

Tuberculosis Situation in Indonesia,, Singapore, Brunei Darussalam, and in the Philippines

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ABSTRACT

Tuberculosis is still one of the important public health problem in South East Asian countries. The prevalence of smear positive tuberculosis in the Philippines is 0.66% (1981 - 1983), in Brunei Darussalam it is 0.037% (1985), in Singapore it is 0.14% (1975) and in Indonesia the prevalence is 0.29% (1980 - 1982). Tuberculosis is also one of the important cause of death in this South East Asian region.

Nowadays we have the knowledge and means to cure people from tuberculosis and thereby to relieve human suffering and to break the chain of transmission of disease. But, there are now more cases of tuberculosis than ever before, because of population explosion. There must be a collaboration among countries in South East Asia region to fight against tuberculosis.

It has been estimated that, in developing countries, 4 - 5 million highly infectious cases of smear positive tuberculosis occur each year, with an equal number of less infectious cases, including those positive by culture only and culture negative cases, the latter being the most frequent form of pulmonary disease in children. Thus, each year about 10 million persons still develop tuberculosis and at least 3 million die from this disease.¹

Tuberculosis in the world is very unevenly distributed. While it has been reduced in importance in many economically developed countries, it continues to be of major concern in many developing areas of the world.²

SITUATION IN ASIAN COUNTRIES

The situation of tuberculosis is subject of great concern and Asia is at the heart of it, it is the most populated area of the world, it is also where the highest rate of tuberculosis are observed and high number of cases were found, two third of all tuberculosis cases occur in Asia.³

WHO estimates that about 70% of the annual incidence of 4 - 5 million smear positive cases in the world occur in the Asia continent.⁴ Tuberculosis is a disease which afflicts at least six million Asians every year, out of whom three million are

infectious; only one third are diagnosed and put on treatment and another one third needlessly succumb to the disease. Even by the year 2000, tuberculosis will still remain a major health problem in Asia continent, because of the difficulties encountered by the countries in their development and the anticipated doubling of population.⁵

Lin made a survey on tuberculosis problem in East Asia and the South Pacific area, and he found that the tuberculosis mortality was very high - around 200 per 100,000 - right after the war in almost all East Asian countries. The mortality rate was declining; however, the tempo of its decline varied between countries with fastest one seen in Japan.⁴ According to Styblo's estimate, the incidence rate of smear positive cases in the world is highest in Africa, with 165 per 100,000 population, followed by Asia with 110; the actual number of new cases is, however, 3 - 7 times greater in Asia than Africa because Asia's larger population.⁶

The annual risk of infection in most developing countries are about 20-50 times higher than in technically advanced countries. The risk of infection in Japan is about 0,1% with an annual rate of decrease of 11%, and this is quite similar to that of France.⁷ In most European countries, the estimated annual risk of infection is 1 to 3 per 1000, and is falling at the rate of 10%

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or more every year.⁸ The lowest figure of 0,1 % was observed in Netherland and Scandinavia.⁷ The annual risk of infection in many African countries is about 1.5 - 3%, and in South East Asia region the annual risk is about 2% - corresponding to an incidence of about 100 smear positive cases per 100,000 population.⁹

INDONESIA

Tuberculosis ranks as the 4th leading cause of death in Indonesia, and is also one of the ten leading morbidity causes, according to Household Health Survey in 1986. In previous survey (1980), tuberculosis also got the same position in the ten leading causes of death.¹⁰

Tuberculosis prevalence survey was done in 1979 - 1982, in 15 provinces. The result (**table 1**) showed the variation of prevalence in each province. The highest was 0.74% in East Nusa Tenggara province and the lowest was in Bali province, 0.08%. Another survey was done in Aceh province (1983) and found a prevalence of 0.57% and in West Sumatra province (1984-1985) with a prevalence 0.27%.¹¹ The result of the prevalence survey in 15 provinces (**table 1**) showed that the average prevalence was 0.29%.

The National Health System ("Sistem Kesehatan Nasional") aims to reduce the prevalence of smear positive tuberculosis to 0.2% by the year of 2000.¹²

Table 1. Prevalence of smear-positive and population in 15 provinces in Indonesia

No.	Province	Population in 1982	Prevalence of Smear Positive	Year of Survey
1.	Bali	2.555.300	0,08	1980
2.	Central Java	26.226.600	0,13	1979
3.	West Kalimantan	2.603.000	0,14	1980
4.	Aceh	2.767.400	0,15	1981
5.	DKI Jakarta	7.038.100	0,16	1980
6.	North Sulawesi	2.215.300	0,30	1981
7.	West Java	28.946.600	0,31	1980
8.	DI Yogyakarta	2.813.300	0,31	1980
9.	East Java	30.078.800	0,34	1980
10.	West Sumatra	3.506.300	0,38	1980
11.	South Sumatra	4.944.300	0,42	1980
12.	South Sulawesi	6.278.200	0,45	1980
13.	East Kalimantan	1.362.800	0,52	1981
14.	North Sumatra	8.803.500	0,53	1980
15.	East Nusa Tenggara	2.846.400	0,74	1983
	Total	133.039.900	0,29%	
	Indonesia	154.661.700		

Source : Directorate General CDC and EH, Ministry of Health, Indonesia.

Table 2 presents a result of tuberculin test survey. The survey was designed to calculate the annual tuberculosis infection rate and the annual reduction rate. This survey was done in 10 districts in Indonesia every five years, starting in 1972.

Table 2. Prevalence of tuberculosis infection from the tuberculin test survey in Indonesia (1972 - 1987) (11)

District (Province)	First survey		Second survey			Third survey		
	Result (year)	AIR	Result (year)	AIR	ARR	Result (year)	AIR	ARR
Tangerang (West Java)	36.25 (1972)	5.2	26.44 (1978)	3.5	7.8	18.50 (1983)	2.4	7.3
Pati (Central Java)	13.36 (1974)	1.7	17.34 (1979)	2.2	-5.3	13.72 (1984)	1.7	5.0
OKI (South Sumatera)	28.90 (1975)	3.9	28.06 (1980)	3.8	0.5	27.05 (1985)	3.6	1.1
Gowa (South Sulawesi)	30.02 (1975)	4.1	30.11 (1980)	4.1	0.0	29.94 (1985)	4.1	0.0
Sambas (West Kalimantan)	23.62 (1976)	31.1	14.21 (1981)	1.8	10.3	15.00 (1986)	1.9	-1.1
Padang (West Sumatera)	17.17 (1976)	2.2	14.51 (1981)	1.8	3.9	23.76 (1986)	3.1	-11.5
H.S.T. (South Kalimantan)	29.35 (1977)	4.0	62.88 (1982)	3.6	2.1	21.70 (1987)	2.8	4.9
Langkat (North Sumatera)	14.66 (1978)	1.8	10.34 (1983)	1.3	6.3	-	-	-
Malang (East Java)	7.66 (1979)	0.9	5.33 (1984)	0.6	7.8	-	-	-
S. Ulin (Aceh)	24.43 (1983)	3.2	-	-	-	-	-	-

Note : all number in %

- AIR = annual infection rate

- ARR = annual reduction rate

SINGAPORE

Tuberculosis was the most frequently notified communicable disease in 1986. In 1987 tuberculosis was the 9th principal causes of death with a rate of 7 per 100,000 population, and in 1987 tuberculosis was the cause of death in 1.4% of the total death in Singapore.¹³

There has been a steady decline of tuberculosis notification over the years. In 1987, a total of 1616 new notification were received, giving a rate of 62 per 100,000 population. The average annual decline in rate since 1959 was 5.7%.

Among the 1616 new cases notified, 1499 (93%) were pulmonary tuberculosis, and among this 1499 new pulmonary tuberculosis cases, 52% were smear positive. The incidence of tuberculosis is highest in the older age group. In the 1987 new notifications among Singaporeans, 31.1% of the pulmonary tuberculosis patients were 60 years or older and 19.17% were between 40 - 59 years old. About 70% of the new pulmonary tuberculosis patients cases in 1987 were males. This predominance becomes more evident with the increasing age (**table 4**).¹⁴

The prevalence rate of smear positive pulmonary tuberculosis in 1975 was 0.14%. The rate for new cases pulmonary tuberculosis (smear positive plus smear negative) in 1959 was 335 per 100,000 population, and it has fallen to 57 per 100,000

Table 6. Tuberculosis by age and sex in Brunei Darussalam 1985¹⁵

		0—14 years old	15—59 years old	60 years & over
Pulmonary TB	M	3	112	42
	F	2	49	10
Extra pulmonary TB	M	6	3	1
	F	—	8	1
Miliary TB	M	-	—	-
	F	-	1	-
Total		11	173	54

Table 7. Tuberculosis by sex and residential status 1983 — 1987 in Brunei Darussalam¹⁶

Year	Bruneian		Non Bruneian		Total
	Male	Female	Male	Female	
1983	113	69	58	72	254
1984	93	66	74	17	250
1985	99	48	65	26	238
1986	93	51	48	20	212
1987	89	50	31	19	189
Total	771 (67.45%)		372 (32.55%)		1143

Table 8. Tuberculosis by bacteriological status and districts in Brunei Darussalam (1984 — 1986).¹⁶

Year	Brunei & Muara and Temburong		Tutong		Kuala Belait		Total	
	Pos (+)	Neg (—)	Pos (+)	Neg (—)	Pos (+)	Neg (—)	Pos (+)	Neg (—)
1984	39	125	7	24	27	55	73	177
1985	68	177	3	24	19	15	90	148
1986	48	90	16	18	20	20	84	128

Treatment and control of tuberculosis are directly managed by the specialist (in Chest Clinic and the supporting teams in districts. The therapy regimen in the absence of hepatic or renal dysfunction) are rifampicin, INH and pyrazinamide daily supervised for 4 weeks, followed by rifampicin and NH bi-weekly supervised for 9 months. If the patient is admitted to hospital or is willing to attend daily, he/she should in addition have streptomycin daily for four weeks.

PHILIPPINES

Tuberculosis was formerly ranked first among the ten leading of death in the Philippines. In 1955 pneumonia replaced tuberculosis as the number-one causes of death, and in 1984 tuberculosis slipped to number three. From 1940 — 1960, the rate

of tuberculosis mortality declined by 3.5% annually, but from 1960 — 1980 the reduction rate of tuberculosis mortality was just 1.5% annually. " In 1985 tuberculosis (all form) ranks fifth in the ten leading causes of morbidity.¹⁸

The Tuberculosis National Prevalence Survey was done in 1981 — 1983. In persons aged 10 years or more, the estimated prevalence of bacteriologically confirmed tuberculosis is 1.25%; the prevalence of smear positive cases is 0.95% Since bacteriologically positive cases are rare among those below 10 years of age, the corresponding prevalence rates in the population of all ages would be 0.86% and 0.66% respectively. In general, male had a substantially higher prevalence than female -1.62% vs 0.93% for culture-positive cases and 1.26% vs 0.69% for smear-positive cases. The estimated number of tuberculosis cases in each level in the Philippines is shown in table 9. Another finding of this National Prevalence Survey was the sociological findings, which showed that 28% of person 20 years or older had experienced symptoms suggestive of tuberculosis. Of these, 17% were classified as symptomatic TB. Actions taking for tuberculosis patients is also quite high, 64.9% among symptomatic TB are under treatment. Of these, 39% resort to self medication, 26% go to private practitioners, 22% attend health centers, 9% go to hospitals and the remaining 4% take other action.¹⁷

Table 9. Estimated Number of TB Cases by Bacteriology, Radiography and Number Infected with Tubercle Bacilli, by Tuberculin Testing for 1987, Based on Average Population of Each Level.

Procedure	Philippines Pop-57, 356,042	Province Pop- 500,000	Municipality Pop- 25,000	Barangay Pop- 5,000
A. Bacteriological Examination				
1. Culture positive TB cases (0.86%)	493,261	4,300	215	43
2. Sputum positive TB cases (0.66%)	378,549	3,200	165	33
B. X-Ray Examination				
1. Total with radiographic abnormalities (2.90%)	1,663,325	14,500	725	145
2. Minimal cases (1.72%)	986,523	8,600	430	86
3. Moderately advanced cases without cavity (0.69%)	395,757	3,450	172	34
4. Moderately advanced cases with cavity (0.14%)	80,299	700	35	7
5. Far advanced cases without cavity (0.14%)	80,299	700	35	7
6. Far advanced cases with cavity (0.14%)	80,299	700	35	7
C. Tuberculin Testing				
1. TB infection among general population (32.4%)	18,583,357	163,500	8,175	1,635
D. Symptom Inquiry				
1. TB symptomatics (8%)	4,588,483	40,00	2,000	400

The use of short course chemotherapy in the NTP was adopted nationwide on 1986. The initial phase of the short course chemotherapy consists of two month daily administration of

INH, Pyrazinamide and Rifampicin, and the continuation phase consists of four months of daily administration of INH and Rifampicin. The standard course chemotherapy have two regimens, Regimen A is INH daily together with Streptomycin daily for 4 week and then twice weekly till the end of 12 months. Regimen B consists of INH daily and Streptomycin twice weekly fully supervised at a treatment center."

CONCLUSION

Tuberculosis is still a health problem in South East Asia region. The epidemiological situation are different from country to country.

The prevalence of smear positive cases in the Philippines were 0.66%, which means 378,549 people in 1987.

In Indonesia, the prevalence of smear positive, cases were 0.29%, which corresponds to a half of million people. Tuberculosis ranks fourth in ten leading causes of death in Indonesia, according to the Household Health Survey 1986.

The epidemiological situation in Singapore and Brunei are rather different. In Singapore, there were 1499 notified pulmonary TB cases for the year of 1987. The prevalence rate of smear positive cases in Singapore for 1975 was 0.14%. In Brunei, there were 218 new pulmonary tuberculosis patients registered in 1985. In 1986, there were 84 bacillary positive cases for 226,000 population, giving a rate of 0.037%.

In the Philippines (1984), tuberculosis was the third leading causes of death. Tuberculosis, bronchitis-emphysema and asthma ranks 10th among ten leading causes of death in Singapore in 1987. The tuberculosis mortality rate for Brunei Damsalam is 8.5/100,000. Tuberculosis is still a killer and there must be a continuous fight against it.

To solve the tuberculosis problem, there must be some kind of cooperation or collaboration between countries in the South East Asia region. This collaboration would be very beneficial for sharing and exchange the experiences and knowledge.

There are now more cases of tuberculosis in the world than ever before because in most densely populated areas the prevalence has not decreased. On the other hand, we have the

knowledge and means to cure, to relieve human suffering and to break the chain of disease transmission; global fight against tuberculosis is a must to reach a goal of eradication of tuberculosis problem in the world.

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