHEY	203	244	300	30	250	100	1	1	1	1	2	1
DANGKOR	77	92	300	12	100	100	1	1	1	1	2	1
PREAH KETH MELEA	109	130	300	18	150	100	1	1	1	1	2	1
RUSSEY KEO	139	167	300	24	200	100	1	1	1	1	2	1
sub-total province	**4964**	**5956**	**1800**	**726**	**11700**	**2500**	**26**	**16**	**26**	**20**	**52**	**26**
PURSAT (5 Hop)												
PURSAT HtPr	266	319	300	42	1000	100	1	1	1	1	2	1
KANDEANG	78	94	300	12	300	100	1	1	1	1	2	1
KRAKOR	118	141	300	18	400	100	1	1	1	1	2	1
KRAVANH	79	94	300	12	300	100	1	1	1	1	2	1
BAKANN	92	111	300	18	300	100	1	1	1	1	2	1
sub-total province	**632**	**759**	**1500**	**102**	**2300**	**500**	**5**	**5**	**5**	**5**	**10**	**5**
BATTAMBANG (8 Hop)												
BATTAMB HtPr	1184	1421	300	174	4000	100	6	3	6	4	12	6
BATTAMB dist	205	246	300	30	700	100	1	1	1	1	2	1
MAUNG RUSSEY	275	331	300	42	1000	100	1	1	1	1	2	1
RATTANAK MONDUL	37	45	300	6	100	100	1	1	1	1	2	1
SANGKE	197	237	300	30	700	100	1	1	1	1	2	1
BOVEL	157	188	300	24	500	100	1	1	1	1	2	1
BANAN	37	44	300	6	100	100	1	1	1	1	2	1
EK PHNOM	97	116	300	18	300	100	1	1	1	1	2	1
sub-total province	**2190**	**2627**	**2400**	**330**	**7400**	**800**	**13**	**10**	**13**	**11**	**26**	**13**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 1

1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo.	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
B. MEANCHEY (7 Hop)												
MONGOL B.HtProv	389	**467**	300	60	1400	100	2	1	2	1	4	2
SISOPHON	184	**220**	300	30	600	100	1	1	1	1	2	1
PREAH METH PREAH	214	**257**	300	30	700	100	1	1	1	1	2	1
OCHROW	174	**209**	300	24	600	100	1	1	1	1	2	1
PHNOM SROK	256	**307**	300	36	1000	100	1	1	1	1	2	1
SVAY CHEK	181	**218**	300	24	600	100	1	1	1	1	2	1
THMAR PUORK	203	**243**	300	30	700	100	1	1	1	1	2	1
sub-total province	**1601**	**1921**	**2100**	**234**	**5600**	**700**	**8**	**7**	**8**	**7**	**16**	**8**
SIEMREAP (6 Hop)												
SIEMREAP HtPr	1015	**1218**	300	150	3000	100	5	3	5	4	10	5
PUOK	786	**943**	300	114	2500	100	4	2	4	3	8	4
KRALANH	429	**514**	300	60	1500	100	2	2	2	2	4	2
SOTNIKUM	333	**400**	300	18	1000	100	2	1	2	1	4	2
CHIKRENG	861	**1033**	300	126	2500	100	4	3	4	3	8	4
sub-total province	**3423**	**4108**	**1500**	**488**	**10500**	**500**	**17**	**11**	**17**	**13**	**34**	**17**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 2

1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
KG SPUE (2 Hop)												
KG SPEU HtPr	838	1006	300	120	2500	100	4	3	4	3	8	4
THPAUNG	148	178	300	24	500	100	1	1	1	1	2	1
PHNOM SROUCH	222	266	300	36	800	100	1	1	1	1	2	1
BARSETH	126	151	300	18	400	100	1	1	1	1	2	1
KORNE PISEY	273	327	300	42	800	100	1	1	1	1	2	1
OUDONG	279	335	300	42	800	100	1	1	1	1	2	1
sub-total province	1886	2263	1800	282	5800	600	9	8	9	8	18	9
KAMPOT (5 Hop)												
KAMPOT HtPr	279	335	300	42	1000	100	1	1	1	1	2	1
ANGKOR CHEY	243	291	300	36	800	100	1	1	1	1	2	1
KG TRACH	268	321	300	36	1000	100	1	1	1	1	2	1
CHHOUK	228	274	300	36	800	100	1	1	1	1	2	1
BANTEAY M.	269	322	300	36	1000	100	1	1	1	1	2	1
DUNGTUNG	130	156	300	18	400	100	1	1	1	1	2	1
CHUMKIRI	86	103	300	12	300	100	1	1	1	1	2	1
sub-total province	1503	1803	2100	216	5300	700	7	7	7	7	14	7
KG SOM (2 Hop)												
KG SOM HtPr	184	221	300	30	600	100	1	1	1	1	2	1
STENG HAV	32	38	300	6	100	100	1	1	1	1	2	1
PREY NUP	175	210	300	24	600	100	1	1	1	1	2	1
sub-total province	391	470	900	60	1300	300	3	3	3	3	6	3

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 2												
1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
PREY VENG (12 Hop)												
PREY VENG HtPr	452	543	300	66	1000	100	2	2	2	2	4	2
KAMCHEY MEAR	191	230	300	30	600	100	1	1	1	1	2	1
PEAMRANG	218	262	300	30	600	100	1	1	1	1	2	1
PREY VENG dist	221	265	300	30	600	100	1	1	1	1	2	1
PEAM RO	403	483	300	60	1000	100	2	1	2	2	4	2
KANREACH	130	156	300	18	300	100	1	1	1	1	2	1
PEAM CHOR	99	119	300	18	300	100	1	1	1	1	2	1
BAPHNOM	257	308	300	36	800	100	1	1	1	1	2	1
KG TRABECK	199	238	300	30	600	100	1	1	1	1	2	1
ME SANG	411	493	300	60	1000	100	2	1	2	2	4	2
PREAH SDACH	311	373	300	48	1000	100	2	1	2	2	4	2
SITHOR KANDAL	220	264	300	30	600	100	1	1	1	1	2	1
sub-total province	**3111**	**3733**	**3600**	**456**	**8400**	**1200**	**16**	**13**	**16**	**16**	**32**	**16**
KANDAL (11 Hop)												
KANDAL HtPr	438	526	300	66	1000	100	2	2	2	2	4	2
SAANG	350	420	300	48	1000	100	2	1	2	1	4	2
KOH THOM	384	460	300	54	1000	100	2	1	2	1	4	2
KIEN SVAY	231	278	300	36	800	100	1	1	1	1	2	1
LOEUK DEK	141	169	300	24	500	100	1	1	1	1	2	1
LOVEA EM	233	279	300	42	800	100	1	1	1	1	2	1
KHSACH KANDAL	202	242	300	30	700	100	1	1	1	1	2	1
MOUK KAMPOUL	123	147	300	18	400	100	1	1	1	1	2	1
PONHEA LEU	355	426	300	54	1000	100	2	1	2	1	4	2
KANDAL STUNE	476	571	300	72	1500	100	2	2	2	2	4	2
ANG SNOUL	208	249	300	30	500	100	1	1	1	1	2	1
sub-total province	**3139**	**3766**	**3300**	**474**	**9200**	**1100**	**16**	**13**	**16**	**13**	**32**	**16**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 2			2nd Quarter									
1997	Average	20%up	Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
KG THOM (4 Hop)												
KG THOM HtPr	848	1018	300	120	3000	100	4	3	4	3	8	4
BARAY	269	323	300	42	1000	100	1	1	1	1	2	1
STUNG	352	422	300	48	1200	100	2	1	2	1	4	2
KG SVAY	103	123	300	18	300	100	1	1	1	1	2	1
SANTUK	130	156	300	18	400	100	1	1	1	1	2	1
sub-total province	**1702**	**2042**	**1500**	**246**	**5900**	**500**	**9**	**7**	**9**	**7**	**18**	**9**
KG CHAM (7 Hop)												
KG CHAM HtPr	921	1105	300	132	3000	100	5	3	5	4	10	5
KRAUCMAR	163	195	300	24	500	100	1	1	1	1	2	1
TOBONG KHMON	435	522	300	66	1500	100	2	2	2	2	4	2
DJEUN PREY	142	171	300	24	500	100	1	1	1	1	2	1
SREY SOMTO	576	691	300	84	200	100	3	2	3	2	6	3
CHAMCAR LEU	166	200	300	24	600	100	1	1	1	1	2	1
STUNG TRANG	90	108	300	12	300	100	1	1	1	1	2	1
PREY CHHOR	161	193	300	24	500	100	1	1	1	1	2	1
PONHEA KREK		100	300	12	300	100	1	1	1	1	2	1
KOH SOTIN	133	160	300	18	400	100	1	1	1	1	2	1
OREANG OV	352	422	300	48	1200	100	2	1	2	1	4	2
BATHEAY	105	126	300	18	300	100	1	1	1	1	2	1
sub-total province	**3244**	**3992**	**3600**	**486**	**9300**	**1200**	**20**	**16**	**20**	**17**	**40**	**20**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 2

1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
TAKEO (10 Hop)												
TAKEO HtPr	530	**636**	300	78	1900	100	3	2	3	2	6	3
BATI	161	**194**	300	24	500	100	1	1	1	1	2	1
SAMRONG	417	**500**	300	60	1500	100	2	2	2	2	4	2
PREY KABAS	385	**462**	300	54	1300	100	2	1	2	2	4	2
ANGKOR BOR	147	**176**	300	24	500	100	1	1	1	1	2	1
TRAING	103	**124**	300	18	300	100	1	1	1	1	2	1
KOH ANDETH	187	**225**	300	30	600	100	1	1	1	1	2	1
KIRIVONG	176	**212**	300	24	600	100	1	1	1	1	2	1
BOREY CHULS	89	**106**	300	12	300	100	1	1	1	1	2	1
TRAMKAK	178	**214**	300	24	600	100	1	1	1	1	2	1
sub-total province	**2373**	**2848**	**3000**	**348**	**8100**	**1000**	**14**	**12**	**14**	**13**	**28**	**14**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Red : Buffer stock

Group 3			2nd Quarter									
1997	Average	20%up	Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
KRATIE (6 Hop)												
KRATIE HtPr	245	**294**	300	36	800	100	1	1	1	1	2	1
SAMBO	39	**46**	300	12	100	100	1	1	1	1	2	1
PREK PRASup	58	**70**	300	12	200	100	1	1	1	1	2	1
CHHLAUNG	114	**136**	300	18	400	100	1	1	1	1	2	1
SNOURL	32	**39**	300	12	100	100	1	1	1	1	2	1
sub-total province	**488**	**585**	**1500**	**90**	**1600**	**500**	**5**	**5**	**5**	**5**	**10**	**5**
STUNG TRENE (4 Hop)												
STUNG TRENE Ht Pr	120	**143**	300	18	400	100	1	1	1	1	2	1
SIEM BARK	84	**101**	300	12	300	100	1	1	1	1	2	1
THALABORIWATH	44	**53**	300	12	100	100	1	1	1	1	2	1
SESAN	65	**77**	300	12	200	100	1	1	1	1	2	1
sub-total province	**312**	**375**	**1200**	**54**	**1000**	**400**	**4**	**4**	**4**	**4**	**8**	**4**
KOH KONG (1 Hop)												
KOH KONG HtPr	56	**67**	**300**	**12**	200	**100**	**1**	**1**	**1**	**1**	**2**	**1**

Distribution plan for TB examination reagents in 1998 (NTP)

Feb. 26, 1998

Group 4

Red : Buffer stock

1997	Average	20%up	2nd Quarter									
			Filter Paper pcs	Glass slide 50 pcs/box	Sp Containe pcs	Immersion oil ml	Xylene liter	Coplen jar pcs	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter
			1 yr+ 6 mo	1 yr+ 6mo	6 + 3 month		6 month	1 year	3 month	3 month	3 month	3 month
RATTANAKIRI (2 Hop)												
RATTANAKIRI Ht Pr	58	70	300	12	200	100	1	1	1	1	2	1
BOKEO	9	11	300	6	100	100	1	1	1	1	2	1
sub-total province	**67**	**80**	**600**	**18**	**300**	**200**	**2**	**2**	**2**	**2**	**4**	**2**
MONDUL KIRI (1 Hop)												
MONDUL KIRI Ht Pr	111	133	300	18	400	100	1	1	1	1	2	1
PREAH VIHEAR (1 Hop)												
PREAH VIHEAR Ht Pr	78	94	300	12	300	100	1	1	1	1	2	1
Grand Total	**35257**	**42409**	**37500**	**5232**	**107100**	**14400**	**200**	**159**	**200**	**171**	**400**	**200**

	3rd Quarter						4th Quarter				
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
0	5	5	2	10	5	5	2	10	5	700	800
0	5	5	2	10	5	5	2	10	5	400	500
1	5	5	3	10	5	5	3	10	5	1200	1300
2	5	5	5	10	5	5	5	10	5	2000	2100
0	1	1	1	2	1	1	1	2	1	300	400
0	1	1	1	2	1	1	1	2	1	200	200
0	5	5	2	10	5	5	2	10	5	500	600
3	**27**	**27**	**16**	**54**	**27**	27	**16**	**54**	**27**	**5300**	**5900**
1	5	5	4	10	5	5	4	10	5	1400	1500
1	3	3	3	6	3	3	3	6	3	900	1000
0	3	3	3	6	3	3	3	6	3	900	1000
1	5	5	4	10	5	5	4	10	5	1400	1500
1	4	4	3	8	4	4	3	8	4	900	1000
1	4	4	3	8	4	4	3	8	4	1100	1200
0	2	2	2	4	2	2	2	4	2	600	700
5	**26**	**26**	**22**	**52**	**26**	**26**	**22**	**52**	**26**	**7200**	**7900**

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
0	36	36	26	72	36	36	26	72	36	10000	10100
							0				
3	8	8	6	16	8	8	6	16	8	1000	1100
0	2	2	2	4	2	2	2	4	2	250	400
0	1	1	1	2	1	1	1	2	1	100	200
0	2	2	1	4	2	2	1	4	2	150	300
0	2	2	1	4	2	2	1	4	2	200	300
3	**51**	**51**	**37**	**102**	**51**	**51**	**37**	**102**	**51**	**11700**	**12400**
0	3	3	2	6	3	3	2	6	3	1000	1100
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	1	4	2	2	1	4	2	400	500
0	1	1	1	2	1	1	1	2	1	300	400
0	1	1	1	2	1	1	1	2	1	300	400
0	**8**	**8**	**6**	**16**	**8**	**8**	**6**	**16**	**8**	**2300**	**2800**
4	11	11	9	22	11	11	9	22	11	4000	4100
0	2	2	2	4	2	2	2	4	2	700	800
0	3	3	2	6	3	3	2	6	3	1000	1100
0	1	1	1	2	1	1	1	2	1	100	200
0	2	2	2	4	2	2	2	4	2	700	800
0	2	2	2	4	2	2	2	4	2	500	600
0	1	1	1	2	1	1	1	2	1	100	200
0	1	1	1	2	1	1	1	2	1	300	400
4	**23**	**23**	**20**	**46**	**23**	**23**	**20**	**46**	**23**	**7400**	**8200**

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
1	4	4	3	8	4	4	3	8	4	1400	1500
0	2	2	2	4	2	2	2	4	2	600	700
0	3	3	2	6	3	3	2	6	3	700	800
0	2	2	2	4	2	2	2	4	2	600	700
0	3	3	2	6	3	3	2	6	3	1000	1100
0	2	2	2	4	2	2	2	4	2	600	700
0	2	2	2	4	2	2	2	4	2	700	800
1	**18**	**18**	**15**	**36**	**18**	**18**	**15**	**36**	**18**	**5600**	**6300**
4	10	10	8	20	10	10	8	20	10	3000	3100
3	8	8	6	16	8	8	6	16	8	2500	2600
1	5	5	4	10	5	5	4	10	5	1500	1600
1	4	4	3	8	4	4	3	8	4	1000	1100
3	8	8	7	16	8	8	7	16	8	2500	2600
12	**35**	**35**	**28**	**70**	**35**	**35**	**28**	**70**	**35**	**10500**	**11000**

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
3	8	8	6	16	8	8	6	16	8	250	400
0	2	2	2	4	2	2	2	4	2	500	600
0	3	3	2	6	3	3	2	6	3	800	900
0	2	2	1	4	2	2	1	4	2	400	500
0	3	3	2	6	3	3	2	6	3	800	900
0	3	3	2	6	3	3	2	6	3	800	900
3	**21**	**21**	**15**	**42**	**21**	**21**	**15**	**42**	**21**	**3550**	**4200**
0	3	3	2	6	3	3	2	6	3	1000	1100
0	3	3	2	6	3	3	2	6	3	800	900
0	3	3	2	6	3	3	2	6	3	1000	1100
0	3	3	2	6	3	3	2	6	3	800	900
0	3	3	2	6	3	3	2	6	3	1000	1100
0	2	2	2	4	2	2	2	4	2	400	500
0	1	1	1	2	1	1	1	2	1	300	400
0	**18**	**18**	**13**	**36**	**18**	**18**	**13**	**36**	**18**	**5300**	**6000**
0	2	2	2	4	2	2	2	4	2	600	700
0	1	1	1	2	1	1	1	2	1	100	200
0	2	2	2	4	2	2	2	4	2	600	700
0	**5**	**5**	**5**	**10**	**5**	**5**	**5**	**10**	**5**	**1300**	**1600**

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
1	4	4	4	8	4	4	4	8	4	1000	1100
0	2	2	2	4	2	2	2	4	2	600	700
0	3	3	2	6	3	3	2	6	3	600	700
0	3	3	2	6	3	3	2	6	3	600	700
1	4	4	3	8	4	4	3	8	4	1000	1100
0	2	2	1	4	2	2	1	4	2	300	400
0	1	1	1	2	1	1	1	2	1	300	400
0	3	3	2	6	3	3	2	6	3	800	900
0	2	2	2	4	2	2	2	4	2	600	700
1	4	4	3	8	4	4	3	8	4	1000	1100
1	3	3	3	6	3	3	3	6	3	1000	1100
0	3	3	2	6	3	3	2	6	3	600	700
4	**34**	**34**	**27**	**68**	**34**	**34**	**27**	**68**	**34**	**8400**	**9600**
1	5	5	4	10	5	5	4	10	5	1000	1100
1	4	4	3	8	4	4	3	8	4	1000	1100
1	4	4	3	8	4	4	3	8	4	1000	1100
0	3	3	2	6	3	3	2	6	3	800	900
0	2	2	1	4	2	2	1	4	2	500	600
0	3	3	2	6	3	3	2	6	3	800	900
0	2	2	2	4	2	2	2	4	2	700	800
0	2	2	1	4	2	2	1	4	2	400	500
1	4	4	3	8	4	4	3	8	4	1000	1100
1	5	5	4	10	5	5	4	10	5	1500	1600
0	2	2	2	4	2	2	2	4	2	500	600
5	**36**	**36**	**27**	**72**	**36**	**36**	**27**	**72**	**36**	**9200**	**10300**

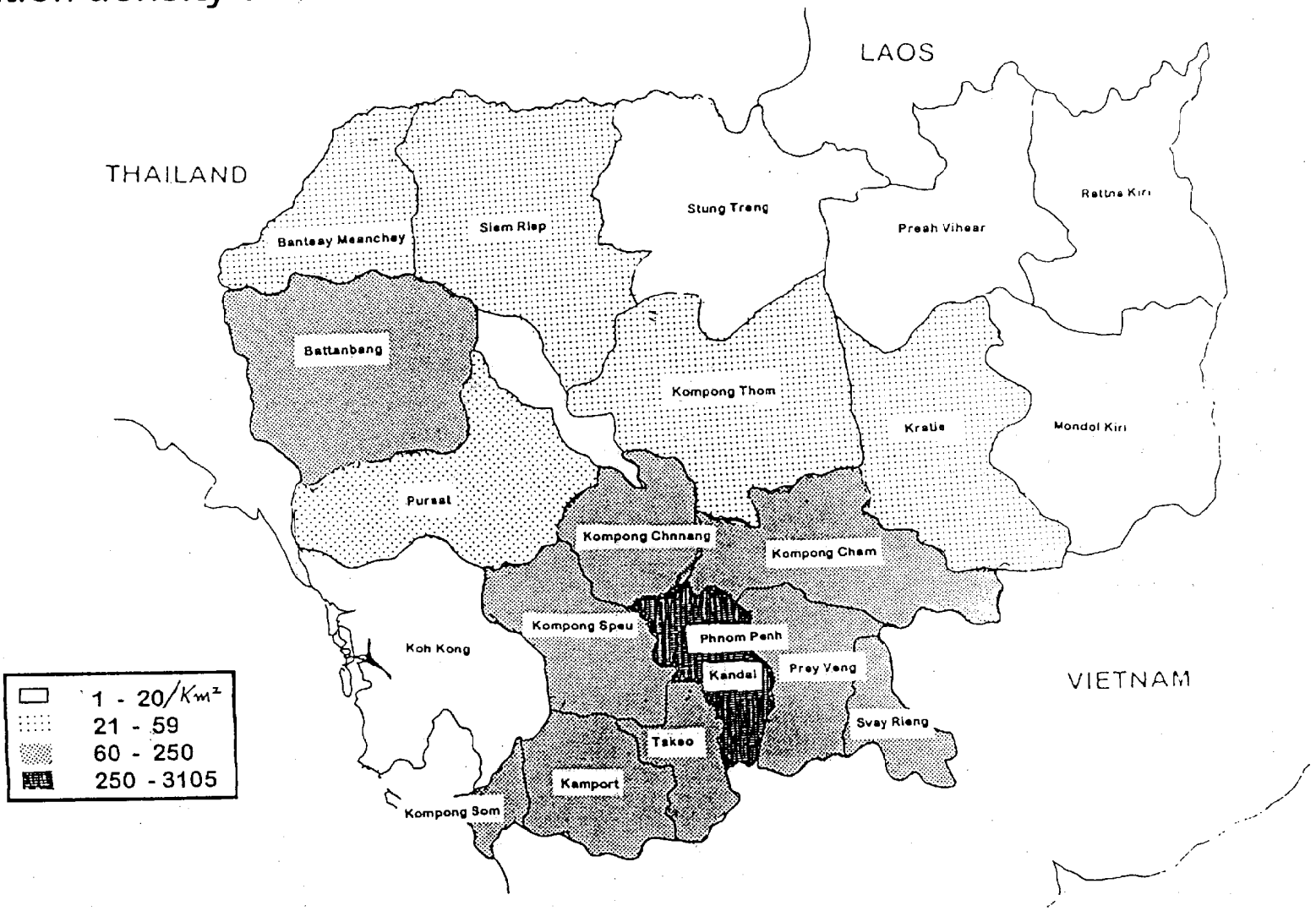
3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
3	8	8	7	16	8	8	7	16	8	3000	3100
0	3	3	2	6	3	3	2	6	3	1000	1100
1	4	4	3	8	4	4	3	8	4	1200	1300
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	2	4	2	2	2	4	2	400	500
4	**18**	**18**	**15**	**36**	**18**	**18**	**15**	**36**	**18**	**5900**	**6400**
4	9	9	7	18	9	9	7	18	9	3000	3100
0	2	2	2	4	2	2	2	4	2	500	600
1	5	5	4	10	5	5	4	10	5	1500	1600
0	2	2	2	4	2	2	2	4	2	500	600
2	6	6	5	12	6	6	5	12	6	200	300
0	2	2	2	4	2	2	2	4	2	600	700
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	2	4	2	2	2	4	2	500	600
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	1	4	2	2	1	4	2	400	500
1	4	4	3	8	4	4	3	8	4	1200	1300
0	1	1	1	2	1	1	1	2	1	300	400
8	**37**	**37**	**31**	**74**	**37**	**37**	**31**	**74**	**37**	**9300**	**10500**

	3rd Quarter					4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
2	6	6	4	12	6	6	4	12	6	1900	2000
0	2	2	2	4	2	2	2	4	2	500	600
1	4	4	3	8	4	4	3	8	4	1500	1600
1	4	4	3	8	4	4	3	8	4	1300	1400
0	2	2	2	4	2	2	2	4	2	500	600
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	2	4	2	2	2	4	2	600	700
0	2	2	2	4	2	2	2	4	2	600	700
0	1	1	1	2	1	1	1	2	1	300	400
0	2	2	2	4	2	2	2	4	2	600	700
4	**26**	**26**	**22**	**52**	**26**	**26**	**22**	**52**	**26**	**8100**	**9100**

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
0	3	3	2	6	3	3	2	6	3	800	900
0	1	1	1	2	1	1	1	2	1	100	200
0	1	1	1	2	1	1	1	2	1	200	300
0	1	1	1	2	1	1	1	2	1	400	500
0	1	1	1	2	1	1	1	2	1	100	200
0	**7**	**7**	**6**	**14**	**7**	**7**	**6**	**14**	**7**	**1600**	**2100**
0	2	2	1	4	2	2	1	4	2	400	500
0	1	1	1	2	1	1	1	2	1	300	400
0	1	1	1	2	1	1	1	2	1	100	200
0	1	1	1	2	1	1	1	2	1	200	300
0	**5**	**5**	**4**	**10**	**5**	**5**	**4**	**10**	**5**	**1000**	**1400**
0	1	1	**1**	**2**	1	1	1	**2**	1	**200**	300

3rd Quarter						4th Quarter					
Immersion oil bottle	Xylene liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Fuchsin liter	Methy Blue liter	Acid Al liter	Alcohol liter	Sp Containe pcs	Sp Container pcs
6 month	6 + 6month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	3+3month	6 + 3 month	6 + 3 month
0	1	1	1	2	1	1	1	2	1	200	300
0	1	1	1	2	1	1	1	2	1	100	200
0	2	2	2	4	2	2	2	4	2	300	500
0	1	1	1	2	1	1	1	2	1	400	500
0	1	1	1	2	1	1	1	2	1	300	400
56	400	400	314	800	400	400	314	800	400	104850	117400

Population density of Cambodia



⑥公共投資計画

Kingdom of Cambodia
Nation Religion King

PUBLIC INVESTMENT PROGRAMME

1997 - 1999

P.I.P UNIT
Ministry of Planning

(15)

HEALTH

INTRODUCTION

9.1 The health situation in Cambodia is one of the lowest in Asia. The infant mortality rate is estimated at 115 per 1,000 live births and maternal mortality is about 473 per 100,000 births. The death rate from preventable diseases is very high. Around 140 infants die every day and no less than 80,000 children under five die each year. The main causes are diarrhoea diseases and acute respiratory infections compounded by protein energy malnutrition and nutrient deficiencies. At least 750,000 children below five years of age suffer from malnutrition. Malaria numbers 100,000 cases per year of all age groups and 5,100 deaths annually. Cases of tuberculosis amount to 30,000 of adults and children and 18,000 new cases appear each year. The incidence of HIV/AIDS infection is rapidly increasing in various social groups. An estimated 10 million land mines litter large areas of cultivable land claiming 300-500 victims per month. The amputation prevalence rate due to mine injury is one in 236 persons, the highest in the world and the total number of amputees is estimated at 30,000 to 40,000. Mental health is also a main health problem in Cambodia.

9.2 The capacity of the health sector to respond to health problems is over-stretched, but the Ministry of Health (MOH) in recent years has with external assistance made remarkable progress in prioritising and tackling health issues. The Government's health care reforms are geared towards making the best use of available resources. This involves the reallocation of expenditure, so that public health spending is deployed where it generates the best returns and delivers services that benefit the poor. The emphasis is on revitalising health services, controlling communicable and preventable diseases, building capacity to manage resources and deliver core services more efficiently and promoting a greater sense and habit of responsibility to each person for the protection and enhancement of personal and family health. Children and mothers are receiving special attention.

CURRENT SITUATION

9.3 The rehabilitation and restructuring of the health sector is guided by two principles. First, that health related services such as information and control of contagious diseases are public goods. Thus expenditures to control infectious diseases should still be financed by the public sector. Second, charging fees for heath services should exclude the poorest groups of society, since the provision of cost effective health services to the poor is an efficient approach to poverty reduction. These principles are defining the size and composition of the health services to be financed by public expenditure.

9.4 The Government with external assistance has been focusing on the identification of policy and expenditure priorities aimed at establishing efficient primary health care services through a district health based system. Provincial and national systems have been integrated technically and financially with the assistance of Germany, UNICEF, WHO, UNDP and Ausaid. Budget and finance systems have been strengthened with support from UNDP, UK and WHO. The ADB and the World Bank are providing support for improving the performance of local health delivery systems. Immunisation services are now increasingly available as is a basic

supply of essential drugs which reaches even remote commune centres. The National Malaria Institute has articulated a provisional national strategy and implemented field trials for preventative interventions. The re-training of health staff and the training of new staff is being tackled, but achieving a critical mass of health professionals is a long term sector challenge that will require additional external assistance.

MEDIUM TERM GOALS AND OBJECTIVES

9.5 The Government's goals and objectives for health are set out in the SEDP and may be summarised as follows. The sectoral goal is to establish a cost effective health care system based on choice, responsiveness, prevention, quality and personal responsibility that contributes to economic and social development.

9.6 The medium term objectives for the sector are to:

- Establish basic health services
- Control communicable and preventable diseases
- Improve resources management and strengthen services delivery
- Promote a greater sense and habit of responsibility to each person for the protection and enhancement of personal and family health.

9.7 The key policy elements and timing of policy actions is summarised in table 9.1.

Table 9.1 Summary of Health Sector Policy Actions

Goal: Establish a cost effective health care system based on choice, responsiveness, prevention, quality and personal responsibility that contributes to economic and social development		
Medium Term Objectives	Policy Elements and Actions	Timing and Responsibilities
Establish basic health services	Rehabilitate and Expand Access	
	Implement Health Coverage Plan based on equitable geographical access to basic health and referral services	MOH, external assistance, ongoing
	Use the public investment program to increase public spending on health priorities	MOH, MOP, external assistance, ongoing
	Rehabilitate and construct 914 health centres and 65 referral hospitals nationally	MOH, external assistance, ongoing
	Develop and test new financing mechanisms to increase the share of resources available to health	MOH, 1997
	Strengthen planning, budgeting and management capacities at national and local level	MOH, external assistance, 1997
	Improve Maternal and Child Health Care	

	Trained midwife or nurse to attend at least 40 percent of rural births	MOH, 1996-2000
	Expand birth spacing information and services to 12 most populous provinces and develop mechanisms for national coverage	MOH, 1996-2000
Control Communicable and Preventable Diseases	<u>Strengthen and Expand National Programs</u>	
	Increase coverage of children's vaccination program to 80 percent of one year olds covering tuberculosis, polio and measles	MOH, 1996-2000
	Install epidemiological monitoring systems in 8 provinces identified as STD's/HIV/AIDS high risk areas and develop public information strategy	MOH, 1996-2000
	Promote use of insecticide-treated mosquito nets and strengthen capacity of National Malaria Centre	MOH, ongoing
	Develop capacity of National Centre for Tuberculosis through structured capacity building interventions	MOH, ongoing
Improve resources management and services delivery	<u>Build Sector Capacity</u>	
	Initiate training of health educators program	MOH, external assistance 1996-1997
	Plan and implement curricular reforms to training of health professionals	MOH, 1996-1998
	Promote voluntary blood donation	MOH, ongoing
	Strengthen and enforce the legal and regulatory framework for import and sale of drugs including standards and licensing of pharmacies	MOH, ongoing
	Enhance children's nutrition monitoring system and use system to assist in designing appropriate interventions	MOH, 1996-1999
	Strengthen strategic planning, budgeting and management	MOH, 1997
	Accelerate skills transfer programs at provincial, district, commune and village level	MOH
Promote a greater sense and habit of responsibility to each person for the protection and enhancement of personal and family health.	<u>Health Education Activities</u>	
	Strengthen National Centre for Health Education	MOH
	Use Village Development Commitees to disseminate advice on health matters	MOH, MRD

MEDIUM TERM POLICY ACTIONS

Re-establish and Expand Health Access

9.8 The Government will accelerate to the maximum extent feasible the implementation of the Health Coverage Plan. Core elements of the Plan include prioritised rehabilitation and construction of health facilities nation-wide. To ensure that resources are used efficiently and least cost alternatives implemented the Government will continue to strengthen health planning and project preparation capacities under the public investment programming process.

Financing Options

9.9 The Government is committed to raising the level of public expenditure on health to a target of 2 percent of GDP by the year 2000 which will align sector spending with the norms of other low income countries. In addition, the Government will intensify efforts to identify and test on a pilot scale alternative health financing mechanisms in recognition of the fiscal limits of public health provision. This will include testing such schemes as user charges, community based rural insurance and the contracting out of services where private business has a comparative advantage.

Maternal Mortality

9.10 High maternal mortality rates are a cause for concern and improvement in the situation is a high priory of the Government. The level of maternal mortality is linked to the absence of trained midwifes at rural births. More than 90 percent of rural births are at home attended by a traditional midwife whose knowledge is not consistent with scientific research. The Government aims by the year 2000 to have achieved a target of 40 percent of rural births being attended by a trained midwife or nurse. Expenditures in this area will be increased so that rural access to such expertise is expanded.

Strengthen and Expand National Programs

9.11 A high priority of the Government is to increase the coverage of core vaccination programs. Present coverage of children under one years of age measures 72 percent, 58 percent and 59 percent for tuberculosis, polio and measles respectively. The Government with external assistance is committed to achieving by the year 2000 80 percent of one year olds vaccinated against these diseases.

9.12 To combat the rising spread of HIV/AIDS the Government will increase its monitoring and educational programs in 8 prioritised high risk provinces and develop further its public information strategy. The Village Development Committees will play an important role in disseminating advice on health matters.

9.13 A key priority will be promoting the use of insecticide-treated mosquito nets to combat the incidence of malaria and dengue fever. With external assistance malaria training programs will be strengthened and the National Malaria Centre further upgraded in terms of technical expertise and associated facilities. External assistance will also be required to increase the purchase of essential drugs for communicable and infectious diseases control.

9.14 Tuberculosis (TB) is a high priority of the Government. Cases of TB amount to 30,000. In 1992 TB-AIDS has been detected and is in six provinces in 1995. The national program Anti-Tuberculosis applies the treatment strategy " treatment with control and surveillance". With external assistance the Government objective is to reduce the prevalence of TB by detecting 70 percent of new cases and achieving a 85 percent cure rate of TB smear positive tests.

Building Capacity

9.15 The Government will intensify training at local levels in specific fields, including data analysis and identification of priorities as well as knowledge of the inputs needed to maintain the efficiency of the essential services. Budgeting will then be further revised so as to give priority financing to essential inputs such as emergency transportation, critical drugs and services. This further strengthening will assist in developing the capacity of the sector to absorb and implement policy and investment priorities.

Training Trainers

9.16 As a core component of its human resource development strategy the Government will initiate a new program designed to train medical educators to train others. Following a six months training course sponsored by MOH and WHO the trainers will be based in the provinces where they will train 300 local health educators with the assistance of the ADB.

Enforcing Legislation

9.17 The Government is concerned that the growing number of unlicensed pharmacies is contributing to the rising level of fake and expired drugs being sold. About 50 percent of drugs sold in Cambodia are estimated to be past their expiration date. The Government will strengthen the licensing procedures of pharmacies and enforce legislation against illegal pharmacies by closing them down.

Nutrition

9.18 A system exists to monitor the nutritional status of children, but no work has been to assess the extent of poor nutrition among adults. Nutrition surveys indicate that there is a high correlation between malnutrition and low educational attainment of the parents. Since the highest incidence of nutritional deficiency occurs in very young children, part of this is attributable to lack of education on the part of mothers and health workers about birth spacing and infant feeding practises The incidence of protein energy malnutrition among children aged 13-24 months strongly suggests that a significant impact could be made by training health providers and supporting infant feeding practises that are consistent with current scientific research. The Government with the assistance of UNICEF will maintain the monitoring of the nutrition status of children and extend it to adults for the purpose of strengthening nutrition monitoring and to assist in designing appropriate interventions.

PUBLIC INVESTMENT PROGRAM

9.19 The PIP is discussed in detail in Section III of this document. The scheduling and allocation of public investment is guided by the indicative sectoral allocation provided in the SEDP. Public investment allocated to health for the 1997-1999 PIP period amounts to nearly $234 million or 19.5 percent of the PIP.