表１．チェンライ県の結核登録(1995 年より 28,945 登録、1985 年より 36,650 登録)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
Total	1,555	1,627	1,840	2,031	2,133	2,075	2,105	2,000	2,157	2,322	2,544	2,227	2,231	2,098	28,945
Thai - lowland	1,231	1,306	1,445	1,631	1,727	1,605	1,615	1,497	1,644	1,789	1,854	1,577	1,612	1,512	22,045
HIV Negative	355	361	381	413	531	558	568	524	572	675	912	877	929	917	8,573
HIV Positive	469	594	752	838	809	764	741	650	714	767	740	596	584	479	9,497
HIV Unknown	407	351	312	380	387	283	306	323	358	347	202	104	99	116	3,975
Thai - hilltribe	266	261	267	300	295	320	344	348	327	333	357	339	310	325	4,392
HIV Negative	82	107	134	128	145	165	161	188	166	165	217	223	232	242	2,355
HIV Positive	24	36	37	59	54	63	70	70	63	62	98	76	52	66	830
HIV Unknown	160	118	96	113	96	92	113	90	98	106	42	40	26	17	1,207
Non-Thai	266	261	267	300	295	320	344	348	327	333	357	339	310	325	4,392
HIV Negative	6	16	70	30	55	62	64	77	83	108	173	219	202	174	1,339
HIV Positive	4	4	11	19	13	23	24	23	31	24	76	61	74	56	443
HIV Unknown	48	40	47	51	43	65	58	55	72	68	84	31	33	31	726
Thai - lowland with HIV negative															
No have CID	350	357	378	399	515	549	553	489	378	391	66	29	29	24	4,507
Have CID	5	4	3	14	16	9	15	35	194	284	846	848	900	893	4,066
Thai - lowland with HIV positive															
No have CID	464	590	749	833	799	747	719	598	422	294	27	14	9	10	6,275
Have CID	5	4	3	5	10	17	22	52	292	473	713	582	575	469	3,222
Thai - lowland with HIV unknown															
No have CID	405	350	310	377	384	281	302	312	248	213	26	4	5	1	3,218
Have CID	2	1	2	3	3	2	4	11	110	134	176	100	94	115	757
Thai - hilltribe with HIV negative															
No have CID	80	106	130	123	138	161	154	172	126	116	52	44	51	66	1,519
Have CID	2	1	4	5	7	4	7	16	40	49	165	179	181	176	836
Thai - hilltribe with HIV positive															
No have CID	22	36	37	58	54	61	69	63	53	27	11	19	8	10	528
Have CID	2	0	0	1	0	2	1	7	10	35	87	57	44	56	302
Thai - hilltribe with HIV unknown															
No have CID	157	118	96	111	95	90	110	85	77	81	14	8	11	6	1,059
Have CID	3	0	0	2	1	2	3	5	21	25	28	32	15	11	148
Non-Thai with HIV negative															
No have CID	6	16	70	30	55	62	64	77	83	107	167	212	195	172	1,316
Have CID	0	0	0	0	0	0	0	0	0	1	6	7	7	2	23
Non-Thai with HIV positive															
No have CID	4	4	11	19	13	23	24	23	31	24	61	54	67	51	409
Have CID	0	0	0	0	0	0	0	0	0	0	15	7	7	5	34
Non-Thai with HIV unknown															
No have CID	48	40	47	51	43	65	58	55	72	68	81	31	31	30	720
Have CID	0	0	0	0	0	0	0	0	0	0	3	0	2	1	6

表２

HIV陰性結核患者に対するProvider Initiated Counseling & Testing (PICT)の評価-HIV陰性患者のHIV陽転化に関連した因子分析

表2　HIV陰性結核患者に対するProvider Initiated Counseling & Testing (PICT)の評価−HIV陰性患者のHIV陽転化に関連した因子分析

	Characteristics	HIV status negative	%	converter	%	Total	Odd ratios	95%CI	p	Sig. at alpha 0.05
	Gender									
	Female	4,705	98.9%	54	1.1%	4,759	1.00			
	Male	10,130	98.9%	108	1.1%	10,238	0.93	(0.67-1.3)	0.660	NS.
	Age (years)									
	n	14,818		162		14,980	0.98	(0.98-1)	<0.001	Sig
	minimum	0		1		0				
	maximum	104		96		104				
	median	47		39		47				
	mean	47		42		47				
	SD	19		17		18				
	Age (years)									
	<=15	442	99.5%	2	0.5%	444	1.00			
	16-25	1,584	98.8%	20	1.2%	1,604	2.79	(0.65-11.99)	0.168	NS.
	26-35	2,239	97.9%	48	2.1%	2,287	4.74	(1.15-19.57)	0.032	Sig
	36-45	2,624	98.7%	34	1.3%	2,658	2.86	(0.69-11.97)	0.149	NS.
	46-55	2,678	99.1%	24	0.9%	2,702	1.98	(0.47-8.41)	0.354	NS.
	56-65	2,407	99.3%	17	0.7%	2,424	1.56	(0.36-6.78)	0.552	NS
	66+	2,844	99.4%	17	0.6%	2,861	1.32	(0.31-5.74)	0.710	NS.
	Race									
	Thai	10,442	98.7%	134	1.3%	10,576	1.00			
	Hilltribe	2,800	99.2%	24	0.8%	2,824	0.67	(0.44-1.04)	0.070	NS.
	Non-Thai	1,593	99.7%	4	0.3%	1,597	0.20	(0.08-0.53)	0.001	Sig
	Race									
	Thai	10,442	98.7%	134	1.3%	10,576	1.00			
	Hilltribe/ Non-Thai	4,393	99.4%	28	0.6%	4,421	0.50	(0.34-0.75)	0.001	Sig
	Marital status									
	Single	1,179	99.4%	7	0.6%	1,186	1.00			
	Married	4,340	99.1%	40	0.9%	4,380	1.55	(0.7-3.48)	0.285	NS.
	Divorced	352	98.9%	4	1.1%	356	1.91	(0.56-6.58)	0.303	NS.
	Widow	804	99.1%	7	0.9%	811	1.47	(0.52-4.2)	0.475	NS.
	Missing	8,160	98.7%	104	1.3%	8,264	-	(-)	<0.001	Sig
	Education									
	Uneducated	1,822	99.3%	12	0.7%	1,834	1.00			
	Primary school or lower	2,341	99.2%	20	0.8%	2,361	1.30	(0.64-2.67)	0.478	NS.
	High school	632	99.4%	4	0.6%	636	0.96	(0.31-3)	0.945	NS.
	Higher	201	99.0%	2	1.0%	203	1.51	(0.34-6.8)	0.591	NS.
	Missing	9,839	98.8%	124	1.2%	9,963	-	(-)	<0.001	Sig
	Occupation									
01	Agriculture	1,874	99.0%	19	1.0%	1,893	1.00			
02	Government/ Enterprise	92	98.9%	1	1.1%	93	1.07	(0.15-8.1)	0.946	NS.
03	Labor	2,029	99.3%	15	0.7%	2,044	0.73	(0.37-1.44)	0.363	NS.
04	Merchant	174	99.4%	1	0.6%	175	0.57	(0.08-4.26)	0.581	NS.
05	Home take care	770	98.6%	11	1.4%	781	1.41	(0.67-2.98)	0.368	NS.
06	Student	182	99.5%	1	0.5%	183	0.54	(0.08-4.08)	0.552	NS
07	Solider/ Policeman	8	100.0%	0	0.0%	8	N/A	(-)	<0.001	Sig
08	Fisherman	1	100.0%	0	0.0%	1	N/A	(-)	<0.001	Sig
09	Teacher	12	100.0%	0	0.0%	12	N/A	(-)	<0.001	Sig
10	Prisoner	77	97.5%	2	2.5%	79	2.56	(0.59-11.2)	0.211	NS.
11	Business	14	100.0%	0	0.0%	14	N/A	(-)	<0.001	Sig
12	Empolyee	14	100.0%	0	0.0%	14	N/A	(-)	<0.001	Sig
13	Unemployed	380	99.5%	2	0.5%	382	0.52	(0.13-2.24)	0.379	NS.
14	Mont/ Nun	53	100.0%	0	0.0%	53	N/A	(-)	<0.001	Sig
15	Others	92	98.9%	1	1.1%	93	1.07	(0.15-8.1)	0.946	NS.
99	Missing	9,063	98.8%	109	1.2%	9,172	-	(-)	<0.001	Sig
	TB site and sputum AFB result									
	Pulmonary TB with sputum AFB positive	8,408	99.1%	77	0.9%	8,485	1.00			
	Pulmonary TB with sputum AFB negative	3,962	98.8%	48	1.2%	4,010	1.32	(0.93-1.91)	0.130	NS.
	Pulmonary TB with sputum AFB unknown	362	98.4%	6	1.6%	368	1.81	(0.79-4.19)	0.165	NS.
	Extra-pulmonary TB	2,103	98.5%	31	1.5%	2,134	1.61	(1.06-2.45)	0.026	Sig
	TB site and sputum AFB result									
	Pulmonary TB with sputum AFB positive	8,408	99.1%	77	0.9%	8,485	1.00			
	Other	6,427	98.7%	85	1.3%	6,512	1.44	(1.06-1.97)	0.020	Sig
	TB site									
	Pulmonary TB only	12,347	99.1%	117	0.9%	12,464	1.00			
	Extra-pulmonary TB only	2,103	98.5%	31	1.5%	2,134	1.56	(1.05-2.32)	0.030	Sig
	Both	385	96.5%	14	3.5%	399	3.84	(2.19-6.75)	<0.001	Sig
	Chest X-ray									
	Cavity	6,925	99.1%	63	0.9%	6,988	1.00			
	Non cavity	7,231	98.9%	82	1.1%	7,313	1.25	(0.9-1.74)	0.191	NS.
	Not done	679	97.6%	17	2.4%	696	-	(-)	<0.001	Sig
	Patient type									
1	New	11,595	99.0%	114	1.0%	11,709	1.00			
2	Relapse	307	98.4%	5	1.6%	312	1.66	(0.68-4.09)	0.273	NS.
3	Treatment after failure	227	98.7%	3	1.3%	230	1.34	(0.43-4.27)	0.615	NS.
4	Chronic	135	98.5%	2	1.5%	137	1.51	(0.37-6.17)	0.568	NS.
5	Ttreatment after default	539	98.5%	8	1.5%	547	1.51	(0.74-3.11)	0.264	NS.
6	Other	436	99.3%	3	0.7%	439	0.70	(0.23-2.22)	0.543	NS.
7	Transfer in	1,596	98.3%	27	1.7%	1,623	1.72	(1.13-2.63)	0.012	Sig
	Year of TB start treatment									
	1990	268	99.3%	2	0.7%	270	1.00			
	1991	279	99.6%	1	0.4%	280	0.48	(0.05-5.33)	0.550	NS.
	1992	249	99.6%	1	0.4%	250	0.54	(0.05-5.98)	0.614	NS.
	1993	252	98.8%	3	1.2%	255	1.60	(0.27-9.63)	0.611	NS.
	1994	316	97.5%	8	2.5%	324	3.39	(0.72-16.12)	0.124	NS.
	1995	368	97.6%	9	2.4%	377	3.28	(0.71-15.3)	0.131	NS.
	1996	538	98.7%	7	1.3%	545	1.74	(0.36-8.46)	0.490	NS.
	1997	546	98.0%	11	2.0%	557	2.70	(0.6-12.27)	0.198	NS.
	1998	572	99.0%	6	1.0%	578	1.41	(0.29-7.01)	0.678	NS.
	1999	712	99.6%	3	0.4%	715	0.56	(0.1-3.4)	0.532	NS.
	2000	772	99.4%	5	0.6%	777	0.87	(0.17-4.5)	0.866	NS
	2001	785	99.0%	8	1.0%	793	1.37	(0.29-6.48)	0.695	NS.
	2002	703	98.5%	11	1.6%	714	2.10	(0.47-9.53)	0.338	NS.
	2003	823	98.4%	13	1.6%	836	2.12	(0.48-9.44)	0.326	NS
	2004	967	96.4%	36	3.6%	1,003	4.99	(1.2-20.86)	0.028	Sig
	2005	1,291	99.9%	22	1.7%	1,313	2.28	(0.54-9.77)	0.266	NS.
	2006	1,304	99.5%	7	0.5%	1,311	0.72	(0.15-3.49)	0.682	NS.
	2007	1,325	99.8%	2	0.2%	1,327	0.20	(0.03-1.45)	0.111	NS.
	2008	1,401	99.9%	3	0.2%	1,404	0.29	(0.05-1.73)	0.173	NS.
	2009	1,364	99.7%	4	0.3%	1,368	0.39	(0.08-2.16)	0.282	NS.
	Prisoner									
	Yes	301	98.7%	4	1.3%	305	1.00			
	no	14,534	98.9%	158	1.1%	14,692	0.82	(0.31-2.23)	0.694	NS.
	Treatment outcome									
1	Cured	4,203	99.3%	31	0.7%	4,234	1.00			
2	Completed	4,961	99.0%	49	1.0%	5,010	1.34	(0.86-2.11)	0.205	NS.
3	Defaulted	1,906	98.6%	28	1.4%	1,934	1.99	(1.2-3.33)	0.009	Sig
4	Failured	371	100.0%	0	0.0%	371	N/A	(-)	<0.001	Sig
5	Died	1,711	97.7%	40	2.3%	1,751	3.17	(1.98-5.09)	<0.001	Sig
6	Change diagnosis	360	99.4%	2	0.6%	362	0.75	(0.18-3.16)	0.699	NS.
7	Transfer out	599	98.4%	10	1.6%	609	2.26	(1.11-4.65)	0.026	Sig
	DM									
	No	5,185	99.7%	17	0.3%	5,202	1.00			
	Yes	349	99.1%	3	0.9%	352	2.62	(0.77-8.99)	0.125	NS
	Missing	9,301	98.5%	142	1.5%	9,443	-	(-)	<0.001	Sig
	IDU									
	No	5,379	99.6%	22	0.4%	5,401	1.00			
	Yes	163	99.4%	1	0.6%	164	1.50	(0.21-11.2)	0.693	NS.
	Missing	9,293	98.5%	139	1.5%	9,432	-	(-)	<0.001	Sig
	BCG scar									
	No	3,026	99.6%	11	0.4%	3,037	1.00			
	Yes	1,697	99.4%	11	0.6%	1,708	1.78	(0.78-4.13)	0.176	NS.
	Missing	10,112	98.6%	140	1.4%	10,252	-	(-)	<0.001	Sig

表３

タイ北部チェンライ県全域の死亡統計

（県レベルでの直接入力個票データ）

Year	Age	Total	<1	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	>85
2006	**Total**	**5,938**	**0**	**18**	**5**	**8**	**8**	**12**	**37**	**82**	**92**	**114**	**190**	**285**	**321**	**403**	**450**	**419**	**421**	**587**	**779**	**705**	**488**	**466**
	Male	**3,403**	0	8	5	3	5	5	20	67	72	71	118	194	224	272	296	262	235	309	401	373	230	205
	Female	**2,535**	0	10	0	5	3	7	17	15	20	43	72	91	97	131	154	157	186	278	378	332	258	261
2005	**Total**	**7,962**	**0**	**11**	**4**	**9**	**3**	**38**	**42**	**135**	**125**	**221**	**331**	**424**	**487**	**492**	**570**	**514**	**550**	**771**	**963**	**882**	**695**	**612**
	Male	**4,602**	0	6	1	5	2	17	26	103	92	135	209	286	338	327	368	321	341	419	523	462	343	237
	Female	**3,360**	0	5	3	4	1	21	16	32	33	86	122	138	149	165	202	193	209	352	440	420	352	375
2004	**Total**	**7,465**	**0**	**11**	**7**	**10**	**4**	**48**	**50**	**96**	**136**	**260**	**410**	**417**	**447**	**509**	**485**	**470**	**519**	**699**	**843**	**779**	**631**	**575**
	Male	**4,364**	0	7	2	5	2	25	35	81	101	138	240	294	299	365	308	284	309	378	474	411	318	255
	Female	**3,101**	0	4	5	5	2	23	15	15	35	122	170	123	148	144	177	186	210	321	369	368	313	320
2003	**Total**	**8,729**	**15**	**18**	**9**	**15**	**11**	**88**	**65**	**133**	**177**	**386**	**638**	**621**	**520**	**542**	**556**	**488**	**597**	**787**	**930**	**848**	**623**	**632**
	Male	**5,028**	7	12	7	9	5	43	40	106	122	195	384	426	357	354	329	312	347	436	505	447	300	271
	Female	**3,701**	8	6	2	6	6	45	25	27	55	191	254	195	163	188	227	176	250	351	425	401	323	361
2002	**Total**	**9,626**	**17**	**24**	**17**	**11**	**22**	**111**	**59**	**127**	**243**	**595**	**818**	**718**	**661**	**630**	**527**	**530**	**671**	**853**	**935**	**786**	**612**	**632**
	Male	**5,709**	12	15	11	7	13	67	32	100	157	293	527	488	448	424	341	342	410	479	509	433	305	277
	Female	**3,917**	5	9	6	4	9	44	27	27	86	302	291	230	213	206	186	188	261	374	426	353	307	355
2001	**Total**	**10,384**	**58**	**18**	**22**	**12**	**19**	**125**	**42**	**123**	**309**	**817**	**1,053**	**883**	**684**	**607**	**552**	**503**	**689**	**876**	**877**	**816**	**614**	**641**
	Male	**6,034**	39	10	9	5	9	67	19	91	167	430	678	597	491	404	347	299	387	463	480	416	307	292
	Female	**4,350**	19	8	13	7	10	58	23	32	142	387	375	286	193	203	205	204	302	413	397	400	307	349
2000	**Total**	**9,816**	**45**	**28**	**15**	**19**	**20**	**111**	**37**	**118**	**329**	**989**	**1,020**	**832**	**686**	**554**	**445**	**491**	**638**	**818**	**814**	**682**	**522**	**583**
	Male	**5,649**	31	12	10	15	12	73	16	81	162	508	683	574	447	351	269	281	342	442	429	395	263	242
	Female	**4,167**	14	16	5	4	8	38	21	37	167	481	337	258	239	203	176	210	296	376	385	287	259	341
1999	**Total**	**11,589**	**70**	**37**	**25**	**20**	**35**	**128**	**49**	**140**	**429**	**1,222**	**1,382**	**994**	**771**	**597**	**504**	**578**	**726**	**915**	**899**	**783**	**565**	**710**
	Male	**6,966**	37	15	15	11	16	70	27	111	225	707	979	711	529	391	326	354	424	497	497	415	277	324
	Female	**4,623**	33	22	10	9	19	58	22	29	204	515	403	283	242	206	178	224	302	418	402	368	288	386
1998	**Total**	**11,990**	**81**	**35**	**31**	**25**	**29**	**110**	**38**	**154**	**583**	**1,415**	**1,475**	**999**	**758**	**559**	**526**	**567**	**814**	**874**	**870**	**778**	**590**	**660**
	Male	**7,356**	43	14	12	14	18	68	19	107	285	857	1,127	772	554	355	338	350	480	481	492	417	281	257
	Female	**4,634**	38	21	19	11	11	42	19	47	298	558	348	227	204	204	188	217	334	393	378	361	309	403
1997	**Total**	**7,983**	**82**	**30**	**25**	**19**	**20**	**57**	**35**	**98**	**428**	**1,019**	**914**	**689**	**489**	**354**	**328**	**420**	**523**	**566**	**535**	**533**	**385**	**423**
	Male	**4,987**	43	12	14	9	11	37	20	74	210	710	701	543	351	243	213	252	302	319	286	280	175	176
	Female	**2,996**	39	18	11	10	9	20	15	24	218	309	213	146	138	111	115	168	221	247	249	253	210	247
1996	**Total**	**9,335**	**90**	**36**	**22**	**25**	**23**	**54**	**47**	**142**	**616**	**1,158**	**1,052**	**748**	**590**	**427**	**354**	**491**	**628**	**703**	**624**	**567**	**424**	**500**
	Male	**5,966**	52	20	17	15	14	36	31	110	337	867	838	585	430	281	245	311	355	391	328	297	189	208
	Female	**3,369**	38	16	5	10	9	18	16	32	279	291	214	163	160	146	109	180	273	312	296	270	235	292
1995	**Total**	**10,328**	**73**	**55**	**23**	**20**	**9**	**73**	**37**	**182**	**644**	**1,163**	**1,104**	**779**	**614**	**481**	**455**	**566**	**791**	**766**	**755**	**626**	**492**	**526**
	Male	**6,770**	41	29	15	11	4	43	21	129	408	918	924	630	465	326	305	366	459	433	416	319	230	226
	Female	**3,558**	32	26	8	9	5	30	16	53	236	245	180	149	149	155	150	200	332	333	339	307	262	300
1994	**Total**	**7,929**	**50**	**51**	**21**	**21**	**12**	**45**	**39**	**147**	**460**	**771**	**663**	**538**	**399**	**329**	**398**	**483**	**628**	**637**	**615**	**518**	**451**	**520**
	Male	**5,098**	32	27	9	11	4	28	23	90	315	629	564	440	304	231	262	290	366	353	335	276	210	220
	Female	**2,831**	18	24	12	10	8	17	16	57	145	142	99	98	95	98	136	193	262	284	280	242	241	300
1993	**Total**	**5,869**	**55**	**28**	**19**	**14**	**14**	**39**	**32**	**132**	**283**	**378**	**366**	**325**	**265**	**232**	**306**	**447**	**566**	**552**	**497**	**427**	**396**	**409**
	Male	**3,612**	24	13	10	7	7	26	14	98	215	311	300	264	193	146	171	270	317	329	268	218	188	167
	Female	**2,257**	31	15	9	7	7	13	18	34	68	67	66	61	72	86	135	177	249	223	229	209	208	242

表4

検体バンク(Specimen banking) のリスト

between 19 February 2002 and 03 May 2010

表4 検体バンク(Specimen banking)のリスト between 19 February 2002 and 03 May 2010

Characteristic	Study									Total
	Clinical study	Daycare	DST	TB genetic		Household contact		TB recurrent		
				TB	non TB	TB	non TB	TB	non TB	
Total (specimens)	**75**	**1,574**	**799**	**1,145**	**1,481**	**14**	**59**	**1,156**	**956**	**7,259**
Collection year										
2002	0	220	48	136	269	10	44	33	0	**760**
2003	0	707	55	276	471	4	15	157	0	**1,685**
2004	0	647	62	336	487	0	0	193	0	**1,725**
2005	5	0	43	218	249	0	0	160	0	**675**
2006	11	0	58	64	4	0	0	187	0	**324**
2007	50	0	107	96	1	0	0	143	256	**653**
2008	9	0	181	19	0	0	0	115	319	**643**
2009	0	0	168	0	0	0	0	132	381	**681**
2010	0	0	77	0	0	0	0	36	0	**113**
Gender										
female	46	961	218	421	790	5	34	327	420	**3,222**
male	29	612	578	721	689	9	25	829	536	**4,028**
Pt. type for TB cases										
New			700	882		9		732		**2,323**
Relapse			16	26		0		186		**228**
Failure			14	3		0		147		**164**
Chronic			9	1		0		59		**69**
TAD			38	37		1		11		**87**
Other			8	15		0		0		**23**
Transfer in			7	18		0		0		**25**
HIV status										
Negative	0	0	377	622	399	10	2	861	5	**2,276**
Positive	38	6	160	388	32	0	0	91	2	**717**
Unknown	37	1,568	262	135	1,050	4	57	204	949	**4,266**
Age (years-old)										
n			404	1,101	1,422			175		
minimum			7	2	6			10		
maximum			104	99	99			78		
median			47	35	55			40		
mean			49.3	37.2	54.6			41.4		
SD			16.7	14.9	15.1			15.1		
Race										
Thai	0	6	308	432	445	5	14	28	4	**1,242**
Aka	0	0	0	0	4	0	0	0	0	**4**
Chinese	0	0	7	5	0	0	0	1	0	**13**
Eko/Aka	0	0	57	31	0	0	0	5	0	**93**
Hilltribe	0	0	17	21	35	1	7	5	0	**86**
Kariang/Yang	0	0	1	0	0	0	0	0	0	**1**
Laos	0	0	9	3	0	0	0	0	0	**12**
Lau	0	0	0	0	3	0	0	0	0	**3**
Leesor	0	0	3	0	0	0	0	0	0	**3**
Lue	0	0	2	2	0	0	0	0	0	**4**
Maw/Mong	0	0	1	0	0	0	0	0	0	**1**
Muser/Lahu	0	0	35	18	0	0	0	2	0	**55**
Musur	0	0	0	0	8	0	0	0	0	**8**
ThaiYai	0	0	1	13	0	0	0	0	0	**14**
ThaiYai/Lue	0	0	4	6	0	0	0	2	0	**12**
Thailua	0	0	0	0	1	0	0	0	0	**1**
Thaiyai	0	0	0	0	4	0	0	0	0	**4**
Yao	0	0	3	1	0	0	0	0	0	**4**
Myanmar	0	0	16	7	3	0	0	1	0	**27**
Myanmar/Thailua	0	0	0	0	2	0	0	0	0	**2**
Myanmar ThaiYai	0	0	3	3	0	0	0	0	0	**6**
Other	0	0	1	0	1	0	0	0	0	**2**
Missing	75	1,568	331	603	975	8	38	1,112	952	**5,662**

添付資料 1

英文概念書

Development of the field laboratory system to study systemically the HIV and TB interventions

Title:

Development of the field laboratory system to study systemically the HIV and TB interventions

Background

While HAART (Highly Active Anti-Retroviral Therapy) for HIV patients and World Health Organization (WHO) recommended DOTS strategies for TB control have contributed to reduce the burden of HIV and TB, these strategies are not adequate to eliminate these diseases. Development of tackling co-morbidity of HIV/AIDS and TB is one of the priorities in global health. We need further research and development to identify the breakthrough strategy. We had planned to set up the "Field laboratory (population-based monitoring system with specimen bank)" to combine the international collaborative research to maximize the utilization of the field site in Thailand and Japanese research and development capacity.

For example, Thai NIH has experienced the collaboration in HIV research of Thailand and Japan. Thai Researchers found the HLA-B*3505 allele associated with the nevirapine-induced skin adverse drug reactions in HIV-infected Thai patients [1]. Then, the team with the University Tokyo is now initiating the field trial for the field trial to use the genotype based drug prescription for better HIV treatment and control. Since we have difficulties to treating HIV-infected TB patients due to drug interactions (nevirapine-refampicin) and immune reconstruction syndrome [2], researches can identify personalized biomarkers for treating these cases, which can assist TB control in HIV-infected population.

Therefore, we propose to set up the population-based field laboratory system in Chiang Rai province which has been initiated by Dr. Pathom Sawanpanyalert, director of Thai NIH [3-18].

Objectives:

- to develop the field laboratory system, which composed of (1) population-based field surveillance system of demographics and disease burden, especially HIV and Tuberculosis; and (2) specimen bank of HIV and TB cases and the comparison group to investigate the breakthrough interventions for HIV and TB control.

With this field laboratory system, we will evaluate the primary HIV prevention

(prevention of HIV infection) and secondary HIV prevention (prevention of HIV-infected person from developing morbidity and mortality.

– to evaluate the primary HIV prevention strategies such as provider-initiated HIV testing and counseling (PITC) for TB patients.

– to study the possibility of order-made care for HIV-infected tuberculosis patients to overcome the drug side effects and interactions between Nevirapine and Rifampicin, which has been studied clinically [2], but we need additional samples for immunology and genetics study. Clinical outcome such as pharmacokinetic can be investigated based on various genetic polymorphisms when we collect more number of samples.

Besides of above specific example, we will study the intervention identified by the systematic review and also will open the field laboratory for researchers to initiate the new innovative ideas.

Methodology:

(1) Population database system will be set up with the following the standard of INDEPTH (An International network of HDSS sites involved in demographic and health research in developing countries) network. Prof. Shibuya who has been working at WHO for disease burden monitoring is an expert for this field and will help us to formalize the system [19-23]. Thailand has 13 digit civil registrations system as below which can link the morbidity data, e.g., hospital information and mortality status. We had developed special computer program, named "looklike" to link these information while keeping the data anonymous and confidential.

HIV and TB cases will be ascertained in Chiang Rai province in Thailand. Chiang Rai is located in Northern Thailand and has a population of approximately 1.2 million. We have set the cohort of people living with HIV who registered for day-care center at the hospitals. As for TB, we maintained the TB register which has been active since May 1996. The outcome of the treatment data has also been documented in the register.

The study was reviewed and approved by the Ethical review committee, Ministry of Public Health, Thailand. All subjects have been and will be provided written, informed consent before being screened for study eligibility.

The meaning of 13 digit for Thai Citizen ID

1st digit person type as following

1 = people who got Thai nationality and born since December 17, 1983 and registered within 15 days

2 = people who got Thai nationality and born since December 17, 1983 and registered after 15 days

3 = people who got Thai nationality and already registered at the beginning of system

4 = people who got Thai nationality and did not have name in any household registration January- May 1984

5 = people who got Thai nationality and registered after disappeared from the registration

6 = Alien or small group

7 = the children from the parent who have 1st digit as "6"

8 = Alien who got Thai nationality

2nd – 5th digit	code of register office that the children have name in the household registration (for the new born means birthplace).
6th – 10th digit	the running number of birth certificate book.
11th – 12th digit	the running numbers of birth certificate in each book follows the household registration system.
13th digit	check digit that can calculate by computer to check the correction of 1st – 12th digit this digit can prove the real citizen ID.

(2) Specimen bank will be also trying to follow the standard of Biobank Japan http://www.biobankjp.org Initial target will be HIV-infected people, HIV-positive tuberculosis cases, and HIV-negative tuberculosis cases and normal Thai comparison group.

Patients and Controls

The Ethical review committee, Chiang Rai Hospital, Ministry of Public Health, Thailand, which has the international valid IRB (Institutional Review Board) status was informed and approved this field laboratory system on February 16, 2010.

Patients has been and will be recruited from Chiang Rai Province. All subjects will be provided written, informed consent before being screened for study eligibility.

There are four category of participants, (1) HIV infected people from the people living with HIV group; (2) HIV-positive TB cases; and control group, i.e., (3) HIV-negative TB cases; and (4) normal population.

Control population can be also recruited from the National Health Examination Survey of Thai population during year 2000 stored in Thai NIH.

Biological Specimen Collection and Processing

Preparation of genomic DNA

Venous blood (10 ml) will be taken from patients and controls Genomic DNAs will be prepared from white blood cells by standard methods.

Utilization of the field laboratory and specimen bank

Thai NIH and University of Tokyo have a memorandum of Understanding (MOU), which can be the basis for the organizational arrangement for the international collaborative researches. Series of researches has been conducted by this group [2-9] in addition to the study of Dr. Pathom Sawanpanyalert, when he was Ph.D. student [10-18]. Collaboration with the laboratory scientists, especially genetists [2], pharmacologists [3], bacteriologist [4], and virologists [5-6], has been done and will be further promoted systematically with emphasis for the HIV researchers in Japan and Thailand.

With the collaboration of Mahidol University, we will use the bacterial specimen bank to do DNA fingerprinting of *Mycobacterium tuberculosis* of Thai TB patients. We use standard IS6110-RFLP and also VNTR to compare the fingerprinting pattern [4]

In future, the network will be extended for the other Asian counties, such as Vietnam NIHE(National Institute of Hygiene and Epidemiology) with a similar function as Thai NIH, since they has been setting up the field laboratory system [24].

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添付資料 2

Provider-initiated testing and counseling (PITC) の評価に関する文献的研究と研究計画書

Title:

Assessment of Provider-initiated testing and counseling (PITC) for HIV/AIDS prevention at Tuberculosis Service, Chiang Rai, Thailand.

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Introduction:

UNAIDS and World Health Organization (WHO) recommend tuberculosis (TB) and HIV collaborative activities as one of the core strategies for tuberculosis control, HIV prevention and scaling up of universal access to anti-retrovirus treatment (ART). HIV-testing for tuberculosis patients is listed as one of such collaborative activities, and in HIV high prevalence settings, WHO recommends HIV testing for every tuberculosis patient, primarily as part of clinical management of TB patients.

HIV testing is already well recognized as an essential component of HIV prevention strategy; a number of studies have shown that HIV positive people who have come to know their status have modified their risky behaviour thus preventing further HIV transmission to others. However, studies reporting benefits of HIV testing as intervention for HIV prevention among TB patients are very limited. Since HIV-negative TB patients may easily develop clinical TB again if they become HIV-positive, primary prevention of HIV among HIV-negative TB patients should be considered not only as a rational but a key strategic activity. Needless to

say, as for HIV-positive TB patients, HIV testing can become an effective entry point for secondary prevention of HIV.

It should be noted here that until recently, the so-called Voluntary Counselling and Testing (VCT) was considered as the most ideal method of implementing HIV-testing. As its name indicates, VCT was intended to enable individuals to make informed choice about being testing and cope with his or her result but also provides opportunity for education. However, to date, various factors have been pointed out which potentially hindered the acceptance and access to VCT, such as lack of HIV care and treatment including ARV, access to condoms and treatment of opportunistic infections, stigma and fear of negative reactions to disclosure, gender inequalities, transport difficulties in accessing testing site and fear of being seen at testing site and individual attitudes and perceptions of risk. Indeed, various studies on the effectiveness of VCT have been conducted, but the results are so far inconclusive. In the light of the above circumstances, in 2007, WHO, together with UNAIDS, produced new guidelines for HIV testing. In the report, WHO and UNAIDS state that though they "...strongly support the continued scale-up of client-initiated HIV testing and counselling, (they) recognise the need for additional, innovative and varied approaches", one of which is the so-called provider-initiated testing and counselling (PITC).

Studies on PICT are still quite limited, however, our study[1], conducted in Chiang Rai between June 2000 and January 2002, Thailand, has demonstrated that not only TB patients but spouses of HIV positive TB patients can also benefit from HIV testing. In this study, HIV testing was offered from the provider-side, and thus the study may be considered one of the first attempts of PITC. The results showed that almost half of the spouses of the HIV positive TB patients were HIV negative. We concluded that HIV testing should be regarded as a key opportunity to offer HIV prevention and care for those who need them.

If we could provide evidence of effectiveness of PITC for TB patients, we may then move onto consider implementing PITC to other high-risk populations, such as blood donors and pregnant women[2].

Research questions:

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- This project aims to clarify the following;

1. Coverage of HIV testing for TB patients and for the spouse of patients with TB and HIV co-infection.

2. The situation (frequency and reasons) of HIV sero-conversion as resulting from failure of primary prevention for HIV-negative TB patients.

3. The situation (rate and reasons) of progression to AIDS and deaths as resulting from failure of secondary prevention for HIV-positive TB patients

Objectives:

The objectives of this study are to;

1. describe HIV testing practice of TB patients and their spouses in Thailand.
2. estimate the frequency of HIV sero-conversion among HIV-negative TB patients.
3. examine the risk factors and reasons of HIV sero-conversion among HIV-negative TB patients.

Subsidiary Objectives*

4. examine the AIDS progression and survival among HIV-positive TB patients and their risk factors.

Method

Setting:

Chiang Rai is the northernmost province of Thailand, where HIV epidemic occurred very early in the 1990s. Immediately after HIV epidemic broke out, HIV-positive TB cases rapidly increased[3] and surveillance system for TB/HIV was set up, which later became the official TB/ registry database system under the responsibility of Chiang Rai Provincial Health Office and the TB/HIV Research Project[4].

Study Population

Population-based retrospective cohort of TB patients from the TB registry of Chiang Rai Province will be constructed. Between the period of 1995 and 2008, there is a total of 28,945 registry of TB case episodes. Excluding the 2,508 Non –Thai nationals, there are 10,928

[3] Yanai H, Uthaivoravit W, Panich V, Sawanpanyalert P, Chaimanee B, Akarasewi P, Limpakarnjanarat K, Nieburg P, Mastro TD. Rapid Increase in HIV-Related Tuberculosis, Chiang Rai, Thailand, 1990-1994. *AIDS* 1996; 10:527-531

[4] TB/HIV Research Project: a collaborative research project between the Ministry of Public Health, Thailand and the Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, which began in 1995.

HIV-negative TB cases and 10,327 HIV-positive TB cases, and 5,182 HIV-unknown cases. Of them, 4,902 HIV-negative TB cases and 3,524 HIV-positive TB cases have CID (citizen ID card). These populations will be the primary target of our study. It should be noted that CID coverage of TB registry is recently increasing; for example, current estimates indicate that more than 97% of Thai lowlanders hold CID. However, HIV-unknown cases will be examined to assess potential biases, although the proportion of HIV unknown reduces the proportion recently only 7.2% in 2008. There are additional 7,705 TB cases registered between 1985-1994. Quality of data and HIV status information will be checked

Outcome Measures and ascertainment strategies:

We will have a separate file to obtain primary prevention information (follow-up HIV status for HIV-negative TB patients) by linkage with other databases, including Hospital Database, HIV/AIDS surveillance database, and Mortality Database. Since this process will give us the opportunity to examine data on secondary prevention (AIDS occurrence and mortality status), we will also attempt to investigate secondary prevention, as indicated above as subsidiary objective. Contacts through health systems and mail will be considered in the subset of cohort members, especially for those with very rich independent variable information.

Independent variables

Independent variables available for TB registry databases are listed in the appendix. In addition, data from questionnaire asking about health seeking behaviours are available for sputum smear-positive TB patients from 1996. Information on drug resistance is also available from 1996. Very detailed social and clinical information on those who have joined the previous household contact study already exist. It may thus be necessary to follow-up these individuals more actively. Collaboration with the Thai NIH will be considered if we are to examine the possibility of survival outcome of human genetic polymorphisms, since the Thai NIH has already extensively examined Single Nucleotide polymorphism (SNP) patterns of nearly 1,000 TB patients from Chiang Rai. (Number of HIV converter, which may have SNPs information may be too small, but association with mortality outcome can be investigated).

Supplemental Clinical and Qualitative information

It is not possible to perfectly ascertain the occurance, but the process will be examined to assess the level of underestimation. For example, of which database detected how many cases of outcomes (HIV status or AIDS occurrence or Mortality) will be recorded. Possible reasons behind "failures of preventions" will be investigated by quantitative analysis and also

qualitative case studies. Clinical factors will be investigated through clinical case investigations of particular cases, e.g., those who became HIV-positive TB cases but were HIV-negative TB cases before. If the patients have survived, interviews will be conducted to investigate further reasons.

In addition, we will review the national guidelines on TB/HIV and interview national policy makers of TB and AIDS programs. We will also identify HIV preventions interventions through literature review and stakeholder analysis

Ethical Considerations

We will obtain approval from the ethic committee of Chiang Rai Regional Hospital, which is registered to the Institutional Review Board, Chiang Rai Regional Hospital, Ministry of Public Health, Thailand, which has the formal registration no. of international IRB body. Data management including the data security will be assured (NOTE before submission: any standard now in Thailand?) CID, Name, and other identifier will be changed to the other confidential coding system without losing the uniqueness when doing analysis to avoid the violation of confidentiality. .

Literature Review how the concept of PITC come out and current status:

Voluntary Counselling and Testing (VCT) supposedly enables individuals to make informed choice about being testing and cope with his or her result but also provides opportunity for education. It is thought that irrespective of the test result, VCT offers chance for the individual to access various information about HIV/AIDS which could potentially stimulate behaviour change. Effect of VCT, however, often varies by research design and population: Higgins et al (1991), in their analysis of VCT data published between 1986-1990, concluded that while the effect of VCT in changing risky behaviour was evident among discordant heterosexual couples, it was not so conclusive among men who have sex with men and injecting drug users. Another review of VCT studies from 1990-1996 showed that the evidence for most consistent behaviour change was found among discordant couples (Wolitski et al 1997). Weinhardt et al (1999), in their meta-analysis of VCT efficacy data, also concluded that VCT was an effective intervention in moderating risky behaviour of persons infected with HIV. It should here be noted that the aforementioned reviews mainly examined studies conducted in developed countries in North America and Europe. The picture can be substantially different in resource-constrained settings, where establishing VCT, a highly labour-intensive service, may strain the already weak health care infrastructure. However, Denison et al (2008), in their recent meta-analysis of VCT studies in developing countries