ANNUAL REPORT 2013

TUBERCULOSIS & CHEST SERVICE

OF THE

DEPARTMENT OF HEALTH

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PREFACE

In 2013, 9 million people became ill with tuberculosis (TB) worldwide, at an estimated incidence of 126 cases per 100,000 population. There were marked differences in TB rates between high and low burden countries. The estimated TB incidence was as high as 860 cases per 100 000 population in South Africa. In the United States, the incidence rate of TB dropped to 3.0 cases per 100,000 population, with 64.6% of tuberculosis cases occurring among foreign-born persons at an incidence rate 13 times greater than that of US-born persons. With 1.5 million estimated deaths in the year, TB ranked as the second leading cause of death from a single infectious agent, after the human immunodeficiency virus (HIV). Over 95% of TB deaths occur in low- and middle-income countries. TB is also the leading killer of HIV-positive people, causing 25% of all HIV-related deaths. Effective anti-TB treatment has been available for half a century. However, with the long course of treatment required to cure the disease, non-adherence and emergence of drug resistance were encountered since the earliest days of chemotherapy. Globally, 480,000 cases of multidrug-resistant TB (MDR-TB) with bacillary resistance to at least isoniazid and rifampicin were estimated to have emerged in 2013, involving 3.5% of new TB cases and 20.5% of previously treated cases. There were as many as 210,000 deaths from MDR-TB. While MDR-TB was present in virtually all countries surveyed by the World Health Organization, the MDR-TB burden was particularly high in 27 countries, which together accounted for over 80% of MDR-TB cases. An estimated 9% of MDR-TB cases were extensively drug-resistant TB (XDR-TB), defined as MDR-TB with additional resistance to fluoroquinolones and one or more of the three injectable drugs -- kanamycin, amikacin and capreomycin. XDR-TB carries a very poor prognosis with high treatment failure and mortality rates. Significant epidemiological clustering was also observed, probably reflecting the prolonged period of infectiousness with ineffective treatment, especially in the nosocomial settings.

With the effective implementation of directly observed treatment short course (DOTS) and DOTS-plus in Hong Kong, the overall TB situation and drug resistance problem have been brought under progressive control. The notification rate of TB decreased from a peak of 697 per 100,000 in 1952 to 67.9 per 100,000 in 2012. Fluctuations did occur from time to time, possibly related to changes in attendance and/ or notification patterns. In 2013, the TB notification further decreased to 64.9 per 100,000. However, with the ageing of the TB epidemic, 38.3% of the TB patients are aged 65 or above, likely reflecting both the high past TB burden and waning immunity/ increasing co-morbidities with age. Despite a smaller elderly population among the males, 43.5% of male TB patients were aged 65 or above, while the corresponding figure for females was 29.8%. The higher smoking prevalence in our male population likely accounted for a substantial portion of the gender disparity, but multiple other factors could also be involved. Bacillary resistance rates to the

first-line TB drugs were also on a declining trend, with only about 1% of all culture-confirmed TB being MDR-TB and about 10% of the MDR-TB being XDR-TB. However, the high rates of drug-resistant TB in some neighbouring areas remain an important source of concern, especially in view of the increasingly frequent population movement. There was also evidence of increased clustering of both MDR-TB and XDR-TB locally from a study published in 2013,[1] highlighting a need to strengthen the management and control of drug-resistant TB in Hong Kong.

After the updating of the in-service TB contact screening guidelines in late 2012, symptom surveillance and chest x-ray examination continued to be used as screening tools for active TB disease in 2013. Targeted screening and treatment of latent TB infection were offered predominantly to four risk groups, including household contacts of smear-positive TB, silicosis patients, people living with HIV or patients with immune-mediated inflammatory diseases to be started on anti-tumour necrosis factor-α or other biologics. Tuberculin skin test remained the regular diagnostic tool for latent TB infection. Interferon gamma release assays were used selectively only in situations where interference by previous BCG vaccination was considered likely to impact the overall cost-effectiveness of such screening.

Collaborative efforts continued to be made in the evaluation of new diagnostic tools and drugs/ regimens to meet the new challenges in TB control. Conventional culture for TB takes a long turn over time of weeks to months, and this may delay the diagnosis and affect the management/ public health control for some TB cases, especially for those with more extensive forms of drug resistance. New molecular tools allow rapid diagnosis of TB and early detection of drug resistance. To facilitate the proper management of our patients, real-time DNA amplification assays for sputum/ other clinical specimens for *Mycobacterium tuberculosis* complex were employed on a highly selective basis to allow rapid diagnosis of TB, especially among sputum smear-negative patients. They were also used to allow rapid differentiation of TB from non-tuberculous mycobacteria among smear-positive patients with atypical clinical and/ or radiological presentation. In 2013, there was increased utilization of rapid molecular diagnostic tools for the detection of MDR- and XDR-TB to facilitate the timely implementation of effective treatment and public health measures. Genotypic tests for rifampicin, isoniazid, fluoroquinolone and second-line injectable resistance were also performed where appropriate.

Controlling the infection at source by effective treatment remains the key strategy in TB control, even for drug-resistant TB. Apart from the more established classes of second-line drugs, linezolid was increasingly utilized to reinforce the definitive treatment regimen for difficult MDR-TB and XDR-TB cases. Statutory isolation order was also utilized in

highly selected cases to maximize case-holding and minimize community transmission risk. Statutory provision has been made for a health officer to prohibit, by order in writing, an XDR-TB patient from leaving Hong Kong after inclusion of XDR-TB as one of the specified diseases under the Prevention and Control of Disease Regulation (CAP 599A) of the Prevention and Control of Disease Ordinance (CAP 599) in 2008. Orders continued to be made in 2013 to prohibit all known cases of XDR-TB patients from leaving Hong Kong, and XDR-TB patients intercepted at the border would be sent to an infectious disease hospital or other designated places for assessment.

In line with our previous involvement in the milestone Hong Kong Chest Service/ British Medical Research Council TB trials that helped to establish the standard 6-month short-course regimen, the Hong Kong Tuberculosis Service also joined the Tuberculosis Trial Consortium (TBTC) in 2009 as one of the new study sites for the development and evaluation of new TB treatment regimens. In 2013, recruitment into TBTC study 29x (a phase II clinical trial on the use of different daily doses of rifapentine to substitute for rifampicin in the intensive phase regimen for the treatment of active TB) was completed. On the other hand, another phase IV clinical trial (TBTC study 33) comparing self-administered therapy against directly observed therapy among patients undergoing treatment with the twelve weekly doses of isoniazid and rifapentine for latent TB infection was rolled out. It is hoped that some of these pilot and research activities will translate into effective, safe, and affordable tools suitable for large-scale implementation to control, and ultimately eliminate, this major killer in the history of mankind.

In 2013, the Tuberculosis and Chest Service (TB&CS) continued to take an active part in the planning and development of the Communicable Disease Information System (CDIS) by the Centre for Health Protection of the Department of Health. The CDIS would incorporate state-of-the-art technologies such as automated electronic data transfer, geographic information system, advanced statistical packages and functions to support investigation and sharing of information, and it would allow efficient data capture from diverse sources, followed by accurate analysis and timely dissemination of communicable disease alerts and actionable information to the stakeholders as well as the general public. In line with the government’s overall web content accessibility standard, which conformed to the World Wide Web Consortium's (W3C) internationally recognised Web Content Accessibility Guidelines 2.0 to the level AA (Double-A conformance), the website of TB&CS was also revamped to allow access by most people with special needs.

Staff members of the TB&CS continued to take an active part in various local and international conferences on TB and other lung diseases. A number of scientific papers were published by the TB&CS in collaboration with other investigators/ authors from different

sectors in 2013.[1-16] Besides contributing to the body of scientific literature, they also helped to provide some of the necessary data to inform our local TB control programme as well as the management of various respiratory diseases. An exhibition was held by the Hong Kong Tuberculosis, Chest and Heart Diseases Association to commemorate World TB day at Citywalk, Yeung Uk Road, Tsuen Wan, New Territories from 23 to 24 March 2013, with the support from the Department of Health and the Hospital Authority. The exhibition promoted public awareness on TB and helped to mobilize community support in the ongoing efforts on the control of TB in Hong Kong.

During the year, there were a total of 85,437 attendees in TB&CS as compared to 86,577 in 2012, and the total attendance was 722,504 in comparison with 715,005 in 2012. Among the 85,437 patients, 20,644 patients were new attendants, of whom 31.7% were found free of any chest diseases. The diagnoses among other new patients included active pulmonary tuberculosis (10.6%), active tuberculosis of other forms (4.3%), inactive tuberculosis (4.4%), bronchitis not specified as acute or chronic (10.9%), acute respiratory infection (4.8%), pneumonia (0.2%), malignant neoplasm of trachea and bronchus (1.2%), bronchiectasis (1.4%), asthma (0.7%) and emphysema (0.2%). Among all the attendance, 2,823 hospital admissions were arranged.

Part 1: Tuberculosis

The number of tuberculosis notifications in 2013 was 4,664, making a notification rate of 64.9 per 100,000 population. The corresponding figures in 2012 were 4,858 and 67.9 respectively.

The number of tuberculosis deaths was 178 in 2013 as compared with 199 in 2012. The corresponding tuberculosis mortality rates were 2.5 and 2.8 per 100,000 population in 2013 and 2012.

Tuberculosis stayed outside the top ten causes of death in 2013. Tuberculosis deaths accounted for 0.4% of the total registered deaths in Hong Kong. The average age of tuberculosis deaths was 74.1.

In 2013, 99.1% of the newborns were given direct BCG vaccination at birth. The BCG revaccination programme for primary school children was stopped since the school year starting from September 2000.

HIV testing was done among tuberculosis patients of the TB&CS on a voluntary

basis after counselling and consent. The positive rate remained low. On the other hand, unlinked anonymous screening (UAS) was no longer considered necessary and surveillance of HIV among TB patients mainly depends on voluntary HIV testing.

Part 2: Pneumoconiosis

The Pneumoconiosis (Compensation) Ordinance was first introduced in 1980 for compensation of workers who acquired pneumoconiosis as a result of occupational exposure to silica and asbestos dusts. Compensation was paid out in the form of a lump sum according to the assessed degree of incapacity and the expected degree of further deterioration. The Ordinance was amended in 1993 to replace the lump sum payment with monthly payment. Reassessment at 2-yearly interval was also introduced at the same time to update the degree of incapacity for adjustment of the monthly compensation. Previously compensated post-1981 pneumoconiotics could apply for reassessment for compensation for additional incapacity. Further amendments were made in 1996. A flat-rate compensation for pain, suffering, and loss of amenities was payable to all post-1981 pneumoconiotics who had applied for reassessment under the revised scheme, irrespective of whether there was additional degree of incapacity over previous lump-sum compensation. The 1996 amendment also allowed the Pneumoconiosis Medical Board to take other tests into consideration in adjusting the degree of incapacity as determined by FVC test by a maximum of 5%. The ex-gratia payment scheme for pre-1981 pneumoconiotics was also reviewed. On top of a flat-rate of monthly payment, additional payments were introduced for those in need of constant care, oxygen and medical appliances. In 2008, the Pneumoconiosis (Compensation) Ordinance was amended to cover compensation for mesothelioma and became the Pneumoconiosis and Mesothelioma (Compensation) Ordinance.

A new set of reference values for spirometry were published for the local population in 2006. A calibration study was subsequently performed in the Pneumoconiosis Clinic, comparing the new reference values with those published in 1982 among normal construction and quarry workers as well as silicosis patients. The new set of reference values was shown to reflect the lung function status of normal heavy manual workers better than the older set. Because of such finding, the new set of reference values was adopted for compensation assessment since 2009.

The Pneumoconiosis Clinic continued to provide a full range of outpatient services to patients with suspected or confirmed pneumoconiosis. These services covered not only the assessment aspect, but also addressed the patients' diversified needs in terms of

treatment, prevention and rehabilitation. The attendance at the clinic was 6,432 in 2013 compared with 6,977 in 2012. In 2013, 156 new cases of pneumoconiosis or mesothelioma were registered in the TB&CS, and 70 new cases (including 51 cases of silicosis, 2 cases of asbestosis and 17 cases of mesothelioma) were confirmed by the Pneumoconiosis Medical Board. Up to the end of 2013, a total of 4,744 patients had been compensated.

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Part 1

TUBERCULOSIS

Part 1 - Tuberculosis: Contents

Appendix 1

TB Notifications & Death Rate of Tuberculosis (All Forms)
1947 - 2013

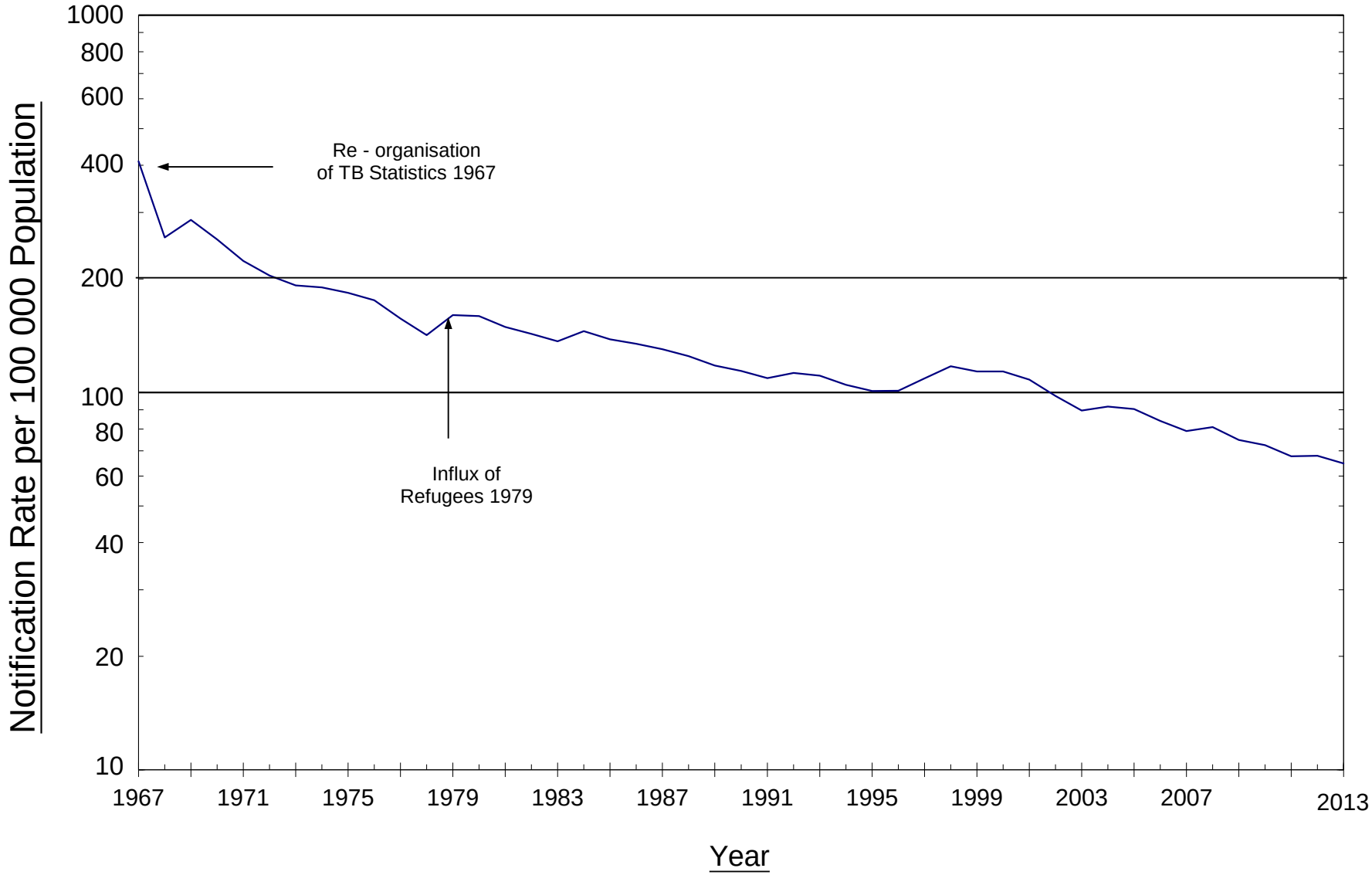
Year	TB Notifications			Notification Rate per 100,000 Pop	TB Deaths	Death Rate per 100,000 Pop	Ratio (Notifications/ Deaths)	Deaths ---------- x 100% Notifications
1947	4855			277.4	1861	106.3	2.61	38.33
1948	6279			348.8	1961	108.9	3.20	31.23
1949	7510			404.4	2611	140.6	2.88	34.77
1950	9067			405.3	3263	145.9	2.78	35.99
1951	13886			689.0	4190	207.9	3.31	30.17
1952	14821			697.2	3573	168.1	4.15	24.11
1953	11900			530.7	2939	131.1	4.05	24.70
1954	12508			528.9	2876	121.6	4.35	22.99
1955	14148			568.1	2810	112.8	5.03	19.86
1956	12155			464.9	2629	100.6	4.62	21.63
1957	13665			499.4	2675	97.8	5.11	19.58
1958	13485			472.5	2302	80.7	5.86	17.07
1959	14302			482.0	2178	73.4	6.57	15.23
1960	12425			405.5	2085	68.0	5.96	16.78
1961	12584			397.2	1907	60.2	6.60	15.15
1962	14263			431.5	1881	56.9	7.58	13.19
1963	13031			380.9	1762	51.5	7.40	13.52
1964	12557			358.3	1441	41.1	8.71	11.48
1965	9927			275.9	1278	35.5	7.77	12.87
1966	11427			314.8	1515	41.7	7.54	13.26
1967	15253			409.7	1493	40.1	10.22	9.79
1968	9792			257.5	1483	39.0	6.60	15.15
1969	11072			286.5	1470	38.0	7.53	13.28
1970	10077			254.5	1436	36.3	7.02	14.25
1971	9028			223.2	1250	30.9	7.22	13.85
1972	8420			204.2	1312	31.8	6.42	15.58
1973	8152			192.2	1154	27.2	7.06	14.16
1974	8320			190.0	974	22.2	8.54	11.71
1975	8192			183.6	646	14.5	12.68	7.89
1976	7928			175.5	568	12.6	13.96	7.16
1977	7191			156.9	532	11.6	13.52	7.40
1978	6623			141.9	420	9.0	15.77	6.34
1979	7907	(498) *		160.4	523	10.6	15.12	6.61
1980	8065	(712)		159.3	551	10.9	14.64	6.83
1981	7729	(254)		149.1	489	9.4	15.81	6.33
1982	7527	(112)		143.0	454	8.6	16.58	6.03
1983	7301	(73)		136.6	446	8.3	16.37	6.11
1984	7843	(69)		145.3	420	7.8	18.67	5.36
1985	7545	(59)	580 #	138.3	409	7.5	18.45	5.42
1986	7432	(46)	544	134.5	407	7.4	18.26	5.48
1987	7269	(41)	495	130.3	405	7.3	17.95	5.57
1988	7021	(121)	433	124.8	388	6.9	18.10	5.53
1989	6704	(226)	387	117.9	403	7.1	16.64	6.01
1990	6510	(288)	341	114.1	382	6.7	17.04	5.87
1991	6283	(281)	293	109.2	409	7.1	15.36	6.51
1992	6534	(309)	264	112.6	410	7.1	15.94	6.27
1993	6537	(264)	89	110.8	396	6.7	16.51	6.06
1994	6319	(230)	87	104.7	409	6.8	15.45	6.47
1995	6212	(175)	102	100.9	418	6.8	14.86	6.73
1996	6501	(88)	162	101.0	292	4.5	22.26	4.49
1997	7072	(34)	156	109.0	252	3.9	28.06	3.56
1998	7673	(7)	169	117.3	270	4.1	28.42	3.52
1999	7512	(5)	166	113.7	312	4.7	24.08	4.15
2000	7578	(7)	152	113.7	299	4.5	25.34	3.95
2001	7262	(0)	192	108.2	311	4.6	23.35	4.28
2002	6602	(0)	186	97.9	267	4.0	24.73	4.04
2003	6024	(0)	177	89.5	275	4.1	21.91	4.57
2004	6226	(0)	110	91.8	286	4.2	21.77	4.59
2005	6160	(0)	77	90.4	271	4.0	22.73	4.40
2006	5766	(0)	58	84.1	294	4.3	19.61	5.10
2007	5463	(0)	56	79.0	231	3.3	23.65	4.23
2008	5635	(0)	67	81.0	229	3.3	24.61	4.06
2009	5193	(0)	68	74.5	204	2.9	25.46	3.93
2010	5093	(0)	80	72.5	191	2.7	26.66	3.75
2011	4794	(0)	81	67.8	187	2.6	25.64	3.90
2012	4858	(0)	100	67.9	199	2.8	24.41	4.10
2013	4664	(0)	92	64.9	178	2.5	26.20	3.82

* Figures in brackets denote the number of Vietnamese refugees included.

\# Figures in this column denote the number of Chinese immigrants staying in Hong Kong for less than 7 years.

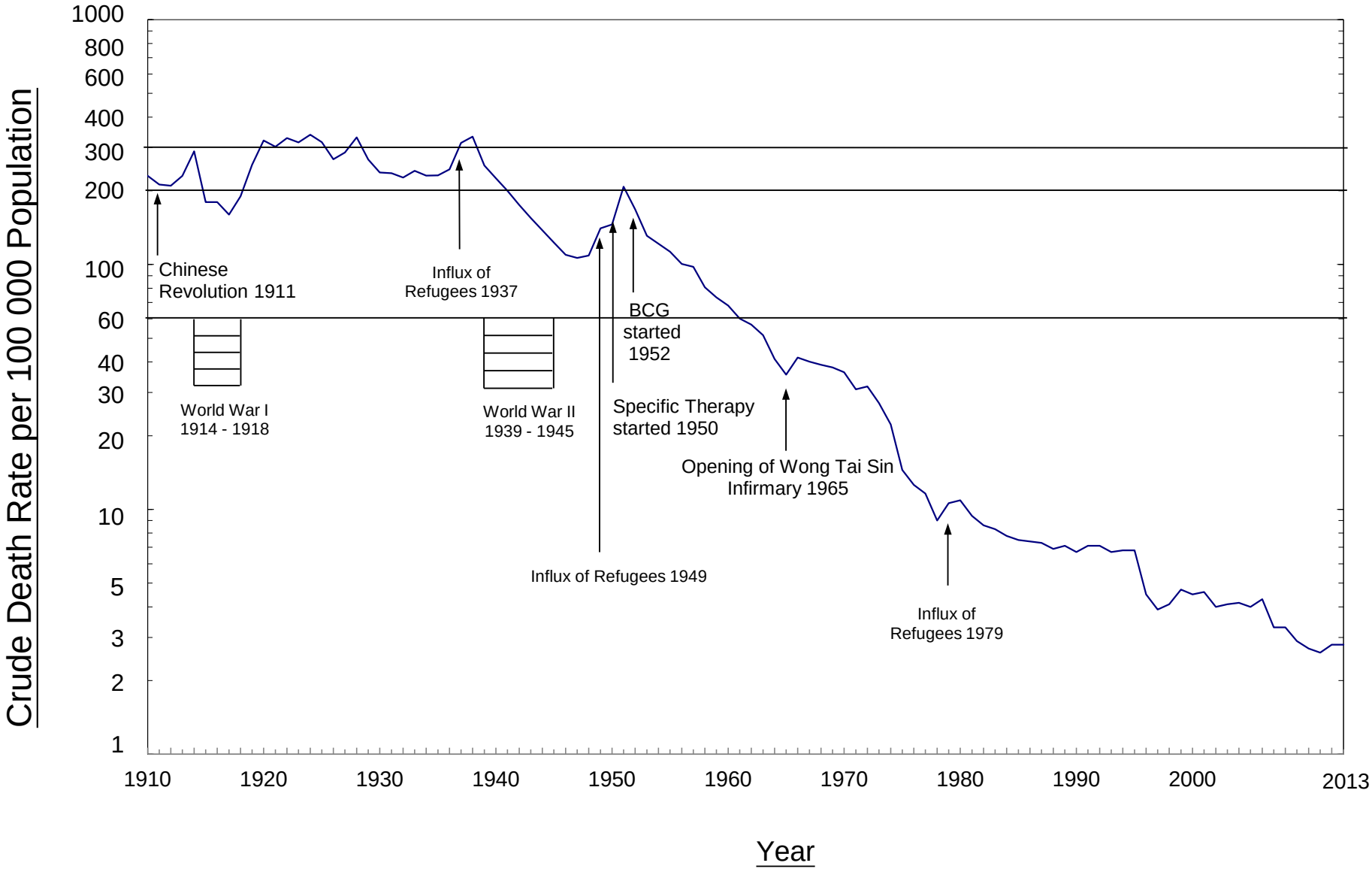
Appendix 2

TB Notification Rate (All Forms) 1967-2013



Appendix 3

Crude Death Rate due to Tuberculosis (All Forms) 1910-2013



Appendix 4 (a)

Tuberculosis Notifications (All Forms) & Rate by Age & Sex 2013

Age Group	Tuberculosis Notifications (All Forms)			Tuberculosis Notifications Rate (per 100,000 population)		
	Male	Female	Total	Male	Female	Total
Under 1	1	0	1	2.97	0.80	1.92
1	0	0	0			
2	1	1	2			
3	1	0	1			
4	1	0	1			
5-9	2	3	5	1.56	2.50	2.01
10-14	12	11	23	8.05	7.88	7.97
15-19	82	56	138	39.42	28.53	34.13
20-24	115	85	200	50.80	36.84	43.75
25-29	96	168	264	43.28	56.80	51.00
30-34	105	178	283	45.28	51.86	49.21
35-39	112	149	261	48.80	45.02	46.57
40-44	124	134	258	51.71	39.56	44.60
45-49	174	111	285	64.21	32.85	46.81
50-54	235	103	338	74.96	30.20	51.63
55-59	280	141	421	99.54	48.98	73.96
60-64	302	94	396	137.27	42.13	89.37
65-69	227	86	313	152.55	58.74	106.03
70-74	226	66	292	206.20	63.65	136.90
75-79	288	106	394	286.28	96.45	187.17
80-84	250	99	349	359.71	111.99	221.03
85 & over	272	167	439	573.84	171.81	303.60
Total	**2906**	**1758**	**4664**	**87.25**	**45.58**	**64.89**

Appendix 4 (b)

Pulmonary TB Notifications by Age & Sex 2013**

Age Group	Pulmonary TB			Bacteriologically * Positive Pulmonary TB			Smear Positive Pulmonary TB		
	M	F	T	M	F	T	M	F	T
Under 1	0	0	0	0	0	0	0	0	0
1	0	1	1	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5-9	1	1	2	0	0	0	0	0	0
10-14	8	9	17	7	6	13	4	4	8
15-19	70	49	119	46	36	82	22	21	43
20-24	95	70	165	61	51	112	27	29	56
25-29	71	128	199	43	89	132	22	44	66
30-34	90	120	210	50	73	123	24	48	72
35-39	95	106	201	61	68	129	38	39	77
40-44	103	85	188	73	59	132	54	31	85
45-49	154	68	222	106	50	156	61	27	88
50-54	198	62	260	146	43	189	102	19	121
55-59	251	91	342	186	64	250	109	36	145
60-64	253	67	320	194	44	238	111	19	130
65-69	197	59	256	151	42	193	83	18	101
70-74	198	49	247	162	36	198	90	17	107
75-79	246	74	320	201	51	252	95	22	117
80-84	222	78	300	184	59	243	99	22	121
85 & over	230	124	354	197	101	298	83	37	120
Total	**2482**	**1241**	**3723**	**1868**	**872**	**2740**	**1024**	**433**	**1457**

** Pulmonary TB with or without extrapulmonary TB

* Either smear or culture positive

Appendix 4(c)

Rate of Pulmonary TB Notifications by Age & Sex 2013**

(Rate per 100,000 Population)

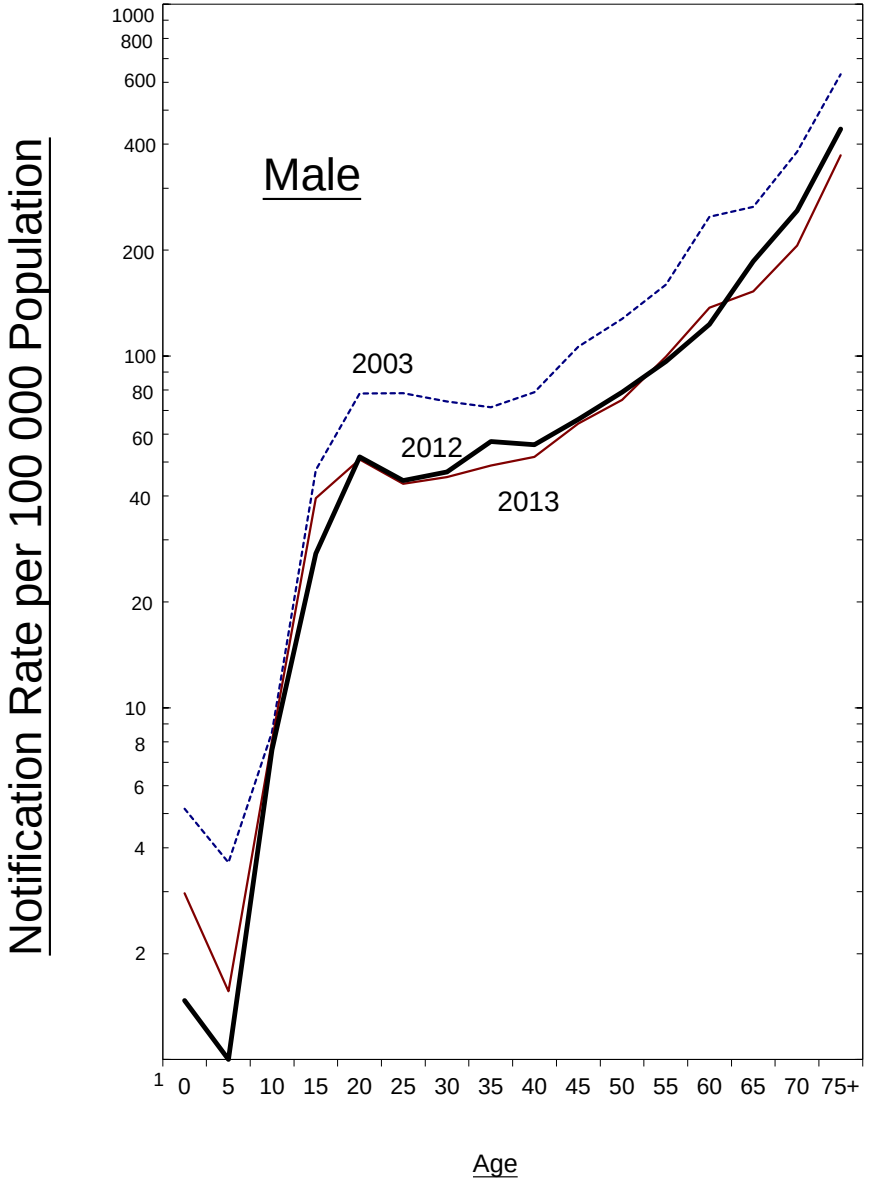
Age Group	Pulmonary TB			Bacteriologically * Positive Pulmonary TB			Smear Positive Pulmonary TB		
	M	F	T	M	F	T	M	F	T
0-4	0.0	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
10-14	5.4	6.4	5.9	4.7	4.3	4.5	2.7	2.9	2.8
15-19	33.7	25.0	29.4	22.1	18.3	20.3	10.6	10.7	10.6
20-24	42.0	30.3	36.1	26.9	22.1	24.5	11.9	12.6	12.3
25-29	32.0	43.3	38.4	19.4	30.1	25.5	9.9	14.9	12.8
30-34	38.8	35.0	36.5	21.6	21.3	21.4	10.3	14.0	12.5
35-39	41.4	32.0	35.9	26.6	20.5	23.0	16.6	11.8	13.7
40-44	43.0	25.1	32.5	30.4	17.4	22.8	22.5	9.2	14.7
45-49	56.8	20.1	36.5	39.1	14.8	25.6	22.5	8.0	14.5
50-54	63.2	18.2	39.7	46.6	12.6	28.9	32.5	5.6	18.5
55-59	89.2	31.6	60.1	66.1	22.2	43.9	38.7	12.5	25.5
60-64	115.0	30.0	72.2	88.2	19.7	53.7	50.5	8.5	29.3
65-69	132.4	40.3	86.7	101.5	28.7	65.4	55.8	12.3	34.2
70-74	180.7	47.3	115.8	147.8	34.7	92.8	82.1	16.4	50.2
75-79	244.5	67.3	152.0	199.8	46.4	119.7	94.4	20.0	55.6
80-84	319.4	88.2	190.0	264.7	66.7	153.9	142.4	24.9	76.6
85 & over	485.2	127.6	244.8	415.6	103.9	206.1	175.1	38.1	83.0
Total	**74.5**	**32.2**	**51.8**	**56.1**	**22.6**	**38.1**	**30.7**	**11.2**	**20.3**

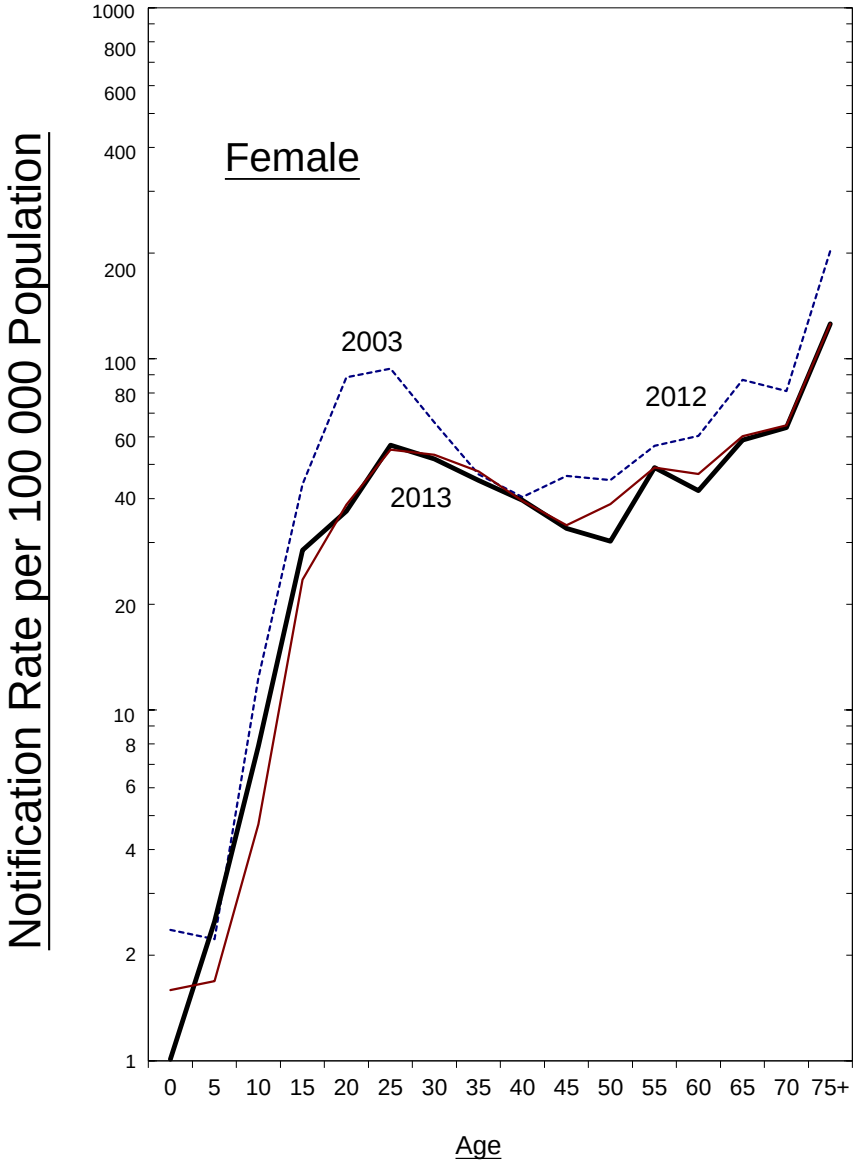
** Pulmonary TB with or without extrapulmonary TB

* Either smear or culture positive

Appendix 5

TB Notification Rate by Age & Sex 2003, 2012 & 2013





Appendix 6

Notifications of Tuberculosis by Type by Age & Sex 2013

Age Group	Pulmonary only #			Miliary			Meninges/ CNS			Bones & Joints			Others		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Under 1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
3	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
5-9	1	1	2	-	-	-	-	-	-	-	-	-	1	2	3
10-14	7	9	16	-	-	-	-	-	-	1	-	1	4	2	6
15-19	59	45	104	-	-	-	-	-	-	1	1	2	22	10	32
20-24	88	67	155	-	-	-	-	1	1	1	-	1	26	17	43
25-29	66	109	175	-	1	1	-	1	1	1	2	3	29	55	84
30-34	77	110	187	-	-	-	1	1	2	1	2	3	26	65	91
35-39	86	97	183	-	-	-	1	-	1	1	3	4	24	49	73
40-44	99	73	172	-	1	1	1	1	2	3	1	4	21	58	79
45-49	142	59	201	1	2	3	2	2	4	3	3	6	26	45	71
50-54	184	55	239	2	1	3	-	4	4	5	5	10	44	38	82
55-59	235	80	315	2	-	2	-	1	1	5	2	7	38	58	96
60-64	231	57	288	1	-	1	2	-	2	7	-	7	61	37	98
65-69	178	55	233	2	-	2	1	-	1	5	7	12	41	24	65
70-74	184	45	229	3	1	4	1	1	2	1	3	4	37	16	53
75-79	232	64	296	1	3	4	-	1	1	9	4	13	46	34	80
80-84	205	73	278	4	-	4	2	-	2	3	3	6	36	23	59
85 & over	215	116	331	-	2	2	-	2	2	2	4	6	55	43	98
Total	2289	1116	3405	16	11	27 (a)	12	15	27 (b)	51	40	91 (c)	538	576	1114 (d)*

* Including

TB lymph node	479
TB urogenital system	62
TB peritonitis, intestines, mesenteric, appendicitis	103
TB pleuritis, pleural effusion	383
TB laryngitis	12
TB skin	38
Unspecified	37

(Note: some cases have more than one site of extrapulmonary TB)

(a) All miliary TB cases has coexisting pulmonary TB; also include 4 cases with coexisting TB of other extrapulmonary sites.

(b) Including 7 cases with coexisting pulmonary TB; also include 1 case with coexisting pulmonary TB and TB of other extrapulmonary sites.

(c) Including 13 cases with coexisting pulmonary TB; also include 2 cases with coexisting pulmonary TB and TB of other extrapulmonary sites, and 1 case with coexisting TB of other extrapulmonary sites.

(d) Including 268 cases with coexisting pulmonary TB.

Pulmonary TB only, without extrapulmonary site involvement

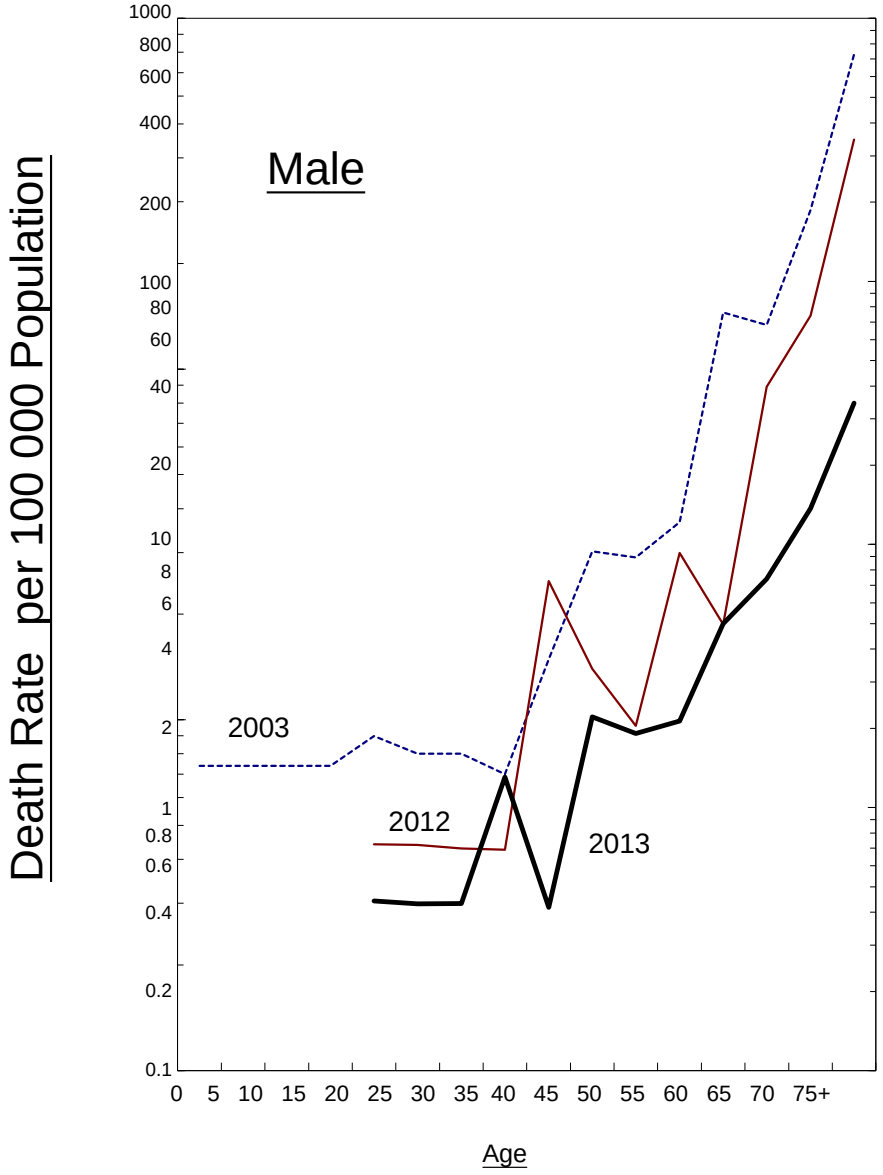
Appendix 7

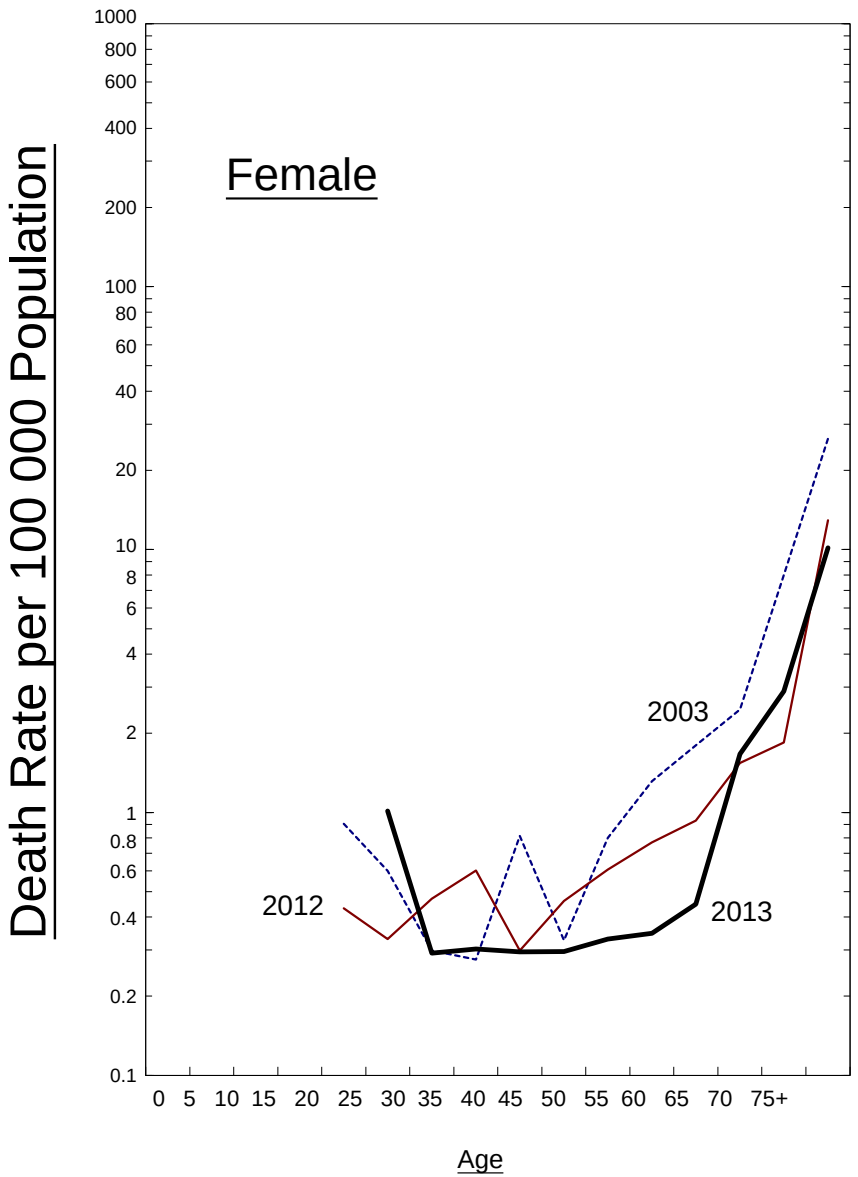
TB Death (All Forms) & Death Rate by Age & Sex 2013

Age Group	Tuberculosis Death (All Forms)			Death Rate (per 100,000 population)		
	Male	Female	Total	Male	Female	Total
Under 1	0	0	0	0.00	0.00	0.00
1	0	0	0			
2	0	0	0			
3	0	0	0			
4	0	0	0			
5-9	0	0	0	0.00	0.00	0.00
10-14	0	0	0	0.00	0.00	0.00
15-19	0	0	0	0.00	0.00	0.00
20-24	1	0	1	0.44	0.00	0.22
25-29	0	3	3	0.00	1.01	0.58
30-34	1	1	2	0.43	0.29	0.35
35-39	3	1	4	1.31	0.30	0.71
40-44	1	1	2	0.42	0.30	0.35
45-49	6	1	7	2.21	0.30	1.15
50-54	6	0	6	1.91	0.00	0.92
55-59	6	1	7	2.13	0.35	1.23
60-64	11	1	12	5.00	0.45	2.71
65-69	11	0	11	7.39	0.00	3.73
70-74	15	3	18	13.69	2.89	8.44
75-79	14	9	23	13.92	8.19	10.93
80-84	22	6	28	31.65	6.79	17.73
85 & over	39	15	54	82.28	15.43	37.34
Total	**136**	**42**	**178**	4.08	1.09	2.477

Appendix 8

TB Mortality Rate by Age & Sex 2003, 2012 & 2013





Appendix 9

TB Deaths by Type by Age & Sex 2013

Age Group	Pulmonary only #			Miliary			Meninges			Bones & Joints			Others		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Under 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	2	2	-	1	1	-	-	-	-	-	-	-	1	1
30-34	-	1	1	1	-	1	-	-	-	-	-	-	-	-	-
35-39	1	-	1	1	-	1	1	-	1	-	-	-	-	1	1
40-44	0	1	1	1	-	1	-	-	-	-	-	-	-	-	-
45-49	6	-	6	-	-	-	-	-	-	-	-	-	-	-	-
50-54	4	-	4	2	-	2	-	-	-	-	-	-	-	-	-
55-59	6	-	6	-	1	1	-	-	-	-	-	-	-	-	-
60-64	7	1	8	3	-	3	1	-	1	-	-	-	-	-	-
65-69	9	-	9	1	-	1	-	-	-	-	-	-	1	-	1
70-74	11	3	14	3	-	3	1	-	1	-	-	-	-	-	-
75-79	12	5	17	2	4	6	-	-	-	-	-	-	-	-	-
80-84	20	4	24	2	1	3	-	-	-	-	-	-	-	1	1
85 & over	38	14	52	1	-	1	-	-	-	-	-	-	-	1	1
Total	115	31	146	17	7	24	3	0	3	0	0	0	1	4	5 *

* Breakdown of Deaths from other forms of TB:-

	Number
Tuberculosis of genitourinary system	1
Tuberculosis of intestines, peritoneum & mesenteric glands	3
Sequelae of respiratory and unspecified tuberculosis	1
Total	5

\# Pulmonary TB only, without extrapulmonary site involvement.

Appendix 10

1950 - 2013

Year	% of TB Death below 5 years	% of TB Death below 1 year	Infant Mort. Rate from TB per 1,000 Registered Live Births	% of TB Deaths among Total Registered Deaths	Average Age of TB Death
1950	38.34	9.81	5.28	17.7	24.0
1951	34.22	7.73	4.73	20.0	25.0
1952	34.28	7.05	3.50	18.4	25.0
1953	36.27	9.02	3.51	16.1	26.0
1954	31.26	8.17	2.82	14.9	29.0
1955	28.51	8.61	2.67	14.7	31.0
1956	25.22	7.34	1.99	13.6	32.0
1957	21.20	5.76	1.57	13.8	36.0
1958	19.64	7.04	1.52	11.2	36.5
1959	18.92	5.56	1.16	10.8	37.0
1960	10.55	2.21	0.42	10.9	43.0
1961	11.48	2.62	0.46	10.2	43.0
1962	5.74	1.44	0.24	9.3	46.0
1963	5.51	1.08	0.16	8.9	47.0
1964	4.09	0.90	0.12	8.0	48.0
1965	3.36	0.70	0.09	7.3	49.0
1966	2.71	0.73	0.12	8.1	53.0
1967	2.01	0.33	0.06	7.6	54.5
1968	1.15	0.20	0.04	7.7	56.5
1969	0.95	0.27	0.05	7.8	56.0
1970	0.63	0.00	0.00	6.9	57.5
1971	0.64	0.08	0.01	6.2	57.5
1972	0.30	0.15	0.02	6.2	59.0
1973	0.35	0.09	0.01	5.4	58.0
1974	0.82	0.21	0.02	4.4	58.5
1975	1.39	0.31	0.03	3.0	58.5
1976	0.70	0.00	0.00	2.4	59.5
1977	0.38	0.00	0.00	2.3	61.0
1978	0.48	0.24	0.01	1.8	61.0
1979	0.96	0.19	0.01	2.0	61.0
1980	0.73	0.18	0.01	2.1	62.0
1981	0.41	0.00	0.00	2.0	63.0
1982	0.22	0.00	0.00	1.8	63.0
1983	0.45	0.00	0.00	1.7	63.0
1984	0.24	0.24	0.01	1.6	64.5
1985	0.00	0.00	0.00	1.6	65.5
1986	0.00	0.00	0.00	1.6	68.0
1987	0.00	0.00	0.00	1.5	68.5
1988	0.52	0.26	0.01	1.4	69.0
1989	0.25	0.25	0.01	1.4	69.0
1990	0.52	0.52	0.03	1.3	69.0
1991	0.00	0.00	0.00	1.4	69.0
1992	0.00	0.00	0.00	1.3	68.0
1993	0.25	0.25	0.01	1.3	69.0
1994	0.00	0.00	0.00	1.4	71.0
1995	0.00	0.00	0.00	1.4	71.1
1996	0.00	0.00	0.00	0.9	70.6
1997	0.00	0.00	0.00	0.8	72.1
1998	0.37	0.00	0.00	0.8	72.6
1999	0.00	0.00	0.00	0.9	72.9
2000	0.00	0.00	0.00	0.9	73.4
2001	0.00	0.00	0.00	0.9	74.3
2002	0.00	0.00	0.00	0.8	74.0
2003	0.36	0.00	0.00	0.8	72.3
2004	0.00	0.00	0.00	0.8	73.4
2005	0.00	0.00	0.00	0.7	74.3
2006	0.00	0.00	0.00	0.8	73.5
2007	0.00	0.00	0.00	0.6	74.2
2008	0.00	0.00	0.00	0.6	74.5
2009	0.00	0.00	0.00	0.5	73.7
2010	0.00	0.00	0.00	0.4	73.1
2011	0.00	0.00	0.00	0.4	77.3 *
2012	0.00	0.00	0.00	0.5	75.9
2013	0.00	0.00	0.00	0.4	74.1

Note: * The average age of TB death is calculated by the exact age of TB death from 2011 onwards. Figures may be slightly different from previous years which were compiled basing on the age groups of TB death.

Appendix 11

Top Ten Causes of Death 2013

Rank	Causes of Death	Detailed List No.	2013		
		ICD 10th Revision	Male	Female	Total
	All Causes		24149	19244	43399 (6)
1	Malignant neoplasms	C00-C97	7934	5655	13589
2	Diseases of heart	I00-I09, I11 I13, I20-I51	3690	3140	6830
3	Pneumonia	J12-J18	3210	2624	5834
4	Cerebrovascular diseases	I60-I69	1657	1595	3252
5	External causes of morbidity and mortality #	V01-Y89	1202	658	1860
6	Chronic lower respiratory diseases *	J40-J47	1325	418	1743
7	Nephritis, nephrotic syndrome and nephrosis	N00-N07, N17-N19, N25-N27	763	826	1589
8	Septicaemia	A40-A41	406	446	852
9	Dementia	F01-F03	388	611	999
10	Diabetes mellitus	E10-E14	181	179	360
	Tuberculosis (including late effects of tuberculosis)		136	42	178
	All other causes	Residues of all causes	3257	3050	6313 (6)

Notes : 1. Figures in brackets denote number of deaths of unknown sex included.

2. Classification of diseases and causes of death is based on the International Statistical Classification of Diseases and Related Health Problems (ICD) 10th Revision from 2001 onwards. The disease groups for the purpose of ranking causes of death have also been redefined based on the ICD 10th Revision, and new disease groups have been added. Figures for 2001 may not be comparable with figures for previous years which were compiled based on the ICD 9th Revision.

* Chronic lower respiratory diseases has been included as a disease group for the purpose of ranking the causes of death since 2001.

\# According to the ICD 10th Revision, when the morbid condition is classifiable under Chapter XIX as "injury, poisoning and certain other consequences of external causes", the codes under Chapter XX for "external causes of morbidity and mortality" should be used as the primary cause.

Appendix 12 (a)

Origin of Tuberculosis Notifications
2003 - 2013

Origin	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
East Kowloon Chest Clinic	123	121	132	86	121	129	100	99	105	101	83
Kowloon Chest Clinic	432	330	287	231	220	184	171	165	122	154	167
Sai Ying Pun Chest Clinic (a)	133	148	112	92	108	86	69	80	71	89	79
Shaukiwan Chest Clinic	122	138	111	104	128	105	80	72	74	65	74
Shaukiwan Pneumoconiosis	12	29	10	15	13	13	16	6	9	10	2
Shek Kip Mei Chest Clinic	162	157	140	96	111	127	92	87	90	101	95
South Kwai Chung Chest Clinic	300	261	282	224	187	200	158	166	146	158	122
Tai Po Chest Clinic	111	112	101	92	79	81	63	71	86	82	93
Wanchai Chest Clinic	264	223	214	191	169	168	170	143	118	110	113
Yan Oi Chest Clinic	320	290	263	238	165	179	172	152	173	144	146
Yaumatei Chest Clinic	233	203	249	204	151	137	139	131	128	132	112
Yuen Chau Kok Chest Clinic	226	181	148	136	122	116	124	131	112	108	110
Yung Fung Shee Chest Clinic	197	178	174	148	120	147	118	131	112	116	86
Castle Peak Hospital (Chest Clinic)		5	3	3	4	5	0	0	0	2	0
Cheung Chau Chest Clinic	2	2	3	1	1	2	1	1	1	1	0
Sai Kung Chest Clinic	7	7	4	9	5	9	1	3	6	4	4
Sheung Shui Chest Clinic	59	54	64	61	53	45	42	63	33	21	30
Tung Chung Chest Clinic	22	16	11	15	12	9	7	11	13	9	11
Yuen Long Chest Clinic	75	80	93	69	64	67	73	80	48	39	66
Sub-total	2800	2535	2401	2015	1833	1809	1596	1592	1447	1446	1393
Grantham Hospital	252	257	165	176	215	209	214	180	163	138	148
Haven of Hope Hospital	119	137	127	124	124	87	103	65	80	68	77
Kowloon Hospital	220	205	113	142	108	120	84	108	92	97	64
Ruttonjee Hospital	223	263	256	264	218	165	183	170	176	165	127
Wong Tai Sin Hospital	166	189	184	140	90	104	82	105	57	58	86
Other Govt. Institutions (b)	84	87	84	60	66	78	54	64	62	54	51
Other H.A. Hospitals	1937	2301	2543	2538	2530	2648	2472	2425	2364	2497	2377
Private Practitioners	159	136	156	164	90	83	57	101	100	109	118
Private Hospitals	64	116	131	143	189	332	348	283	253	226	223
Total	6024	6226	6160	5766	5463	5635	5193	5093	4794	4858	4664
% of cases from Chest Clinics among the total	46.5	40.7	39.0	34.9	33.6	32.1	30.7	31.3	30.2	29.8	29.9
% from Chest Hospitals (c)	16.3	16.9	13.7	14.7	13.8	12.2	12.8	12.3	11.8	10.8	10.8
% from Other Public Hospitals	33.5	38.4	42.6	45.1	47.5	48.4	48.6	48.9	50.6	52.5	52.1
% from Private Sector	3.7	4.0	4.7	5.3	5.1	7.4	7.8	7.5	7.4	6.9	7.3

Notes : (a) Including notifications from Cheung Chau Chest Clinic (1997-2002)
(b) Sources are from Public Mortuaries, Prison Hospitals, & Army Hospitals.
(c) Chest Hospitals include Kowloon Hospital, Wong Tai Sin Hospital, Ruttonjee Hospital, Grantham Hospital and Haven of Hope Hospital.

Appendix 12 (b)

Breakdown of Origin of TB
Notifications for "Other H.A. Hospitals" 2013

Name of Hospital	No. of TB Notification
Alice Ho Miu Ling Nethersole Hospital	91
Caritas Medical Centre	145
Hong Kong Buddhist Hospital	4
Kwong Wah Hospital	176
North District Hospital	105
North Lantau Hospital	1
Our Lady of Maryknoll Hospital	15
Pamela Youde Nethersole Eastern Hospital	181
Pok Oi Hospital	64
Prince of Wales Hospital	251
Princess Margaret Hospital	235
Queen Elizabeth Hospital	262
Queen Mary Hospital	119
Shatin Hospital	12
Tai Po Hospital	7
Tseung Kwan O Hospital	134
Tuen Mun Hospital	226
Tung Wah Eastern Hospital	12
Tung Wah Group of Hospitals Fung Yiu King Hospital	3
Tung Wah Hospital	3
United Christian Hospital	230
Wong Chuk Hang Hospital	1
Yan Chai Hospital	100
Total	**2377**

Appendix 13

Tuberculosis Notifications & Notification Rates

by District Council District 2013

District Council District	Notification	Notification Rate (per 100,000 pop.)
Hong Kong Island	787	61.7
Central & Western	142	56.1
Wanchai	126	82.3
Eastern	332	56.4
Southern	187	66.6
Kowloon	1620	75.0
Kowloon City	197	51.4
Kwun Tong	506	78.6
Sham Shui Po	345	88.8
Wong Tai Sin	340	79.3
Yau Tsim Mong	232	73.7
NT (East)	1071	57.9
Islands	75	51.2
Northern	174	56.5
Sai Kung/Tseung Kwan O	253	57.0
Shatin	379	58.6
Tai Po	190	62.7
NT (West)	1150	60.4
Kwai Tsing	390	76.6
Tsuen Wan	110	36.0
Tuen Mun	267	54.0
Yuen Long	383	64.5
Marine	0	0.0
Unknown	9	0.0
Others	27	0.0
Total	**4664**	**64.9**

Appendix 14

Establishment & Strength of TB & Chest Service

As at 31.12.2013

Post	Establishment	Strength
Consultant Chest Physician i/c	1	1
Consultant Chest Physician	1	1
Senior Medical & Health Officer	7	7
Medical & Health Officer	23	23
Senior Nursing Officer	1	1
Nursing Officer	15	13
Registered Nurse	75	77
Enrolled Nurse	74	74
Senior Dispenser	9	9
Dispenser	2	3
Executive Officer I	1	1
Statistical Officer II	3	3
Personal Secretary I	1	1
Clerical Officer	16	16
Assistant Clerical Officer	20	23
Clerical Assistant	54	54
Office Assistant	9	8
Workman II	45	55
Senior Radiographer	3	3
Radiographer I	7	8
Radiographer II	22	21
Radiographic Technician	4	4
Darkroom Technician	10	9

Appendix 15

Total Attendances at Chest Clinics

2003 - 2013

Clinic/Hospital	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
East Kowloon Chest Clinic	56132	58535	61835	56737	63191	59670	56566	58167	55678	49894	51368
Kowloon Chest Clinic	97223	86502	77337	73627	67093	62017	56658	56523	47693	50666	52766
Sai Ying Pun Chest Clinic	45437	46974	45159	42034	42770	40126	36036	34502	36441	36877	33892
Shaukiwan Chest Clinic	47541	50828	50699	49667	48207	50618	45028	41263	41804	40600	42335
Shaukiwan Pneumoconiosis	8008	8098	9144	8866	8359	8501	8187	7719	6869	6576	6137
Shek Kip Mei Chest Clinic	60461	60382	60789	57848	58679	52161	54933	49216	49500	47853	49164
South Kwai Chung Chest Clinic	78998	75487	80015	79455	78238	81441	82044	81923	75752	78785	75062
Tai Po Chest Clinic (Full Time)	33518	30879	35347	35728	34769	33297	35492	36215	37628	39318	41316
Tung Chung (Full Time)	6807	1928	-	-	-	-	-	-	-	-	
Wanchai Chest Clinic	62322	60406	57906	58545	56790	50465	50461	49609	48893	46777	47901
Yan Oi Chest Clinic	66084	70168	72078	72144	70643	66058	63411	67564	63333	67804	64184
Yaumatei Chest Clinic	71378	70294	80708	72180	69549	68587	70439	68633	68164	62688	61905
Yuen Chau Kok Chest Clinic	60339	56322	59328	57680	55454	57211	60481	58027	65627	59542	67573
Yung Fung Shee Chest Clinic	77516	71269	78279	72570	73944	71767	74196	80444	73038	74204	75140
Castle Peak Hospital	372	373	317	241	240	192	146	149	145	146	124
Cheung Chau Chest Clinic	1944	2032	2066	1589	2318	1411	869	1206	1286	1349	1356
Sai Kung Chest Clinic	2372	2495	2382	2542	2280	1885	1745	2277	1861	1546	1542
Sheung Shui Chest Clinic	22933	23211	22601	21765	22333	21909	22468	22303	21775	17495	15308
Tai Po Chest Clinic (Part Time)	-	-	-	-	-	-	-	-	-	-	
Tung Chung (Part Time)	-	2802	5173	4447	4086	4263	5137	4433	4447	4248	4303
Yuen Long Chest Clinic	28702	31054	33056	29344	27960	29979	29935	30729	30201	27413	29929
Hei Ling Chau ATC	2352	1670	585	472	282	290	344	303	202	190	240
Lai Chi Kok Reception Centre	-	723	479	356	519	412	379	303	330	365	279
Shek Pik Prison Hospital	203	211	141	157	188	232	201	186	94	140	192
Stanley Prison Hospital	8829	7459	527	603	665	796	719	687	688	529	488
Total	**839471**	**820102**	**835951**	**798597**	**788557**	**763288**	**755875**	**752381**	**731449**	**715005**	**722504**

Appendix 16

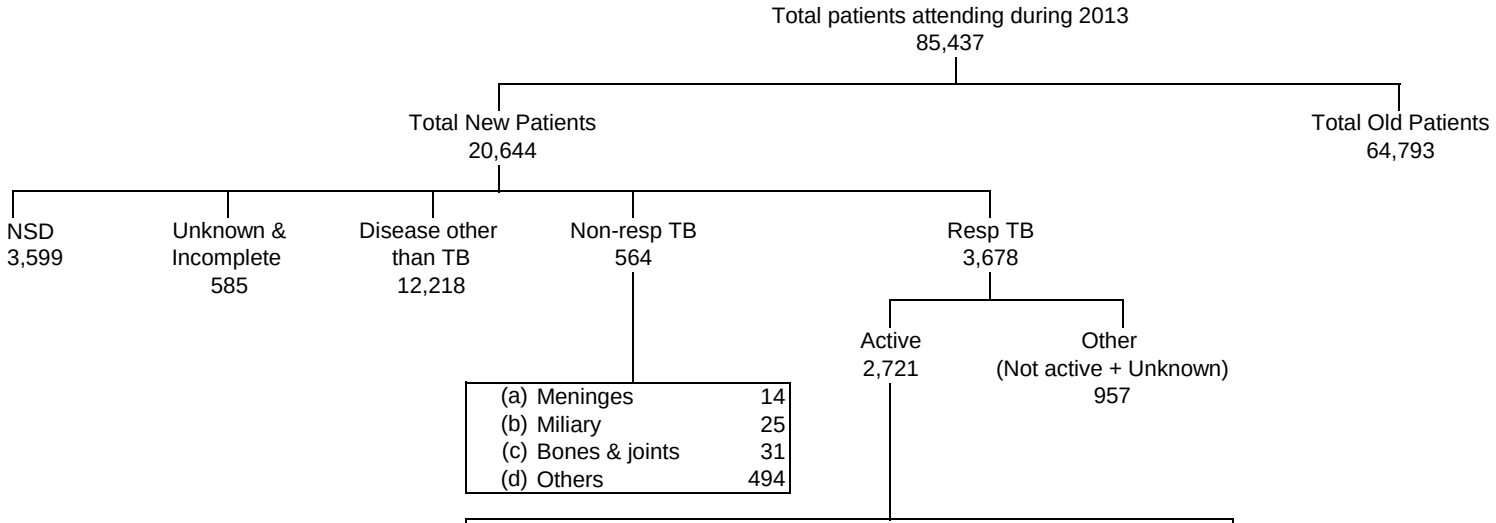
No. of Doctor Sessions, Cases Seen by Doctor and Patient/ Doctor Session 2013

Clinic/Hospital	Doctor Sessions	Cases Seen by Doctor	Patient/Doctor Session
Full Time Clinics			
East Kowloon	578	12998	22
Kowloon	891	18116	20
Pneumoconiosis	346	6155	18
Sai Ying Pun	600	10845	18
Shaukeiwan	562	11296	20
Shek Kip Mei	575	12331	21
South Kwai Chung	1047	22847	22
Tai Po	527	9789	19
Wanchai	852	16185	19
Yan Oi	814	18930	23
Yaumatei	1004	14649	15
Yuen Chau Kok	829	17163	21
Yung Fung Shee	684	15325	22
Sub-total	**9307**	**186629**	**20**
Part Time Clinics			
Castle Peak	24	124	5
Cheung Chau	23	346	15
Sai Kung	50	630	13
Sheung Shui	290	3934	14
Tung Chung	150	1671	11
Yuen Long	390	7360	19
Sub-total	**927**	**14065**	**15**
Institutions Correctional Ser Dept			
Hei Ling Chau	14	240	17
Lai Chi Kok Reception Center	51	238	5
Shek Pik	13	192	15
Stanley Prison	27	488	18
Sub-total	**105**	**1158**	**11**
Total	**10339**	**201852**	**20**

Note: Doctor Session - one doctor of a half-day session

Appendix 17

Flow Chart of Patients Attending Chest Clinics 2013 *



Bacteriology	Extent	Number
Negative	Minimal	326
	Moderate	119
	Extensive	28
	Not Recorded	141
Positive	Minimal	702
	Moderate	444
	Extensive	136
	Not Recorded	175
Incomplete	Minimal	193
	Moderate	119
	Extensive	70
	Not Recorded	268

Bacteriology	Cavity	Number
Negative	Yes	92
	No	522
Positive	Yes	412
	No	1045
Incomplete	Yes	138
	No	512

* A total of 85437 patients attended, comprising 64793 old cases and 20644 new cases. Among new cases, 3678 had respiratory TB with 2721 being active, 564 had non-respiratory TB, 12218 had diseases other than TB, 585 had unknown and incomplete diagnoses, and 3599 had NSD (no specific diagnosis). Of the 564 new cases with non-respiratory TB, 14 had TB affecting meninges, 25 had miliary TB, 31 had TB affecting bones and joints, and 494 had TB affecting other sites.

Among the 2721 new cases with active respiratory TB, in terms of bacteriology (negative, positive, or incomplete) and cavity, 92 were negative with cavity, 522 were negative without cavity, 412 were positive with cavity, 1045 were positive without cavity, 138 were incomplete with cavity, and 512 were incomplete without cavity. In terms of bacteriology and extent of disease (minimal, moderate, extensive or not recorded), 326 were negative with extent minimal, 119 were negative with extent moderate, 28 were negative with extent extensive, 141 were negative with extent not recorded, 702 were positive with extent minimal, 444 were positive with extent moderate, 136 were positive with extent extensive, 175 were positive with extent not recorded, 193 were incomplete with extent minimal, 119 were incomplete with extent moderate, and 70 were incomplete with extent extensive, 268 were incomplete with extent not recorded.

APPENDIX 18

Classification of Patients of First Attendance with New Case Card Completed By Clinics According to International Classification of Diseases Code 2013

Code		Classification	Total
ICD 9	ICD 10		
010	A15.7, A16.7	Primary Tuberculosis Infection	0
011	A15.0-15.3, A16.0-16.3	Pulmonary Tuberculosis	2323
012	A15.4-15.6, A15.8-15.9, A16.3-16.5, A16.8-16.9	Other Respiratory Tuberculosis	339
013	A17.0-17.1	Tuberculosis of Nervous System	17
014	A18.3	Tuberculosis of Intestines	76
015	A18.0	Tuberculosis of Bones & Joints	32
016	A18.1	Tuberculosis of Genito-urinary System	40
017	A18.2, A18.4-18.8	Tuberculosis of Other Organs	411
018	A19.0-19.2, A19.8-19.9	Miliary Tuberculosis	25
137	B90.0-90.2, B90.8-90.9	Late effects of Tuberculosis	963
160-165	C30-C39, C34.0-34.3, C34.8-34.9	Malignant Neoplasm of Respiratory System	267
212	D14.0-14.4	Benign Neoplasm of Respiratory System	0
460-466	J00-J06, J02.0, J02.8-02.9, J03.0, J03.9, J04.0-04.2, J05.0-05.1, J06.8-	Acute Respiratory Infection	1007
470-478	J30-39, J30.0-30.4, J39.9	Other Diseases of Upper Resp Tract	32
480-486	J09-J18, J12.9, J15.0-15.2, J15.5-15.9	Pneumonia	45
487	J09, J10.0-10.1, J10.8, J11.0-11.1, J11.8	Influenza	0
490-491	J40, J41.0-41.1, J41.8, J42	Bronchitis, (not specified as acute or chronic) & chronic brochitis	2304
492	J43, J43.0-43.2, J43.8-43.9	Emphysema	33
493	J45, J45.0-45.1, J45.8-45.9, J46	Asthma	137
494	J47	Bronchiectasis	321
495-496	J44, J44.0-44.1, J44.8-44.9	Others	146
501	J61	Asbestosis	1
502	J62, J62.0, J62.8	Silicosis	21
505	J64	Pneumoconiosis, unspecified	0
506-508	J63	Others	0
510	J86	Pyothorax (Empyema)	2
511	J90	Pleurisy	48
512	J93, J93.0-93.1, J93.8-93.9	Pneumothorax	8
513-519	J95-99, J96.0-96.1, J96.9, J98.4, J99.1, [J99.0* (M05.1†), J99.1*, J99.1* (M33.0-M33.1†), J99.1* (M31.3†), J99.1* (M32.1†), J99.1* (M33.2†), J99.1* (M34.8†)]	Other Diseases of Respiratory System	1
786	R00-09, R04.0-04.2, R04.8-04.9 R06.0-06.2, R06.5-06.8, R07.0-07.4, R09.1, R09.3	Unknown	3188
V71	Z00, Z01.6, Z02, Z02.1-02.2, Z02.6-02.9, Z11.1, Z71.1	N.S.D.	3351
		Diseases Other than TB & Resp System	5506
Total			20644

NB. Above is a crude mapping of some of the codings in ICD9 to ICD10 as a reference only. Such mapping may result in mis-classification of some cases.

Appendix 19 (a)

Extent of Active Resporary TB in First Attenders at Chest Clinics 2011-2013

Extent *	2011		2012		2013	
	No.	%	No.	%	No.	%
1. Minimal	1622	63.4	1211	42.4	1221	44.9
2. Moderate	633	24.7	765	26.8	682	25.1
3. Extensive	304	11.9	305	10.7	234	8.6
4. Not Recorded	-	-	574	20.1	584	21.5
Total	2559	100.0	2855	100.0	2721	100.0
No. of first attenders	20602		21058		20644	
% of active TB	12.4		13.6		13.2	

* 1. Minimal : Less than right upper lobe
2. Moderate : More than right upper lobe
3. Extensive : More than a lung

Percentage on Sputum Results of Active TB in First Attenders at Chest Clinics 2013

	Number	%
Smear +	949	34.9
Smear - Culture +	566	20.8
Smear - Culture -	759	27.9
Incomplete	447	16.4
Total	2721	100.0

Appendix 19 (b1)

Rate of Drug-resistant Tuberculosis

Among cases (mainly cases seen at chest clinics) registered during the period January to June 2013 (Data from Programme Forms)

Age Group	Category	% resistance to				* % resistance to			MDR-TB	# Total % resistance	Total no. of cases analysed
		E	R	H	S	1 drug	2 drugs	≥ 3 drugs			
0 - 19	New cases	0.00	2.04	10.20	24.49	22.45	4.08	2.04	2.04	28.57	49
	Previously treated cases	0.00	0.00	0.00	25.00	25.00	0.00	0.00	0.00	25.00	4
	Overall	0.00	1.89	9.43	24.53	22.64	3.77	1.89	1.89	28.30	53
20 - 39	New cases	0.00	0.39	2.72	6.61	5.06	2.33	0.00	0.39	7.39	257
	Previously treated cases	0.00	4.35	13.04	17.39	8.70	13.04	0.00	4.35	21.74	23
	Overall	0.00	0.71	3.57	7.50	5.36	3.21	0.00	0.71	8.57	280
40 - 59	New cases	0.28	1.38	5.25	7.73	8.01	2.76	0.28	0.55	11.05	362
	Previously treated cases	3.03	6.06	9.09	21.21	12.12	3.03	6.06	6.06	21.21	33
	Overall	0.51	1.77	5.57	8.86	8.35	2.78	0.76	1.01	11.90	395
60 up	New cases	0.60	0.60	3.17	6.94	6.94	1.39	0.40	0.60	8.73	504
	Previously treated cases	0.71	2.13	4.96	8.51	7.09	1.42	2.13	2.13	10.64	141
	Overall	0.62	0.93	3.57	7.29	6.98	1.40	0.78	0.93	9.15	645
All	New cases	0.34	0.85	4.01	7.85	7.51	2.13	0.34	0.60	9.98	1172
	Previously treated cases	1.00	2.99	6.47	11.94	8.46	2.99	2.49	2.99	13.93	201
	Overall	0.44	1.17	4.37	8.45	7.65	2.26	0.66	0.95	10.56	1373

Notes: E = ethambutol; R = rifampicin; H = isoniazid; S = streptomycin
* % resistant to one, two or more than two of the four drugs E, R, H and S
# total % resistance: resistant to at least one of the four drugs E, R, H and S
New cases: for cases with no past history of anti-tuberculosis treatment
Previously treated cases: for cases with past history of anti-tuberculosis treatment
Overall: for all cases

NB: The TB Reference Laboratory of Department of Health is using the absolute concentration method for drug susceptibility tests.

Appendix 19 (b2)

Rate of Drug-resistant Tuberculosis

Among cases (mainly cases seen at chest clinics)
registered druing the period January to June 2013

	New case		Previously treated cases		Combined	
	N	%	N	%	N	%
Total number of strains tested	1172	100	201	100	1373	100
Susceptible to all 4 drugs	1055	90.02	173	86.07	1228	89.44
Any resistance	117	9.98	28	13.93	145	10.56
H	47	4.01	13	6.47	60	4.37
R	10	0.85	6	2.99	16	1.17
E	4	0.34	2	1.00	6	0.44
S	92	7.85	24	11.94	116	8.45
Monoresistance	88	7.51	17	8.46	105	7.65
H	18	1.54	2	1.00	20	1.46
R	3	0.26	0	0.00	3	0.22
E	0	0.00	0	0.00	0	0.00
S	67	5.72	15	7.46	82	5.97
Multidrug resistance	7	0.60	6	2.99	13	0.95
H+R	3	0.26	1	0.50	4	0.29
H+R+E	0	0.00	1	0.50	1	0.07
H+R+S	1	0.09	3	1.49	4	0.29
H+R+E+S	3	0.26	1	0.50	4	0.29
Other patterns	22	1.88	5	2.49	27	1.97
H+E	1	0.09	0	0.00	1	0.07
H+S	21	1.79	5	2.49	26	1.89
H+E+S	0	0.00	0	0.00	0	0.00
R+E	0	0.00	0	0.00	0	0.00
R+S	0	0.00	0	0.00	0	0.00
R+E+S	0	0.00	0	0.00	0	0.00
E+S	0	0.00	0	0.00	0	0.00
Number of drugs resistant to:						
0 drug	1055	90.02	173	86.07	1228	89.44
1 drug	88	7.51	17	8.46	105	7.65
2 drugs	25	2.13	6	2.99	31	2.26
3 drugs	1	0.09	4	1.99	5	0.36
4 drugs	3	0.26	1	0.50	4	0.29

Appendix 19 (c1)

Rate of Drug-resistant Tuberculosis

Among cases (mainly cases seen at chest clinics) registered during the period January to December 2012 (Data from Programme Forms)

Age Group	Category	% resistance to				* % resistance to			MDR-TB	# Total % resistance	Total no. of cases analysed
		E	R	H	S	1 drug	2 drugs	≥ 3 drugs			
0 - 19	New cases	1.32	2.63	7.89	9.21	6.58	1.32	3.95	2.63	11.84	76
	Previously treated cases	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
	Overall	1.30	2.60	7.79	9.09	6.49	1.30	3.90	2.60	11.69	77
20 - 39	New cases	0.34	1.02	3.75	10.56	10.22	1.70	0.68	0.85	12.61	587
	Previously treated cases	9.68	16.13	16.13	16.13	6.45	3.23	12.90	12.90	22.58	31
	Overall	0.81	1.78	4.37	10.84	10.03	1.78	1.29	1.46	13.11	618
40 - 59	New cases	1.01	1.44	5.60	10.49	9.05	2.87	1.01	1.29	12.93	696
	Previously treated cases	2.63	5.26	13.16	21.05	17.11	2.63	6.58	5.26	26.32	76
	Overall	1.17	1.81	6.35	11.53	9.84	2.85	1.55	1.68	14.25	772
60 up	New cases	0.66	0.47	4.32	8.26	7.50	2.35	0.47	0.19	10.32	1066
	Previously treated cases	0.00	1.61	8.60	10.75	10.22	3.76	1.08	1.61	15.05	186
	Overall	0.56	0.64	4.95	8.63	7.91	2.56	0.56	0.40	11.02	1252
All	New cases	0.70	0.95	4.66	9.48	8.58	2.31	0.78	0.74	11.67	2425
	Previously treated cases	1.70	4.08	10.54	13.95	11.56	3.40	3.74	3.74	18.71	294
	Overall	0.81	1.29	5.30	9.97	8.90	2.43	1.10	1.07	12.43	2719

Notes: E = ethambutol; R = rifampicin; H = isoniazid; S = streptomycin
* % resistant to one, two or more than two of the four drugs E, R, H and S
# total % resistance: resistant to at least one of the four drugs E, R, H and S
New cases: for cases with no past history of anti-tuberculosis treatment
Previously treated cases: for cases with past history of anti-tuberculosis treatment
Overall: for all cases

NB: The TB Reference Laboratory of Department of Health is using the absolute concentration method for drug susceptibility tests.

Appendix 19 (c2)

Rate of Drug-resistant Tuberculosis

Among cases (mainly cases seen at chest clinics)
registered druing the period January to December 2012

	New case		Previously treated cases		Combined	
	N	%	N	%	N	%
Total number of strains tested	2425	100	294	100	2719	100
Susceptible to all 4 drugs	2142	88.33	239	81.29	2381	87.57
Any resistance	283	11.67	55	18.71	338	12.43
H	113	4.66	31	10.54	144	5.30
R	23	0.95	12	4.08	35	1.29
E	17	0.70	5	1.70	22	0.81
S	230	9.48	41	13.95	271	9.97
Monoresistance	208	8.58	34	11.56	242	8.90
H	40	1.65	11	3.74	51	1.88
R	3	0.12	0	0.00	3	0.11
E	3	0.12	1	0.34	4	0.15
S	162	6.68	22	7.48	184	6.77
Multidrug resistance	18	0.74	11	3.74	29	1.07
H+R	3	0.12	1	0.34	4	0.15
H+R+E	0	0.00	0	0.00	0	0.00
H+R+S	9	0.37	8	2.72	17	0.63
H+R+E+S	6	0.25	2	0.68	8	0.29
Other patterns	57	2.35	10	3.40	67	2.46
H+E	4	0.16	0	0.00	4	0.15
H+S	48	1.98	8	2.72	56	2.06
H+E+S	3	0.12	1	0.34	4	0.15
R+E	0	0.00	1	0.34	1	0.04
R+S	1	0.04	0	0.00	1	0.04
R+E+S	1	0.04	0	0.00	1	0.04
E+S	0	0.00	0	0.00	0	0.00
Number of drugs resistant to:						
0 drug	2142	88.33	239	81.29	2381	87.57
1 drug	208	8.58	34	11.56	242	8.90
2 drugs	56	2.31	10	3.40	66	2.43
3 drugs	13	0.54	9	3.06	22	0.81
4 drugs	6	0.25	2	0.68	8	0.29

Appendix 19 (d1)

Trend of anti-TB drug resistance (1998-2013) (Data from Programme Forms)

New cases

(Percentages)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 (Jan-Jun)
Ethambutol	1.24	1.11	0.54	0.96	0.65	0.42	0.34	0.54	0.35	0.12	0.45	0.26	0.25	0.33	0.70	0.34
Rifampicin	1.17	0.97	0.61	0.83	0.46	0.69	0.75	0.83	0.86	0.46	0.64	0.90	0.78	0.88	0.95	0.85
Isoniazid	6.78	6.22	5.21	5.02	4.71	4.64	3.65	4.16	4.13	3.79	4.33	4.19	4.86	4.18	4.66	4.01
Streptomycin	7.65	9.34	7.78	7.39	7.40	7.59	6.90	6.72	6.00	7.47	6.89	8.04	7.61	7.32	9.48	7.85
MDR-TB	1.06	0.75	0.47	0.55	0.34	0.46	0.48	0.51	0.55	0.31	0.30	0.67	0.70	0.63	0.74	0.60
Total % resistance	10.89	12.61	10.35	10.39	10.22	10.54	8.84	9.33	8.64	9.32	9.41	10.59	9.88	10.08	11.67	9.98

Previously treated cases

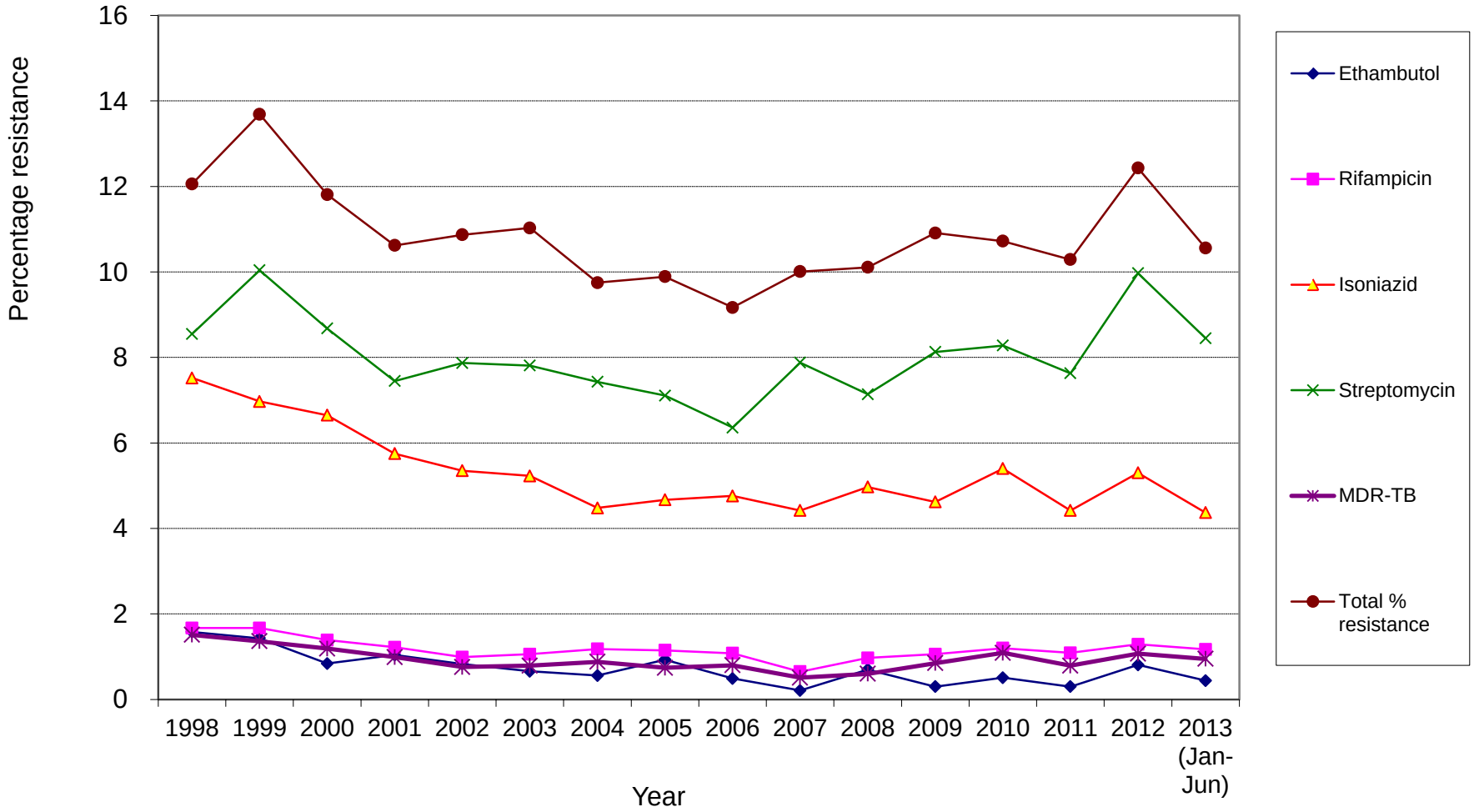
(Percentages)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 (Jan-Jun)
Ethambutol	3.51	3.16	2.68	1.85	2.04	2.19	2.14	3.92	1.61	0.90	2.65	0.47	2.56	0.00	1.70	1.00
Rifampicin	4.61	6.09	5.98	3.71	4.59	3.41	4.29	3.64	2.90	2.10	3.53	1.73	4.47	2.84	4.08	2.99
Isoniazid	11.84	11.51	15.26	11.80	9.69	9.00	10.46	8.68	10.00	9.31	10.00	6.45	9.58	6.38	10.54	6.47
Streptomycin	13.82	14.45	13.81	10.96	10.97	9.25	11.26	10.08	9.35	11.11	9.12	8.49	13.42	10.28	13.95	11.94
MDR-TB	4.17	5.19	5.36	3.54	3.57	2.92	3.75	2.52	2.90	2.10	2.94	1.57	4.15	2.13	3.74	2.99
Total % resistance	18.86	20.32	20.41	16.36	16.58	14.11	16.35	14.29	13.55	15.32	15.59	12.26	17.25	12.06	18.71	13.93

Overall

(Percentages)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 (Jan-Jun)
Ethambutol	1.58	1.43	0.84	1.04	0.83	0.66	0.56	0.93	0.49	0.21	0.70	0.30	0.51	0.30	0.81	0.44
Rifampicin	1.67	1.67	1.39	1.22	0.99	1.06	1.18	1.15	1.08	0.65	0.97	1.06	1.20	1.09	1.29	1.17
Isoniazid	7.52	6.97	6.65	5.75	5.35	5.23	4.48	4.67	4.76	4.42	4.97	4.62	5.40	4.42	5.30	4.37
Streptomycin	8.55	10.04	8.68	7.45	7.87	7.81	7.43	7.11	6.36	7.88	7.14	8.13	8.28	7.63	9.97	8.45
MDR-TB	1.51	1.36	1.19	0.99	0.76	0.79	0.88	0.74	0.80	0.51	0.60	0.85	1.09	0.79	1.07	0.95
Total % resistance	12.06	13.69	11.81	10.62	10.87	11.03	9.75	9.89	9.17	10.01	10.11	10.91	10.72	10.29	12.43	10.56

Appendix 19 (d2)

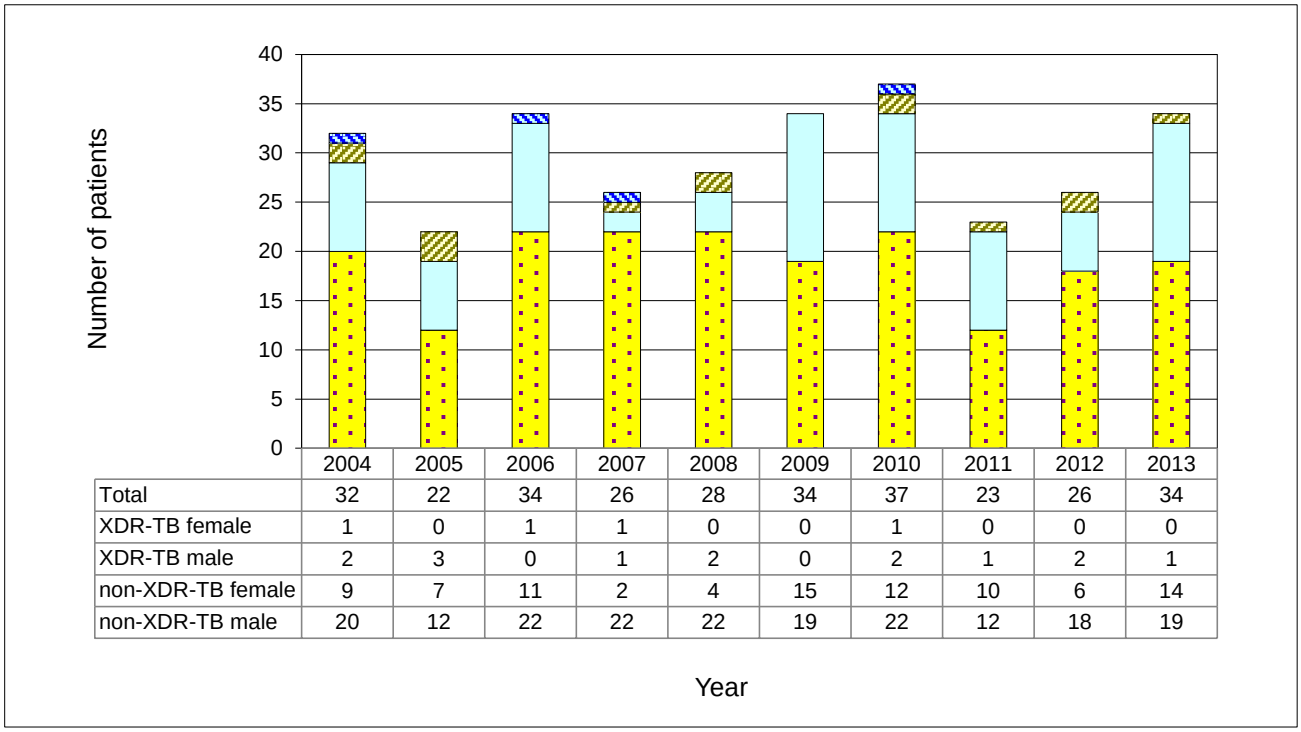
Trend of anti-TB drug resistance (1998-2013) (Overall) (Data from Programme Forms)



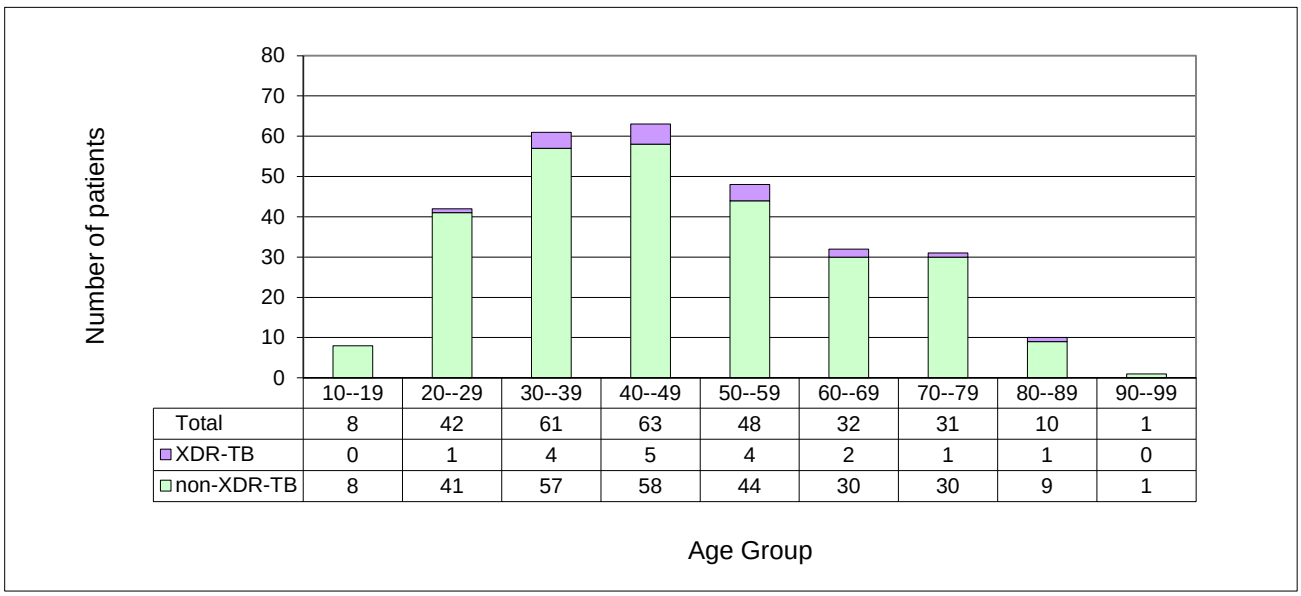
Appendix 19 (e)

MDR-TB and XDR-TB by Sex and Year (Upper Graph) and by Age (Lower Graph) (2004-2013)

Cases of MDR-TB and XDR-TB are identified from four main sources: (1) Programme forms; (2) MDR-TB registry; (3) Prison registry; (4) TB Reference Laboratory. The year to which the case belongs is defined as the year of starting treatment with second-line anti-TB drugs, or if treatment has not been started (e.g., patient died, or no effective second-line drugs are available for treatment), it is defined as the year of reporting MDR-TB.



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	32	22	34	26	28	34	37	23	26	34
XDR-TB female	1	0	1	1	0	0	1	0	0	0
XDR-TB male	2	3	0	1	2	0	2	1	2	1
non-XDR-TB female	9	7	11	2	4	15	12	10	6	14
non-XDR-TB male	20	12	22	22	22	19	22	12	18	19



	10--19	20--29	30--39	40--49	50--59	60--69	70--79	80--89	90--99
Total	8	42	61	63	48	32	31	10	1
XDR-TB	0	1	4	5	4	2	1	1	0
non-XDR-TB	8	41	57	58	44	30	30	9	1

Definitions: MDR-TB = multidrug-resistant tuberculosis [resistant to at least isoniazid and rifampicin]

XDR-TB = extensively drug-resistant tuberculosis [resistant to any fluoroquinolone, and at least one of the three injectable second-line drugs (capreomycin, kanamycin, and amikacin), in addition to MDR-TB]

NB: In the above graphs, non-XDR-TB refers to MDR-TB excluding XDR-TB cases.

Appendix 20 (a)
Treatment Return 2013

Name of Clinic/Hospital	Service Regimen																										
	No. put on Rx b/f	Bought in					Treatment completed					Transfer out to		Interrup Rx temp	Died	Drop out				Complete defaulter				No. still onRx c/f	Unsup Rx	Incomp super. Rx	No. def. >2M <3M
		1	2	3	4	5	<6M	at 6M	>6M	MAI	%	hosp.	other cc			Rx by GP	Leave HK	Def. >1x	AMA	<2M	>2M <3M	>3M	%				
	A	B	C	D	E	F	G	H	I	J		K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Full Time Clinics																											
East Kowloon	161	116	7	11	90	62	1	20	175	4	84.8	48	2	0	17	1	3	0	1	0	2	7	3.9	166	6	69	0
Kowloon	207	157	11	13	120	59	6	47	204	6	83.9	49	15	0	14	2	11	0	6	1	4	4	3.0	198	0	47	0
South Kwai Chung	226	146	6	10	186	53	10	52	247	9	85.7	51	15	0	20	2	9	2	4	0	2	4	1.7	200	0	39	0
Sai Ying Pun	84	70	7	4	112	61	4	36	102	3	87.3	69	17	1	7	0	6	0	2	0	0	2	1.3	89	2	20	1
Shaukeiwan	135	112	7	3	80	31	9	39	126	8	87.8	18	13	0	7	1	5	0	2	0	0	0	0.0	140	0	51	0
Shek Kip Mei	109	117	18	9	124	45	2	46	162	7	82.9	44	8	0	14	2	6	11	9	1	1	3	2.0	106	0	71	12
Tai Po	159	118	2	4	60	19	4	30	136	0	88.3	2	6	0	14	2	2	1	2	0	0	2	1.1	161	0	0	0
Wanchai	102	132	8	6	86	61	13	57	96	2	78.1	34	19	0	5	7	27	0	0	0	2	0	1.0	133	2	26	0
Yan Oi	136	176	4	5	131	54	12	68	203	8	86.3	45	11	0	16	1	8	1	9	0	0	1	0.3	123	0	91	0
Yaumatei	200	146	4	2	125	51	18	45	172	3	81.9	43	22	0	18	3	12	1	0	2	6	4	4.5	179	0	49	14
Yuen Chau Kok	127	182	9	11	119	105	9	70	192	4	89.4	24	18	1	14	0	7	0	2	0	2	2	1.4	208	0	34	0
Yung Fung Shee	248	153	4	4	178	43	11	44	266	2	91.7	49	15	0	14	0	6	0	2	1	2	1	1.2	217	9	83	1
Sub-total	1894	1625	87	82	1411	644	99	554	2081	56	85.9	476	161	2	160	21	102	16	39	5	21	30	1.8	1920	19	580	28
Hosp Discharge Clinic																											
East Kowloon	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Part Time Clinics																											
Castle Peak	1	0	0	0	1	2	0	1	1	0	100.0	0	1	0	0	0	0	0	0	0	0	0	0.0	1	0	0	0
Cheung Chau	2	0	0	0	2	5	0	1	4	0	83.3	0	0	0	0	0	1	0	0	0	0	0	0.0	3	0	0	0
Sai Kung	10	7	1	1	2	2	0	1	8	1	75.0	0	0	0	1	0	0	0	1	0	0	0	0.0	11	0	0	0
Sheung Shui	80	39	0	5	53	15	2	11	74	0	81.0	4	5	0	5	0	3	1	1	0	0	11	10.5	75	0	72	0
Tung Chung	29	11	0	3	16	2	2	6	23	1	80.6	0	1	0	2	0	1	0	1	0	0	2	5.6	22	0	15	0
Yuen Long	140	107	2	2	101	29	1	39	120	0	87.8	19	13	0	8	1	6	1	3	0	0	4	2.2	166	0	153	0
Sub-total	262	164	3	11	175	55	5	59	230	2	84.5	23	20	0	16	1	11	2	6	0	0	17	5.0	278	0	240	0
Institutions Correctional Services Dept																											
Hei Ling Chau	2	5	2	0	0	0	1	1	1	0	100.0	1	4	0	0	0	0	0	0	0	0	0	0.0	1	0	0	0
Stanley Prison	12	9	0	1	0	0	0	16	0	0	100.0	0	0	0	0	0	0	0	0	0	0	0	0.0	6	0	0	0
Shek Pik Prison	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Sub-total	14	14	2	1	0	0	1	17	1	0	100.0	1	4	0	0	0	0	0	0	0	0	0	0.0	7	0	0	0
Total	2170	1803	92	94	1586	699	105	630	2312	58	85.8	500	185	2	176	22	113	18	45	5	21	47	2.1	2205	19	820	28

Appendix 20 (b)
Treatment Return 2013

Other Regimen																											
	No. put	Bought in					Treatment completed					Transfer out to		Interrup		Drop out				Complete defaulter				No. still	Unsup	Incomp	No. def.
Name of Clinic/Hospital	on Rx b/f	1	2	3	4	5	<6M	at6M	>6M	MAI	%	hosp.	other cc	Rx temp	Died	Rx by GP	Leave HK	Def. >1x	AMA	<2M	>2M <3M	>3M	%	onRx c/f	Rx	super. Rx	>2M <3M
	A	B	C	D	E	F	G	H	I	J		K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Full Time Clinics																											
East Kowloon	47	17	2	1	42	22	0	2	31	4	71.7	23	2	0	6	0	1	0	0	0	0	2	4.3	60	6	32	0
Kowloon	22	10	0	1	16	6	0	1	18	0	79.2	7	1	0	4	0	0	0	1	0	0	0	0.0	23	0	13	0
South Kwai Chung	98	12	0	1	66	13	2	3	61	1	81.0	13	1	0	10	0	2	0	2	0	0	0	0.0	95	0	15	0
Sai Ying Pun	49	0	2	2	25	13	0	0	16	2	64.0	12	3	0	6	0	0	0	0	0	0	1	4.0	51	2	7	0
Shaukeiwan	25	5	4	1	20	4	1	3	17	1	71.4	3	0	0	3	1	1	1	1	0	0	1	3.6	26	0	21	0
Shek Kip Mei	101	6	1	0	11	4	0	1	17	7	64.3	4	0	0	2	0	0	1	1	0	0	0	0.0	90	0	6	0
Tai Po	32	15	0	1	12	1	1	3	17	4	62.5	0	3	0	7	0	0	0	1	0	0	0	0.0	25	0	0	0
Wanchai	32	0	0	1	14	8	0	6	18	5	77.4	2	1	1	1	0	1	0	0	0	0	0	0.0	20	1	4	0
Yan Oi	139	8	1	1	13	4	0	1	22	9	62.2	3	1	0	3	1	0	1	1	0	0	0	0.0	124	11	0	0
Yaumatei	31	13	2	3	37	13	3	2	31	0	78.6	19	2	0	4	1	3	0	0	0	0	1	2.4	33	0	22	1
Yuen Chau Kok	56	19	0	2	22	14	2	4	41	4	86.5	4	4	2	2	0	1	0	0	0	0	0	0.0	49	0	17	1
Yung Fung Shee	46	4	0	1	29	1	1	3	20	3	82.1	4	0	0	0	0	0	0	0	0	0	2	7.1	48	0	12	0
Sub-total	678	109	12	15	307	103	10	29	309	40	74.8	94	18	3	48	3	9	3	7	0	0	7	1.5	644	20	149	2
Hosp Discharge Clinic																											
East Kowloon	0	0	0	0	0	0	0	0	0		0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Part Time Clinics																											
Castle Peak	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Cheung Chau	1	0	0	0	0	1	0	0	0	0	0.0	1	0	0	1	0	0	0	0	0	0	0	0.0	0	0	0	0
Sai Kung	0	0	0	0	1	0	0	0	0	0	0.0	1	0	0	0	0	0	0	0	0	0	0	0.0	0	0	1	0
Sheung Shui	25	3	1	2	17	5	0	2	16	3	72.0	3	1	0	2	0	0	0	0	0	0	2	8.0	24	0	13	0
Tung Chung	1	1	0	0	4	0	0	0	1	0	100.0	1	0	0	0	0	0	0	0	0	0	0	0.0	4	0	2	0
Yuen Long	11	3	0	0	14	5	0	2	11	0	86.7	3	0	0	1	0	0	0	0	0	0	1	6.7	15	0	4	0
Sub-total	38	7	1	2	36	11	0	4	28	3	76.2	9	1	0	4	0	0	0	0	0	0	3	7.1	43	0	20	0
Institutions Correctional Services Dept																											
Hei Ling Chau	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Stanley Prison	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Shek Pik Prison	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0
Total	716	116	13	17	343	114	10	33	337	43	74.9	103	19	3	52	3	9	3	7	0	0	10	2.0	687	20	169	2

Appendix 20 (c)

Explanatory Notes for Appendices 20(a) & 20(b)

Name of clinic/hospital	Service regimen / Other regimens *																									
	b/f	Brought in					Treatment completed					Transfer out to		Interrup. Rx temp.	Died	Drop out				Complete defaulter				Number still on Rx c/f	Unsup. Rx	Incomp. Super. Rx	No. Def. >2m, <3m
							<6M	at 6M	>6M	NTM	%	hospi-tal	other cc			Rx by GP	Leave HK	Def. >1x	AMA	<2M	>2M, <3M	>3M	%				
	A	B *	C *	D *	E *	F *	G	H	I	J		K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
		% = $\frac{H + I}{A + B + C + D + E + F - G - K - L - M - Q - W}$ ⇨												V = $\frac{S + T + U}{A + B + C + D + E + F - G - K - L - M - Q - W}$ ⇨													
														W = (A + B + C + D + E + F) - (G + H + I + K + L + M + N + O + P + Q + R + S + T + U) ⇨													

* Explanatory Notes :

Service regimen	Upon starting treatment, the regimen contains any combination of drugs including H (isoniazid), R (rifampicin), Z (pyrazinamide), E (ethambutol), and S (streptomycin).
Other regimens	Upon starting treatment, the regimen contains second line drugs apart from H, R, Z, E or S.
Item B	New cases with treatment started in chest clinics.
Item C	Retreatment cases, with treatment newly started. Previous treatment either not completed, or even if claimed to be completed, without documentation in the available clinic record.
Item D	Relapse cases, with treatment newly started. Previous treatment is completed with documentation in the available clinic record.
Item E	Treatment cases transferred in from hospitals, private doctors, etc. without treatment started previously at any chest clinics for this episode of tuberculosis.
Item F	Other transferred in treatment cases, with treatment given previously in any chest clinics for this episode of tuberculosis.

Appendix 20 (d)

Explanatory Notes For Appendices 20(a) and 20(b)

Appendix 20 (a) : Service regimen: For treatment cases who, upon starting anti-TB drugs, were given any combination of drugs including H (isoniazid), R (rifampicin), Z (pyrazinamide), E (ethambutol), and S (streptomycin).

Appendix 20 (b) : Other regimens: For treatment cases who, upon starting anti-TB drugs, were given also second line drugs apart from H, R, Z, E or S.

Number put on treatment b/f:

(A) - No. put on Rx b/f: Total number of treatment cases c/f from last month's balance.

Brought in:

- Items (B), (C), (D) & (E) will be using a new treatment number, while item (F) will be using the same previous treatment number, as follows:

(B) (1) Newly started treatment in your chest clinic.

(C) (2) Retreatment cases, with treatment newly started, including:
- Cases previously classified under items(O), (P), (Q), (R), (S), (T) or (U) in the most recent episode of treatment, with treatment restarted now after treatment has been interrupted for over 2 months;
- Cases claiming to have anti-TB treatment completed previously in chest clinic or chest hospital, but the clinic record is not available, e.g., because it has been destroyed;
- Cases claiming to have anti-TB treatment completed previously from sources other than chest clinic or chest hospital.

(D) (3) Relapse case:
- Cases having treatment completed previously (even if this is completed less than 2 months ago) in either chest clinic or chest hospital as indicated in the clinic record which is still available, e.g., cases classified under items (H) or (I) in the most recent episode.

(E) (4) Transfer in from hospitals, general practitioners (GPs), or prison:
- Cases previously unknown to any one chest clinic for this episode of treatment.

(F) (5) Cases using the same previous treatment number:
- Cases previously known to chest clinic for this episode of treatment, and now being transferred in from other chest clinics, hospitals, GPs, or prison, e.g., cases previously classified under items (K) or (L);
- Cases previously classified under items (O), (P), (Q), (R), or (S) in the most recent episode of treatment, with treatment restarted now after treatment has been interrupted for less than 2 months;
- Cases previously classified under item (M), and resuming treatment now.

Treatment completed:

(G) < 6m: Treatment stopped permanently by doctor prematurely, e.g., revised diagnosis.

(H) at 6m: Treatment stopped permanently by doctor at or within 2 weeks of 6 month from DOS.

(I) > 6m: Treatment stopped permanently by doctor at 7 month or more.

(J) NTM = Non-tuberculous mycobacteria cases

Column following (J): % = (H + I)/(A + B + C + D + E + F – G – K – L – M – Q – W)

Transfer out to:

(K) hosp: Admission to hospital.

(L) other cc: Transfer out to other chest clinics.

Interrup. Rx temp.:
(M) Treatment interrupted by doctor temporarily, e.g., due to side effects of drug such as impaired LFT.

Died:
(N) Treatment cases who died.

Drop out:
(O) Rx by GP: Changed to be treated by GP.
(P) Leave HK: Treatment cases known to be going back to Philippines, China, or other countries for good as stated in the clinic record (whether AMA has been signed or not).
(Q) Def. > 1x: Defaulted treatment and NFA in conference with MO for more than one time.
(R) AMA: Treatment cases who have signed AMA, excluding those who are to be classified under items (O) or (P).

Complete defaulter:
(S) < 2m: Defaulted treatment for less than 2 months, and NFA in conference with MO for the first time.
(T) > 2m, < 3m: Defaulted treatment for more than 2 months but less than 3 months, and NFA in conference with MO for the first time.
(U) > 3m: Defaulted treatment for more than 3 months, and NFA in conference with MO for the first time.
(V) % = (S + T + U)/(A + B + C + D + E + F – G – K – L – M – Q – W)

No. still on Rx c/f:
(W) - Number of treatment cases in hand at the end of the month = (A + B + C + D + E + F) – (G + H + I + K + L + M + N + O + P + Q + R + S + T + U)

Unsup. Rx:
(X) - Treatment cases with all anti-TB drugs supplied (not even taken one dose at chest clinic) and unsupervised. Count under this item if this happens within the first 2 month of treatment.

Incomp. super. Rx:
(Y) - Treatment incompletely supervised, including:
  - Treatment supervised by non-clinic staff, e.g., CNS, old aged home staff, Vietnamese camp, prison.
  - Drug supplied to patient or relatives.

  Count under this item if this happens within the first 2 months of treatment.

No. def. > 2m, < 3m:
(Z) - Number of defaulters who have defaulted treatment for more than 2 months but less than 3 months, but not yet NFA in conference with MO. (NB: No cases who have been counted under this item in the last month will be counted again under this item for the subsequent months.)

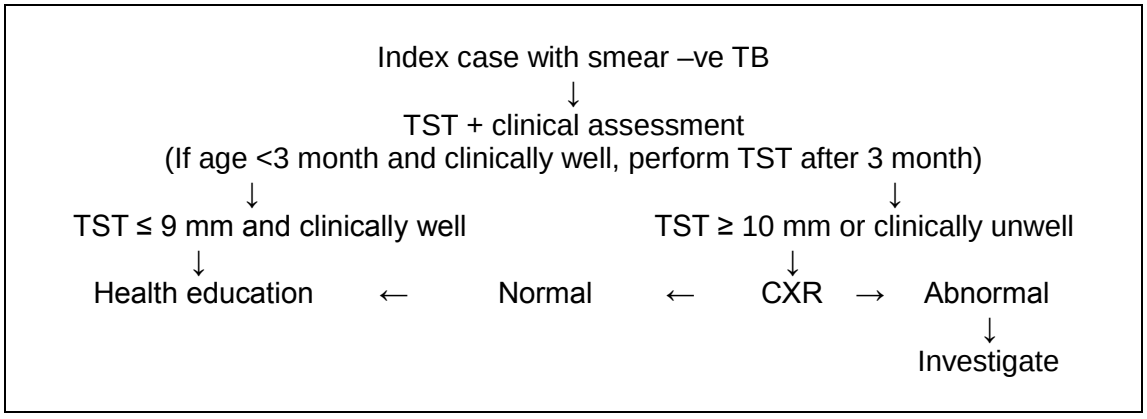
  This item needs to be counted only on the last working day of the month when completing the monthly treatment return.

Appendix 21 (a)

Scheme for Investigation of Close Contacts (Household) in the Tuberculosis & Chest Service, Department of Health

Scenario	Strategy
Index case is smear-negative and the close contact < 5 years old	Tuberculin skin test, with chest X-ray if the test reads 10 mm or more.
Index case is smear-negative and the close contact aged 5 years or more	Chest X-ray
Index case is smear-positive and the close contact < 35 years old	Chest X-ray and tuberculin skin test, with treatment of latent TB infection if appropriate.
Index case is smear-positive and the close contact aged 35 years or more	Chest X-ray, with tuberculin skin test and treatment of latent TB infection after assessment on a case-by-case basis.

Flow chart for contact investigation of close contacts aged below 5 with smear negative index case *



* If the index case has smear-negative TB and the close contact case is aged below five, the contact case is first evaluated by tuberculin skin test alongside clinical assessment. If the contact case is aged below 3 months and clinically well, the tuberculin test can be postponed until the contact case is 3 months old. If the contact case is clinically well and the tuberculin skin test result is 9 mm or less, health education is all that is required. If the contact case is clinically unwell or the tuberculin skin test result is 10 mm or more, chest X-ray is taken. If chest X-ray is normal, only health education is required. Otherwise, further investigation may be considered.

Appendix 21 (b)

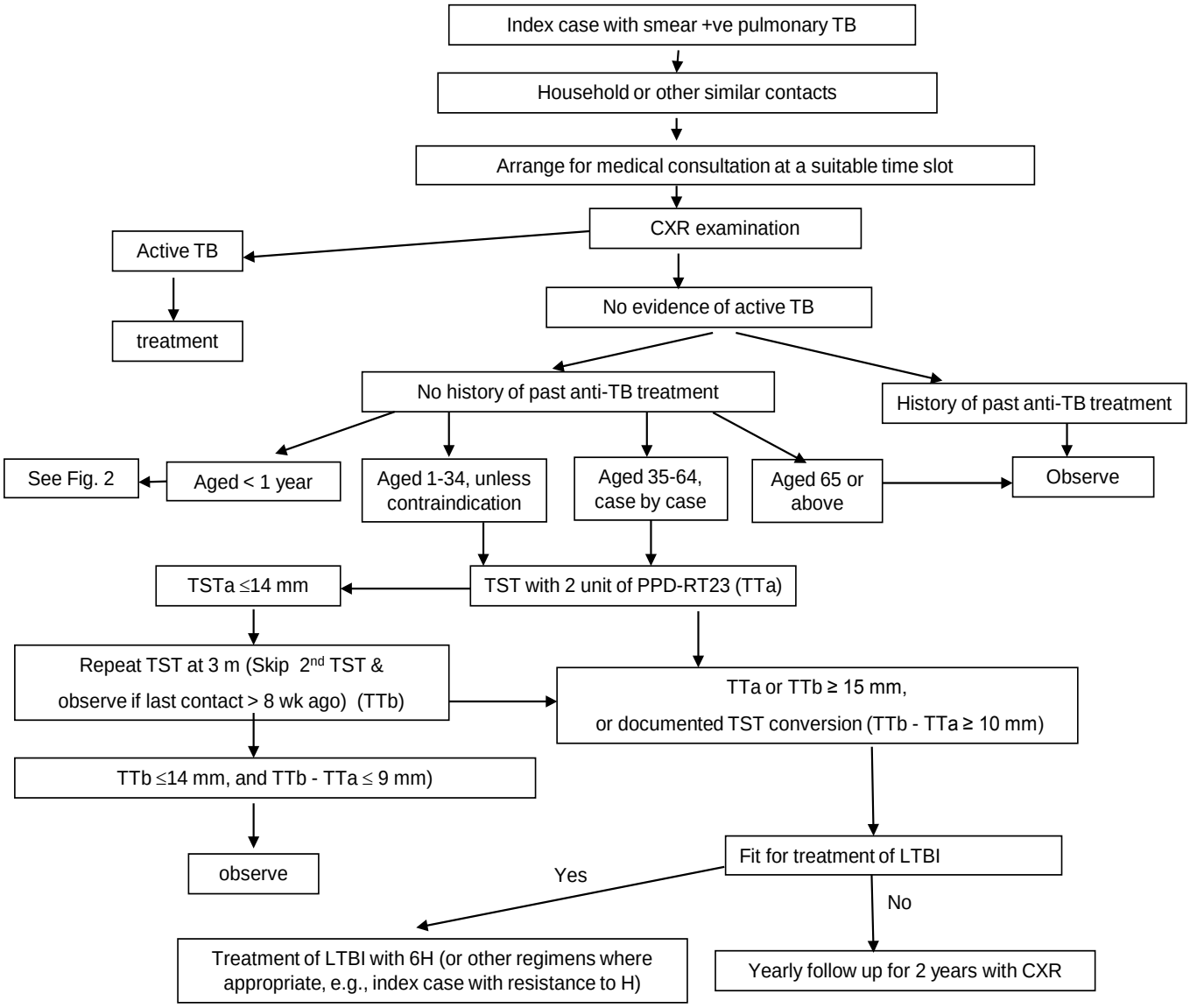


Figure 1: General schema for targeted screening of household contacts of smear-positive pulmonary TB patients

* Targeted screening for active TB and latent TB infection is regularly offered to subjects exposed to smear-positive pulmonary TB patients in the same household or other similar scenarios. Medical consultation is arranged at a suitable time slot, when chest X-ray examination will first be done to exclude active TB for which treatment will be given. Contacts with no evidence of active TB but a history of past anti-TB treatment will be observed, whereas those with no history of past anti-TB treatment will be managed according to their age group. For contacts aged below 1, please refer to App 21b2. For contacts aged 1 to 34, tuberculin skin test (TST) is routinely offered, unless there are contraindications. For those aged 35 to 64, TST is offered on a case-by-case basis. For those aged 65 or above, just observe. TST is done using 2 units of PPD-RT23. If the induration measured after 48 to 72 hours is no more than 14 mm, repeat TST 3 months later, unless the contact has had no further contact with the index case for more than 8 weeks. If the test response of either the first or the second TST is at least 15 mm, or if the difference between the two test responses is at least 10 mm, consider treatment of latent TB infection with daily isoniazid for 6 months (or other regimens where appropriate, for example, when the index case has TB with isoniazid resistance). If treatment of latent TB infection is indicated but the contact case is medically not fit, consider yearly follow up for 2 years with chest X-ray.

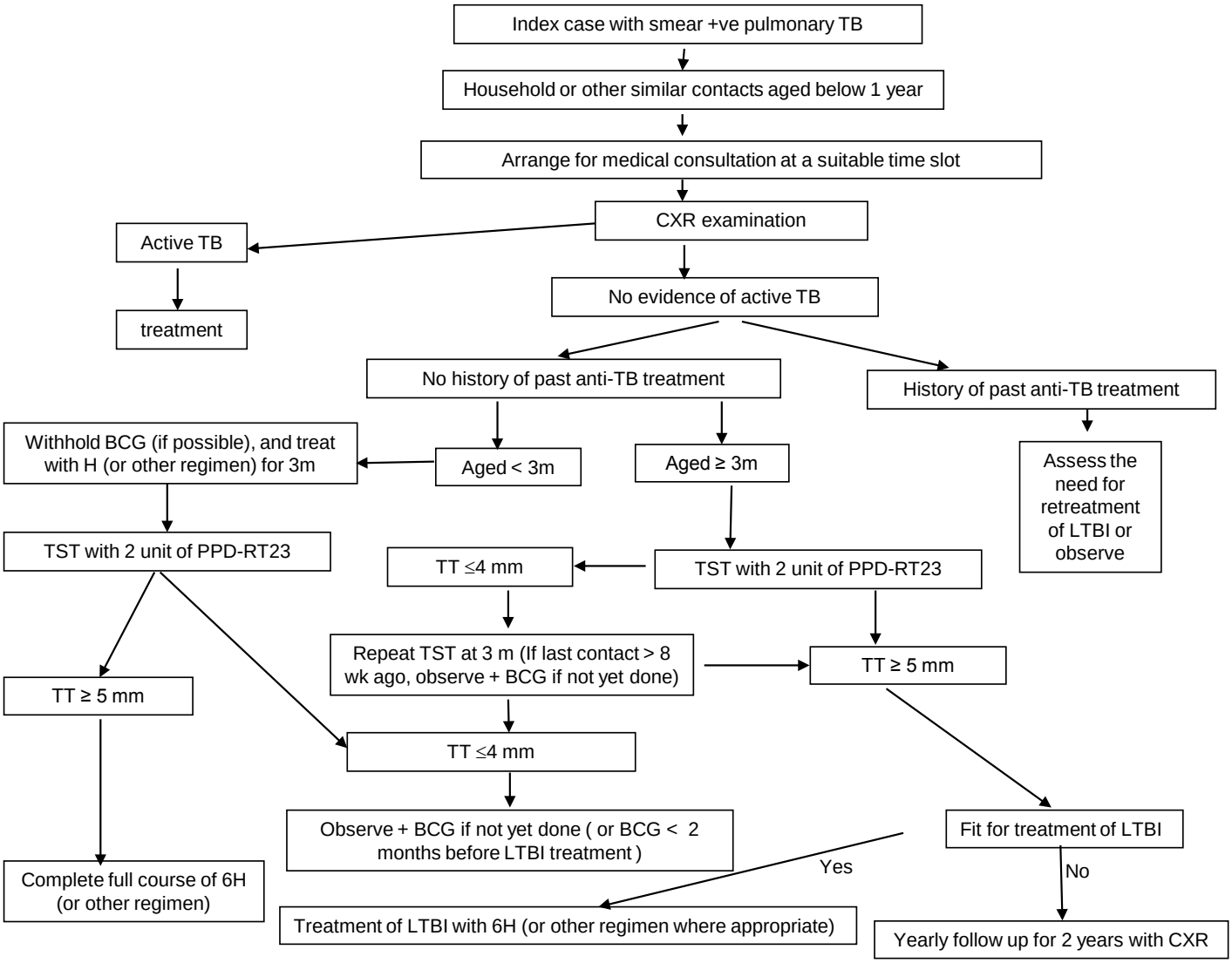


Figure 2: Targeted screening of household contacts aged below one year

* Targeted screening for active TB and latent TB infection is regularly offered to subjects aged below 1 year and exposed to smear-positive pulmonary TB patients in the same household or other similar scenarios. Medical consultation is arranged at a suitable time slot, when chest X-ray examination will first be done to exclude active TB for which treatment will be given. For contacts with no evidence of active TB but a history of past anti-TB treatment, the need for retreatment of latent TB infection versus observation will be assessed. For those with neither active TB nor a history of past anti-TB treatment, further management is stratified by their age group. For contacts aged below 3 months, withhold BCG if possible, and treat with isoniazid daily (or other regimens) for 3 months. This is followed by tuberculin skin test (TST) using 2 units of PPD-RT23. If the test response is at least 5 mm, complete a full course of 6-month isoniazid preventive treatment (or other regimens). If the test response is no more than 4 mm, observe and give BCG if it has not yet been given or given less than 2 months before starting treatment for latent TB infection.

For contacts aged 3 months or above, TST is done using 2 units of PPD-RT23. If the test response is no more than 4 mm, repeat TST 3 months later, unless the contact has had no further contact with the index case for more than 8 weeks. If the test response of either the first or second TST is at least 5 mm, consider treatment of latent TB infection with daily isoniazid for 6 months (or other regimens where appropriate). If treatment of latent TB infection is indicated but the contact case is medically not fit, consider yearly follow up for 2 years with chest X-ray. If the test response of the second TST (or the single TST done more than 8 weeks ago after last contact) is no more than 4 mm, observe and give BCG if it has not yet been given .

Appendix 21 (C)

Examination of Contacts in the Chest Clinics 2013

Particulars	Smear Positive Index Cases		Smear Negative Index Cases		Total	
No. of patients (new & old) listed	1353		3235		4588	
No. of contacts listed	3169		7515		10684	
Number of contacts x-rayed	3126	(100.00%)	7556	(100.00%)	10682	(100.00%)
Results						
(a) NSD & Unknown	2831	(90.56%)	7078	(93.67%)	9909	(92.76%)
(b) Disease other than TB	157	(5.02%)	282	(3.73%)	439	(4.11%)
(c) Inactive respiratory TB	61	(1.95%)	112	(1.48%)	173	(1.62%)
(d) Active respiratory TB						
A (radiologically)	9	(0.29%)	13	(0.17%)	22	(0.21%)
B (bacteriogically)	11	(0.35%) > 22 (0.70%)	6	(0.08%) > 20 (0.26%)	17	(0.16%) > 42 (0.39%)
C (incomplete)	2	(0.06%)	1	(0.01%)	3	(0.03%)
(e) Non-respiratory TB	5	(0.16%)	14	(0.19%)	19	(0.18%)
(f) Result not yet known	50	(1.60%)	50	(0.66%)	100	(0.94%)

Appendix 22 (a)

Scheme for BCG Administration in Hong Kong, 2013

Population Group		Procedures
Newborns		Direct BCG with intradermal method
Children under the age of 15	Negative BCG history and negative BCG scar	Direct BCG with intradermal method (since September 2000)
	BCG history and / or BCG scar	No action
Primary School Children (aged 6-10)		BCG revaccination programme stopped since September 2000

Notes: (1) Freeze dried BCG from Statens Serum Institut of Denmark being used

(2) Any child with symptoms and/or BCG complications should be seen by a doctor

Appendix 22 (b)

BCG Vaccinations at Birth 2013

Institution		No. of Live-births	BCG Vaccination	% Vaccinated
Hospital under HA management	P.Y. Nethersole East	2707	2535	93.6
	Queen Mary	3481	3388	97.3
Private Hospital	Canossa	712	709	99.6
	H.K. Adventist	518	500	96.5
	H.K. Sanatorium	2919	2890	99.0
	Matilda International	1186	1041	87.8
	St. Paul's	1506	1515	100.6
Total (HK Island)		13029	12578	96.5
Hospital under HA management	Kwong Wah	5184	5151	99.4
	Queen Elizabeth	5658	5646	99.8 *
	United Christian	4121	4108	99.7
Private Hospital	H.K. Baptist	2291	2248	98.1
	St. Teresa's	5242	5154	98.3
	Precious Blood	641	634	98.9
Total (Kowloon)		23137	22941	99.2
Hospital under HA management	Alice H.M.L. Nethersole	-	-	-
	Prince of Wales	6299	6306	100.1
	Princess Margaret	4445	4467	100.5 *
	Tuen Mun	5189	5183	99.9
Private Hospital	T.W. Adventist	1136	1131	99.6
	Shatin Int'l Medical Ctr Union	3838	3766	98.1
Total (NT Areas)		20907	20853	99.7
Mother & Child Health Centre		-	186	-
Grand Total		57073	56558	99.1

Note: * Including vaccinations of live births transferred from other maternity institutions and vaccinations of live births at end of 2011

Appendix 23

TB Beds in Public Services, 2013

Hospital		No. of TB Beds
Hospital Authority	Grantham Hospital	111
	Kowloon Hospital	108
	Ruttonjee Hospital	151
	Haven of Hope Hospital	125
	Wong Tai Sin Hospital	96
	Total (Hospital Authority)	591
Custody	Stanley Prison Hospital	20
Grand Total (2013)		611
Grand Total (2012)		650
Grand Total (2011)		664

Appendix 24

Annual Admissions to Hospitals from Government Chest Clinics

2000 - 2013

Year	Total Admissions
2000	5408
2001	5317
2002	5183
2003	4603
2004	4986
2005	4435
2006	4571
2007	4038
2008	3170
2009	3345
2010	3330
2011	3142
2012	2940
2013	2823

Admissions by Clinic	Year 2013
East Kowloon	321
Kowloon	157
Sai Ying Pun	428
Shaukeiwan	135
Shaukeiwan Pneumoconiosis	60
Shek Kip Mei	123
South Kwai Chung	433
Tai Po	40
Tung Chung	30
Wanchai	242
Yan Oi	280
Yaumatei	192
Yuen Chau Kok	148
Yung Fung Shee	121
Cheung Chau	5
NT Unit	108
Total	2823

Appendix 25

HIV Surveillance Among TB Patients

Provider-initiated HIV Antibody Testing Among TB Patients in Government Chest Clinics (2005 – 2013)

Year	HIV positive		HIV negative		HIV results unknown or not done		Total	
	Number	%	Number	%	Number	%	Number	%
2005	35	0.7%	4174	80.5%	973	18.8%	5182	100%
2006	33	0.7%	4478	90.4%	445	9.0%	4956	100%
2007	41	0.9%	4034	87.8%	517	11.3%	4592	100%
2008	48	1.0%	4073	88.8%	464	10.1%	4585	100%
2009	40	0.9%	3953	88.1%	496	11.0%	4489	100%
2010	28	0.7%	3805	89.5%	418	9.8%	4251	100%
2011	33	0.8%	3623	89.7%	381	9.4%	4037	100%
2012	22	0.5%	3685	90.7%	357	8.8%	4064	100%
2013	24	0.6%	3512	87.6%	473	11.8%	4009	100%

Unlinked Anonymous Screening (UAS) for HIV in TB & Chest Service

Period	Category	Sample	Number Tested (No. +ve) (% +ve)
1.12.90 - 31.1.91	Outpatient	Blood	1548
5.6.91 - 5.8.91	Inpatient	Blood	485
1.4.92 – 30.6.92	Outpatient	Blood	1469 (2) (0.14%)
1.4.93 – 30.6.93	Outpatient	Blood	1173
Sep 95 – Nov 95	Outpatient	Urine	895 (2) (0.22%)
Sep 96 – Dec 96	Outpatient	Urine	998 (4) (0.40%)
Oct 97 – Jan 98	Outpatient	Urine	1003 (2) (0.20%)
Oct 98 – Jan 99	Outpatient	Urine	833 (4) (0.48%)
Sep 99 – Dec 99	Outpatient	Urine	1166 (8) (0.69%)
Sep 00 – Dec 00	Outpatient	Urine	1018 (5) (0.49%)
Oct 01 – Dec 01	Outpatient	Urine	1071 (4) (0.37%)
Oct 02 – Jan 03	Outpatient	Urine	1000 (8) (0.80%)
Nov 03 – Feb 04	Outpatient	Urine	920 (6) (0.65%)
Oct 04 – Feb 05	Outpatient	Urine	1056 (9) (0.85%)
Nov 05 – Jan 06	Outpatient	Urine	841 (7) (0.83%)
Nov 06 – Feb 07	Outpatient	Urine	841 (5) (0.59%)
Nov 07 – Feb 08	Outpatient	Urine	887 (11) (1.24%)

Since late 2008, UAS is no longer performed, and surveillance of HIV among TB patients mainly depends on voluntary HIV testing.

Appendix 26

Number of 'Confirmed' cases of TB in health care staff
Notified to Labour Department (1993 – 2013)

Year	Number
1993	0
1994	1
1995	2
1996	2
1997	10
1998	39
1999	57
2000	39
2001	41
2002	29
2003	30
2004	42
2005	30
2006	18
2007	16
2008	25
2009	18
2010	11
2011	17
2012	15
2013	7

'Confirmed' Cases of TB in Health Care Staff Notified
to Labour Department (2013) by Age and Job Title

Age Group	Doctor	Nurse	Other Allied Health Professional	Other Supporting Staff	Total
20 – 24					0
25 – 29		1			1
30 – 34		1			1
35 – 39		1			1
40 – 44					0
45 – 49				2	2
50 – 54		1			1
55 – 59					0
60 – 64					0
65 – 69					0
70 – 74				1	1
Total	0	4	0	3	7

Appendix 27
Cohorts of TB Patients

Treatment outcomes for TB cases registered in 2012 calendar year (number of patients)

	Number of cases registered in 2012 *		Cured or treatment completed		Treatment failed		Died		Lost to follow-up (defaulted)		Not evaluated **	
All new and relapse cases (bacteriologicaly confirmed or clinically diagnosed, pulmonary or extrapulmonary)	4796	100.00%	3215	67.04%	0	0.00%	818	17.06%	141	2.94%	622	12.97%
Previously treated patients (excluding relapse cases) ***	27	100.00%	14	51.85%	0	0.00%	0	0.00%	7	25.93%	6	22.22%
HIV-positive TB cases, all types	19	100.00%	12	63.16%	0	0.00%	2	10.53%	3	15.79%	2	10.53%

NB:
* Excludes cases moved to second-line treatment (i.e., excluding rifampicin-resistant cases).
** "Not evaluted" includes "transferred out", "still on treatment" and any other registered cases where the treatment outcome has not been evaluated.
*** "Previously treated patients (excluding relapse cases)" include "treatment after default" and "failure of previous treatment" cases.

Treatment outcomes for TB cases started on second-line TB treatment in 2011 calendar year (number of patients)

	Number of cases started on second-line TB treatment in 2011		Cured or treatment completed		Treatment failed		Died		Lost to follow-up (defaulted)		Not evaluated ****	
All confirmed RR-TB/ MDR-TB cases	30	100.00%	18	60.00%	0	0.00%	5	16.67%	6	20.00%	1	3.33%
All confirmed XDR-TB cases *****	1	100.00%	1	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

NB:
**** "Not evaluted" includes "transferred out", "still on treatment" and any other registered cases where the treatment outcome has not been evaluated.
***** Excluding all confirmed RR-TB/ MDR-TB cases which are not XDR-TB cases.

Part 2

PNEUMOCONIOSIS

Part 2 - Pneumoconiosis: Contents

Appendix 1

New Cases of Suspected Pneumoconiosis attending
the Pneumoconiosis Clinic in Hong Kong 1956 - 2013

Year	Number of New Cases Undergoing Assessment					
	Government Workers	Non-government Workers	Total	Cumulative Total	Cumulative Total Compensated	
					R1	R2
1956	1	-	1	1		
1957	4	4	8	9		
1958	9	13	22	31		
1959	5	7	12	43		
1960	9	6	15	58		
1961	8	-	8	66		
1962	3	1	4	70		
1963	9	5	14	84		
1964	21	17	38	122		
1965	9	4	13	135		
1966	7	9	16	151		
1967	3	6	9	160		
1968	4	2	6	166		
1969	4	10	14	180		
1970	22	36	58	238		
1971	9	18	27	265		
1972	9	29	38	303		
1973	3	39	42	345		
1974	-	97	97	442		
1975	5	84	89	531		
1976	15	252	267	798		
1977	3	216	219	1017		
1978	12	207	219	1236		
1979	2	210	212	1448		
1980	12	532 (a)	544	1992	386 (a)	-
1981	8	608	616	2608	1332	162
1982	4	511	515	3123	1434	634
1983	2	292	294	3417	1469	945
1984	1	231	232	3649	1477	1140
1985	1	179	180 (b)	3829	1479	1322
1986	3	176	179 (3)	4008	1485	1513
1987	4	166	170 (2)	4178	1485	1679
1988	6	172	178 (4)	4356	1488	1877
1989	-	156	156 (1)	4512	1488	2023
1990	2	147	149 (1)	4661	1489	2142
1991	-	171	171 (1)	4832	1489	2151
1992	2	171	173 (3)	5005	1490	2340
1993	2	247	249 (4)	5254	1492	2492
1994	-	327	327 (7)	5581	1493	2770
1995	9	245	254 (9)	5835	1494	3000
1996	4	193	197 (9)	6032	1494	3119
1997	4	154	158 (7)	6190	1494	3242
1998	2	197	199 (5)	6389	1494	3351
1999	-	291	291 (15)	6680	1494	3505
2000	3	235	238 (11)	6918	1494	3619
2001	6	230	236 (9)	7154	1494	3751
2002	3	212	215 (9)	7369	1494	3868
2003	3	142	145 (6)	7514	1494	3948
2004	3	138	141 (4)	7655	1494	4021
2005	-	134	134 (2)	7789	1494	4091
2006	-	278	278 (7)	8067	1494	4207
2007	-	120	120 (2)	8187	1494	4276
2008	3	118	121 (5)	8308	1494	4348
2009	-	167	167 (5)	8475	1494	4456
2010	-	152	152 (1)	8627	1494	4518
2011	-	130	130 (9)	8757	1494	4590
2012	-	122	122 (c) (3)	8879	1494 (d)	4637
2013	-	156	156 (c) (2)	9035	1494 (d)	4690

Notes :
(a) The Pneumoconiosis Compensation Scheme was initiated in 1980, before that reporting were voluntary.
(b) The figures in this column denote the number of patient with asbestos-related lung disease.
(c) Up to the moment that this report is being compiled, only 53 of the 156 cases in 2013 had been assesed and confirmed pneumoconiosis by the Pneumoconiosis Medical Board. And the following tables (Appendix 2 to Appendix 8) are compiled basing on the data of these 53 cases.
(d) Under Revised Ordinance 1993 : 584 out of 1494 pneumoconiotics had joined the pneumoconiosis ex-gratia scheme up to the year 2013. 91 living pneumoconiotics were each receiving a monthly ex-gratia payment of $4920.00 in 2013.

Appendix 2

Age Distribution of Pneumoconiosis Cases 2013

Age	Number of Cases	%
25 - 29	-	-
30 - 34	-	-
35 - 39	-	-
40 - 44	-	-
45 - 49	-	-
50 - 54	8	15
55 - 59	10	19
60 - 64	14	27
65 - 69	6	11
70 - 74	7	13
75+	8	15
Total	53	100

Appendix 3

Occupation Distribution of Confirmed Pneumoconiosis 2013

Type of Occupation	Number of Cases	%
Construction Construction/Quarry Others	40 3 10	75 6 19
Total	53	100

Appendix 4

Pneumoconiosis Patients by Duration of Exposure to Dust 2013

Duration	Number of Cases	%
<5 years	-	-
5 - 9	1	2
10 - 14	1	2
15 - 19	4	8
20 - 24	9	17
25 - 29	15	28
30+	22	41
Unknown	1	2
Total	53	100

Appendix 5

Pneumoconiosis Patients by Degree of Incapacity 2013

Degree of Incapacity (%)	No. of New Cases Compensated under Compensation Ordinance
5	22
10	17
15	5
20	2
25	1
30	-
35	1
40	1
45	1
50	1
55	-
60	-
70	1
75	-
80	-
100	-
N. A.	1
Total	53

Appendix 6

Confirmed Pneumoconiosis Patients
Classified by Radiological Appearance 2013

Type of Opacity	Profusion 1	2	3	Sub-Total
Small opacities				
Rounded				
p (up to 1.5 mm diameter)	30	-	-	30
q (1.5 to 3.0 mm diameter)	13	4	-	17
r (3.0 to 10.0 mm diameter)	1	2	-	3
Irregular				
s (fine irregular or linear)	1	-	-	1
t (medium irregular)	-	1	-	1
u (coarse irregular)	-	-	-	-
Sub-total	45	7	-	52
Combined opacities	-	-	-	-
N. A.	-	-	-	1
Total				53

9 out of the 53 patients have large opacities as follows :

Large opacities	
A (Single opacity 1 - 5 cm or multiple opacities > 1 cm each but sum of diameter < 5 cm)	3
B (Single or multiple opacities with combined area < the equivalent of right upper zone)	6
C (Single or multiple opacities with combined area > the equivalent of right upper zone)	-
Total	9

Appendix 7

History of Tuberculosis (TB) among Patients with Pneumoconiosis Confirmed in 2013

History of TB		Number of Cases	%
History of TB	Bacteriological Positive	14	27
	Bacteriological Negative	-	-
	Not Available	6	11
No History of TB		33	62
Total		53	100

Appendix 8

Confirmed Pneumoconiosis Patients by Other Particulars 2013

Characteristics		Number of Cases	%
Smoking	Smoker/Ex-smoker	48	90
	Non-smoker	4	8
	Unknown	1	2
	Total	53	100
Still exposed to dust when seen by the Pneumoconiosis Clinic	Yes	15	28
	No	37	70
	Unknown	1	2
	Total	53	100
General Condition	Good	48	90
	Fair	4	8
	Poor	-	-
	Died	1	2
	Total	53	100

Part 3

ANNEX

Part 3 – Annex: Contents

Annex 1 (a)

Treatment Outcomes up to 2 year of the 2010 Cohort of TB Patients

A total of 5093 cases of TB were notified in the year 2010. Among them, 4066 were ever seen at chest clinics (ES) while 1027 were never seen at chest clinics (NS). They are categorised as follows:

Categories		ES	%	NS	%	ES/NS	%
(A)	New pulmonary, smear positive	1125	27.7	166	16.2	1291	25.3
(B)	New pulmonary, smear negative	1712	42.1	440	42.8	2152	42.3
(C)	New pulmonary, smear not done/ unknown	170	4.2	181	17.6	351	6.9
(D)	New extra-pulmonary	627	15.4	160	15.6	787	15.5
(E)	Relapse pulmonary, smear positive	123	3.0	9	0.9	132	2.6
(F)	Pulmonary smear-positive retreatment after failure or default	11	0.3	0	0.0	11	0.2
(G)	Other retreatment cases (not included in E and F) [i.e., including relapses (pulmonary, smear negative or unknown or not done; and extrapulmonary) and retreatment after failure or default (pulmonary, smear negative or unknown or not done; and extrapulmonary)]	298	7.3	71	6.9	369	7.2
Total		4066	100.0	1027	100.0	5093	100.0

Analysis has been done on this cohort of patients and the results are shown in the following Annexes:

Annex 1 (b)	Various age groups (0-19), (20-39), (40-59), (60+), and all age groups
	for (i) ES/NS (cases ever or never seen at chest clinics) - sheet 01 to 09
	(ii) ES (cases ever seen at chest clinics) - sheet 01 to 03
	(iii) NS (cases never seen at chest clinics) - sheet 01 to 03
Annex 1 (c)	Pulmonary pretreatment smear positive, pretreatment culture positive, and MDR-TB cases
	for ES/NS (cases ever or never seen at chest clinics) - sheet 01 to 08
Annex 1 (d)	New pulmonary smear positive and retreatment pulmonary smear positive cases
	for ES/NS (cases ever or never seen at chest clinics) - sheet 01 to 02
Annex 1 (e)	Treatment defaulters (outcome at 2 year = defaulting)
	for ES/NS (cases ever or never seen at chest clinics) - sheet 01 to 05
Annex 1 (f)	Sources completing Programme Forms PFA, PFB1, PFB2, PFC, and PFD

Annex 1 (g)	Sample of the set of "Programme Forms" (PFA, PFB1, PFB2, PFC, and PFD) used for the cohort of patients in 2009

Discussion

Annex 1 (b) – Various age groups

Among the total of 5093 patients, 179 (3.5%) were aged between 0 and 19, 1111 (21.8%) between 20 and 39, 1414 (27.8%) between 40 and 59, and 2389 (46.9%) above 60. 63.4% were male. 39.3%, 22.3%, and 14.1% were never smokers, ex-smokers, and current smokers respectively. 73.5% were permanent local residents while 74.0% were of Chinese ethnicity. Most of them (69.6%) presented because of symptoms. 9.6% presented as incidental finding to pre-employment, pre-immigration, other body check or incidental to other illness, while 1.8% were diagnosed through contact tracing.

70.7% of patients had pulmonary TB, 16.7% had extra-pulmonary TB and 12.5% had both. TB pleura and TB lymph node accounted for 10.9% and 8.5% of the site of involvement respectively. Among pulmonary TB patients, 39.4% had pretreatment sputum smear +ve, 67.6% had pretreatment culture +ve and 17.9% had cavitary lesion on their chest radiographs.

With regard to co-morbidity factors for TB, 12.6% of TB patients had diabetes mellitus, 5.0% of patients had coexisting malignancy, 1.4% of patients were immuno-suppressed because of either steroid or cytotoxic therapy. HIV infection was reported for 0.5% of cases. 4.1% of all TB patients were reported to be hepatitis B carrier while 0.4% had chronic active hepatitis.

56.9% of patients were on 6 months short course chemotherapy for TB or other standard regimen based on HREZS. Treatment side effect was reported in 37.5% of patients. 12.3% were GI side effects, 13.2% were skin rash, 3.2% had transient rise in liver enzyme and 8.7% had frank hepatitis.

Among the 4066 patients ever seen in chest clinic, 75.0% received >90% DOT in initial 2 months, while 66.6% received >90% DOT in subsequent 4 months. Treatment completion/cure rates at 6 months, 12 months and 24 months were: 22.5%, 75.0% and 85.0% respectively. Death rates at corresponding periods were 5.7%, 7.6% and 7.9% respectively.

Among the 1027 patients never seen in chest clinic, 2.2% received >90% DOT in initial 2 months, while 1.9% received >90% DOT in subsequent 4 months. Treatment completion/cure rates at 6 months, 12 months and 24 months were: 1.2%, 34.1% and 34.5% respectively. Death rates at corresponding periods were 0.2%, 52.1% and 52.1% respectively. However, a high percentage of the programme forms of this group of patients were not completed.

Annex 1 (c) – Pulmonary pretreatment smear +ve, culture +ve, and MDR-TB cases

Regarding patients with pulmonary TB, 1434 were pretreatment smear +ve, 2866 were pretreatment culture +ve, and 21 were MDR-TB patients.

In the initial 2 months, over 60% of pretreatment smear +ve, culture +ve patients and MDR-TB received >90% DOT. The corresponding percentages were over 50% for all three groups of patients in subsequent 4 months.

Overall sputum smear conversion rate at 2 months were 78.5% for smear +ve patients and 53.8% for MDRTB patients. Culture conversion rate at 2 months were 86.9% for culture +ve patients and 41.7% for MDR-TB patients.

Treatment success rates for smear +ve patients at 6 months, 12 months and 24 months were 16.0%, 69.0% and 78.5% respectively. Those for culture +ve patients were 19.5%, 66.4% and 75.0% respectively. Those for MDR-TB patients were 0.0%, 0.0% and 52.4% respectively. 2 out of 21 (9.5%) MDR-TB patients defaulted treatment at 24 months.

Annex 1 (d) – New and retreatment pulmonary smear +ve cases

Treatment success rates for new pulmonary smear +ve patients at 6 months, 12 months and 24 months were 17.1%, 69.4% and 78.7% respectively. The corresponding treatment success rates for retreatment pulmonary smear +ve patients were 5.6%, 65.7% and 76.9% respectively.

Annex 1 (e) – Treatment defaulters

There were 226 treatment defaulters at 24 months in the 2010 cohort. Around 34.1%, 31.0%, and 34.1% are in each of the age groups 20 to 39, 40 to 59, and 60+ respectively. 25.2% worked full time, 2.7% part time, 19.0% retired, and 19.0% were unemployed. 87.6% were new case, 9.3% were relapse, 3.1% were retreatment after default cases, and 0.0% were retreatment after failure of previous treatment cases. 45.1% had pretreatment smear +ve and 22.8% had cavitary lesions on the chest radiograph. 39.8% of patients lost contact after default and 8.8% of patients were retreated after default.

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 01

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Female	85	47.5	615	55.4	514	36.4	649	27.2	1863	36.6
Male	94	52.5	496	44.6	900	63.6	1740	72.8	3230	63.4
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Marital status										
Single	151	84.4	545	49.1	199	14.1	85	3.6	980	19.2
Married	2	1.1	385	34.7	920	65.1	1560	65.3	2867	56.3
Separated	0	0.0	9	0.8	16	1.1	8	0.3	33	0.6
Divorce	0	0.0	9	0.8	59	4.2	28	1.2	96	1.9
Widowed	0	0.0	2	0.2	14	1.0	57	2.4	73	1.4
Not recorded	26	14.5	161	14.5	206	14.6	651	27.2	1044	20.5
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Smoking status										
Never	127	70.9	613	55.2	581	41.1	681	28.5	2002	39.3
Ex-smoker	6	3.4	120	10.8	298	21.1	713	29.8	1137	22.3
Current smoker	8	4.5	181	16.3	300	21.2	227	9.5	716	14.1
Not recorded	38	21.2	197	17.7	235	16.6	768	32.1	1238	24.3
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Institution-related										
Yes	107	59.8	100	9.0	68	4.8	248	10.4	523	10.3
No	49	27.4	859	77.3	1145	81.0	1515	63.4	3568	70.1
Not recorded	23	12.8	152	13.7	201	14.2	626	26.2	1002	19.7
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Institution										
Client	94	-	57	-	34	-	216	-	401	-
Staff	0	-	15	-	17	-	1	-	33	-
Institution type										
Old age home	35	-	21	-	22	-	222	-	300	-
School	101	-	39	-	25	-	153	-	318	-
Hospital	0	-	11	-	7	-	1	-	19	-
Handicapped	1	-	19	-	17	-	2	-	39	-
Prison	1	-	29	-	10	-	4	-	44	-
Others	1	-	7	-	15	-	5	-	28	-
Living situation										
Street-sleeper	0	0.0	2	0.2	0	0.0	2	0.1	4	0.1
Cubicle bed space	0	0.0	0	0.0	4	0.3	26	1.1	30	0.6
Institution	6	3.4	34	3.1	36	2.5	199	8.3	275	5.4
Work quarter	0	0.0	41	3.7	7	0.5	0	0.0	48	0.9
Alone (not above)	1	0.6	72	6.5	143	10.1	228	9.5	444	8.7
With friends	1	0.6	33	3.0	23	1.6	14	0.6	71	1.4
With family	148	82.7	752	67.7	987	69.8	1275	53.4	3162	62.1
Not recorded	23	12.8	177	15.9	214	15.1	645	27.0	1059	20.8
Residential status										
Permanent resident	137	76.5	724	65.2	1135	80.3	1746	73.1	3742	73.5
Chinese immigrant	13	7.3	53	4.8	25	1.8	6	0.3	97	1.9
Imported worker	2	1.1	123	11.1	40	2.8	2	0.1	167	3.3
Tourist - 2 way permit Chinese	2	1.1	15	1.4	3	0.2	1	0.0	21	0.4
Other tourist	1	0.6	8	0.7	1	0.1	1	0.0	11	0.2
Vietnamese	0	0.0	2	0.2	0	0.0	0	0.0	2	0.0
Illegal immigrants	0	0.0	13	1.2	3	0.2	0	0.0	16	0.3
Not recorded	24	13.4	173	15.6	207	14.6	633	26.5	1037	20.4
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 02

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Place of birth										
Hong Kong	97	54.2	509	45.8	668	47.2	413	17.3	1687	33.1
Mainland China	51	28.5	249	22.4	451	31.9	1278	53.5	2029	39.8
Others	8	4.5	217	19.5	110	7.8	75	3.1	410	8.1
Not recorded	23	12.8	136	12.2	185	13.1	623	26.1	967	19.0
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Ethnicity										
Chinese	148	82.7	754	67.9	1128	79.8	1741	72.9	3771	74.0
Other Asian	6	3.4	200	18.0	80	5.7	28	1.2	314	6.2
Caucasian	0	0.0	1	0.1	5	0.4	1	0.0	7	0.1
Others	0	0.0	3	0.3	1	0.1	2	0.1	6	0.1
Not recorded	25	14.0	153	13.8	200	14.1	617	25.8	995	19.5
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Previous BCG history										
Yes	136	76.0	661	59.5	510	36.1	120	5.0	1427	28.0
No	8	4.5	100	9.0	212	15.0	656	27.5	976	19.2
Unknown	35	19.6	350	31.5	692	48.9	1613	67.5	2690	52.8
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
BCG scar										
Yes	125	-	619	-	463	-	120	-	1327	-
No	26	-	316	-	713	-	1538	-	2593	-
Evidence of previous BCG										
BCG history +ve or scar +ve	137	76.5	696	62.6	559	39.5	158	6.6	1550	30.4
Employment status										
Full-time	16	8.9	603	54.3	597	42.2	124	5.2	1340	26.3
Part-time	1	0.6	26	2.3	61	4.3	23	1.0	111	2.2
Retired	0	0.0	4	0.4	91	6.4	1231	51.5	1326	26.0
Unemployed	15	8.4	194	17.5	265	18.7	59	2.5	533	10.5
Housewife	1	0.6	73	6.6	166	11.7	299	12.5	539	10.6
Student	119	66.5	39	3.5	1	0.1	1	0.0	160	3.1
Not recorded	27	15.1	172	15.5	233	16.5	652	27.3	1084	21.3
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Occupation										
Blue collar	10	5.6	229	20.6	371	26.2	103	4.3	713	14.0
White collar	1	0.6	206	18.5	133	9.4	14	0.6	354	7.0
Medical	0	0.0	2	0.2	1	0.1	0	0.0	3	0.1
Nursing	0	0.0	6	0.5	6	0.4	0	0.0	12	0.2
Paramedical	0	0.0	2	0.2	0	0.0	0	0.0	2	0.0
Supporting health staff	0	0.0	4	0.4	6	0.4	1	0.0	11	0.2
Not applicable	89	49.7	284	25.6	467	33.0	1452	60.8	2292	45.0
Not recorded	79	44.1	378	34.0	430	30.4	819	34.3	1706	33.5
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
First presentation										
Private doctor	31	17.3	248	22.3	226	16.0	158	6.6	663	13.0
Private hospital	4	2.2	26	2.3	28	2.0	18	0.8	76	1.5
GOPC	10	5.6	32	2.9	52	3.7	87	3.6	181	3.6
Chest Clinic	25	14.0	85	7.7	129	9.1	231	9.7	470	9.2
Other DH Clinic	3	1.7	26	2.3	17	1.2	21	0.9	67	1.3
HA Clinic	0	0.0	28	2.5	46	3.3	51	2.1	125	2.5
HA Hospital	80	44.7	499	44.9	716	50.6	1200	50.2	2495	49.0
Mainland	3	1.7	19	1.7	16	1.1	24	1.0	62	1.2
Overseas	0	0.0	7	0.6	2	0.1	0	0.0	9	0.2
Not recorded	23	12.8	141	12.7	182	12.9	599	25.1	945	18.6
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 03

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Symptomatic on presentation										
Y	135	75.4	867	78.0	1083	76.6	1611	67.4	3696	72.6
N	21	11.7	103	9.3	154	10.9	180	7.5	458	9.0
Not recorded	23	12.8	141	12.7	177	12.5	598	25.0	939	18.4
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Chest symptoms	96	-	617	-	768	-	1240	-	2721	-
Systemic symptoms	35	-	127	-	193	-	269	-	624	-
Other site-specific symptoms	29	-	210	-	270	-	225	-	734	-
Reason for presentation										
Symptom	131	73.2	840	75.6	1039	73.5	1533	64.2	3543	69.6
Contact screening	18	10.1	23	2.1	30	2.1	20	0.8	91	1.8
Pre-employment	1	0.6	31	2.8	11	0.8	2	0.1	45	0.9
Pre-emigration	0	0.0	3	0.3	3	0.2	0	0.0	6	0.1
Other body check	3	1.7	45	4.1	74	5.2	63	2.6	185	3.6
Incidental to other illness	3	1.7	23	2.1	74	5.2	156	6.5	256	5.0
Others	0	0.0	0	0.0	2	0.1	4	0.2	6	0.1
Not recorded	23	12.8	146	13.1	181	12.8	611	25.6	961	18.9
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Contact with TB patients										
Yes	35	19.6	78	7.0	103	7.3	63	2.6	279	5.5
No	118	65.9	890	80.1	1126	79.6	1720	72.0	3854	75.7
Not recorded	26	14.5	143	12.9	185	13.1	606	25.4	960	18.8
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Contact type										
Household	27	-	59	-	66	-	45	-	197	-
Work	1	-	4	-	11	-	3	-	19	-
Casual	4	-	5	-	18	-	5	-	32	-
Time of contact										
Within 2 year	20	-	27	-	34	-	13	-	94	-
Over 2 year	6	-	41	-	53	-	35	-	135	-
Previous chemoprophylaxis										
Yes	0	-	2	-	3	-	2	-	7	-
Reason for chemoprophylaxis										
Contact	0	-	1	-	0	-	0	-	1	-
Silicosis	0	-	0	-	1	-	0	-	1	-
HIV	0	-	0	-	0	-	1	-	1	-
Old scar on CXR	0	-	0	-	0	-	0	-	0	-
Others	0	-	0	-	2	-	0	-	2	-
Disease Classification										
Pulmonary TB only	125	69.8	716	64.4	968	68.5	1794	75.1	3603	70.7
Extrapulmonary TB only	20	11.2	219	19.7	267	18.9	347	14.5	853	16.7
Both	34	19.0	176	15.8	179	12.7	248	10.4	637	12.5
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 04

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Extrapulmonary TB										
Pleura	16	8.9	111	10.0	146	10.3	281	11.8	554	10.9
Lymph node	21	11.7	177	15.9	143	10.1	90	3.8	431	8.5
Meninges	0	0.0	11	1.0	20	1.4	20	0.8	51	1.0
Miliary	2	1.1	9	0.8	7	0.5	16	0.7	34	0.7
Abdomen	5	2.8	24	2.2	36	2.5	45	1.9	110	2.2
Bone and joint (not spine)	3	1.7	10	0.9	15	1.1	33	1.4	61	1.2
Spine	2	1.1	7	0.6	13	0.9	17	0.7	39	0.8
Genito-urinary tract	0	0.0	9	0.8	16	1.1	35	1.5	60	1.2
Naso/oro-pharynx	0	0.0	8	0.7	3	0.2	2	0.1	13	0.3
Larynx	0	0.0	2	0.2	6	0.4	3	0.1	11	0.2
Pericardium	0	0.0	2	0.2	3	0.2	10	0.4	15	0.3
Skin	3	1.7	10	0.9	16	1.1	12	0.5	41	0.8
Other sites	1	0.6	14	1.3	21	1.5	26	1.1	62	1.2
Case category										
New case	177	98.9	1062	95.6	1293	91.4	2049	85.8	4581	89.9
Relapse	2	1.1	44	4.0	107	7.6	328	13.7	481	9.4
Treatment after default	0	0.0	5	0.5	14	1.0	12	0.5	31	0.6
Failure of previous treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Disease characteristics (pulmonary cases)										
Pretreatment smear +ve	42	26.4	365	40.9	501	43.7	763	37.4	1671	39.4
Pretreatment culture +ve	88	55.3	560	62.8	752	65.6	1466	71.8	2866	67.6
Extent = 1	74	46.5	438	49.1	522	45.5	791	38.7	1825	43.0
Extent=1 & cavity=N	*61*	*38.4*	*368*	*41.3*	*444*	*38.7*	*711*	*34.8*	*1584*	*37.4*
Extent=1 & cavity=Y	*13*	*8.2*	*70*	*7.8*	*78*	*6.8*	*80*	*3.9*	*241*	*5.7*
Extent = 2	30	18.9	180	20.2	258	22.5	442	21.6	910	21.5
Extent=2 & cavity=N	*18*	*11.3*	*105*	*11.8*	*143*	*12.5*	*338*	*16.6*	*604*	*14.2*
Extent=2 & cavity=Y	*12*	*7.5*	*75*	*8.4*	*115*	*10.0*	*104*	*5.1*	*306*	*7.2*
Extent=3	17	10.7	106	11.9	138	12.0	191	9.4	452	10.7
Extent=3 & cavity=N	*7*	*4.4*	*55*	*6.2*	*67*	*5.8*	*118*	*5.8*	*247*	*5.8*
Extent=3 & cavity=Y	*10*	*6.3*	*51*	*5.7*	*71*	*6.2*	*73*	*3.6*	*205*	*4.8*
Extent=not specified	38	23.9	168	18.8	229	20.0	618	30.3	1053	24.8
Extent=ns & cavity=N	*38*	*23.9*	*166*	*18.6*	*224*	*19.5*	*617*	*30.2*	*1045*	*24.6*
Extent=ns & cavity=Y	*0*	*0.0*	*2*	*0.2*	*5*	*0.4*	*1*	*0.0*	*8*	*0.2*
Cavity=N	124	78.0	694	77.8	878	76.5	1784	87.4	3480	82.1
Cavity=Y	35	22.0	198	22.2	269	23.5	258	12.6	760	17.9
Mode of diagnosis										
Bacteriological	105	58.7	733	66.0	963	68.1	1826	76.4	3627	71.2
Histological	15	8.4	117	10.5	175	12.4	163	6.8	470	9.2
Clinical-radiological	38	21.2	153	13.8	160	11.3	175	7.3	526	10.3
Clinical only	0	0.0	7	0.6	4	0.3	4	0.2	15	0.3
Not recorded	21	11.7	101	9.1	112	7.9	221	9.3	455	8.9
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Histology										
Typical (with caseation)	4	-	39	-	61	-	48	-	152	-
Granulomatous inflammation	12	-	114	-	146	-	165	-	437	-
Other	4	-	28	-	32	-	21	-	85	-
Ziehl-Neelzen staining										
Positive	10	-	81	-	115	-	119	-	325	-

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 05

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Risk factors for TB										
Yes	3	1.7	77	6.9	368	26.0	853	35.7	1301	25.5
Diabetes mellitus	0	0.0	23	2.1	229	16.2	390	16.3	642	12.6
Lung cancer	0	0.0	0	0.0	15	1.1	61	2.6	76	1.5
Other malignancies	0	0.0	3	0.3	44	3.1	129	5.4	176	3.5
On cytotoxic drugs	0	0.0	3	0.3	10	0.7	6	0.3	19	0.4
On steroid	0	0.0	10	0.9	14	1.0	25	1.0	49	1.0
Chronic renal failure	0	0.0	1	0.1	15	1.1	37	1.5	53	1.0
HIV	0	0.0	14	1.3	11	0.8	3	0.1	28	0.5
Silicosis	0	0.0	0	0.0	4	0.3	10	0.4	14	0.3
Alcoholism	0	0.0	7	0.6	44	3.1	29	1.2	80	1.6
Drug abuser	0	0.0	18	1.6	17	1.2	7	0.3	42	0.8
Gastrectomy	0	0.0	0	0.0	2	0.1	9	0.4	11	0.2
General debilitation	1	0.6	1	0.1	3	0.2	294	12.3	299	5.9
Others	2	1.1	8	0.7	13	0.9	34	1.4	57	1.1
Factors affecting treatment choices										
Yes	6	3.4	72	6.5	209	14.8	575	24.1	862	16.9
Hepatitis-B carrier	2	1.1	41	3.7	84	5.9	81	3.4	208	4.1
Chronic active hepatitis	0	0.0	2	0.2	8	0.6	10	0.4	20	0.4
Impaired renal function	0	0.0	2	0.2	15	1.1	81	3.4	98	1.9
Chronic renal failure	0	0.0	0	0.0	8	0.6	18	0.8	26	0.5
Impaired vision	2	1.1	16	1.4	55	3.9	337	14.1	410	8.1
Impaired heaering	0	0.0	3	0.3	7	0.5	42	1.8	52	1.0
Known drug reaction	0	0.0	2	0.2	1	0.1	3	0.1	6	0.1
Known drug resistance	0	0.0	1	0.1	3	0.2	4	0.2	8	0.2
Gout	0	0.0	3	0.3	9	0.6	34	1.4	46	0.9
Idiopathic thromb. purpura	0	0.0	1	0.1	3	0.2	2	0.1	6	0.1
Others	2	1.1	11	1.0	30	2.1	73	3.1	116	2.3
6-month short course treatment										
Yes	45	25.1	238	21.4	198	14.0	173	7.2	654	12.8
2HRZE+4HR	39	21.8	217	19.5	183	12.9	141	5.9	580	11.4
2HRZS+4HR	1	0.6	3	0.3	0	0.0	5	0.2	9	0.2
Other standard regimen based on HRZES										
Yes	85	47.5	514	46.3	727	51.4	918	38.4	2244	44.1
Treatment side effects										
Yes	32	17.9	364	32.8	581	41.1	931	39.0	1908	37.5
GI upset	14	7.8	139	12.5	182	12.9	290	12.1	625	12.3
Skin rash	10	5.6	134	12.1	208	14.7	319	13.4	671	13.2
Visual	0	0.0	28	2.5	38	2.7	62	2.6	128	2.5
Transient rise liver enzyme	1	0.6	32	2.9	52	3.7	76	3.2	161	3.2
Hepatitis	5	2.8	53	4.8	139	9.8	245	10.3	442	8.7
Vestibular	0	0.0	1	0.1	8	0.6	5	0.2	14	0.3
Arthropathy	0	0.0	10	0.9	28	2.0	35	1.5	73	1.4
Fever-chill	0	0.0	8	0.7	14	1.0	26	1.1	48	0.9
Dizziness	4	2.2	23	2.1	25	1.8	37	1.5	89	1.7
Thrombocytopenia	0	0.0	1	0.1	9	0.6	19	0.8	29	0.6
Leucopenia	0	0.0	0	0.0	3	0.2	8	0.3	11	0.2
Flush face	0	0.0	3	0.3	2	0.1	4	0.2	9	0.2
Others	3	1.7	23	2.1	40	2.8	86	3.6	152	3.0
Consequence of side effects										
Rx temporarily withheld	14	7.8	203	18.3	369	26.1	627	26.2	1213	23.8
Desensitiation or drug trial	7	3.9	135	12.2	249	17.6	459	19.2	850	16.7
Change in dosage/frequency	3	1.7	59	5.3	98	6.9	164	6.9	324	6.4
Change of drugs	9	5.0	128	11.5	239	16.9	506	21.2	882	17.3

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 06

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Treatment supervision										
Under DOT at chest clinic, hospital, CNS or other health staff (initial 2 months)										
>90%	114	63.7	682	61.4	916	64.8	1359	56.9	3071	60.3
>75%	21	11.7	98	8.8	128	9.1	79	3.3	326	6.4
>50%	6	3.4	66	5.9	85	6.0	74	3.1	231	4.5
>25%	3	1.7	25	2.3	31	2.2	28	1.2	87	1.7
≤25%	3	1.7	22	2.0	23	1.6	33	1.4	81	1.6
Not recorded	32	17.9	218	19.6	231	16.3	816	34.2	1297	25.5
Under DOT at chest clinic, hospital, CNS or other health staff (subsequent 4 months)										
>90%	103	57.5	581	52.3	823	58.2	1222	51.2	2729	53.6
>75%	20	11.2	121	10.9	152	10.7	92	3.9	385	7.6
>50%	17	9.5	66	5.9	101	7.1	72	3.0	256	5.0
>25%	3	1.7	34	3.1	29	2.1	21	0.9	87	1.7
≤25%	3	1.7	38	3.4	42	3.0	34	1.4	117	2.3
Not recorded	33	18.4	271	24.4	267	18.9	948	39.7	1519	29.8
Under supervision by relatives (initial 2 months)										
>90%	1	0.6	2	0.2	2	0.1	6	0.3	11	0.2
>75%	0	0.0	1	0.1	1	0.1	0	0.0	2	0.0
>50%	1	0.6	0	0.0	0	0.0	3	0.1	4	0.1
>25%	0	0.0	0	0.0	0	0.0	1	0.0	1	0.0
≤25%	79	44.1	512	46.1	668	47.2	964	40.4	2223	43.6
Not recorded	98	54.7	596	53.6	743	52.5	1415	59.2	2852	56.0
Under supervision by relatives (subsequent 4 months)										
>90%	1	0.6	2	0.2	4	0.3	7	0.3	14	0.3
>75%	0	0.0	1	0.1	0	0.0	1	0.0	2	0.0
>50%	2	1.1	0	0.0	1	0.1	2	0.1	5	0.1
>25%	1	0.6	1	0.1	2	0.1	2	0.1	6	0.1
≤25%	76	42.5	471	42.4	640	45.3	866	36.2	2053	40.3
Not recorded	99	55.3	636	57.2	767	54.2	1511	63.2	3013	59.2
Supplied for unsupervised treatment (initial 2 months)										
<5%	83	46.4	479	43.1	649	45.9	1020	42.7	2231	43.8
<10%	8	4.5	54	4.9	77	5.4	49	2.1	188	3.7
<15%	3	1.7	36	3.2	44	3.1	21	0.9	104	2.0
<25%	10	5.6	41	3.7	62	4.4	35	1.5	148	2.9
<50%	0	0.0	40	3.6	52	3.7	35	1.5	127	2.5
≥50%	5	2.8	38	3.4	39	2.8	33	1.4	115	2.3
Not recorded	70	39.1	423	38.1	491	34.7	1196	50.1	2180	42.8
Supplied for unsupervised treatment (subsequent 4 months)										
<5%	75	41.9	400	36.0	555	39.3	888	37.2	1918	37.7
<10%	10	5.6	67	6.0	89	6.3	52	2.2	218	4.3
<15%	2	1.1	45	4.1	58	4.1	29	1.2	134	2.6
<25%	10	5.6	54	4.9	74	5.2	37	1.5	175	3.4
<50%	6	3.4	39	3.5	70	5.0	40	1.7	155	3.0
≥50%	6	3.4	41	3.7	49	3.5	44	1.8	140	2.7
Not recorded	70	39.1	465	41.9	519	36.7	1299	54.4	2353	46.2
Defaulted (initial 2 months)										
<5%	118	65.9	719	64.7	970	68.6	1328	55.6	3135	61.6
<10%	6	3.4	32	2.9	30	2.1	18	0.8	86	1.7
<15%	6	3.4	14	1.3	13	0.9	14	0.6	47	0.9
<25%	2	1.1	18	1.6	11	0.8	13	0.5	44	0.9
<50%	0	0.0	14	1.3	18	1.3	9	0.4	41	0.8
≥50%	0	0.0	11	1.0	14	1.0	21	0.9	46	0.9
Not recorded	47	26.3	303	27.3	358	25.3	986	41.3	1694	33.3
Defaulted (subsequent 4 months)										
<5%	110	61.5	633	57.0	929	65.7	1215	50.9	2887	56.7
<10%	8	4.5	31	2.8	26	1.8	21	0.9	86	1.7
<15%	8	4.5	24	2.2	21	1.5	9	0.4	62	1.2
<25%	2	1.1	33	3.0	19	1.3	15	0.6	69	1.4
<50%	3	1.7	19	1.7	19	1.3	12	0.5	53	1.0
≥50%	0	0.0	23	2.1	20	1.4	18	0.8	61	1.2
Not recorded	48	26.8	348	31.3	380	26.9	1099	46.0	1875	36.8

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 07

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Outcome at 6 months										
Cured/ treatment completed	60	33.5	294	26.5	288	20.4	286	12.0	928	18.2
Still on treatment	89	49.7	539	48.5	857	60.6	1116	46.7	2601	51.1
Died	0	0.0	1	0.1	14	1.0	218	9.1	233	4.6
Transferred	5	2.8	86	7.7	30	2.1	25	1.0	146	2.9
Defaulted	2	1.1	38	3.4	36	2.5	49	2.1	125	2.5
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	0	0.0	2	0.1	2	0.0
Not recorded	23	12.8	153	13.8	189	13.4	693	29.0	1058	20.8
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Among those cured/ treatment completed										
Bacteriological conversion	34	56.7	184	62.6	176	61.1	189	66.1	583	62.8
Radiological improvement	55	91.7	262	89.1	243	84.4	220	76.9	780	84.1
Other clinical improvement	10	16.7	47	16.0	40	13.9	36	12.6	133	14.3
No evidence of response	1	1.7	7	2.4	8	2.8	13	4.5	29	3.1
Among those still on treatment										
Reasons for still on treatment:										
Retreatment case	1	1.1	21	3.9	57	6.7	139	12.5	218	8.4
Extrapulmonary disease	34	38.2	230	42.7	263	30.7	234	21.0	761	29.3
Extensive disease	28	31.5	115	21.3	167	19.5	157	14.1	467	18.0
Interrupted treatment	11	12.4	110	20.4	208	24.3	331	29.7	660	25.4
Drug resistance	4	4.5	34	6.3	50	5.8	42	3.8	130	5.0
Poor response	6	6.7	39	7.2	75	8.8	81	7.3	201	7.7
Others	15	16.9	102	18.9	297	34.7	482	43.2	896	34.4
Among those died - causes of death:										
TB-related cause	0	-	0	0.0	4	28.6	30	13.8	34	14.6
Not TB-related	0	-	0	0.0	9	64.3	122	56.0	131	56.2
Unknown	0	-	1	100.0	1	7.1	66	30.3	68	29.2
Among those transferred, new sources of care:										
GP	0	0.0	9	10.5	6	20.0	4	16.0	19	13.0
Chest Clinic	0	0.0	1	1.2	0	0.0	0	0.0	1	0.7
Hospital	1	20.0	0	0.0	5	16.7	6	24.0	12	8.2
Outside HK	4	80.0	75	87.2	17	56.7	15	60.0	111	76.0
Not recorded	0	0.0	1	1.2	2	6.7	0	0.0	3	2.1
Among those defaulted										
Never found	1	50.0	26	68.4	26	72.2	24	49.0	77	61.6
Retreated after default	0	0.0	3	7.9	1	2.8	5	10.2	9	7.2
Treatment stopped by doctor	0	0.0	6	15.8	5	13.9	13	26.5	24	19.2
Not recorded	1	50.0	3	7.9	4	11.1	7	14.3	15	12.0

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 08

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Outcome at 12 months										
Cured/ treatment completed	163	91.1	814	73.3	1090	77.1	1333	55.8	3400	66.8
Still on treatment	8	4.5	103	9.3	142	10.0	200	8.4	453	8.9
Died	1	0.6	14	1.3	79	5.6	751	31.4	845	16.6
Transferred	3	1.7	105	9.5	31	2.2	26	1.1	165	3.2
Defaulted	4	2.2	74	6.7	68	4.8	73	3.1	219	4.3
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	1	0.1	3	0.1	4	0.1
Not recorded	0	0.0	1	0.1	3	0.2	3	0.1	7	0.1
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Among those cured/ treatment completed										
Bacteriological conversion	81	49.7	440	54.1	618	56.7	759	56.9	1898	55.8
Radiological improvement	119	73.0	587	72.1	768	70.5	902	67.7	2376	69.9
Other clinical improvement	45	27.6	235	28.9	277	25.4	273	20.5	830	24.4
No evidence of response	1	0.6	5	0.6	32	2.9	32	2.4	70	2.1
After treatment completed:										
No relapse	117	71.8	591	72.6	826	75.8	984	73.8	2518	74.1
Loss to follow up	16	9.8	83	10.2	53	4.9	44	3.3	196	5.8
Died	0	0.0	0	0.0	4	0.4	24	1.8	28	0.8
TB-related	*0*		*0*		*0*		*2*		*2*	
Not TB-related	*0*		*0*		*4*		*16*		*20*	
Unknown	*0*		*0*		*0*		*6*		*6*	
Relapse	0	0.0	2	0.2	2	0.2	3	0.2	7	0.2
Bacteriological	*0*		*1*		*1*		*2*		*4*	
Histological	*0*		*0*		*1*		*0*		*1*	
Clinico-radiological	*0*		*1*		*0*		*0*		*1*	
Not recorded	30	18.4	138	17.0	205	18.8	278	20.9	651	19.1
Among those still on treatment										
Reasons for still on treatment:										
Retreatment case	1	12.5	4	3.9	8	5.6	10	5.0	23	5.1
Extrapulmonary disease	2	25.0	24	23.3	48	33.8	32	16.0	106	23.4
Extensive disease	2	25.0	18	17.5	18	12.7	29	14.5	67	14.8
Interrupted treatment	2	25.0	41	39.8	63	44.4	112	56.0	218	48.1
Drug resistance	2	25.0	24	23.3	20	14.1	22	11.0	68	15.0
Poor response	3	37.5	20	19.4	13	9.2	13	6.5	49	10.8
Others	3	37.5	20	19.4	50	35.2	86	43.0	159	35.1
Among those died - causes of death:										
TB-related cause	0	-	0	0.0	4	5.1	32	4.3	36	4.3
Not TB-related	0	-	0	0.0	18	22.8	165	22.0	183	21.7
Unknown	0	-	1	7.1	3	3.8	80	10.7	84	9.9
Among those transferred, new sources of care:										
GP	0	0.0	2	1.9	2	6.5	1	3.8	5	3.0
Chest Clinic	0	0.0	1	1.0	0	0.0	0	0.0	1	0.6
Hospital	1	33.3	0	0.0	2	6.5	4	15.4	7	4.2
Outside HK	0	0.0	61	58.1	14	45.2	10	38.5	85	51.5
Not recorded	2	66.7	41	39.0	13	41.9	11	42.3	67	40.6
Among those defaulted										
Never found	1	25.0	27	36.5	33	48.5	25	34.2	86	39.3
Retreated after default	0	0.0	7	9.5	1	1.5	2	2.7	10	4.6
Treatment stopped by doctor	0	0.0	4	5.4	10	14.7	13	17.8	27	12.3
Not recorded	3	75.0	36	48.6	24	35.3	33	45.2	96	43.8

Annex 1 (b) - (i) ES/NS (cases ever or never seen at chest clinics) - 09

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Outcome at 24 months										
Cured/ treatment completed	170	95.0	904	81.4	1222	86.4	1515	63.4	3811	74.8
Still on treatment	0	0.0	2	0.2	2	0.1	4	0.2	8	0.2
Died	1	0.6	14	1.3	79	5.6	761	31.9	855	16.8
Transferred	5	2.8	111	10.0	32	2.3	21	0.9	169	3.3
Defaulted	2	1.1	77	6.9	70	5.0	77	3.2	226	4.4
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	2	0.1	3	0.1	5	0.1
Not recorded	1	0.6	3	0.3	7	0.5	8	0.3	19	0.4
Total	179	100.0	1111	100.0	1414	100.0	2389	100.0	5093	100.0
Among those cured/ treatment completed										
Bacteriological conversion	92	54.1	517	57.2	728	59.6	948	62.6	2285	60.0
Radiological improvement	134	78.8	676	74.8	900	73.6	1124	74.2	2834	74.4
Other clinical improvement	59	34.7	314	34.7	415	34.0	404	26.7	1192	31.3
No evidence of response	0	0.0	9	1.0	16	1.3	30	2.0	55	1.4
After treatment completed:										
No relapse	111	65.3	613	67.8	938	76.8	1084	71.6	2746	72.1
Loss to follow up	35	20.6	153	16.9	121	9.9	112	7.4	421	11.0
Died	0	0.0	1	0.1	10	0.8	80	5.3	91	2.4
TB-related	*0*		*0*		*1*		*3*		*4*	
Not TB-related	*0*		*1*		*7*		*55*		*63*	
Unknown	*0*		*0*		*2*		*22*		*24*	
Relapse	1	0.6	8	0.9	9	0.7	10	0.7	28	0.7
Bacteriological	*0*		*4*		*5*		*8*		*17*	
Histological	*1*		*2*		*1*		*0*		*4*	
Clinico-radiological	*0*		*2*		*3*		*1*		*6*	
Clinical only	*0*		*0*		*0*		*1*		*1*	
Not recorded	23	13.5	129	14.3	144	11.8	229	15.1	525	13.8
Among those still on treatment										
Reasons for still on treatment:										
Retreatment case	0	-	0	-	0	-	0	-	0	0.0
Extrapulmonary disease	0	-	0	-	1	-	2	-	3	37.5
Extensive disease	0	-	0	-	0	-	0	-	0	0.0
Interrupted treatment	0	-	1	-	2	-	2	-	5	62.5
Drug resistance	0	-	1	-	0	-	1	-	2	25.0
Poor response	0	-	0	-	1	-	2	-	3	37.5
Others	0	-	1	-	1	-	1	-	3	37.5
Among those died - causes of death:										
TB-related cause	0	-	0	0.0	4	5.1	33	4.3	37	4.3
Not TB-related	0	-	0	0.0	19	24.1	169	22.2	188	22.0
Unknown	0	-	1	7.1	3	3.8	86	11.3	90	10.5
Among those transferred, new sources of care:										
GP	0	0.0	3	2.7	1	3.1	1	4.8	5	3.0
Chest Clinic	0	0.0	1	0.9	0	0.0	0	0.0	1	0.6
Hospital	1	20.0	3	2.7	2	6.3	2	9.5	8	4.7
Outside HK	2	40.0	68	61.3	18	56.3	10	47.6	98	58.0
Not recorded	2	40.0	36	32.4	11	34.4	8	38.1	57	33.7
Among those defaulted										
Never found	1	50.0	38	49.4	34	48.6	17	22.1	90	39.8
Retreated after default	0	0.0	9	11.7	4	5.7	7	9.1	20	8.8
Treatment stopped by doctor	0	0.0	9	11.7	10	14.3	18	23.4	37	16.4
Not recorded	1	50.0	21	27.3	22	31.4	35	45.5	79	35.0

Annex 1 (b) - (ii) ES (cases ever seen at chest clinics) - 01

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Female	73	46.5	517	54.4	448	36.4	450	26.0	1488	36.6
Male	84	53.5	433	45.6	783	63.6	1278	74.0	2578	63.4
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
First presentation										
Private doctor	31	19.7	245	25.8	225	18.3	154	8.9	655	16.1
Private hospital	4	2.5	26	2.7	28	2.3	16	0.9	74	1.8
GOPC	10	6.4	30	3.2	51	4.1	86	5.0	177	4.4
Chest Clinic	25	15.9	81	8.5	129	10.5	224	13.0	459	11.3
Other DH Clinic	3	1.9	15	1.6	10	0.8	20	1.2	48	1.2
HA Clinic	0	0.0	28	2.9	46	3.7	51	3.0	125	3.1
HA Hospital	80	51.0	492	51.8	711	57.8	1142	66.1	2425	59.6
Mainland	3	1.9	18	1.9	16	1.3	21	1.2	58	1.4
Overseas	0	0.0	7	0.7	2	0.2	0	0.0	9	0.2
Not recorded	1	0.6	8	0.8	13	1.1	14	0.8	36	0.9
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
Symptomatic on presentation										
Y	135	86.0	846	89.1	1076	87.4	1546	89.5	3603	88.6
N	21	13.4	97	10.2	146	11.9	169	9.8	433	10.6
Not recorded	1	0.6	7	0.7	9	0.7	13	0.8	30	0.7
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
Chest symptoms	96	-	601	-	762	-	1196	-	2655	-
Systemic symptoms	35	-	124	-	193	-	255	-	607	-
Other site-specific symptoms	29	-	208	-	268	-	222	-	727	-
Reason for presentation										
Symptom	131	83.4	827	87.1	1034	84.0	1470	85.1	3462	85.1
Contact screening	18	11.5	20	2.1	30	2.4	19	1.1	87	2.1
Pre-employment	1	0.6	31	3.3	11	0.9	2	0.1	45	1.1
Pre-emigration	0	0.0	3	0.3	3	0.2	0	0.0	6	0.1
Other body check	3	1.9	35	3.7	67	5.4	61	3.5	166	4.1
Incidental to other illness	3	1.9	22	2.3	73	5.9	148	8.6	246	6.1
Others	0	0.0	0	0.0	2	0.2	3	0.2	5	0.1
Not recorded	1	0.6	12	1.3	11	0.9	25	1.4	49	1.2
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
Disease Classification										
Pulmonary TB only	107	68.2	612	64.4	823	66.9	1259	72.9	2801	68.9
Extrapulmonary TB only	17	10.8	174	18.3	242	19.7	248	14.4	681	16.7
Both	33	21.0	164	17.3	166	13.5	221	12.8	584	14.4
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
6-month short course treatment										
Yes	45	28.7	234	24.6	196	15.9	173	10.0	648	15.9
2HRZE+4HR	39	24.8	213	22.4	181	14.7	141	8.2	574	14.1
2HRZS+4HR	1	0.6	3	0.3	0	0.0	5	0.3	9	0.2
Other standard regimen based on HRZES										
Yes	85	54.1	502	52.8	724	58.8	917	53.1	2228	54.8

Annex 1 (b) - (ii) ES (cases ever seen at chest clinics) - 02

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Treatment supervision										
Under DOT at chest clinic, hospital, CNS or other health staff (initial 2 months)										
>90%	114	72.6	669	70.4	909	73.8	1356	78.5	3048	75.0
>75%	21	13.4	98	10.3	128	10.4	79	4.6	326	8.0
>50%	6	3.8	65	6.8	85	6.9	74	4.3	230	5.7
>25%	3	1.9	25	2.6	31	2.5	28	1.6	87	2.1
≤25%	3	1.9	21	2.2	23	1.9	33	1.9	80	2.0
Not recorded	10	6.4	72	7.6	55	4.5	158	9.1	295	7.3
Under DOT at chest clinic, hospital, CNS or other health staff (subsequent 4 months)										
>90%	103	65.6	570	60.0	816	66.3	1220	70.6	2709	66.6
>75%	20	12.7	121	12.7	152	12.3	92	5.3	385	9.5
>50%	17	10.8	66	6.9	101	8.2	72	4.2	256	6.3
>25%	3	1.9	34	3.6	29	2.4	21	1.2	87	2.1
≤25%	3	1.9	36	3.8	42	3.4	34	2.0	115	2.8
Not recorded	11	7.0	123	12.9	91	7.4	289	16.7	514	12.6
Under supervision by relatives (initial 2 months)										
>90%	1	0.6	1	0.1	2	0.2	6	0.3	10	0.2
>75%	0	0.0	1	0.1	1	0.1	0	0.0	2	0.0
>50%	1	0.6	0	0.0	0	0.0	3	0.2	4	0.1
>25%	0	0.0	0	0.0	0	0.0	1	0.1	1	0.0
≤25%	79	50.3	511	53.8	668	54.3	964	55.8	2222	54.6
Not recorded	76	48.4	437	46.0	560	45.5	754	43.6	1827	44.9
Under supervision by relatives (subsequent 4 months)										
>90%	1	0.6	1	0.1	4	0.3	7	0.4	13	0.3
>75%	0	0.0	1	0.1	0	0.0	1	0.1	2	0.0
>50%	2	1.3	0	0.0	1	0.1	2	0.1	5	0.1
>25%	1	0.6	1	0.1	2	0.2	2	0.1	6	0.1
≤25%	76	48.4	471	49.6	640	52.0	866	50.1	2053	50.5
Not recorded	77	49.0	476	50.1	584	47.4	850	49.2	1987	48.9
Supplied for unsupervised treatment (initial 2 months)										
<5%	83	52.9	478	50.3	649	52.7	1020	59.0	2230	54.8
<10%	8	5.1	54	5.7	77	6.3	49	2.8	188	4.6
<15%	3	1.9	36	3.8	44	3.6	21	1.2	104	2.6
<25%	10	6.4	41	4.3	62	5.0	35	2.0	148	3.6
<50%	0	0.0	40	4.2	52	4.2	35	2.0	127	3.1
≥50%	5	3.2	38	4.0	39	3.2	33	1.9	115	2.8
Not recorded	48	30.6	263	27.7	308	25.0	535	31.0	1154	28.4
Supplied for unsupervised treatment (subsequent 4 months)										
<5%	75	47.8	400	42.1	555	45.1	888	51.4	1918	47.2
<10%	10	6.4	67	7.1	89	7.2	52	3.0	218	5.4
<15%	2	1.3	45	4.7	58	4.7	29	1.7	134	3.3
<25%	10	6.4	54	5.7	74	6.0	37	2.1	175	4.3
<50%	6	3.8	39	4.1	70	5.7	40	2.3	155	3.8
≥50%	6	3.8	41	4.3	49	4.0	44	2.5	140	3.4
Not recorded	48	30.6	304	32.0	336	27.3	638	36.9	1326	32.6
Defaulted (initial 2 months)										
<5%	118	75.2	718	75.6	970	78.8	1328	76.9	3134	77.1
<10%	6	3.8	32	3.4	30	2.4	18	1.0	86	2.1
<15%	6	3.8	14	1.5	13	1.1	14	0.8	47	1.2
<25%	2	1.3	18	1.9	11	0.9	13	0.8	44	1.1
<50%	0	0.0	14	1.5	18	1.5	9	0.5	41	1.0
≥50%	0	0.0	11	1.2	14	1.1	21	1.2	46	1.1
Not recorded	25	15.9	143	15.1	175	14.2	325	18.8	668	16.4
Defaulted (subsequent 4 months)										
<5%	110	70.1	633	66.6	929	75.5	1215	70.3	2887	71.0
<10%	8	5.1	31	3.3	26	2.1	21	1.2	86	2.1
<15%	8	5.1	24	2.5	21	1.7	9	0.5	62	1.5
<25%	2	1.3	33	3.5	19	1.5	15	0.9	69	1.7
<50%	3	1.9	19	2.0	19	1.5	12	0.7	53	1.3
≥50%	0	0.0	23	2.4	20	1.6	18	1.0	61	1.5
Not recorded	26	16.6	187	19.7	197	16.0	438	25.3	848	20.9

Annex 1 (b) - (ii) ES (cases ever seen at chest clinics) - 03

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Outcome at 6 months										
Cured/ treatment completed	60	38.2	286	30.1	284	23.1	286	16.6	916	22.5
Still on treatment	89	56.7	532	56.0	853	69.3	1114	64.5	2588	63.6
Died	0	0.0	1	0.1	14	1.1	216	12.5	231	5.7
Transferred	5	3.2	81	8.5	29	2.4	25	1.4	140	3.4
Defaulted	2	1.3	38	4.0	36	2.9	48	2.8	124	3.0
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	0	0.0	2	0.1	2	0.0
Not recorded	1	0.6	12	1.3	15	1.2	37	2.1	65	1.6
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
Outcome at 12 months										
Cured/ treatment completed	145	92.4	723	76.1	994	80.7	1188	68.8	3050	75.0
Still on treatment	8	5.1	98	10.3	140	11.4	197	11.4	443	10.9
Died	0	0.0	4	0.4	27	2.2	279	16.1	310	7.6
Transferred	1	0.6	68	7.2	20	1.6	19	1.1	108	2.7
Defaulted	3	1.9	57	6.0	49	4.0	43	2.5	152	3.7
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	1	0.1	2	0.1	3	0.1
Not recorded	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0
Outcome at 24 months										
Cured/ treatment completed	152	96.8	810	85.3	1125	91.4	1370	79.3	3457	85.0
Still on treatment	0	0.0	2	0.2	2	0.2	4	0.2	8	0.2
Died	0	0.0	4	0.4	27	2.2	289	16.7	320	7.9
Transferred	3	1.9	74	7.8	22	1.8	14	0.8	113	2.8
Defaulted	1	0.6	60	6.3	51	4.1	47	2.7	159	3.9
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	2	0.2	2	0.1	4	0.1
Not recorded	1	0.6	0	0.0	2	0.2	2	0.1	5	0.1
Total	157	100.0	950	100.0	1231	100.0	1728	100.0	4066	100.0

Annex 1 (b) - (iii) NS (cases never seen at chest clinics) - 01

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Female	12	54.5	98	60.9	66	36.1	199	30.1	375	36.5
Male	10	45.5	63	39.1	117	63.9	462	69.9	652	63.5
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
First presentation										
Private doctor	0	0.0	3	1.9	1	0.5	4	0.6	8	0.8
Private hospital	0	0.0	0	0.0	0	0.0	2	0.3	2	0.2
GOPC	0	0.0	2	1.2	1	0.5	1	0.2	4	0.4
Chest Clinic	0	0.0	4	2.5	0	0.0	7	1.1	11	1.1
Other DH Clinic	0	0.0	11	6.8	7	3.8	1	0.2	19	1.9
HA Clinic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
HA Hospital	0	0.0	7	4.3	5	2.7	58	8.8	70	6.8
Mainland	0	0.0	1	0.6	0	0.0	3	0.5	4	0.4
Overseas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	133	82.6	169	92.3	585	88.5	909	88.5
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Symptomatic on presentation										
Y	0	0.0	21	13.0	7	3.8	65	9.8	93	9.1
N	0	0.0	6	3.7	8	4.4	11	1.7	25	2.4
Not recorded	22	100.0	134	83.2	168	91.8	585	88.5	909	88.5
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Chest symptoms	0	-	16	-	6	-	44	-	66	-
Systemic symptoms	0	-	3	-	0	-	14	-	17	-
Other site-specific symptoms	0	-	2	-	2	-	3	-	7	-
Reason for presentation										
Symptom	0	0.0	13	8.1	5	2.7	63	9.5	81	7.9
Contact screening	0	0.0	3	1.9	0	0.0	1	0.2	4	0.4
Pre-employment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pre-emigration	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other body check	0	0.0	10	6.2	7	3.8	2	0.3	19	1.9
Incidental to other illness	0	0.0	1	0.6	1	0.5	8	1.2	10	1.0
Others	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Not recorded	22	100.0	134	83.2	170	92.9	586	88.7	912	88.8
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Disease Classification										
Pulmonary TB only	18	81.8	104	64.6	145	79.2	535	80.9	802	78.1
Extrapulmonary TB only	3	13.6	45	28.0	25	13.7	99	15.0	172	16.7
Both	1	4.5	12	7.5	13	7.1	27	4.1	53	5.2
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
6-month short course treatment										
Yes	0	0.0	4	2.5	2	1.1	0	0.0	6	0.6
2HRZE+4HR	0	0.0	4	2.5	2	1.1	0	0.0	6	0.6
2HRZS+4HR	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other standard regimen based on HRZES										
Yes	0	0.0	12	7.5	3	1.6	1	0.2	16	1.6

Annex 1 (b) - (iii) NS (cases never seen at chest clinics) - 02

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Treatment supervision										
Under DOT at chest clinic, hospital, CNS or other health staff (initial 2 months)										
>90%	0	0.0	13	8.1	7	3.8	3	0.5	23	2.2
>75%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>50%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
>25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≤25%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
Not recorded	22	100.0	146	90.7	176	96.2	658	99.5	1002	97.6
Under DOT at chest clinic, hospital, CNS or other health staff (subsequent 4 months)										
>90%	0	0.0	11	6.8	7	3.8	2	0.3	20	1.9
>75%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≤25%	0	0.0	2	1.2	0	0.0	0	0.0	2	0.2
Not recorded	22	100.0	148	91.9	176	96.2	659	99.7	1005	97.9
Under supervision by relatives (initial 2 months)										
>90%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
>75%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≤25%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
Not recorded	22	100.0	159	98.8	183	100.0	661	100.0	1025	99.8
Under supervision by relatives (subsequent 4 months)										
>90%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
>75%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
>25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≤25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	160	99.4	183	100.0	661	100.0	1026	99.9
Supplied for unsupervised treatment (initial 2 months)										
<5%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
<10%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<15%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≥50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	160	99.4	183	100.0	661	100.0	1026	99.9
Supplied for unsupervised treatment (subsequent 4 months)										
<5%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<10%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<15%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≥50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Defaulted (initial 2 months)										
<5%	0	0.0	1	0.6	0	0.0	0	0.0	1	0.1
<10%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<15%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≥50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	160	99.4	183	100.0	661	100.0	1026	99.9
Defaulted (subsequent 4 months)										
<5%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<10%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<15%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<25%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
≥50%	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0

Annex 1 (b) - (iii) NS (cases never seen at chest clinics) - 03

Age group	0 to 19		20 to 39		40 to 59		60+		All	
	N	%	N	%	N	%	N	%	N	%
Outcome at 6 months										
Cured/ treatment completed	0	0.0	8	5.0	4	2.2	0	0.0	12	1.2
Still on treatment	0	0.0	7	4.3	4	2.2	2	0.3	13	1.3
Died	0	0.0	0	0.0	0	0.0	2	0.3	2	0.2
Transferred	0	0.0	5	3.1	1	0.5	0	0.0	6	0.6
Defaulted	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Not recorded	22	100.0	141	87.6	174	95.1	656	99.2	993	96.7
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Outcome at 12 months										
Cured/ treatment completed	18	81.8	91	56.5	96	52.5	145	21.9	350	34.1
Still on treatment	0	0.0	5	3.1	2	1.1	3	0.5	10	1.0
Died	1	4.5	10	6.2	52	28.4	472	71.4	535	52.1
Transferred	2	9.1	37	23.0	11	6.0	7	1.1	57	5.6
Defaulted	1	4.5	17	10.6	19	10.4	30	4.5	67	6.5
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Not recorded	0	0.0	1	0.6	3	1.6	3	0.5	7	0.7
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0
Outcome at 24 months										
Cured/ treatment completed	18	81.8	94	58.4	97	53.0	145	21.9	354	34.5
Still on treatment	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Died	1	4.5	10	6.2	52	28.4	472	71.4	535	52.1
Transferred	2	9.1	37	23.0	10	5.5	7	1.1	56	5.5
Defaulted	1	4.5	17	10.6	19	10.4	30	4.5	67	6.5
Failure	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Revised dx/ others	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Not recorded	0	0.0	3	1.9	5	2.7	6	0.9	14	1.4
Total	22	100.0	161	100.0	183	100.0	661	100.0	1027	100.0

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 01

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Ever seen at chest clinics						
Yes	1259	87.8	2342	81.7	20	95.2
No	175	12.2	524	18.3	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Age group						
0 to 19	40	2.8	88	3.1	1	4.8
Female	15		37		0	
Male	25		51		1	
20 to 39	334	23.3	560	19.5	12	57.1
Female	172		292		5	
Male	162		268		7	
40 to 59	439	30.6	752	26.2	5	23.8
Female	127		207		2	
Male	312		545		3	
60+	621	43.3	1466	51.2	3	14.3
Female	124		327		1	
Male	497		1139		2	
Total	1434	100.0	2866	100.0	21	100.0
Female	438	30.5	863	30.1	8	38.1
Male	996	69.5	2003	69.9	13	61.9
Marital status						
Single	314	21.9	554	19.3	7	33.3
Married	869	60.6	1666	58.1	12	57.1
Separated	13	0.9	19	0.7	0	0.0
Divorce	42	2.9	62	2.2	1	4.8
Widowed	13	0.9	34	1.2	0	0.0
Not recorded	183	12.8	531	18.5	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Smoking status						
Never	522	36.4	1023	35.7	8	38.1
Ex-smoker	381	26.6	728	25.4	4	19.0
Current smoker	288	20.1	464	16.2	8	38.1
Not recorded	243	16.9	651	22.7	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Institution-related						
Yes	120	8.4	273	9.5	1	4.8
No	1144	79.8	2084	72.7	19	90.5
Not recorded	170	11.9	509	17.8	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Institution						
Client	95	-	222	-	0	-
Staff	8	-	15	-	1	-
Institution type						
Old age home	57	-	152	-	0	-
School	68	-	184	-	2	-
Hospital	2	-	4	-	0	-
Handicapped	10	-	19	-	0	-
Prison	21	-	27	-	0	-
Others	6	-	14	-	0	-

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 02

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Living situation						
Street-sleeper	1	0.1	3	0.1	0	0.0
Cubicle bed space	4	0.3	13	0.5	0	0.0
Institution	62	4.3	153	5.3	0	0.0
Work quarter	9	0.6	18	0.6	0	0.0
Alone (not above)	167	11.6	286	10.0	4	19.0
With friends	26	1.8	42	1.5	0	0.0
With family	969	67.6	1809	63.1	14	66.7
Not recorded	196	13.7	542	18.9	3	14.3
Residential status						
Permanent resident	1151	80.3	2179	76.0	14	66.7
Chinese immigrant	27	1.9	53	1.8	2	9.5
Imported worker	51	3.6	73	2.5	0	0.0
Tourist - 2 way permit Chinese	11	0.8	13	0.5	2	9.5
Other tourist	6	0.4	7	0.2	0	0.0
Vietnamese	0	0.0	1	0.0	0	0.0
Illegal immigrants	4	0.3	7	0.2	0	0.0
Not recorded	184	12.8	533	18.6	3	14.3
Total	1434	100.0	2866	100.0	21	100.0
Place of birth						
Hong Kong	502	35.0	951	33.2	6	28.6
Mainland China	640	44.6	1226	42.8	12	57.1
Others	132	9.2	201	7.0	2	9.5
Not recorded	160	11.2	488	17.0	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Ethnicity						
Chinese	1161	81.0	2213	77.2	14	66.7
Other Asian	102	7.1	145	5.1	3	14.3
Caucasian	3	0.2	5	0.2	0	0.0
Others	1	0.1	4	0.1	0	0.0
Not recorded	167	11.6	499	17.4	4	19.0
Total	1434	100.0	2866	100.0	21	100.0
Previous BCG history						
Yes	451	31.5	780	27.2	7	33.3
No	314	21.9	595	20.8	4	19.0
Unknown	669	46.7	1491	52.0	10	47.6
Total	1434	100.0	2866	100.0	21	100.0
BCG scar						
Yes	433	-	738	-	8	-
No	788	-	1528	-	11	-
Employment status						
Full-time	411	28.7	722	25.2	7	33.3
Part-time	37	2.6	61	2.1	0	0.0
Retired	411	28.7	852	29.7	1	4.8
Unemployed	204	14.2	316	11.0	5	23.8
Housewife	138	9.6	272	9.5	6	28.6
Student	35	2.4	84	2.9	0	0.0
Not recorded	198	13.8	559	19.5	2	9.5
Total	1434	100.0	2866	100.0	21	100.0

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 03

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Occupation						
Blue collar	221	15.4	387	13.5	3	14.3
White collar	99	6.9	183	6.4	0	0.0
Medical	1	0.1	2	0.1	0	0.0
Nursing	2	0.1	3	0.1	0	0.0
Paramedical	1	0.1	1	0.0	0	0.0
Supporting health staff	1	0.1	2	0.1	0	0.0
Not applicable	721	50.3	1389	48.5	10	47.6
Not recorded	388	27.1	899	31.4	8	38.1
Total	1434	100.0	2866	100.0	21	100.0
First presentation						
Private doctor	216	15.1	351	12.2	4	19.0
Private hospital	15	1.0	35	1.2	0	0.0
GOPC	73	5.1	133	4.6	0	0.0
Chest Clinic	105	7.3	275	9.6	2	9.5
Other DH Clinic	17	1.2	38	1.3	0	0.0
HA Clinic	25	1.7	53	1.8	0	0.0
HA Hospital	814	56.8	1467	51.2	12	57.1
Mainland	12	0.8	30	1.0	1	4.8
Overseas	3	0.2	4	0.1	1	4.8
Not recorded	154	10.7	480	16.7	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Symptomatic on presentation						
Y	1225	85.4	2178	76.0	20	95.2
N	58	4.0	215	7.5	0	0.0
Not recorded	151	10.5	473	16.5	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Chest symptoms	1094	-	1903	-	19	-
Systemic symptoms	237	-	391	-	2	-
Other site-specific symptoms	61	-	137	-	0	-
Reason for presentation						
Symptom	1182	82.4	2090	72.9	20	95.2
Contact screening	10	0.7	38	1.3	0	0.0
Pre-employment	4	0.3	11	0.4	0	0.0
Pre-emigration	1	0.1	3	0.1	0	0.0
Other body check	29	2.0	90	3.1	0	0.0
Incidental to other illness	50	3.5	143	5.0	0	0.0
Others	2	0.1	5	0.2	0	0.0
Not recorded	156	10.9	486	17.0	1	4.8
Total	1434	100.0	2866	100.0	21	100.0

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 04

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Contact with TB patients						
Yes	59	4.1	144	5.0	0	0.0
No	1222	85.2	2244	78.3	20	95.2
Not recorded	153	10.7	478	16.7	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Contact type						
Household	39	-	106	-	0	-
Work	2	-	6	-	0	-
Casual	7	-	13	-	0	-
Time of contact						
Within 2 year	14	-	45	-	0	-
Over 2 year	36	-	77	-	0	-
Previous chemoprophylaxis						
Yes	0	-	3	-	0	-
Reason for chemoprophylaxis						
Contact	0	-	1	-	0	-
Silicosis	0	-	1	-	0	-
HIV	0	-	1	-	0	-
Old scar on CXR	0	-	0	-	0	-
Others	0	-	0	-	0	-
Disease Classification						
Pulmonary TB only	1323	92.3	2587	90.3	20	95.2
Both pulm & extrapulm	111	7.7	279	9.7	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Case category						
New case	1291	90.0	2571	89.7	13	61.9
Relapse	132	9.2	275	9.6	7	33.3
Treatment after default	11	0.8	20	0.7	1	4.8
Failure of previous treatment	0	0.0	0	0.0	0	0.0
Total	1434	100.0	2866	100.0	21	100.0
Disease characteristics (pulmonary cases)						
Extent = 1	459	32.0	1157	40.4	6	28.6
Extent=1 & cavity=N	*334*	*23.3*	*968*	*33.8*	*5*	*23.8*
Extent=1 & cavity=Y	*125*	*8.7*	*189*	*6.6*	*1*	*4.8*
Extent = 2	484	33.8	747	26.1	8	38.1
Extent=2 & cavity=N	*276*	*19.2*	*486*	*17.0*	*3*	*14.3*
Extent=2 & cavity=Y	*208*	*14.5*	*261*	*9.1*	*5*	*23.8*
Extent=3	298	20.8	382	13.3	5	23.8
Extent=3 & cavity=N	*132*	*9.2*	*191*	*6.7*	*1*	*4.8*
Extent=3 & cavity=Y	*166*	*11.6*	*191*	*6.7*	*4*	*19.0*
Extent=not specified	193	13.5	580	20.2	2	9.5
Extent=ns & cavity=N	*188*	*13.1*	*575*	*20.1*	*2*	*9.5*
Extent=ns & cavity=Y	*5*	*0.3*	*5*	*0.2*	*0*	*0.0*
Cavity=N	930	64.9	2220	77.5	11	52.4
Cavity=Y	504	35.1	646	22.5	10	47.6
6-month short course treatment						
Yes	156	10.9	383	13.4	0	0.0
2HRZE+4HR	136	9.5	335	11.7	0	0.0
2HRZS+4HR	1	0.1	6	0.2	0	0.0
Other standard regimen based on HRZES						
Yes	753	52.5	1294	45.2	3	14.3

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 05

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Treatment supervision						
Under DOT at chest clinic, hospital, CNS or other health staff (initial 2 months)						
>90%	970	67.6	1803	62.9	14	66.7
>75%	104	7.3	187	6.5	2	9.5
>50%	73	5.1	128	4.5	1	4.8
>25%	29	2.0	54	1.9	0	0.0
≤25%	20	1.4	47	1.6	1	4.8
Not recorded	238	16.6	647	22.6	3	14.3
Under DOT at chest clinic, hospital, CNS or other health staff (subsequent 4 months)						
>90%	859	59.9	1624	56.7	12	57.1
>75%	117	8.2	14	0.5	1	4.8
>50%	86	6.0	133	4.6	0	0.0
>25%	32	2.2	49	1.7	0	0.0
≤25%	39	2.7	75	2.6	4	19.0
Not recorded	301	21.0	771	26.9	4	19.0
Under supervision by relatives (initial 2 months)						
>90%	4	0.3	7	0.2	1	4.8
>75%	0	0.0	1	0.0	0	0.0
>50%	1	0.1	2	0.1	0	0.0
>25%	1	0.1	1	0.0	0	0.0
≤25%	683	47.6	1287	44.9	8	38.1
Not recorded	745	52.0	1568	54.7	12	57.1
Under supervision by relatives (subsequent 4 months)						
>90%	4	0.3	9	0.3	0	0.0
>75%	0	0.0	0	0.0	0	0.0
>50%	1	0.1	4	0.1	0	0.0
>25%	2	0.1	4	0.1	0	0.0
≤25%	639	44.6	1194	41.7	8	38.1
Not recorded	788	55.0	1655	57.7	13	61.9
Supplied for unsupervised treatment (initial 2 months)						
<5%	686	47.8	1282	44.7	11	52.4
<10%	67	4.7	120	4.2	2	9.5
<15%	27	1.9	58	2.0	1	4.8
<25%	52	3.6	89	3.1	0	0.0
<50%	42	2.9	70	2.4	0	0.0
≥50%	36	2.5	66	2.3	0	0.0
Not recorded	524	36.5	1181	41.2	7	33.3
Supplied for unsupervised treatment (subsequent 4 months)						
<5%	606	42.3	1122	39.1	10	47.6
<10%	75	5.2	132	4.6	2	9.5
<15%	32	2.2	70	2.4	0	0.0
<25%	52	3.6	93	3.2	1	4.8
<50%	50	3.5	82	2.9	0	0.0
≥50%	46	3.2	85	3.0	0	0.0
Not recorded	573	40.0	1282	44.7	8	38.1
Defaulted (initial 2 months)						
<5%	975	68.0	1839	64.2	12	57.1
<10%	29	2.0	53	1.8	2	9.5
<15%	18	1.3	31	1.1	0	0.0
<25%	22	1.5	29	1.0	0	0.0
<50%	11	0.8	21	0.7	0	0.0
≥50%	11	0.8	26	0.9	2	9.5
Not recorded	368	25.7	867	30.3	5	23.8
Defaulted (subsequent 4 months)						
<5%	889	62.0	1695	59.1	10	47.6
<10%	33	2.3	52	1.8	0	0.0
<15%	22	1.5	36	1.3	0	0.0
<25%	29	2.0	44	1.5	0	0.0
<50%	23	1.6	30	1.0	0	0.0
≥50%	23	1.6	36	1.3	4	19.0
Not recorded	415	28.9	973	33.9	7	33.3

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 06

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Outcome at 6 months						
Cured/ treatment completed	229	16.0	560	19.5	0	0.0
Still on treatment	886	61.8	1499	52.3	15	71.4
Died	64	4.5	140	4.9	1	4.8
Transferred	47	3.3	72	2.5	2	9.5
Defaulted	33	2.3	61	2.1	2	9.5
Failure	0	0.0	0	0.0	0	0.0
Revised dx/ others	1	0.1	1	0.0	0	0.0
Not recorded	174	12.1	533	18.6	1	4.8
Total	1434	100.0	2866	100.0	21	100.0
Outcome at 12 months						
Cured/ treatment completed	990	69.0	1904	66.4	0	0.0
Still on treatment	160	11.2	277	9.7	15	71.4
Died	179	12.5	506	17.7	3	14.3
Transferred	45	3.1	69	2.4	1	4.8
Defaulted	55	3.8	104	3.6	2	9.5
Failure	0	0.0	0	0.0	0	0.0
Revised dx/ others	2	0.1	3	0.1	0	0.0
Not recorded	3	0.2	3	0.1	0	0.0
Total	1434	100.0	2866	100.0	21	100.0

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 07

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Outcome at 24 months						
Cured/ treatment completed	1126	78.5	2149	75.0	11	52.4
Still on treatment	5	0.3	6	0.2	2	9.5
Died	181	12.6	512	17.9	3	14.3
Transferred	44	3.1	70	2.4	3	14.3
Defaulted	72	5.0	117	4.1	2	9.5
Failure	0	0.0	0	0.0	0	0.0
Revised dx/ others	2	0.1	3	0.1	0	0.0
Not recorded	4	0.3	9	0.3	0	0.0
Total	1434	100.0	2866	100.0	21	100.0
Among those cured/ treatment completed						
Bacteriological conversion	1051	93.3	1942	90.4	10	90.9
Radiological improvement	1035	91.9	1887	87.8	10	90.9
Other clinical improvement	238	21.1	442	20.6	1	9.1
No evidence of response	0	0.0	1	0.0	0	0.0
After treatment completed:						
No relapse	842	74.8	1589	73.9	9	81.8
Loss to follow up	141	12.5	253	11.8	1	9.1
Died	31	2.8	57	2.7	0	0.0
TB-related	*2*		*4*		*0*	
Not TB-related	*19*		*37*		*0*	
Unknown	*10*		*16*		*0*	
Relapse	17	1.5	21	1.0	0	0.0
Bacteriological	*12*		*15*		*0*	
Histological	*0*		*1*		*0*	
Clinico-radiological	*4*		*4*		*0*	
Clinical only	*1*		*1*			
Not recorded	95	8.4	229	10.7	1	9.1
Among those still on treatment						
Reasons for still on treatment:						
Retreatment case	0	-	0	-	0	-
Extrapulmonary disease	1	-	1	-	0	-
Extensive disease	0	-	0	-	0	-
Interrupted treatment	4	-	4	-	1	-
Drug resistance	2	-	2	-	1	-
Poor response	2	-	2	-	0	-
Others	1	-	2	-	1	-
Among those died - causes of death:						
TB-related cause	13	7.2	25	4.9	1	-
Not TB-related	51	28.2	113	22.1	1	-
Unknown	27	14.9	54	10.5	1	-
Among those transferred, new sources of care:						
GP	1	2.3	3	4.3	0	0.0
Chest Clinic	1	2.3	1	1.4	0	0.0
Hospital	1	2.3	3	4.3	1	33.3
Outside HK	32	72.7	47	67.1	1	33.3
Not recorded	9	20.5	16	22.9	1	33.3
Among those defaulted						
Never found	36	50.0	51	43.6	1	50.0
Retreated after default	7	9.7	11	9.4	1	50.0
Treatment stopped by doctor	12	16.7	20	17.1	0	0.0
Not recorded	17	23.6	35	29.9	0	0.0

Annex 1 (c) - ES/NS (cases ever or never seen at chest clinics) - 08

Group (Pulmonary cases)	PreRx smear +ve		PreRx culture +ve		MDR-TB	
	N	%	N	%	N	%
Drug susceptibility pattern						
Streptomycin - R	112	9.1	199	8.7	17	81.0
Streptomycin - S	1118	90.9	2078	91.3	4	19.0
Isoniazid - R	71	5.8	126	5.5	21	100.0
Isoniazid - S	1158	94.2	2150	94.5	0	0.0
Rifampicin - R	16	1.3	24	1.1	21	100.0
Rifampicin - S	1214	98.7	2252	98.9	0	0.0
Ethambutol - R	8	0.7	12	0.5	8	38.1
Ethambutol - S	1222	99.3	2264	99.5	13	61.9
Pyrazinamide - R	7	24.1	10	18.2	9	56.3
Pyrazinamide - S	22	75.9	45	81.8	7	43.8
Ofloxacin - R	7	12.5	10	10.8	7	35.0
Ofloxacin - S	49	87.5	83	89.2	13	65.0
Smear conversion rates						
1. Smear at 2 month = N (a)	701				7	
2. Smear at 2 month = P (b)	192				6	
2. Sm 2m (P); Sm 3m (N) (c)	98				2	
2. Sm 2m (P); Sm 3m (P) (d)	54				2	
2. Sm 2m (P); Sm 3m (U) (e)	40				2	
3. Smear at 2 month = U (f)	541				8	
3. Sm 2m (U); Sm 3m (N) (g)	155				1	
3. Sm 2m (U); Sm 3m (P) (h)	25				3	
3. Sm 2m (U); Sm 3m (U) (i)	361				4	
Overall percentage of smear conversion at 2m = (a)/ [(a)+(b)]	78.5		-		53.8	
Overall percentage of smear conversion at 3m = [(a)+(c)+(g)]/ [(a)+(c)+(d)+(g)+(h)]	92.4		-		66.7	
Culture conversion rates						
1. Culture at 2 month = N (a)			1266		5	
2. Culture at 2 month = P (b)			191		7	
2. Cu 2m (P); Cu 3m (N) (c)			109		0	
2. Cu 2m (P); Cu 3m (P) (d)			28		5	
2. Cu 2m (P); Cu 3m (U) (e)			54		2	
3. Culture at 2 month = U (f)			1409		9	
3. Cu 2m (U); Cu 3m (N) (g)			377		1	
3. Cu 2m (U); Cu 3m (P) (h)			16		3	
3. Cu 2m (U); Cu 3m (U) (i)			1016		5	
Overall percentage of culture conversion at 2m = (a)/ [(a)+(b)]	-		86.9		41.7	
Overall percentage of culture conversion at 3m = [(a)+(c)+(g)]/ [(a)+(c)+(d)+(g)+(h)]	-		97.6		42.9	

Annex 1 (d) - ES/NS (cases ever or never seen at chest clinics) - 01

Group	New pulmonary smear +ve		ReRx pulmonary smear +ve	
	N	%	N	%
Ever seen at chest clinics				
Yes	1125	87.1	134	93.7
No	166	12.9	9	6.3
Total	1291	100.0	143	100.0
Age group				
0 to 19	39	3.0	1	0.7
Female	15		0	
Male	24		1	
20 to 39	316	24.5	18	12.6
Female	166		6	
Male	150		12	
40 to 59	410	31.8	29	20.3
Female	116		11	
Male	294		18	
60+	526	40.7	95	66.4
Female	112		12	
Male	414		83	
Total	1291	100.0	143	100.0
Female	409	31.7	29	20.3
Male	882	68.3	114	79.7
Disease Classification				
Pulmonary TB only	1185	91.8	138	96.5
Both pulmon and extrapulm	106	8.2	5	3.5
Total	1291	100.0	143	100.0
6-month short course treatment				
Yes	153	11.9	3	2.1
2HRZE+4HR	133	10.3	3	2.1
2HRZS+4HR	1	0.1	0	0.0
Other standard regimen based on HRZES				
Yes	664	51.4	89	62.2
Outcome at 6 months				
Cured/ treatment completed	221	17.1	8	5.6
Still on treatment	785	60.8	101	70.6
Died	55	4.3	9	6.3
Transferred	42	3.3	5	3.5
Defaulted	22	1.7	11	7.7
Failure	0	0.0	0	0.0
Revised dx/ others	1	0.1	0	0.0
Not recorded	165	12.8	9	6.3
Total	1291	100.0	143	100.0
Outcome at 12 months				
Cured/ treatment completed	896	69.4	94	65.7
Still on treatment	139	10.8	21	14.7
Died	165	12.8	14	9.8
Transferred	39	3.0	6	4.2
Defaulted	49	3.8	6	4.2
Failure	0	0.0	0	0.0
Revised dx/ others	1	0.1	1	0.7
Not recorded	2	0.2	1	0.7
Total	1291	100.0	143	100.0

Annex 1 (d) - ES/NS (cases ever or never seen at chest clinics) - 02

Group	New pulmonary smear +ve		ReRx pulmonary smear +ve	
	N	%	N	%
Outcome at 24 months				
Cured/ treatment completed	1016	78.7	110	76.9
Still on treatment	5	0.4	0	0.0
Died	167	12.9	14	9.8
Transferred	39	3.0	5	3.5
Defaulted	60	4.6	12	8.4
Failure	0	0.0	0	0.0
Revised dx/ others	1	0.1	1	0.7
Not recorded	3	0.2	1	0.7
Total	1291	100.0	143	100.0
Among those cured/ treatment completed				
Bacteriological conversion	950	93.5	101	91.8
Radiological improvement	934	91.9	101	91.8
Other clinical improvement	220	21.7	18	16.4
No evidence of response	0	0.0	0	0.0
After treatment completed:				
No relapse	758	74.6	84	76.4
Loss to follow up	130	12.8	11	10.0
Died	25	2.5	6	5.5
TB-related	*2*		*0*	
Not TB-related	*16*		*3*	
Unknown	*7*		*3*	
Relapse	16	1.6	1	0.9
Bacteriological	*11*		*1*	
Histological	*0*		*0*	
Clinico-radiological	*4*		*0*	
Clinical only	*1*		*0*	
Not recorded	87	8.6	8	7.3
Among those still on treatment				
Reasons for still on treatment:				
Retreatment case	0	-	0	-
Extrapulmonary disease	1	-	0	-
Extensive disease	0	-	0	-
Interrupted treatment	4	-	0	-
Drug resistance	2	-	0	-
Poor response	2	-	0	-
Others	1	-	0	-
Among those died - causes of death:				
TB-related cause	10	6.0	3	21.4
Not TB-related	43	25.7	8	57.1
Unknown	26	15.6	1	7.1
Among those transferred, new sources of care:				
GP	1	2.6	0	0.0
Chest Clinic	0	0.0	1	20.0
Hospital	0	0.0	1	20.0
Outside HK	31	79.5	1	20.0
Not recorded	7	17.9	2	40.0
Among those defaulted				
Never found	31	51.7	5	41.7
Retreated after default	4	6.7	3	25.0
Treatment stopped by doctor	9	15.0	3	25.0
Not recorded	16	26.7	1	8.3

Annex 1 (e) - Treatment defaulters - 01

Ever seen at chest clinics	N	%
Yes	159	70.4
No	67	29.6
Total	226	100.0

Age group

0 to 19	2	0.9
Female	2	
Male	0	
20 to 39	77	34.1
Female	36	
Male	41	
40 to 59	70	31.0
Female	19	
Male	51	
60+	77	34.1
Female	12	
Male	65	
Total	226	100.0
Female	69	30.5
Male	157	69.5

Marital status

Single	54	23.9
Married	98	43.4
Separated	3	1.3
Divorce	10	4.4
Widowed	1	0.4
Not recorded	60	26.5
Total	226	100.0

Smoking status

Never	64	28.3
Ex-smoker	35	15.5
Current smoker	64	28.3
Not recorded	63	27.9
Total	226	100.0

Institution-related

Yes	9	4.0
No	161	71.2
Not recorded	56	24.8
Total	226	100.0

Institution

Client	8	-
Staff	0	-

Institution type

Old age home	2	-
School	8	-
Hospital	0	-
Handicapped	0	-
Prison	6	-
Others	1	-

Annex 1 (e) - Treatment defaulters - 02

Living situation	N	%
Street-sleeper	1	0.4
Cubicle bed space	0	0.0
Institution	5	2.2
Work quarter	6	2.7
Alone (not above)	43	19.0
With friends	3	1.3
With family	108	47.8
Not recorded	60	26.5

Residential status		
Permanent resident	139	61.5
Chinese immigrant	4	1.8
Imported worker	16	7.1
Tourist - 2 way permit Chinese	1	0.4
Other tourist	2	0.9
Vietnamese	1	0.4
Illegal immigrants	2	0.9
Not recorded	61	27.0
Total	226	100.0

Place of birth		
Hong Kong	66	29.2
Mainland China	76	33.6
Others	28	12.4
Not recorded	56	24.8
Total	226	100.0

Ethnicity		
Chinese	142	62.8
Other Asian	25	11.1
Caucasian	1	0.4
Others	1	0.4
Not recorded	57	25.2
Total	226	100.0

Employment status		
Full-time	57	25.2
Part-time	6	2.7
Retired	43	19.0
Unemployed	43	19.0
Housewife	13	5.8
Student	3	1.3
Not recorded	61	27.0
Total	226	100.0

Occupation		
Blue collar	35	15.5
White collar	13	5.8
Medical	0	0.0
Nursing	0	0.0
Paramedical	0	0.0
Supporting health staff	0	0.0
Not applicable	100	44.2
Not recorded	78	34.5
Total	226	100.0

Annex 1 (e) - Treatment defaulters - 03

First presentation	N	%
Private doctor	19	8.4
Private hospital	3	1.3
GOPC	4	1.8
Chest Clinic	21	9.3
Other DH Clinic	6	2.7
HA Clinic	7	3.1
HA Hospital	107	47.3
Mainland	2	0.9
Overseas	0	0.0
Not recorded	57	25.2
Total	226	100.0

Symptomatic on presentation

Y	139	61.5
N	31	13.7
Not recorded	56	24.8
Total	226	100.0

Chest symptoms	98	-
Systemic symptoms	19	-
Other site-specific symptoms	37	-

Reason for presentation

Symptom	136	60.2
Contact screening	4	1.8
Pre-employment	3	1.3
Pre-emigration	1	0.4
Other body check	11	4.9
Incidental to other illness	13	5.8
Others	1	0.4
Not recorded	57	25.2
Total	226	100.0

Contact with TB patients

Yes	10	4.4
No	160	70.8
Not recorded	56	24.8
Total	226	100.0

Contact type

Household	8	-
Work	1	-
Casual	0	-

Time of contact

Within 2 year	6	-
Over 2 year	3	-

Annex 1 (e) - Treatment defaulters - 04

Previous chemoprophylaxis	N	%
Yes	1	-

Reason for chemoprophylaxis

Contact	0	-
Silicosis	0	-
HIV	1	-
Old scar on CXR	0	-
Others	0	-

Disease Classification

Pulmonary TB only	160	70.8
Extrapulmonary TB only	42	18.6
Both	24	10.6
Total	226	100.0

Case category

New case	198	87.6
Relapse	21	9.3
Treatment after default	7	3.1
Failure of previous treatment	0	0.0
Total	226	100.0

Disease characteristics (pulmonary cases)

Pretreatment smear +ve	83	45.1
Pretreatment culture +ve	117	63.6
Extent = 1	75	40.8
Extent=1 & cavity=N	*63*	*34.2*
Extent=1 & cavity=Y	*12*	6.5
Extent = 2	38	20.7
Extent=2 & cavity=N	*19*	*10.3*
Extent=2 & cavity=Y	*19*	*10.3*
Extent=3	18	9.8
Extent=3 & cavity=N	*7*	*3.8*
Extent=3 & cavity=Y	*11*	*6.0*
Extent=not specified	53	28.8
Extent=ns & cavity=N	*53*	*28.8*
Extent=ns & cavity=Y	*0*	*0.0*
Cavity=N	142	77.2
Cavity=Y	42	22.8

6-month short course treatment

Yes	9	4.0
2HRZE+4HR	7	3.1
2HRZS+4HR	0	0.0

Other standard regimen based on HRZES

Yes	56	24.8

Among those defaulted

Never found	90	39.8
Retreated after default	20	8.8
Treatment stopped by doctor	37	16.4
Not recorded	79	35.0

Annex 1 (e) - Treatment defaulters - 05

Treatment supervision	N	%
Under DOT at chest clinic, hospital, CNS or other health staff (initial 2 months)		
>90%	61	27.0
>75%	20	8.8
>50%	20	8.8
>25%	13	5.8
≤25%	16	7.1
Not recorded	96	42.5
Under DOT at chest clinic, hospital, CNS or other health staff (subsequent 4 months)		
>90%	26	11.5
>75%	9	4.0
>50%	22	9.7
>25%	13	5.8
≤25%	29	12.8
Not recorded	127	56.2
Under supervision by relatives (initial 2 months)		
>90%	0	0.0
>75%	0	0.0
>50%	0	0.0
>25%	0	0.0
≤25%	67	29.6
Not recorded	159	70.4
Under supervision by relatives (subsequent 4 months)		
>90%	0	0.0
>75%	0	0.0
>50%	0	0.0
>25%	0	0.0
≤25%	48	21.2
Not recorded	178	78.8
Supplied for unsupervised treatment (initial 2 months)		
<5%	60	26.5
<10%	12	5.3
<15%	3	1.3
<25%	9	4.0
<50%	7	3.1
≥50%	3	1.3
Not recorded	132	58.4
Supplied for unsupervised treatment (subsequent 4 months)		
<5%	37	16.4
<10%	12	5.3
<15%	7	3.1
<25%	9	4.0
<50%	4	1.8
≥50%	5	2.2
Not recorded	152	67.3
Defaulted (initial 2 months)		
<5%	63	27.9
<10%	9	4.0
<15%	6	2.7
<25%	11	4.9
<50%	9	4.0
≥50%	16	7.1
Not recorded	112	49.6
Defaulted (subsequent 4 months)		
<5%	29	12.8
<10%	1	0.4
<15%	8	3.5
<25%	9	4.0
<50%	21	9.3
≥50%	26	11.5
Not recorded	132	58.4

Annex 1 (f) Sources completing Programme Forms

Sources completing Programme Forms	PFA	PFB1	PFB2	PFC	PFD
Chest Clinics	3601	4034	4035	4012	3981
Hospital Authority	539	6	6	5	1
Private Practitioners/ Private Hospitals	0	0	0	0	0
Correctional Services and Others	36	22	22	18	11
Not Recorded	917	1031	1030	1058	1100
Total	5093	5093	5093	5093	5093

Breakdown for Hospital Authority:

Alice Ho Miu Ling Nethersole Hospital	0	1	2	2	2
Caritas Medical Centre	12	12	12	12	10
Castle Peak Hospital	4	3	1	2	1
Duchess of Kent Children Hospital	0	0	0	0	0
Fung Yiu King Hospital	0	0	0	0	0
Grantham Hospital	203	2	1	1	0
Haven of Hope Hospital	45	1	1	1	2
Kowloon Hospital	55	5	1	1	1
Kwong Wah Hospital	38	4	4	4	4
North District Hospital	82	7	7	6	6
Nam Long Hospital	0	0	0	0	0
Our Lady of Maryknoll Hospital	2	0	0	0	0
Pamela Youde Nethersole Eastern Hospital	0	0	0	0	0
Pok Oi Hospital	2	1	2	1	2
Prince of Wales Hospital	12	12	12	12	12
Princess Margaret Hospital	1	2	1	1	1
Queen Elizabeth Hospital	27	13	11	11	9
Queen Mary Hospital	37	0	0	0	0
Ruttonjee Hospital	174	1	1	1	1
Shatin Hospital	0	0	0	0	0
Tai Po Hospital	0	0	0	0	0
Tseung Kwan O Hosital	13	0	0	0	0
Tuen Mun Hospital	9	9	9	9	9
Tung Wah Eastern Hospital	0	0	0	0	0
Tung Wah Hospital	0	0	0	2	2
United Christian Hospital	68	10	9	9	8
Wong Tai Sin Hospital	34	1	2	1	1
Wong Chuk Hang Hospital	0	0	0	0	0
Yan Chai Hospital	6	6	6	6	6
Total	824	90	82	82	77

HKID/ Passport/ Birth certificate no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Clinic/ Hospital no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _ DOS: _ _/_ _/_ _ _ _

PFA - To be completed at around DOS (for TB patients) *[DOS = date of starting treatment (or, if patient defaulted>2 months before starting anti-TB treatment, put down the date of diagnosis)]*

Part (A) Basic information

TB notified: N / Y : Date: _ _ / _ _ / _ _ _ _ Sex: 1.M / 2.F Age: _ _ years Date of birth : _ _ / _ _ / _ _ _ _

Marital status: 1.single/ 2.married/ 3.separated/ 4.divorce/ 5.widowed Smoking status: 1.never/ 2.ex-smoker/ 3.current smokers

Institution-related: N / Y : 1.Client / 2.Staff Type: 1.Old age home/ 2.School/ 3. Hospital/ 4.Handicapped/ 5.Prison/ 6.Others

Name of institution: _____

Living situation: 1.street-sleeper/ 2.cubicle bed space/ 3.institution/ 4.work quarter/ 5.alone (but not 1. to 4.)/ 6.with friends/ 7.with family

Resident status: 1.PermanentResident/ 2.ChineseNewImmigrant(inHK<7yr)/ 3.ImportedWorker/ 4.Tourist-2wayPermitChinese/ 5.OtherTourist/ 6.Vietnamese/ 7.IllegalImmigrants

Place of birth: 1.Hong Kong / 2.Mainland/ 3.Others _____

Ethnicity: 1.Chinese/ 2.Other Asian/ 3.Caucasian/ 4.Other _____

Previous BCG history: N / Y / Unknown BCG scar: N / Y

Employment status (including self-employment) at DOS: 1.Full-time/ 2.Part-time/ 3.Retired/ 4.Unemployed/ 5.Housewife/ 6.Student

Occupation (current or last): 1.Blue collar/ 2.White collar/ 3.Medical/ 4.Nursing/ 5.Paramedical/ 6.Supporting health staff/ 7.Not applicable

Job title: _____

Part (B) Information on this episode of TB:

First presentation to: 1. Private doctor / 2.Private Hospital / 3.GOPC / 4.Chest Clinic / 5.Other DH Clinic / 6 .HA Clinic / 7. HA Hospital / 8. Mainland / 9.Overseas

Symptomatic on presentation: N / Y: 1.Chest symptoms / 2.Systemic Symptoms / 3.Other site-specific symptoms

Reason for presentation: 1. Symptom / 2.Contact Screening / 3. Pre-employment / 4.Pre-emigration/ 5.Other body check / 6. Incidental to other illness / 7. Others: _____

Contact with TB patients: N / Y: 1.Household / 2.Work / 3.Casual
1. within 2 year / 2. over 2 year

Previous chemoprophylaxis: N / Y : reason: 1. Contact / 2. Silicosis / 3. HIV / 4. Old scar on CXR / 5. Others _____

Drugs & duration: _____

Part (C) Case category (choose 1 item only):

1. New case (<1m previous Rx)
2. Relapse case.
3. Treatment after default.
4. Failure of previous treatment.

Date of last treatment (mm/yyyy): _ _ / _ _ _ _ Duration of last treatment: _ _ months

5. Others, specify: _____

Part (D) Disease classification: (please circle ≥1 item)

1. Pulmonary tuberculosis
   Extent of disease: 1minimal (total area< RUL)/ 2moderate (> RUL)/ 3advanced (> 1 lung) Cavity: N / Y

Extra-pulmonary tuberculosis:

2. Pleura
3. Lymph node
4. Meninges
5. Miliary
6. Abdomen
7. Bone and joint (other than spine)
8. Spine
9. Genito-urinary tract
10. Naso/oro-pharynx
11. Larynx
12. Pericardium
13. Skin
14. Other site(1), specify _____
15. Other site(2), specify _____
16. Other site(3), specify _____

Completed by: _____ (name) Tel: _____ Fax: _____

Institution: 1.Chest Clinic/ 2.Chest Hospital/ 3.General Hospital/ 4.Private Practice. ; Name (and ward) of institution: _____

(After completion, this form should be sent to Consultant Chest Physician i/c, Wanchai Chest Clinic, 99 Kennedy Road, Hong Kong. Fax: (852) 28346627)
(If patient is transferred, a copy of this completed form should also be sent to the new source of care for information.)

HKID/ Passport/ Birth certificate no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Clinic/ Hospital no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _ DOS: _ _/_ _/_ _ _ _

PFB1 – To be completed at 6 month from DOS (for TB patients)

Part (E) Mode of TB diagnosis: 1. Bacteriological/ 2.Histological/ 3.Clinical-radiological/ 4.Clinical only (choose 1 item, priority from left to right)

Bacteriological examination for MTB: P (positive), N (negative) , U (not done), NTM (Non-tuberculous Mycobacteria)

	Sputum			**Other type of specimen:** 1.gastric aspirate/ 2.pleural fluid/ 3.bronchial washing/ 4.urine/ 5.biopsy or others, specify: _____		
	Pre-treatment	2 months	3 months	Pre-treatment	2 months	3 months
Smear	P / N / U	P / N / U	P / N / U	P / N / U	P / N / U	P / N / U
Culture	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM

- Histological result from (site) _____: 1 Typical (with caseation) / 2.Granulomatous inflammation / 3.other
  Ziehl-Neelzen staining: P / N / U
- **If pre-treatment culture is positive for MTB, is the ST favourable? (i.e., sensitive to HRES)**: N / Y / U (ST not done)

If unfavourable ST, please mark S (sensitive) or R (resistant) for all ST done:

Isoniazid (H)	: S / R	Pyrazinamide	: S / R	Cycloserine	: S / R
Rifampicin (R)	: S / R	Ofloxacin	: S / R	Other (1) _____	: S / R
Ethambutol (E)	: S / R	Ethionamide	: S / R	Other (2) _____	: S / R
Streptomycin (S)	: S / R	Kanamycin	: S / R		

Part (F) Risk factors for TB: N / Y (If Y, please circle whichever applicable)

1. Diabetes mellitus
2. Lung cancer
3. Other malignancies
4. On cytotoxic drugs
5. On steroid
6. Chronic renal failure
7. HIV
8. Silicosis
9. Alcoholism
10. Drug abuser
11. Gastrectomy
12. General debilitation (e.g., due to old age, immobility, stroke, etc.)
13. Other(1), specify_____
14. Other(2), specify_____
15. Other(3), specify_____

Part (G) Factors affecting treatment choices: N / Y (If Y, please circle whichever applicable)

1. Hepatitis-B carrier
2. Chronic active hepatitis
3. Impaired renal function
4. Chronic renal failure (require dialysis, etc.)
5. Impaired vision
6. Impaired hearing
7. Known drug reaction
8. Known drug resistance
9. Gout
10. Idiopathic thrombocytopenic purpura
11. Other(1), specify_____
12. Other(2), specify_____
13. Other(3), specify_____

Part (H) Other co-morbidities: N / Y : 1. _____ 2. _____ 3. _____

Part (I) Treatment regimen:

6-month short course treatment: N / Y: 1. [2HRZE+4HR] / 2. [2HRZS+4HR]

If neither of the above 2 regimens, please complete the following two questions:

Other standard regimens based on HRZES (at least HRZ in initial and HR in continuation phase): N / Y

Drugs that have been used (for at least over 1 month): 1 Isoniazid (H) / 2 Rifampicin (R) / 3 Ethambutol (E) / 4 Streptomycin (S) / 5 Pyrazinamide (Z) / 6 Ofloxacin / 7 Levofloxacin / 8 Ethionamide / 9 Prothionamide / 10 Kanamycin / 11 Cycloserine / 12 PAS /

12 Other(1) _____ / 13 Other(2) _____ / 14 Other (3) _____

Completed by: _____ (name) Tel: _____ Fax: _____

Institution: 1.Chest Clinic/ 2.Chest Hospital/ 3.General Hospital/ 4.Private Practice. ; Name (and ward) of institution: _____

(After completion, this form should be sent to Consultant Chest Physician i/c, Wanchai Chest Clinic, 99 Kennedy Road, Hong Kong. Fax: (852) 28346627)
(If patient is transferred, a copy of this completed form should also be sent to the new source of care for information.)

HKID/ Passport/ Birth certificate no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Clinic/ Hospital no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _ DOS: _ _/_ _/_ _ _ _

PFB2 – To be completed at 6 month from DOS (for TB patients)

Part (J) Treatment side effects: N / Y (If Y, please circle)

1.GI upset/ 2.skin rash/ 3.visual/ 4.transient rise of liver enzyme/ 5. hepatitis/ 6.vestibular/ 7.arthropathy/ 8.fever-chill/ 9.dizziness/ 10.thrombocytopenia/ 11.leucopenia/ 12.flush face/ 13.other(1) _____ / 14.other(2) _____ /15.other(3) _____

Treatment temporarily withheld for side effects: N / Y

Desensitisation or drug trial required: N / Y

Change in dosage or frequency required: N / Y

Change of drugs required: N / Y

Part (K) Treatment Supervision:

Proportion of doses:	Initial 2 month	Subsequent 4 months (up to 6 month from DOS)
Under DOT at chest clinic, hospital, CNS or other health staff	>90% >75% >50% >25% ≤25%	>90% >75% >50% >25% ≤25%
Under supervison by relatives	>90% >75% >50% >25% ≤25%	>90% >75% >50% >25% ≤25%
Supplied for unsupervised treatment	<5% <10% <15% < 25% <50% ≥50%	<5% <10% <15% < 25% <50% ≥50%
Defaulted	<5% <10% <15% < 25% <50% ≥50%	<5% <10% <15% < 25% <50% ≥50%

Part (L) Outcome at 6 months (please √, circle and/ or fill in the spaces provided as appropriate)

(1) Cured/ treatment completed □ Date treatment stopped (mm/yyyy): ____/_____

Status at completion:

- Bacteriological conversion □
- Radiological improvement □
- Other clinical improvement □
- No available evidence of response □

(2) Treatment incomplete □

- Still on treatment, reason: 1.retreatment/ 2.extrapulm./ 3.extensive/ 4.interrupted treatment/ 5.drug resistance/ 6.poor response/ 7.others, specify: _____
- Died □ Cause: 1.TB-related/ 2.Not TB-related/ 3.Unknown Date of death (mm/yyyy): ____/_____

(3) Transferred □ to: 1.GP/ 2.Chest Clinic/ 3.Hospital/ 4.Outside HK Details: _____

Last treatment date (mm/yyyy): ____/_____

(4) Defaulted (defaulted treatment for a continuous period > 2m) □

- Never found □ Last visit date (mm/yyyy): ____/_____
- Retreated after default □ Date treatment re-started (mm/yyyy): ____/_____
- Treatment stopped by doctor □ Last treatment date (mm/yyyy): ____/_____

(5) Failure (persistent positive bacteriology and treatment stopped) □

(6) Wrong/ revised diagnosis □ Last treatment date (mm/yyyy): ____/_____

- New diagnosis: _____

(7) Others □ , specify: _____

Completed by: _____ (name) Tel: _____ Fax: _____

Institution: 1.Chest Clinic/ 2.Chest Hospital/ 3.General Hospital/ 4.Private Practice; Name (and ward) of institution: _____

(After completion, this form should be sent to Consultant Chest Physician i/c, Wanchai Chest Clinic, 99 Kennedy Road, Hong Kong. Fax: (852) 28346627)
(If patient is transferred, a copy of this completed form should also be sent to the new source of care for information.)

HKID/ Passport/ Birth certificate no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Clinic/ Hospital no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _ DOS: _ _/_ _/_ _ _ _

PFC – To be completed at 12 month from DOS (for TB patients)

Part (M) Bacteriological examination for MTB: P (positive), N (negative) , U (not done), NTM (Non-tuberculous Mycobacteria)

	Sputum		**Other type of specimen:** 1.gastric aspirate/ 2.pleural fluid/ 3.bronchial washing/ 4.urine/ 5.biopsy or others, specify: _____	
	5-6 months	7-12 months	5-6 months	7-12 months
Smear	P / N / U	P / N / U	P / N / U	P / N / U
Culture	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM	P / N / U / NTM

Part (N) Outcome at 12 months (please √, circle and/ or fill in the spaces provided as appropriate)

(1) Cured/ treatment completed □ Date treatment completed (mm/yyyy): ____/_____

(a) Status at completion:

- Bacteriological conversion □
- Radiological improvement □
- Other clinical improvement □
- No available evidence of response □

(b) After treatment completed:

No relapse □

Loss to follow-up □ Last visit date (mm/yyyy): ____/_____

Died □ Cause: 1.TB-related/ 2.Not TB-related/ 3.Unknown Date of death (mm/yyyy): ____/_____

Relapse □ Date relapse (mm/yyyy): ____/_____

- 1.Bacteriological / 2.Histological / 3.Clinical-radiological (choose 1 item, priority from left to right)

(2) Treatment incomplete (including death while on treatment) □

- Still on treatment, reason: 1.retreatment/ 2.extrapulm./ 3.extensive/ 4.interrupted treatment/ 5.drug resistance/ 6.poor response/ 7.others, specify: _____
- Died □ Cause: 1.TB-related/ 2.Not TB-related/ 3.Unknown Date of death (mm/yyyy): ____/_____

(3) Transferred □ to: 1.GP/ 2..Chest Clinic/ 3.Hospital/ 4.Outside HK Details: _____

Last treatment date (mm/yyyy): ____/_____

(4) Defaulted (defaulted treatment for a continuous period > 2m) □

- Never found □ Last visit date (mm/yyyy): ____/_____
- Retreated after default □ Date treatment re-started (mm/yyyy): ____/_____
- Treatment stopped by doctor □ Last treatment date (mm/yyyy): ____/_____

(5) Failure (persistent positive bacteriology and treatment stopped) □

(6) Wrong/ revised diagnosis □ Last treatment date (mm/yyyy): ____/_____

- New diagnosis: _____

(7) Others □ , specify: _____

Completed by: _____ (name) Tel: _____ Fax: _____

Institution: 1.Chest Clinic/ 2.Chest Hospital/ 3.General Hospital/ 4.Private Practice; Name (and ward) of institution: _____

(After completion, this form should be sent to Consultant Chest Physician i/c, Wanchai Chest Clinic, 99 Kennedy Road, Hong Kong. Fax: (852) 28346627)

(If patient is transferred, a copy of this completed form should also be sent to the new source of care for information.)

HKID/ Passport/ Birth certificate no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ Clinic/ Hospital no.: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _ DOS: _ _/_ _/_ _ _ _

PFD – To be completed at 24 month from DOS (for TB patients)

Part (O) Outcome at 24 months (please √, circle and/ or fill in the spaces provided as appropriate)

(1) Cured/ treatment completed □ Date treatment completed (mm/yyyy): ____/_____

(a) Status at completion:

- Bacteriological conversion □
- Radiological improvement □
- Other clinical improvement □
- No available evidence of response □

(b) After treatment completed:

No relapse □

Loss to follow-up □ Last visit date (mm/yyyy): ____/_____

Died □ Cause: 1.TB-related/ 2.Not TB-related/ 3.Unknown Date of death (mm/yyyy): ____/_____

Relapse □ Date relapse (mm/yyyy): ____/_____

- 1.Bacteriological / 2.Histological / 3.Clinical-radiological / 4.Clinical only (choose 1 item, priority from left to right)

(2) Treatment incomplete (including death while on treatment) □

- Still on treatment, reason: 1.retreatment/ 2.extrapulm./ 3.extensive/ 4.interrupted treatment/ 5.drug resistance/ 6.poor response/ 7.others, specify: _____
- Died □ Cause: 1.TB-related/ 2.Not TB-related/ 3.Unknown Date of death (mm/yyyy): ____/_____

(3) Transferred □ to: 1.GP/ 2.Chest Clinic/ 3.Hospital/ 4.Outside HK Details: _____

Last treatment date (mm/yyyy): ____/_____

(4) Defaulted (defaulted treatment for a continuous period > 2m) □

- Never found □ Last visit date (mm/yyyy): ____/_____
- Retreated after default □ Date treatment re-started (mm/yyyy): ____/_____
- Treatment stopped by doctor □ Last treatment date (mm/yyyy): ____/_____

(5) Failure (persistent positive bacteriology and treatment stopped) □

(6) Wrong/ revised diagnosis □ Last treatment date (mm/yyyy): ____/_____

- New diagnosis: _____

(7) Others □, specify: _____

Completed by: _____ (name) Tel: _____ Fax: _____

Institution: 1.Chest Clinic/ 2.Chest Hospital/ 3.General Hospital/ 4.Private Practice; Name (and ward) of institution: _____

(After completion, this form should be sent to Consultant Chest Physician i/c, Wanchai Chest Clinic, 99 Kennedy Road, Hong Kong. Fax: (852) 28346627)

(If patient is transferred, a copy of this completed form should also be sent to the new source of care for information.)

Annex 2 (a)

TB Among Chinese New Immigrants

Number of all notified TB cases and TB cases who are Chinese new immigrants (with years of arrival in Hong Kong)

	Years of arrival	2009	2010	2011	2012	2013
Notified TB cases who are Chinese New Immigrants (with years of arrival in Hong Kong)	≤1 year	16	13	14	24	18
	≤2 year	11	13	18	14	9
	≤3 year	10	17	10	15	11
	≤4 year	10	12	8	19	14
	≤5 year	10	11	10	7	14
	≤6 year	7	5	11	6	16
	≤7 year	4	9	10	15	10
	Total	68	80	81	100	92
Overall notified TB cases		5193	5093	4794	4858	4664

The above table shows the number of all notified TB cases in Hong Kong from 2009 to 2013 and the number of TB cases among the Chinese new immigrants (staying in Hong Kong less than 7 years) according to the number of years they have arrived in Hong Kong. The numbers are in general higher in the first one to two years of arrival. This phenomenon has also been observed in the immigrants of some other countries. The exact reason is unknown although some postulate that the stress experienced by the new immigrants upon arrival may be a factor.

In Annex 2 (b), the tables show the number of notified TB cases among the Chinese new immigrants by age and sex, and the estimated rates. In Annex 2 (c), the table shows the number of all notified TB cases in Hong Kong by age and sex, and the rates.

As shown from Annex 2 (c), the rates of TB among males are in general higher than that among females, and higher in the older age groups. The overall rates (per 100,000) from 2009 to 2013 are 74.5, 72.5, 67.8, 67.9 and 64.9 respectively.

From Annex 2 (b), the overall estimated rates (per 100,000) among the new immigrants from 2009 to 2013 are 20.9, 25.5, 25.4, 31.4 and 29.7 respectively. The rates are lower than those of the general Hong Kong population. Although Mainland China has been classified by the World Health Organization as among one of the high TB burden countries in the world, the new immigrants coming to Hong Kong are likely to be a “selected” group. Their demographics and health condition may be quite different from and not representative of the whole population in China. For example, they may be younger, more ‘fit’, or with better socioeconomic condition. Hence, the rate of TB among this group may be lower.

Annex 2 (b)

TB Notification and Estimated Rates Among Chinese New Immigrants By Age & Sex (2009-2013)

Notified TB cases who are Chinese new immigrants (coming to HK < 7 years), by age and sex

	2009	2009	2009	2010	2010	2010	2011	2011	2011	2012	2012	2012	2013	2013	2013
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-19	3	5	8	8	9	17	3	4	7	4	4	8	7	3	10
20-39	7	32	39	13	29	42	3	37	40	19	50	69	12	43	55
40-59	6	11	17	2	13	15	14	10	24	10	10	20	9	14	23
60+	3	1	4	2	4	6	5	5	10	1	2	3	2	2	4
Total	19	49	68	25	55	80	25	56	81	34	66	100	30	62	92

Estimated rate of TB (per 100,000) among Chinese new immigrants (coming to HK < 7 years)

	2009	2009	2009	2010	2010	2010	2011	2011	2011	2012	2012	2012	2013	2013	2013
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-19	5.1	9.0	7.0	14.3	17.1	15.6	5.4	7.8	6.6	7.9	8.5	8.2	15.9	7.3	11.8
20-39	32.6	23.1	24.4	58.4	22.0	27.2	12.4	28.0	25.6	70.1	39.9	45.2	42.9	35.0	36.5
40-59	40.3	37.8	38.6	13.0	43.5	33.2	80.5	29.9	47.2	45.1	25.1	32.2	39.4	32.3	34.7
60+	146.3	21.7	60.0	101.3	103.6	102.8	240.0	136.4	173.9	38.6	48.2	44.5	66.7	42.8	52.2
Total	19.6	21.5	20.9	26.1	25.2	25.5	25.3	25.4	25.4	33.2	30.5	31.4	30.7	29.3	29.7

Annex 2 (c)

TB Notification and Rates (All Cases) By Age & Sex (2009-2013)

All TB cases by age and sex

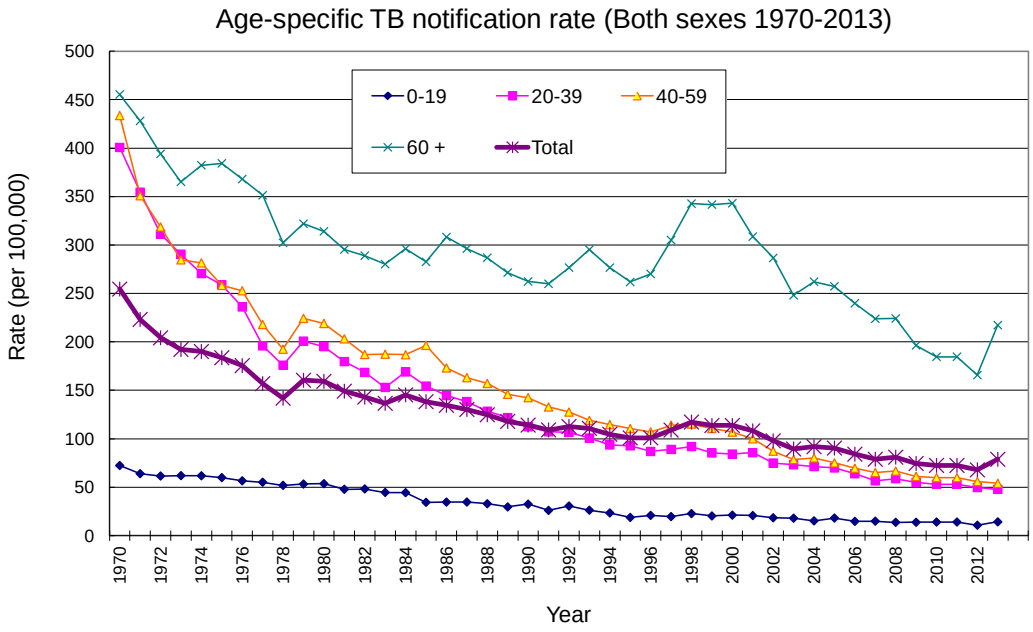
	2009	2009	2009	2010	2010	2010	2011	2011	2011	2012	2012	2012	2013	2013	2013
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-19	92	87	179	94	85	179	94	63	157	74	59	133	100	71	171
20-39	489	663	1152	496	615	1111	445	605	1050	458	593	1051	428	580	1008
40-59	936	502	1438	900	514	1414	842	468	1310	828	511	1339	813	489	1302
60+	1734	690	2424	1740	649	2389	1711	566	2277	1726	609	2335	1565	618	2183
Total	3251	1942	5193	3230	1863	5093	3092	1702	4794	3086	1772	4858	2906	1758	4664

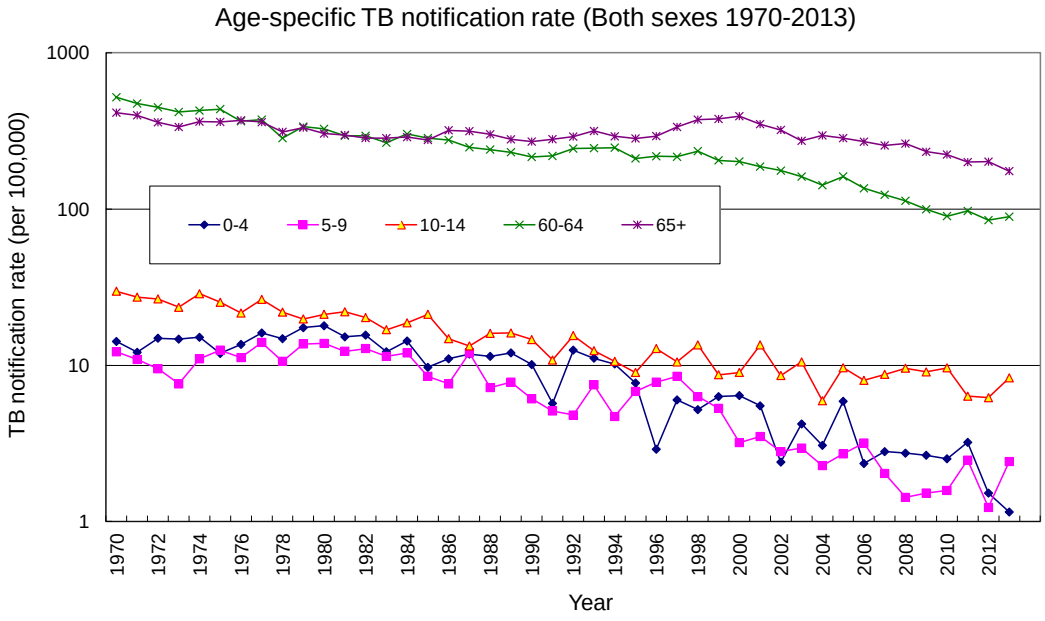
Rate of TB (all notified cases) (per 100,000)

	2009	2009	2009	2010	2010	2010	2011	2011	2011	2012	2012	2012	2013	2013	2013
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-19	13.6	13.7	13.7	14.3	13.8	14.1	14.6	10.4	12.6	11.6	9.9	10.8	16.1	12.2	14.2
20-39	53.3	55.6	54.6	54.4	51.9	53.0	48.8	51.0	50.0	50.1	49.3	49.7	47.1	48.3	47.8
40-59	83.5	40.6	61.0	81.1	41.0	59.9	76.2	36.8	55.2	74.8	39.6	55.9	73.5	37.5	54.0
60+	297.4	107.2	197.6	282.5	95.8	184.7	266.0	80.0	168.5	257.8	82.4	165.7	224.9	80.4	149.1
Total	98.6	52.4	74.1	98.0	49.9	72.5	93.6	45.2	67.8	92.7	46.3	67.9	87.2	45.6	64.9

Annex 3

Trend of age-specific TB notification rates (1970-2013)





- All the age-specific TB notification rates, particularly those of the younger age groups, show a generally declining trend.
- TB cases can develop from progressive primary infection, exogenous re-infection, or endogenous reactivation. The trend of progressive primary infection is best reflected by the trends of the younger age groups, in particular that of the 0-4 age group. On the other hand, endogenous reactivation is better reflected by the trends of the older age groups, which generally show slower rates of decline than those of the younger age groups.
- The transient increase in rates for the age group 60+ during the period 1997 to 2000 (top graph) is likely due to strengthened surveillance measures targeting at bacteriologically positive and death cases through laboratory data and data from death certificates.

Annex 4(a)

TB-HIV Registry

A total of 21 cases with TB-HIV co-infection were reported to the TB-HIV Registry in 2013. The cumulative number of cases reported to the TB-HIV Registry from all sources as in 2013 was 561 (Table 1)**.** .

The number of TB as primary AIDS-defining illness in the Hong Kong HIV/AIDS reporting system for the years 1996-2013 is shown in Table 2. Out of a total of 84 AIDS cases newly diagnosed in 2013, 17 (20.2%) had TB as a primary AIDS-defining illness, compared to 37 (44.1%) for *Pneumocystis jiroveci* pneumonia. The percentage, as well as the absolute number, of TB as the most common primary AIDS-defining illness in Hong Kong in 2013 increased compared to 2012 but were still lower than that for 2010 and 2011. Overall there was a decreasing trend of the number of TB as primary AIDS-defining illness since 2007.

Table 3 shows the distribution of ADI criteria among 375 cases reported from chest clinics and SPP for the years 1996-2013 with TB as the primary AIDS-defining illness. In Hong Kong, both pulmonary TB with a CD_4 count below 200/µL and extra-pulmonary TB are included in the AIDS case definition. Relatively more patients have pulmonary TB with a low CD_4 count as primary AIDS-defining illness compared to extra-pulmonary TB.

The pre-treatment drug sensitivity pattern among culture-positive (sputum or other specimens) TB-HIV cases for the years 1996-2013 is shown in Table 4. Of the 18 cases with a positive sputum or other specimen culture and sensitivity tests performed reported to TB-HIV Registry in 2013, 13 (72.2%) had disease due to *Mycobacterium tuberculosis* with favourable sensitivity pattern. Four (22.2%) had bacillary resistance to streptomycin and one (5.6%) had bacillary resistance to isoniazid. No patient case had MDRTB in 2013. Among all the 387 cases reported to TB-HIV Registry with a positive sputum or other specimen culture between 1996 and 2013, 5 (1.3%) had MDRTB. This figure is slightly higher than the MDRTB rate of around 1% in general population. There is no XDR-TB cases detected among the reported TB-HIV cases. DH will continue to monitor prevalence of drug resistance in the context of HIV.

Table 5 shows the characteristics of 21 patients reported from chest clinics and SPP in 2013. The characteristics of these patients are similar to those of the 2012 cohort, namely, there are greater proportions of young males and non-Chinese Asians among TB-HIV co-infected patients as compared to non-HIV infected TB patients. A lower proportion of patients had a positive sputum smear than the non HIV-infected counterpart. CD_4 count was generally low at time of TB diagnosis. Extra-pulmonary involvement is common, with over half of patients having TB involving one or more extra-pulmonary sites.

Annex 4 (b)

Table 1. Total number of TB-HIV cases reported to TB-HIV Registry (1996-2013)*

Year	Number of TB-HIV cases**
1996	22
1997	19
1998	22
1999	25
2000	24
2001	34
2002	22
2003	28
2004	35
2005	42
2006	50
2007	56
2008	50
2009	38
2010	25
2011	28
2012	20
2013	21
Total	561

* Including cases reported from all sources (chest clinics, SPP, HA hospitals and private centres).
** Some of the figures in the table for the previous years have been updated after (1) taking out some mismatched cases and cases with a revised diagnosis (2) adding some cases which were previously unreported.

Table 2. TB as primary ADI in Hong Kong HIV/AIDS reporting system, all sources (1996-2013)*

Year	Number of cases with TB as primary AIDS-defining illness	Total number of reported AIDS cases	% of reported AIDS cases with TB as primary AIDS-defining illness
Pre-1996	21	175	12.00%
1996	21	70	30.00%
1997	17	64	26.56%
1998	18	63	28.57%
1999	13	61	21.31%
2000	19	67	28.36%
2001	17	60	28.33%
2002	9	53	16.98%
2003	15	56	26.79%
2004	13	49	26.53%
2005	25	64	39.06%**
2006	26	73	35.62%
2007	32	79	40.51%**
2008	31	96	32.29%
2009	24	76	31.58%
2010	20	79	25.30%
2011	22	82	27.00%
2012	15	86	17.40%
2013	17	84	20.23%
Total	375	1437	26.10%

* An expanded case definition was adopted in 1995 to include pulmonary TB cases with a CD4 count less than 200/μL.
** TB overtook *Pneumocystis jiroveci* pneumonia as the most common AIDS-defining illness in 2005 and 2007.

Annex 4 (c)

Table 3. Criteria for TB as AIDS-defining illness among 375 cases reported from chest clinics and SPP (1996-2013)*

Year	TB as AIDS-defining illness				Total
	Yes		No	Information not available	
	Extra-pulmonary	Pulmonary and TB cervical lymph node with CD4 < 200 µL			
1996	1	7	1	0	9
1997	2	3	2	0	7
1998	6	3	3	0	12
1999	7	6	3	0	16
2000	3	4	5	0	12
2001	4	6	7	0	17
2002	4	9	2	0	15
2003	1	10	5	0	16
2004	5	7	11	0	23
2005	8	14	7	0	29
2006	9	19	7	0	35
2007	10	17	8	2	37
2008	14	13	6	0	33
2009	9	3	6	5	23
2010	4	10	5	3	22
2011	6	8	8	6	28
2012	4	9	5	2	20
2013	7	10	1	3	21
Total	104	158	92	21	375

* Some of the figures in the table for the previous years have been updated. Of all the cases reported to the TB-HIV Registry from 1996 to 2013, 375 cases were seen at chest clinics and/or SPP. The table is compiled basing on data of these 375 cases.

Table 4. Pre-treatment drug sensitivity pattern among culture positive (sputum and/or other specimens) TB-HIV cases from TB-HIV Registry, all sources (1996-2013)*

Year	Susceptible to SHRE	Any resistance** (non-MDR/XDR)	MDR	XDR	Total number of culture positive cases
1996	7	1	0	0	8
1997	5	1	0	0	6
1998	13	1	0	0	14
1999	16	4	1	0	21
2000	13	2	0	0	15
2001	23	5	0	0	28
2002	11	3	1	0	15
2003	18	3***	0 (+1)***	0	21
2004	20	6	0	0	26
2005	29	5	0	0	34
2006	32	3	0	0	35
2007	30	7	1	0	38
2008	30	3	0	0	33
2009	22	7	0	0	29
2010	12	2	0	0	14
2011	12	4	0	0	16
2012	13	2	1	0	16
2013	13	5	0	0	18
Total	319	64	4 (+1)***	0	387

* Of all the cases reported to the TB-HIV Registry from 1996 to 2013, 387 had a positive culture (sputum or other specimens). The table is compiled basing on data of these 387 cases.
** Any pattern of drug resistance except MDR (i.e. resistant to at least both H and R) and XDR (i.e resistance to any fluoroquinolones, and at least one of the injectable drugs, in addition to MDR).
*** One of these patients had extremely poor treatment adherence, developed acquired resistance during anti-TB treatment and became MDR-TB.

Annex 4 (d)

Table 5: Characteristics of 21 TB-HIV cases reported from chest clinics and SPP in 2013

Age distribution	Number	Proportion
0 to 19	0	0.00%
20 to 39	14	66.67%
40 to 59	5	23.81%
60+	2	9.52%
Sex distribution		
Male	13	61.90%
Female	8	38.10%
Ethnicity		
Chinese	14	66.67%
Asians, non-Chinese	6	28.57%
African	1	4.76%
Others	0	0.00%
Case category		
New case	20	95.24%
Relapse	1	4.76%
Treatment after default	0	0.00%
Failure of previous treatment	0	0.00%
Others	0	0.00%
TB as primary AIDS defining illness*		
Yes	17	94.44%
No	1	5.56%
CD4 count at time of co-infection (median, IQR)**	48 (24-118) /µL	
Anti-retroviral therapy at time of co-infection		
Yes	3	14.29%
No	16	76.19%
Unknown	2	9.52%
Presence of extra-pulmonary TB		
Yes	12	57.14%
No	9	42.86%
Extent of Respiratory TB***		
Minimal	7	41.18%
Moderate	5	29.41%
Extensive	5	29.41%
Sputum bacteriological status (pre-treatment)		
Smear + culture +	5	23.81%
Smear - culture +	10	47.62%
Smear + culture -	0	0.00%
Smear - culture -	5	23.81%
Incomplete	1	4.76%
Drug resistance pattern (pre-treatment)****		
Susceptible to SHRE	13	72.22%
Resistant to streptomycin	4	22.22%
Resistant to isoniazid	1	5.56%
Resistant to rifampicin	0	6.30%
MDR	0	6.30%
XDR	0	0.00%

* Information on TB as primary AIDS-defining illness unknown in 3 patients.
** Information on CD4 count unknown in 3 patients.
*** 17 out of the 21 cases had lung parenchymal lesion on CXR.
**** 18 out of the 21 cases had a positive sputum or other specimen culture.

Annex 5

HBsAg Seroprevalence Survey Among TB Patients Seen at Chest Clinics (2013)

In a sample survey conducted by the TB & Chest Service of the Department of Health in 2013 (2-month period from 1.3.2013 to 31.5.2013), the overall HBsAg seropositive rate among TB patients seen at chest clinics was 9.72%.

Sex/Age group	HBsAg status			HBsAg seropositive rate (%)*	Total
	Positive	Negative	Unknown		
Male					
0-19	1	28	5	3.45	34
20-39	8	86	3	8.51	97
40-59	32	166	10	16.16	208
≥60	29	279	17	9.42	325
Female					
0-19	0	20	0	0.00	20
20-39	5	119	7	4.03	131
40-59	9	98	5	8.41	112
≥60	11	86	9	11.34	106
Total	95	882	56	9.72	1033

* *HBsAg seropositivity rate = number of HBsAg positive patients/ (number of HBsAg positive patients + number of HBsAg negative patients)*

HBsAg Seroprevalence Survey 2012-2013

Sex/Age group	HBsAg seropositive rate (%)	
	2012	2013
Male		
0-19	0.00	3.45
20-39	7.89	8.51
40-59	12.63	16.16
≥60	8.20	9.42
Female		
0-19	0.00	0.00
20-39	8.70	4.03
40-59	6.19	8.41
≥60	9.20	11.34
Total	8.78	9.72

Annex 6

Crude and Standardised Death Rate and Notification Rate 1981 - 2013
(per 100,000 population)

Year	Crude Death Rate	Standardised Death Rate *	Crude Notification Rate	Standardised Notification Rate *
1981	9.4	9.4	149.1	149.1
1982	8.6	8.4	140.3	142.1
1983	8.3	7.2	136.6	135.2
1984	7.8	7.9	145.3	142.7
1985	7.5	6.9	138.3	134.6
1986	7.4	6.6	134.5	134.6
1987	7.3	6.3	130.3	124.2
1988	6.9	5.8	124.8	122.1
1989	7.1	5.9	117.9	111.4
1990	6.7	5.7	114.1	107.7
1991	7.1	5.6	109.2	100.5
1992	7.1	5.5	112.6	107.9
1993	6.7	5.1	110.8	100.2
1994	6.8	5.0	104.7	88.9
1995	6.8	4.8	100.9	88.9
1996	4.5	3.1	101.0	88.7
1997	3.9	2.6	109.0	93.1
1998	4.1	2.8	117.3	98.6
1999	4.7	3.1	113.7	93.9
2000	4.5	2.8	113.7	93.4
2001	4.6	2.8	108.2	88.6
2002	4.0	2.4	97.9	78.9
2003	4.1	2.5	89.5	72.3
2004	4.2	2.4	91.8	71.1
2005	4.0	2.2	90.4	70.5
2006	4.3	2.4	84.1	63.3
2007	3.3	1.8	79.0	58.5
2008	3.3	1.7	81.0	59.3
2009	2.9	1.5	74.5	54.1
2010	2.7	1.4	72.5	52.0
2011	2.6	1.3	67.8	48.4
2012	2.8	1.4	67.9	47.2
2013	2.5	1.2	64.9	46.1

* Age and sex-standardisation, using the mid-1981 population as the standard population.

NB. The rates have been updated based on the updated population figures from the 2013 Population Census.

Part 4

SUPPLEMENT

Part 4 – Supplement: Contents

Supplement

AMBULATORY TREATMENT AND PUBLIC HEALTH MEASURES FOR A PATIENT WITH UNCOMPLICATED PULMONARY TUBERCULOSIS

AN INFORMATION PAPER

January 2013

This information paper is an update of Chapter 17 of “Tuberculosis Manual 2006” by Tuberculosis and Chest Service of Public Health Services Branch of Centre for Health Protection of Department of Health, Government of the HKSAR. This updated paper has been endorsed by Members of the Joint Committee of the Tuberculosis Control Coordinating Committee of the Hong Kong Department of Health and the Respiratory Services Working Group of the Hospital Authority. The Members are: Dr. HS Chan, Dr. KS Chan, Dr. VL Chan, Dr. KC Chang, Dr. KL Choo, Dr. CM Ho, Dr. SC Hui, Dr. KM Kam, Dr. FY Kong, Dr. KC Kwong, Dr. TK Lam, Dr. WK Lam, Dr. KS Lau, Dr. MP Lee, Dr. CC Leung, Dr. HM Ma, Dr. YW Mok, Dr. KY So, Dr. CM Tam, Dr. CY Tam, Dr. PY Tse, Dr. KC Wong, Dr. ML Wong, Dr. PC Wong, and Dr. KS Yee.

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January 2013

[This information paper is also published in the Annual Report (Suppl) 2013, TB & Chest Service, Public Health Services Branch, Centre for Health Protection, Department of Health, Hong Kong.]

Summary points:

1. There are two main purposes in the management of a case of tuberculosis: to cure the patient, and to contain the spread of the infection. The attending physician has the responsibility to ensure treatment completion.
2. The process of diagnosis follows the usual steps: history, physical examination, and investigations. Chest radiograph and sputum bacteriological examination are the basic diagnostic tools, supplemented by other tests where appropriate.
3. Bacteriological examination and drug susceptibility tests should be done as far as possible in every case of tuberculosis. Susceptibility results provide a good guide to formulation of the drug regimen, as well as surveillance data on trend of drug resistance in the community.
4. The standard treatment is the short course regimen given for at least 6 months. Drug prescription should be made after assessment of contraindications and necessary precautions. Biochemical and clinical monitoring are performed where appropriate.
5. DOTS is strongly recommended by the World Health Organisation as the cornerstone of TB treatment.
6. Apart from clinical management, public health measures are also essential. These include infection control measures, notification, contact tracing, and health education.

Introduction

In Hong Kong, there are around 5,000 notified cases of tuberculosis (TB) each year. Ambulatory chemotherapy has been the mainstay of anti-TB treatment. The majority (around 80%) of notified TB cases are managed in the chest clinics of the Tuberculosis & Chest Service (TB&CS) under the administration of the Department of Health (DH). Others are treated at various medical units of the Hospital Authority (HA) and in the private sector. It is a statutory requirement for every case of active TB to be notified to DH according to the Prevention and Control of Disease Ordinance (Cap. 599), which was an update from an old Ordinance and enacted in July 2008. Broadly speaking, notification serves two main purposes, namely, epidemiological surveillance and contact investigation. Prompt notification facilitates contact tracing procedures and helps to contain the spread of the infection. Details of the notification procedure can be found in the "Guidance notes for notification of tuberculosis".[1]

Today, emphasis is placed on encouraging patients with symptoms suggestive of TB to seek medical attention early, so called "passive case finding", rather than indiscriminate screening of asymptomatic individuals. This paper provides a summary and general view of the management of a patient with uncomplicated pulmonary TB.

Management of the Patient with Tuberculosis

Aims

There are two main objectives in managing a TB patient. The first is to cure the individual patient. The second is to contain the spread of the infection. In this regard, the health care provider has a responsibility to monitor every TB patient for treatment adherence till completion.[2]

History

As TB is endemic in Hong Kong, a high index of suspicion should be maintained, especially for patients presenting with symptoms like persistent cough for over 3 to 4 weeks, blood in sputum, weight loss, persistent fever, or night sweating. In assessing a patient presenting with persistent chest and/ or constitutional symptoms, a full medical history is essential. Particularly important issues in the history include previous history of TB, coexisting medical illnesses, occupational history, contact history, and smoking habit, risk of HIV infection (e.g. venereal exposure, intravenous drug addiction). If a positive culture of *Mycobacterium tuberculosis* (MTB) has been isolated from the sputum of the probable source case, the anti-TB drug susceptibility pattern helps in the choice of initial drug regimen for the patient. Any evidence of previous BCG vaccination is to be noted especially if the patient is a child.

Physical examination

Physical examination not uncommonly yields negative findings. Some features may be worth mentioning, including: general condition, cervical lymph node enlargement, features of pleural effusion, and unilateral wheeze related to endobronchial involvement. The physical findings may help in the consideration of differential diagnoses, e.g., a lung nodule is more likely to be a carcinoma than a tuberculoma in the presence of finger clubbing.

Investigation

Chest radiograph and sputum examination for acid fast bacilli (AFB) are essential tools employed for the diagnosis of pulmonary TB. The chest radiograph is a relatively simple and sensitive test. Typical radiographic changes, like apical lesions, tend to have a higher positive predictive value for TB in an endemic area like Hong Kong. However, atypical sites of involvement, e.g. predominant lower lobe changes, may occur in elderly patients with TB or patients coinfected with HIV. Every effort should be made to trace old chest radiographs for comparison, if available. At times, symptomatic TB patients may have normal findings on chest radiographs at presentation.[3]

Diagnostic sputum samples, preferably collected on two to three consecutive mornings, are sent for direct smear and culture examination. Positive smear results should be reported back to the clinics promptly so that patients can be called back for early commencement of treatment. If direct smears are negative, clinico-radiological correlation is essential in deciding the next step of action. In certain situations, trial of antibiotics, and follow-up chest

radiograph examination in one to two weeks may be required to differentiate TB from other types of community-acquired pneumonia. However, care should be exercised to avoid certain antibiotics in particular the fluoroquinolones which may mask the features of TB resulting in delayed diagnosis.[4,5]

The use of liquid cultures and the more advanced laboratory techniques like molecular detection and amplification tests can shorten the time required for bacteriological diagnosis and/ or drug susceptibility tests, though at a higher cost. However, false positive results of nucleic acid amplification tests may occur, e.g. in cases of treated or inactive TB. In more difficult cases, it may be necessary to resort to further investigations like computerised tomography scan, fibreoptic bronchoscopy, and percutaneous transthoracic fine needle aspirate. Thus, the diagnosis of active pulmonary TB may be based on any combination of clinical, radiological, bacteriological, and sometimes histological grounds. Empirical treatment may have to be considered for some patients with compatible clinical and/ or radiological features in the absence of bacteriological confirmation. Under such situation, careful clinical evaluation of treatment response is called for to confirm the clinical diagnosis and exclude other possibilities.

Both tuberculin skin test (TST) and interferon-gamma release assays (IGRAs) are immunological tests designed primarily for the diagnosis of infection, rather than disease. Neither is sufficiently sensitive or specific to rule in or rule out active TB disease. The use of TST is rather limited in the local setting, partly as a result of widespread BCG vaccination and revaccination, although the latter has been stopped since September 2000. Despite such limitation, the test may still give useful information in certain clinical situations, especially among the younger age group, and in case assessment is required for need of treatment of latent TB infection. Regarding the use of IGRAs for the diagnosis of latent TB infection, the World Health Organisation (WHO) issued a policy statement commenting that there is insufficient data and low quality evidence on the performance of IGRAs in low- and middle-income countries, typically those with a high TB and/or HIV burden.[6] IGRAs and TST cannot accurately predict the risk of infected individuals developing active TB disease. Neither IGRAs nor the TST should be used for the diagnosis of active TB disease. IGRAs are more costly and technically complex to do than the TST. Given comparable performance but increased cost, replacing TST by IGRAs as a public health intervention in resource-constrained settings is not recommended. However, the WHO's policy statement is not intended to apply to high-income countries or to supercede their national guidelines.

The TB Reference Laboratory of DH performs anti-TB drug susceptibility tests for the great majority of health care facilities in the public sector, including TB&CS of DH and chest medical units of HA. Identification and drug susceptibility tests to the four first-line anti-TB drugs (isoniazid, rifampicin, ethambutol and streptomycin) are regularly performed for all pretreatment culture isolates which are positive for MTB. Drug susceptibility tests to second-line anti-TB drugs are also performed if there is multidrug-resistance (resistant to at least isoniazid and rifampicin), or with other clinical indications. The drug susceptibility test results provide a useful guide to the clinical management of the patient, and also allow epidemiological surveillance of drug resistance rates and evaluation of the local TB control programme. Hence, sputum or other relevant specimens should be sent for bacteriological

examination including drug susceptibility tests as far as possible.

Newer generations of molecular amplification tools have been increasingly utilized to facilitate the rapid diagnosis of TB and detection of drug resistance. The use of Xpert MTB/RIF test has recently been endorsed by WHO.[7,8,9] It has been recommended as the initial diagnostic test in individuals suspected of having MDR-TB or HIV-associated TB. On the other hand, it may be considered as a follow-on test to microscopy in settings where MDR-TB or HIV is of lesser concern, especially in further testing of smear-negative specimens. However, local epidemiological profiles, service constraints and cost-effectiveness considerations will need to be taken into account in the actual deployment of these evolving molecular tools in a service setting.

Notification

Cases diagnosed as active pulmonary TB should be notified promptly to DH, particularly once the case is put on treatment.[1] If the patient happens to be a health care worker or working in other relevant occupations with increased risk of exposure to TB, notification to the Labour Department is required under the Occupational Safety and Health Ordinance.[10] De-notification is necessary if the case eventually turns out to be non-TB, atypical mycobacterial infections, or other diagnoses. De-notification forms can be downloaded from the TB website (http://www.info.gov.hk/tb_chest).

Treatment

"Short course chemotherapy" is the current standard treatment for active pulmonary TB. The regimen consists of a two-month initial phase comprising four drugs, namely, isoniazid (H), rifampicin (R), pyrazinamide (Z), and ethambutol (E) (or streptomycin (S)), plus a four-month continuation phase of two drugs, namely, isoniazid and rifampicin, making a total duration of six months.[11,12] The drugs can be given either daily or three times weekly at the appropriate dosages (Table 1, Appendices 1 and 2). The drugs should, as far as possible, be taken together in one single dose each time and not in split doses in order to achieve optimal therapeutic efficacy. Combined drug preparations (or fixed-dose combinations, e.g. rifater, rifinah) are useful alternatives but have to be given daily. While they help to avoid monotherapy with a single drug, they do not allow flexible dosage adjustment of the individual components of the regimen. TB patients are generally managed as an outpatient for ambulatory care unless there are other indications for hospital admission.

Table 1. Standard regimen for anti-tuberculosis treatment

Initial phase (2 months)	Isoniazid (H) + Rifampicin (R) + Pyrazinamide (Z) + Ethambutol (E) [or Streptomycin (S)]
Continuation phase (4 months)	Isoniazid (H) + Rifampicin (R)

In the recent WHO TB treatment guidelines,[13] systematic reviews were quoted, showing differences in risks of acquired drug resistance and treatment failure between patients given daily dosing and intermittent dosing regimens. Thus, updated recommendations on the dosing frequency for new TB patients were made (Table 2). In addition, WHO recommended that in settings where the level of isoniazid resistance among new TB cases is high and isoniazid susceptibility testing is not done (or results are not available) before the continuation phase begins, ethambutol may be continued during the continuation phase together with isoniazid and rifampicin (i.e., 2 months of HRZE + 4 months of HRE). However, further research has yet to be done to define the level of isoniazid resistance that would warrant the addition of ethambutol (or other drugs) to the continuation phase of treatment under such conditions.

Table 2. Dosing frequency for new TB patients[13]

Dosing frequency during initial phase	Dosing frequency during continuation phase	Remarks
Daily	Daily	Optimal
Daily	3 times per week	Acceptable alternative for any new TB patient receiving directly observed treatment (DOT)
3 times per week	3 times per week	Acceptable alternative provided that the patient is receiving directly observed treatment and is not living with HIV or living in an HIV-prevalence setting

Contraindications to the use of the anti-TB drugs should be noted prior to commencement of therapy, in particular: history of major diseases such as liver and renal diseases, visual problem, hearing problem, drug allergy, and concomitant treatment with other medications. Young females are counselled on pregnancy-related issues, especially the reduced efficacy of oral contraceptives due to interaction with rifampicin, and alternative contraceptive methods may have to be recommended. Pretreatment blood tests for liver function, renal function, HBsAg[14] and HIV antibody (after counselling and obtaining patient's consent) are performed. Baseline vision tests for visual acuity and colour perception (e.g., using Snellen chart and Ishihara chart) are also performed if ethambutol is to be started.[15] Studies show that it would be desirable to closely monitor liver function for HBsAg carriers during anti-TB treatment.[14] Health education is given on the nature of the disease, personal hygiene, avoidance of smoking and alcohol, necessity for full adherence with drug treatment, and the possible pharmacological and side effects of the anti-TB drugs (e.g., discoloration of urine, faeces, tear and other body fluids). This is supplemented by written educational materials. Self-reporting of side effects is also advised. The importance of health education on drug-induced hepatotoxicity and ocular toxicity have been emphasised in the relevant sets of local guidelines.[14,15,16] The establishment of good rapport with the patient from the very beginning is essential for the success of the treatment programme.

Public health measures

The health nurses will enquire the patient about his/ her close contacts (usually the household members), and contact screening will be conducted where appropriate. Casual contacts are, in general, not targeted for screening because of the low cost-effectiveness, although this has to be assessed on a case-by-case basis. Contact tracing normally follows the "stone-in-the-pond principle". Under this principle, contact tracing will be limited first to the innermost circle with the highest degree of close contact, and if more cases are found, consideration may be given to screen successively the outer circles with lesser degree of contact. However, examination of contacts should be considered mainly as an adjunctive measure in the overall TB control programme as only a relatively small proportion of TB cases can be found through this route. A more effective approach would be to emphasise on health education and early awareness of suspicious symptoms.

The sputum smear status is a general guide to the infectiousness of the TB patient. Those patients with severe cough, cavitary disease, and positive sputum smear are likely to be highly infectious. Prompt initiation of treatment is crucial as infectiousness rapidly decreases with effective treatment. Health education, personal hygiene measures, maintenance of good indoor ventilation and screening of close contacts are useful adjunctive measures to reduce the risk of transmission. Sick leave may be granted for the period during which infectivity is considered significant on a case-by-case basis. In general, infectivity is reduced significantly after two weeks of effective anti-TB treatment. Particular concern should be paid to infectious patients who are in frequent contacts with susceptible people, such as teachers, staff of homes for the elderly, medical personnel working for debilitated patients, and elderly home infectious residents where more stringent measures may be necessary.

DOTS and other monitoring measures

In the chest clinics, anti-TB medication is given under direct observation by the health nurses to ensure full adherence. Directly observed treatment, short course (DOTS), with five principal elements and implemented through holistic care, is strongly recommended by the WHO as one of the most important TB control measures, and is crucial for the success of the treatment programme. Directly observed treatment (DOT) is one of the five principal elements of DOTS. DOT by a health care worker also facilitates closer clinical monitoring of adverse drug effects.

During the initial phase of chemotherapy, follow up consultation can be arranged monthly to assess progress, and to reinforce patient adherence. For patients at risk of drug-induced hepatitis, including HBsAg carriers, those with pre-existing liver diseases, the alcoholics, the very old, and the malnourished, it would be desirable to monitor liver function tests once every two weeks during the initial two months of treatment, or more frequently as clinically indicated.[14] In the absence of any risk factors, routine biochemical monitoring may not be necessary, but liver function test should be performed if clinical features suspicious of hepatitis arise, such as fever, nausea, vomiting, anorexia and jaundice.

There is controversy about the role of regular follow up visual testing for patients put on ethambutol. This may, however, be considered if ethambutol is to be prescribed to some patients at a higher risk of oculotoxicity, especially when a high dose (e.g., 25 mg/kg/day) is used, treatment is prolonged,[15] or for those with impaired renal function.[16]

A chest radiograph is usually taken at the second or third month to assess progress. If the pretreatment bacteriology is positive, sputum examination after the second month will be done to assess whether there is conversion to negativity. If the bacteriology then is still positive, a further sputum examination after the third month is indicated. Prolongation of the treatment duration has been recommended by some authorities in case the sputum shows slow bacteriological conversion and cavitary disease is present.[2]

Treatment defaulters will be approached by the health nurses through various means, including telephone calls, visits, and mail. Adherence is positively enhanced through health education and an assisting approach. The underlying reasons for defaulting should be identified and possible solutions are provided to restore adherence. Through the work of the medical social workers, incentives like nutrition allowance or other forms of social assistance may be introduced for eligible patients to enhance treatment adherence. Minimising non-adherence is vital for the overall success of the TB control programme.

At the end of six months' treatment, the patient is assessed with a repeat chest radiograph and sputum examination. After stopping treatment, further health education is delivered to the patient on issues like maintenance of a healthy lifestyle, and returning for assessment should symptoms suspicious of TB recur. Relapse of TB should be uncommon after adequate chemotherapy and regular follow up is not a necessity in general. However, for the purposes of outcome evaluation, TB patients are preferably followed up periodically for two or more years. In fact, standardised "Programme Forms" are being used for continuous evaluation of the service programme in the TB&CS since 1998 and an updated version of the Forms has been introduced since 2001 and extended for use to other health care sectors including the HA and the private sector.[17] Data collected include information on demography, past history of treatment, type of TB (pulmonary or extrapulmonary), extent of disease (if pulmonary), case category (new, relapse, treatment after default and treatment after failure), date of starting treatment (DOS), bacteriological status at certain time points, drug susceptibility test results, and treatment outcome at selected time intervals from DOS. Monitoring of treatment outcome is an essential component of the DOTS strategy advocated by WHO. Surveillance of treatment outcomes are regularly reported in the Annual Reports of TB&CS.[17]

Complicating issues

From time to time, complicating issues may be present, including extensive disease, slow bacteriological conversion, poor general condition, diagnostic dilemma, treatment failure related to poor adherence and drug resistance, concurrent medical diseases, adverse drug reactions, and relapse of TB disease, etc. Opinion from experienced physicians in this field has to be sought and hospital admission may be required. Modification of the drug regimen

may be necessary, for example, in cases with drug-induced hepatitis.[14] Transient rise of liver enzymes may occur, and it does not, by itself, represent genuine hepatotoxicity. The following cut-off levels are recommended for withholding potentially hepatotoxic anti-TB drugs in patients without symptoms: (i) alanine transaminase rising to three times the upper limit of normal or the baseline; or (ii) bilirubin level rising to two times the upper limit of normal or the baseline. A more cautious approach should be adopted in the presence of symptoms suggestive of hepatitis, in which case anti-TB drugs may have to be stopped before the availability of the test results.

Care should also be taken not to add a single drug to a failing regimen (the addition phenomenon), otherwise resistance to the newly added drug will soon develop. Re-challenging and desensitisation with anti-TB medications may be required with drug-induced hypersensitivity skin rash, but care should be taken not to induce emergence of drug-resistant organisms during this process. TB in children is more difficult to diagnose, and treatment with ethambutol should be avoided especially for those under six years old as they may not be able to report visual symptoms reliably. Thus, childhood TB should be managed by an experienced physician. On the other hand, TB in the elderly may have atypical presentations, and there is a higher incidence of side effects from drugs among this population.

Further information and recommendations about the treatment and management of tuberculosis can be found in various local and international publications and guidelines, and the TB website (www.info.gov.hk/tb_chest).[2,13,16]

Conclusions

The most important reason for failure of anti-tuberculous treatment is poor adherence. Studies have shown that there is no good way to predict adherence to drug therapy. DOTS is thus the best available tool to ensure drug adherence. The cost of DOTS is justified because it avoids the greater cost required for the management of failure cases, relapse cases, complications, late effects and even worse, drug-resistant cases. Furthermore, without an effective treatment programme, the spread of TB would lead to an even higher healthcare and economic burden. The management of a case of TB demands the combination of good professional knowledge in clinical medicine as well as adequate attention on public health measures.

Although the local TB situation has much improved in the past 50 years, it is certainly still a major public health concern. In fact, the decline of the notification rate has slowed down in the recent decades, currently staying at around 70 per 100,000 in recent years. The maintenance of a strong infrastructure for the delivery of TB control service is required to combat and prevent the resurgence of this disease. The rate of latent infection in the local population is still high, especially among senior citizens. More emphasis is now being put on treatment of latent infection for targeted groups. Many more years of work will be required before elimination of the disease may be considered as a foreseeable goal.

Appendix 1. Usual dosages of conventional anti-tuberculosis drugs

Drug	Daily dosage			Intermittent dosage		
	Adults and children (mg/kg)	Adults		Adults and children (mg/kg)	Adults	
		Weight (kg)	Dose		Weight (kg)	Dose
Isoniazid * @	5	–	300 mg #	10 (3 times/week)	–	–
Rifampicin *	10	<50	450 mg	10-12 (3 times/week)	–	600 mg
		≥50	600 mg			
Streptomycin *^						
Age ≤50	12-15	<50	500 mg (5 times/week)	12-15	<50	500-750 mg
		≥50	750 mg (5 times/ week)		≥50	750-1000 mg
Age 50-70			500 mg (5 times/week)			500-750 mg
Age ≥70			-			500-750 mg
Pyrazinamide	25-30	<50	1.0-1.5 g	30-40 (3 times/week)	<50	1.5-2.0 g
		≥50	1.5-2.0 g		≥50	2-2.5 g
Ethambutol	15	–		30 (3 times/week)	–	–
Thiacetazone *	2.5	–	150 mg	–	–	–
Rifater		per 10 kg	1 tablet			
		>50 kg	5 tablets			

* *Some authorities recommend higher dosages (per kg body weight) of isoniazid, rifampicin, streptomycin, and thiacetazone for children.*

\# *Some elderly and/or malnourished patients can only tolerate isoniazid 200 mg daily.*

@ *Pyridoxine supplement should be considered for those with malnutrition or at risk of neuropathy, e.g. pregnancy, diabetes mellitus, alcoholism, chronic renal failure, and HIV infection.*

^ *Dosage of streptomycin is adjusted according to age (Reference: American Thoracic Society. Diagnosis and treatment of disease caused by nontuberculous mycobacteria. Am J Respir Crit Care Med 1997;156:S1-25.)*

Appendix 2. Usual dosages of second-line anti-tuberculosis drugs in the treatment of multidrug-resistant tuberculosis

Drug	Daily dosage			
	Adults and children (mg/kg)	Adults		
		Weight (kg)	Dosage	
Amikacin *	15		750 mg	3 to 5 times/week
Kanamycin *	15		750 mg	
Capreomycin *	15		750 mg	
Ofloxacin			600-800 mg	
Levofloxacin			500-600 mg	
Ciprofloxacin			750-1500 mg	
Ethionamide	15 (adults)	<50	500 mg	
Prothionamide		≥50	750 mg	
Cycloserine	15 (adults)	<50	500 mg	
		≥50	750 mg	
Clofazimine			50-100 mg	
Para-aminosalicylic acid	2 g/10 kg		8-12 g	

* Dosages may be adjusted downward to 500 mg for elderly subjects.

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FORM 1

PREVENTION AND CONTROL OF DISEASE ORDINANCE

(Cap. 599)

TUBERCULOSIS NOTIFICATION

Particulars of Infected Person

Name in English:	Name in Chinese:	Age / Sex:	I.D. Card / Passport No.:
Residential Address:			Telephone No.: (Home) : (Mobile) : Patient : Family member : (Office / school / others):
Name and address of workplace / school / other institution:			
Job title / Class attended :			
Hospital / Clinic sent to (if any):			Hospital No.:

Site of TB (please ✓ all applicable)		Sputum (please ✓ and attach laboratory report if available)				Other specimens (specify and ✓ below):	
☐ Lung	☐ Meninges						
☐ Pleura	☐ Bone & Joint						
☐ Lymph node	☐ Urinary system		Smear	Culture	PCR test	Smear	Culture
☐ Miliary	☐ Genital system	Positive					
☐ Other(s) (please specify):		Negative					
		Unknown					
		Not done					

Duration of stay in Hong Kong: _____ Years

History of past treatment for TB
(delete whichever not applicable): Yes / No

If yes, YEAR first receiving treatment: _____

Disposal (please ✓ in front boxes and specify):

☐ Treatment started on: _____ (Date: dd/mm/yyyy)

☐ On observation

☐ Referred to _____ Hospital / Clinic / Private Practitioner

☐ Died on: _____ (Date: dd/mm/yyyy)

(Please DELETE whichever is not applicable)

I will arrange for examination of contacts myself. / Please arrange for examination of contacts.

Further Remarks:

Notified under the Prevention and Control of Disease Regulation by

Dr. _____ of _____Hospital / Clinic / Private Practice
(Full Name in BLOCK Letters)

_____ Ward / Unit / Specialty on _____ / _____ / _____ (Date: dd/mm/yyyy)

Telephone No.: _____ Fax No.: _____ _____
(Signature)

To: Statistics Unit, Wanchai Chest Clinic
99 Kennedy Road, Hong Kong
(Fax: 28346627)

Date:

Denotification of previously notified TB cases

Clinic:

Name:

ID number: Clinic number:

Date notified:

Revised Diagnosis:

Smear: positive / negative / unknown

Culture: negative / M. tuberculosis / atypical mycobacteria / unknown

Denotification request by: _____

To Statistics Unit: Please confirm receiving TB de-notification form of the following patient:

Name: _____ Clinic no.: _____

HKID no.: _____ Chest Clinic: _____

It is confirmed that the TB de-notification form of the above named has been received by the Statistics Unit, TB&CS.

Chop or signature: _____ Date: _____

(Form TBCS/DE/0405)

OCCUPATIONAL SAFETY AND HEALTH ORDINANCE
NOTIFICATION OF OCCUPATIONAL DISEASES

To : Commissioner for Labour

PARTICULARS OF PATIENT

Name: _____ HKID/Passport no.: _____

Male/Female* Date of birth: ___ /___ /____ Occupation: _____

Home address: _____

_____

Telephone no. (Home) _____ (Office) _____ (Pager/Mobile) _____

Name and address of employer: _____

_____ Telephone no. (Employer) _____

Workplace address (if different from employer's address): _____

_____

For Internal use:

Code: ____

Code: ____

Code: ____

Code: ____

NOTIFIABLE OCCUPATIONAL DISEASES (*Please put a tick in* □)

□1	Radiation Illness	□18	Lead Poisoning	□35	Chrome Ulceration
□2	Heat Cataract	□19	Manganese Poisoning	□36	Urinary Tract Cancer
□3	Compressed Air Illness	□20	Phosphorus Poisoning	□37	Peripheral Polyneuropathy
□4	Cramp of Hand or Forearm	□21	Arsenic Poisoning	□38	Localised Papillomatous or Keratotic New Skin Growth
□5	Beat Hand	□22	Mercury Poisoning	□39	Occupational Vitiligo
□6	Beat Knee	□23	Carbon Bisulphide Poisoning	□40	Occupational Dermatitis
□7	Beat Elbow	□24	Benzene Poisoning	□41	Chemical Induced Upper Respiratory Tract Inflammation
□8	Tenosynovitis of Hand or Forearm	□25	Poisoning by Nitro-, Amino-, or Chloro- Derivatives of Benzene	□42	Nasal or Paranasal Sinus Cancer
□9	Anthrax	□26	Dinitrophenol Poisoning	□43	Byssinosis
□10	Glanders	□27	Poisoning by Halogen Derivatives of Hydrocarbons	□44	Occupational Asthma
□11	Leptospirosis	□28	Diethylene Dioxide Poisoning	□45	Silicosis
□12	Extrinsic Allergic Alveolitis	□29	Chlorinated Naphthalene Poisoning	□46	Asbestos-Related Diseases
□13	Brucellosis	□30	Poisoning by Oxides of Nitrogen	□47	Occupational Deafness
□14	Tuberculosis in health care workers	□31	Beryllium Poisoning	□48	Carpal Tunnel Syndrome
□15	Parenterally Contracted Viral Hepatitis in health care workers	□32	Cadmium Poisoning	□49	Legionnaires' Disease
□16	Streptococcus suis Infection	□33	Dystrophy of the Cornea	□50	Severe Acute Respiratory Syndrome
□17	Avian Chlamydiosis	□34	Skin Cancer	□51	Avian Influenza A

Diagnosis: Confirm/Suspect* Date of onset of illness: _____ / _____ / _____

Follow-up of patient: Treated/Referred to hospital/Others(specify)*: _____

Other relevant information: _____

Name of notifying medical practitioner: _____

Address of notifying medical practitioner: _____

_____

Telephone no. of notifying medical practitioner: _____

Fax no. of notifying medical practitioner: _____

Date: _____ Signature: _____

**Delete whichever is inapplicable*

*Please return this form by **fax (no. 25812049)** or by **mail** to Occupational Health Service, Labour Department, 15/F Harbour Building, 38 Pier Road, Central, Hong Kong.*

For details of Notifiable Occupational Diseases and their related occupations, please refer to Schedule 2 of the Occupational Safety & Health Ordinance and to the Labour Department publication "Guidance Notes on the Diagnosis of Notifiable Occupational Diseases". Enquiry telephone no. : 2852 4041.

LD483 (Rev. 8.2.2005)