

The Economic Burden of Tuberculosis and the Need for Private Sector Initiatives¹

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Abstract

Despite the unrelenting effort by the government, tuberculosis still poses a major health risk and remains today a leading cause of morbidity and mortality. In 2003 prices, the economic cost of TB – measured here as the aggregate loss in income estimated based on a selection model of income differential between those with TB and those without it - is about 3.26 billion pesos per annum. In comparison to direct medical costs of DOTS treatment, this estimate exceeds the low-end estimate of 1.81 billion pesos per annum and approximates the high-end estimate of 3.73 billion pesos per annum. Arguably, therefore, TB control is economically viable, but which requires wider private sector participation. However, despite the fact that many TB patients work or seek treatment in the private sector, the private sector's role in the country's TB control program has, until recently, not been articulated, as revealed by the inventory of TB and other relevant policies. Increased private sector participation, however, is now expected with the PhilHealth's TB-outpatient benefit package, but whose design and implementation must be strengthened to make it a wider window of opportunity.

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I. Introduction

Tuberculosis (TB) continues to be one of the major health concerns in the Philippines despite improvements in medicine and the Philippine government's relentless campaign to control it. The history of the Philippine government's effort to control TB dates as far back as 1932 with the creation of the TB Commission under the Philippine Health Service. The more recent anti-TB activities were initiated under the umbrella of the National Tuberculosis Control Program (NTCP) of the Philippine Department of Health (DOH). A key milestone of the NTCP was the adoption of the Directly Observed Treatment Short-Course (DOTS), a treatment protocol that has been proven internationally to be both clinically- and cost-effective. Since the mid-1990's public health care facilities have increasingly applied the DOTS strategy that, according to the DOH, has led to significant gains in TB case finding and case holding. As a result, the DOH projects that by the end of 2001 at least ninety percent of the population would have access to DOTS services provided by public health care facilities.

Despite these efforts however, the DOH reported that as of 1997, TB still ranked 5th and 6th as the leading cause of morbidity and mortality in the Philippines. The most recent National Tuberculosis Prevalence Survey (NTPS) held in 1997 estimated the TB prevalence rate to be 3.1 per one thousand-population and found only a marginal decline in the annual risk of TB infection from 2.5 percent to 2.3 percent during the 15 years that separated the 1982-83 NTPS and 1997 NTPS. Furthermore, the World Health Organizations (WHO) projections show that the Philippines ranks seventh in the world in terms of new TB cases³. When compared with four countries in the Western Pacific Region, the Philippines in 1999 also ranked second only to Cambodia in terms of TB incidence (see Appendix 1).

Further evidence shows TB's adverse impact in terms of potential productivity losses since it afflicts even those of working age. According to Peabody et al. (2003), around half a million Disability Adjusted Life Years (DALYs) were lost in 1997 because of TB; further, two-thirds of the lost DALYs is due to years of life lost (YLL). This premature mortality represents at least nine percent of all potential years of life lost by in Filipinos who are 10 years and older (Table 1).

Research posits a number of reasons for the continued persistence of TB prevalence in the Philippines. The first is that TB is highly infectious and easily transmitted (see Box 1). The 2001 UHNP Evaluation survey estimates that almost one-third of TB patients have household members who are also afflicted with TB. The second reason is the low TB diagnosis rate of only 45 percent (Dye et al. 1999). The third possible explanation is that treatment of TB is somewhat prolonged and may require the daily intake of anti-TB drugs for six months. This last observation may to a large extent be the reason for the low proportion (38 percent) of TB symptomatics receiving professional medical treatment (1997 NTPS Report).

³ In 1999, the World Health Organization (WHO) projections indicated that the Philippines had the seventh highest TB incidence in the world with around 220,000 new cases for that year alone.

Table 1. Burden of Tuberculosis in the Philippines, 1997

	Years of Life Lost (YLL)	Years of Life Disabled (YLD)	Disability-Adjusted Life Years (DALY)
Male	237,272	125,640	362,912
Female	117,610	33,778	151,388
Total	354,882	159,418	514,300

Source of table: Peabody et al. [2003].

Research has also shown that TB afflicts different segments of the Philippine population. Also taken from Peabody et al. (2003), Table 2 shows that self-reported TB prevalence is much higher among the poor and the elderly. In addition, the same study reported that self-reported TB was significantly correlated with socio-economic and demographic variables such as age, gender, geographical regions, type of employment and income class can be observed.

Box 1. The Epidemiology and Clinical Course of Tuberculosis

Tuberculosis is caused by the bacillus *Mycobacterium tuberculosis*. It is transmitted from an infected person through aerosolized droplets. Droplets, formed from coughing and sneezing, are inhaled and create a primary infection that typically involves the lungs and nearby lymph nodes. Normally, these heal spontaneously forming granuloma visible on a chest X-Ray. During this primary stage, patients are rarely symptomatic. However, within the granuloma are dormant bacilli that can be reactivated at anytime. In a small portion of patients, when reactivation occurs, patients develop low-grade fever, increasingly productive cough occasionally mixed with blood, fatigue and weight loss.

Without treatment, the case fatality rate is very high (50-60%). Treatment, however, is highly effective and in 4-6 weeks most patients no longer have bacilli in their sputum and thus are not infectious. Because the bacilli can lie dormant, treatment is required for 6-9 months with multi-drug chemotherapy to affect a complete cure.

Source: Peabody et al. (2003).

Table 2. Reported TB Prevalence by Age and by Economic Class

Age Group	Economic Class – Household Income Quintile				
	First (Poorest)	Second	Third	Fourth	Fifth (Richest)
0-14	0.18	0.22	0.20	0.32	0.22
15-44	0.39	0.33	0.21	0.25	0.15
45-64	1.33	1.59	1.01	0.95	0.71
65 and above	3.30	2.38	2.55	2.24	1.09
All	0.66	0.52	0.39	0.44	0.30

Source of table: Peabody et al. [2003].

The continued presence of TB as a health concern has led to a clamor for a reassessment of TB policies, programs and instruments by stakeholders in the health sector. Leading this effort in the private sector are the Philippine Coalition Against Tuberculosis (PhilCAT) and the Philippine Tuberculosis Initiatives for the Private Sector (PhilTIPS). In tandem, these two organizations are exploring mechanisms for TB reduction through the introduction of interventions directed at the private sector. An initial step was achieved in 2003 with the promulgation of the Comprehensive Unified Program (CUP) for TB control. The framers of the CUP recognized the lack of coordination between the various private and public TB control programs and wrote a guiding framework under which a unified strategy was instituted for combating TB using the Directly Observed Treatment Short-Course (DOTS) protocol (see Box 2).

Box 2. Directly Observed Treatment (DOTS)

Developed in 1993 by WHO's Global Tuberculosis Programme, DOTS (Directly Observed Treatment, Short-course) is believed to be the most effective strategy for controlling the TB epidemic. DOTS has five key components: (1) Government commitment to sustained TB control activities (2) Case detection by sputum smear microscopy among symptomatic patients self-reporting to health services (3) Standardized treatment regimen of six to eight months for at least all confirmed sputum smear positive cases, with directly observed treatment (DOT) for at least the initial two months (4) A regular, uninterrupted supply of all essential anti-TB drugs (5) A standardized recording and reporting system that allows assessment of treatment results for each patient and of the TB control programme overall. Standardized treatment regimens depend on whether the patient is classified as a new case or as a previously treated case; the most common drugs used are isoniazid, rifampicin, pyrazinamide, streptomycin, ethambutol and thioacetazone. With DOTS, the patient, health care workers, public health officials, governments, and communities share the responsibility to effective treatment and control of TB.

Source: What is DOTS? WHO Report, 1999. WHO/CDS/CPC/TB/99.270, in Peabody et al. (2003).

As a broad framework however, the CUP does not provide specific details on the role of private sector nor does it discuss how the private sector participation may be enlisted. This paper attempts to address these issues as well as undertake an evaluation of the economic viability of providing DOTS, the World Health Organization (WHO) recommended treatment protocol, in the subsequent sections of this paper.

Section II provides an assessment of the economic viability of providing DOTS services to the TB population. This is achieved by comparing estimates of foregone income due to TB mortality and morbidity with estimates of the direct medical cost of providing DOTS treatment to the TB population. Admittedly, this is not the ideal comparison since foregone income does not account for lost potential income and lost productivity, while direct medical costs do not reflect indirect costs⁴. Nevertheless, this is the best comparison given the available data. After all, losses in potential income and productivity far outweigh indirect costs associated with DOTS treatment. Section III establishes the case for an expanded DOTS coverage in the private sector with an analysis of TB treatment seeking behavior among patients and the private provision of TB treatment services. Section IV presents a policy evaluation framework for engaging the private physicians in TB control. This framework is then used in Section V to assess

⁴ Lost potential income includes potential earnings associated with the TB patients expected wage stream.

the various TB policies and other related policies in terms of their impact on the promotion of TB DOTS in the private sector. Lastly Section VI examines the PhilHealth TB Out-Patient package, the new window of opportunity for promoting the adoption of DOTS in the private sector.

II. The Economic Viability of Providing DOTS Services

Estimating Annual Foregone Income Due to TB

Several pieces of information are needed to estimate the foregone income due to TB. One of these consists of the number of TB deaths (mortality) and the number of incident TB cases (morbidity). The pertinent data used here are obtained from Peabody et al. (2003), where it is presented in Appendix 6 are the TB mortality and morbidity incidences for different age groups, namely: 0-4, 5-14, 15-29, 30-44, 45-59, 60-69, 70-79 and above 79 age groups.

Measures of income lost per TB death and incident case of TB morbidity are also needed to calculate foregone income due to TB. These are estimated here through a regression model of income on a set of income-determining factors that include TB prevalence and that is then applied on the data culled from the 1998 Philippine Annual Poverty Indicators Survey (APIS). The APIS is best suited for this purpose since it is the nationally representative dataset that contains income and TB prevalence information collected closest to the reference year of the data used in the Peabody et al. study (2003).

The 1998 APIS public-use file has information on monthly income (for the months from April to September), socio-demographic characteristics and self-reported prevalence of diseases including TB. Of the sample size of 195,794 household members, only 40,574 individuals report positive income. There are a number of possible reasons for this observation. For one, an individual may decide not to work, because either he/she is too young, studying, doing household chores or sick. Alternatively, an individual could also be an unpaid worker, possibly working in a family enterprise. Regardless of the reason, this implies that reported zero incomes could be a consequence of a decision not to engage in an income-generating activity. This possibility is taken into account in this paper by using Heckman's approach to correct for selectivity in observed zero incomes. The use of this approach – which helps identify those whose reported income is zero because of TB from those who are not working or are unpaid workers – provides an unbiased estimate of the impact of TB on income.

The Heckman's selection model is implemented here using full maximum likelihood. To account for the 1998 APIS survey sampling design, sampling weights and adjustments for province level clustering are introduced in the regression⁵. The total income from April to September is used as the dependent variable in the main regression equation with the individual's socio-demographic characteristics including age, gender, education and geographical location used as explanatory variables. To account for zero

⁵ White's correction is applied to generate heteroschedasticity-consistent standard errors.

income, a selection/participation equation is incorporated with a binary variable used as a dependent variable that assumes the value of one whenever positive income is reported and zero otherwise. The right-hand side variables of the selection equation include binary variables corresponding to the following individual characteristics: studying, sick with TB, sick with other diseases, an unpaid family worker, a college graduate, married, and female. The regression results are presented in Table 3.

Table 3. Income Regression with Selection for Positive Income

Dependent and Explanatory Variables	Coefficient	Robust Std. Error	z-statistic	p-value
<u>Dependent = Total Income (Apr-Sep)</u>				
Age	407.38	424.10	0.96	0.34
Age Squared	-1.20	5.96	-0.20	0.84
Male	1,516.78	1,083.52	1.40	0.16
College Graduate	33,606.18	1,941.36	17.31	0.00
Urban	5,963.14	910.42	6.55	0.00
Sick with TB	-5,706.03	2,413.27	-2.36	0.02
Sick with Other Disease	-1,201.15	477.34	-2.52	0.01
Ilocos Region	2,976.02	1,196.64	2.49	0.01
Cagayan Valley	1,791.70	1,026.75	1.75	0.08
Central Luzon	6,298.86	1,254.23	5.02	0.00
Southern Luzon	6,947.27	1,608.83	4.32	0.00
Bicol Region	364.03	1,030.62	0.35	0.72
Western Visayas	-2,332.68	1,361.82	-1.71	0.09
Central Visayas	902.19	1,538.27	0.59	0.56
Eastern Visayas	-431.62	1,176.25	-0.37	0.71
Western Mindanao	1,581.73	1,092.27	1.45	0.15
Northern Mindanao	1,693.97	2,122.88	0.80	0.43
Southern Mindanao	-702.09	1,229.69	-0.57	0.57
Central Mindanao	587.70	2,271.08	0.26	0.80
NCR	15,535.78	2,605.80	5.96	0.00
CAR	3,818.25	1,771.30	2.16	0.03
Intercept	7,425.38	11,197.59	0.66	0.51
<u>Selection equation: Positive Income</u>				
Age	0.15	0.00	43.36	0.00
Age Squared	0.00	0.00	-41.14	0.00
Male	0.27	0.02	11.64	0.00
College Graduate	0.10	0.04	2.69	0.01
Urban	0.10	0.03	3.25	0.00
Sick with TB	-0.36	0.10	-3.45	0.00
Sick with Other Disease	-0.04	0.02	-2.40	0.02
Per Capita HH Income	4.10E-06	7.49E-07	5.48	0.00
Unpaid Family Worker	-0.83	0.12	-6.88	0.00
Married Female	-0.70	0.03	-21.49	0.00
Studying	-1.25	0.07	-18.51	0.00
Intercept	-2.70	0.05	-51.30	0.00
Wald test of Independent Equation			25.12	0.00
Heckman selection model			Number of obs=195,794	
(regression model with sample selection)			Censored obs=155,220	
			Uncensored obs=40,574	
Log pseudo-likelihood=-2.16e+08			Wald chi-squared(21)= 3779.58	
			Prob > chi-squared=0.0000	

Source if raw data: 1998 APIS.

To test the hypothesis that self-selection is present when incomes are reported, a Wald test is conducted with the null hypothesis that the income equation and positive income selection equations are independent. As can be seen in the last row of Table 4, the null hypothesis is rejected with a highly significant chi-squared test statistic. Therefore, the selection equation generates estimates that are consistent with the supposition that that school work, household work and morbidity may preclude an individual from engaging in income-generating activities. To comprehend more the impact of TB on income, the marginal effects of the determinants of income generation as well as the expected income are presented in Table 4.

The marginal effects and expected income presented in Table 4 are dichotomized by gender and by age group, following the format in the Peabody et al. (2003). This ensures the consistency in the calculation of total annual foregone income due to TB. Two sets of figures are of interest in Table 4. The first reflects expected income. This figure represents the (regression) predicted average income of the age group including individuals who report zero incomes, without whom the predicted average income will be biased upwards. These estimates will be used in the foregone income calculations as measures of annual income lost due to TB mortality (since this number only represents half a years income, it will be multiplied by a factor of two when presented in the Average Income per Year column of Table 5). The second consists of marginal effects associated with the determinants of income including individual characteristics and morbidity. The marginal effect associated with TB morbidity represents income lost because an individual sick with TB is either unable to work or under-employed (since these also represent income lost due to TB incidence per half year, a scale factor of two will also be applied when these estimates are presented in the Average Income Lost Due to TB Morbidity column in Table 5). It should be noted that the estimates of foregone income due to TB mortality and morbidity are highest in the 30-44 and 45-59 age groups. This stands to reason since these age groups are more productive income-wise.

Table 5 presents foregone income due to TB by gender and age group. An assumption in the generation of Table 5 is that the 5-14, 70-79 and 80 above age groups do not generate income. Although this is not completely accurate, the income generated by these age groups is likely to be minimal i.e., the very young and very old are not likely to earn income⁶. It can be observed from Table 5 that income lost due to TB by males is comparatively higher than that by females. This may be attributed to the inability of the income regression to fully take into account productivity losses by those engaged in household work. Consequently this implies that the estimates of foregone income presented in this paper may be biased downwards⁷. It can also be seen from Table 6 that foregone income is highest among the 30-44 and 45-59 age groups. This can be explained in two ways. First, these age groups account for most of the TB incidences. Second, these age groups also generate more income and forego more income per TB case than other age groups. Thus, this evidence alone provides economic basis for combating TB since this clearly shows that TB largely affects the income-generating

⁶ This assumption is likely to lead to an underestimation of foregone income.

⁷ As will be shown later, even with an underestimated forgone income, this amount still exceeds the direct medical costs of TB treatment. Thus, this paper argues that TB control is economically viable.

segment of the population.

Table 4. Marginal Effects due to the Determinants of Income Generation

Variables	Age Group			
	15-29	30-44	45-59	60-69
Male				
<u>Expected Income</u>	<u>3,427</u>	<u>17,785</u>	<u>15,431</u>	<u>5,171</u>
Age	1,036	2,285	2,423	1,382
Age Squared	-12	-27	-29	-17
Male	1,706	4,508	4,493	2,208
College Graduate	10,470	24,228	20,256	8,350
Urban	2,198	5,248	4,644	2,091
Sick with TB	-2,733	-7,882	-7,342	-3,266
Sick with Other Disease	-574	-1,362	-1,268	-617
Ilocos Region	783	1,944	1,573	598
Cagayan Valley	472	1,170	947	360
Central Luzon	1,658	4,114	3,329	1,265
Southern Luzon	1,828	4,538	3,672	1,395
Bicol Region	96	238	192	73
Western Visayas	-614	-1,524	-1,233	-468
Central Visayas	237	589	477	181
Eastern Visayas	-114	-282	-228	-87
Western Mindanao	416	1,033	836	318
Northern Mindanao	446	1,106	895	340
Southern Mindanao	-185	-459	-371	-141
Central Mindanao	155	384	311	118
National Capital Region	4,089	10,148	8,211	3,119
Cordillera Administrative Region	1,005	2,494	2,018	767
Per Capita Household Income	0.03	0.06	0.06	0.04
Unpaid Family Worker	-3,617	-10,739	-10,383	-4,429
Married Female	-2,772	-9,165	-9,021	-3,943
Studying	-5,919	-14,182	-13,090	-4,900
Female				
<u>Expected Income</u>	<u>1,294</u>	<u>6,644</u>	<u>4,430</u>	<u>1,076</u>
Age	530	1,587	1,230	415
Age Squared	-6	-19	-15	-5
Male	1,391	3,562	2,855	1,071
College Graduate	5,483	12,041	8,309	2,480
Urban	1,121	2,796	1,993	611
Sick with TB	-1,246	-4,114	-2,917	-833
Sick with Other Disease	-293	-781	-571	-182
Ilocos Region	403	909	604	170
Cagayan Valley	243	547	364	102
Central Luzon	853	1,924	1,278	360
Southern Luzon	941	2,122	1,410	397
Bicol Region	49	111	74	21
Western Visayas	-316	-712	-473	-133
Central Visayas	122	276	183	52
Eastern Visayas	-58	-132	-88	-25
Western Mindanao	214	483	321	90
Northern Mindanao	229	517	344	97
Southern Mindanao	-95	-214	-142	-40
Central Mindanao	80	179	119	34
National Capital Region	2,103	4,745	3,152	889
Cordillera Administrative Region	517	1,166	775	218
Per Capita Household Income	0.01	0.04	0.03	0.01
Unpaid Family Worker	-1,397	-5,864	-4,385	-1,202
Married Female	-1,878	-8,239	-6,813	-2,241
Studying	-3,254	-6,207	-4,228	-1,059

Source of raw data: 1998 APIS.

Table 5 shows that the greater proportion of the 2.6 billion peso (in 1998 prices) foregone income due to TB (in 1997) is attributable to morbidity rather than mortality. This should not mislead others from considering the gravity of the TB situation. Literature shows that TB morbidity should not be taken too lightly. Dye et al. (1999) reports that the average duration of TB is around 2.2 years while the WHO estimates that the case fatality rate of TB when untreated is around fifty to sixty percent (see Box 1)⁸.

Table 5. Total Annual Foregone Income Due to TB (in 1998 pesos)

Age Group	Average Income per year (A)	No. of Deaths Due to TB* (B)	Foregone Income Due to TB Mortality (C=A*B)	No. of Incident Cases* (D)	Average Income Lost Due to TB Morbidity (E)	Foregone Income Due to TB Morbidity (F=D*E)	Total Annual Foregone Income Due to TB (C+F)
Male		174					
5-14		991	6,791,969	6,904			
15-29	6,854	2,590	92,126,284	38,282	5,465	209,225,601	216,017,570
30-44	35,570	4,902	151,287,750	58,183	15,764	917,179,706	1,009,305,991
45-59	30,862	4,337	44,853,372	57,923	14,683	850,488,390	1,001,776,140
60-69	10,342	3,082		12,273	6,533	80,173,913	125,027,284
70-79		1,408		5,259			
80+				1,852			
Total		17,484	295,059,375	180,676		2,057,067,610	2,352,126,985
Female							
5-14		143		2,944			
15-29	2,588	624	1,615,193	8,548	2,492	21,299,120	22,914,313
30-44	13,289	1,239	16,464,740	19,193	8,228	157,922,461	174,387,201
45-59	8,860	1,696	15,026,715	3,932	5,834	22,940,208	37,966,923
60-69	2,152	1,818	3,912,117	10,667	1,666	17,768,144	21,680,261
70-79		2,016		5,097			
80+		922		1,979			
Total		8,458	37,018,765	52,360		219,929,932	256,948,698
All							
5-14		317		9,848			
15-29		1,615	8,407,161	46,830		230,524,721	238,931,882
30-44		3,829	108,591,025	77,376		1,075,102,167	1,183,693,192
45-59		6,598	166,314,465	61,855		873,428,598	1,039,743,063
60-69		6,155	48,765,489	22,940		97,942,056	146,707,545
70-79		5,098		10,356			
80+		2,330		3,831			
Total		25,942	332,078,140	233,036		2,276,997,542	2,609,075,682

* From Peabody et al. (2003).

Estimating the Annual Direct Medical Cost of Treating TB Using DOTS

To determine the economic viability of TB-DOTS program, it is also necessary to

⁸ It is possible that the TB mortality figures from the Peabody et al. [2003] study may be underestimated since these were derived from DOH estimates TB mortality from death certificates registered with the Philippine National Statistical Office (NSO).

estimate the average price of DOTS services. Since no definitive price schedules have been established for DOTS, the estimates of DOTS prices in Capuno et al. (2003) are used here. Low-end and high-end cost estimates of providing DOTS to new smear positive TB patients are presented in Table 6. Here it can be seen that the drug regimen which may require the daily intake of a combination of drugs for six months accounts for the large proportion of the cost of providing DOTS treatment. A caveat in the use of direct medical cost estimates is that these do not include indirect costs such as transport fare and lost time.

Table 6. Schedule of Out-of-Pocket Payments by Category 1 TB Patients

Treatment Component (based on NTCP)	Full cost in the private sector (in pesos)	
	Low End	High End
Professional fees (5 visits)	1,000	3250
Laboratory fees (6 smear tests)	600	2700
Drugs		
2 (HRZE)	2,684	4700
4 (HR)	2,706	3,748
Total Price	6,990	14,398
Less: PHIC TB-OP benefit package	4,000	4,000
Net out-of-pocket payments	2,990	10,398

Note: The estimated full costs of treatment in the private sector are based on selected canvas of professional fees, laboratory fees and retail drug prices in Metro Manila in 2003. Source: Capuno et al. [2003]

Table 7 presents the calculations for the direct medical cost of treating the TB population using DOTS. The total number of TB cases is drawn from Table 6 while the low-end and high-end average costs of DOTS treatment are drawn from Table 7. In addition, the cost of DOTS treatment under PhilHealth plus Global Drug Facility (GDF) is provided in the last column of Table 7. This inclusion considers the recently introduced PhilHealth TB Out-Patient Package which pays the DOTS provider 4,000 pesos on a case-rate basis as well as the GDF which enables the purchase of the drugs required by the DOTS drug regimen for only 1,000 pesos.

Table 7. Direct Medical Cost of Treating the TB Population Using DOTS

Age Group	No. of Deaths Due to TB (A)	Incident TB Cases (B)	Total TB Cases (C)	Cost of TB Treatment in the Private Sector		
				Low End (C*P6990)	High End (C*P14398)	PhilHealth + GDF (C*P4000)
5-14	317	9,848	10,165	71,053,350	146,355,670	40,660,000
15-29	1,615	46,830	48,445	338,630,550	697,511,110	193,780,000
30-44	3,829	77,376	81,205	567,622,950	1,169,189,590	324,820,000
45-59	6,598	61,855	68,453	478,486,470	985,586,294	273,812,000
60-69	6,155	22,940	29,095	203,374,050	418,909,810	116,380,000
70-79	5,098	10,356	15,454	108,023,460	222,506,692	61,816,000
80+	2,330	3,831	6,161	43,065,390	88,706,078	24,644,000
Total	25,942	233,036	258,978	1,810,256,220	3,728,765,244	1,035,912,000

Note: Figures in 2003 prices.

The calculations presented in Table 7 consider the provision of DOTS to the entire TB population, including those in the non-income generating age (recall that the foregone income due to TB calculations calculates foregone income only for the 15-69 age groups). Table 8 projects that the direct medical cost of providing DOTS to the TB population ranges from 1,035,912,000 pesos to 3,728,765,244 pesos.

Annual Foregone Income versus Annual Direct Medical Cost of TB-DOTS Treatment

Before a comparison between foregone income and direct medical costs can be made it should be noted that the provision of DOTS to TB symptomatics may not totally eradicate TB and thus also the foregone income due unsuccessful treatment. Nevertheless clinical evidence from other country experience indicates that DOTS will reduce TB dramatically. The same clinical evidence shows that the DOTS cure rate is around 95 percent and that TB patients can be smear negative and non-infective in one month thereby reducing debilitating effect of TB.

It should also be noted that foregone income is a very conservative estimate of lost income and productivity for a number of reasons. First, a year's worth of lost income in the case of morbidity may be insufficient since Dye et al. (1999) reports that the duration of TB is around 2.2 years. Second, the average income per year greatly underestimates the lost potential income in the case of mortality. This is particularly true for the 5-14 and 15-29 age groups whose potential future income stream can be expected to outweigh their present income. Third, productivity is not fully captured by income. Household work for example is not monetized in the data. Last, the potential income losses due to cross-infection are also not taken into account i.e., healthy individuals may get infected by TB symptomatics who are not treated properly.

Although the full cost of DOTS treatment are underestimated when only the direct medical costs are considered, direct medical costs far outweigh the associated indirect costs such as travel costs and waiting time if DOTS centers/services are accessible. A benefit-cost comparison using averted foregone income as the measure for benefit and direct medical cost as the measure for cost would lead to a greater underestimation of benefits since averted foregone productivity is likely to be larger than indirect costs⁹.

Table 8 presents a comparison of the annual foregone income due to TB with the annual direct medical cost of treating the TB population using DOTS. Since the estimates of annual foregone income in Table 5 were presented in 1998 prices, these are inflated by 25 percent, the cumulative inflation from 1998 to 2003 indicated by the Philippine Consumer Price Index (CPI), to make foregone income comparable with direct medical costs of TB DOTS.

It can be discerned from Table 8 that total annual foregone income is almost as large as the direct medical costs when DOTS is provided at high end private sector prices

⁹ Averted foregone income is also likely to be underestimated since foregone income due to mortality should also include the prospective income flow from the time of death up to expected life expectancy.

and is much larger than direct medical costs when DOTS is provided either at low end private sector prices or under PhilHealth plus GDF. At present there is insufficient information to determine whether the (future) medical cost of DOTS would be represented better by high end or low end private sector prices. However, competition induced by the proper implementation of the PhilHealth TB Out-Patient package should at the very least drive the price of DOTS to the low end range. This alone should present an argument in favor of the economic viability of treating the TB population with DOTS¹⁰.

Table 8. Annual Foregone Income and the Cost of Treating TB Using DOTS

Age Group	Total Annual Foregone Income Due to TB*	Price of TB Treatment in the Private Sector		
		Low End (P6990)	High End (P14398)	PhilHealth+GDF (P4000)**
5-14		71,053,350	146,355,670	146,355,670*
15-29	298,664,853	338,630,550	697,511,110	193,780,000
30-44	1,479,616,490	567,622,950	1,169,189,590	324,820,000
45-59	1,299,678,829	478,486,470	985,586,294	273,812,000
60-69	183,384,431	203,374,050	418,909,810	116,380,000
70-79		108,023,460	222,506,692	61,816,000
80+		43,065,390	88,706,078	24,644,000
Total	3,261,344,603	1,810,256,220	3,728,765,244	1,141,607,670

* Inflated to 2003 prices using compounded inflation of 25% based on CPI. **PhilHealth TB Out-Patient Package covers only adult cases

Arguments for and against the provision of DOTS to TB symptomatics can be discerned from the foregone income and direct medical cost associated with the various age groups. The numbers associated with the 30-44 and 45-59 age groups indicate that the benefits (reduction in foregone income) of DOTS provision far outweigh the direct medical costs. This is clearly a strong argument since earning capacity and productivity tend to peak within these age ranges. The numbers associated with the 5-14, 15-29, 60-69, 70-79 and 80+ age groups however do not seem to be favorable towards the provision of DOTS to TB symptomatics since direct medical costs exceed foregone income.

Does this imply that only those belonging to the 30-44 and 45-59 age groups be treated? Without further data and considering other mitigating factors, the answer is probably no. Take, for example TB patients belonging to the 5-14 and 15-29 age groups. While their current income may be negligible, their potential income will eventually approximate the income of individuals of belonging to higher income groups. Further, there are social security reasons why individuals aged 60 and above should be taken care of even though not all of them are still productive. Also, even when potential income and productivity are abstracted from, there is still the argument of the risk of

¹⁰ Although the price to TB patients of DOTS is zero, the cost certainly is not and it may be approximated with the low-end private sector costs.

infection consequent from the infectious character of TB.

In sum, it is economically viable to provide TB-DOTS services to the TB population. The evidence shows that even a conservative estimate of the total annual foregone income due to TB already approximates the direct medical costs of providing DOTS estimated at high end private sector prices.

III. Provision of TB Services in the Private Sector

TB Treatment-Seeking Behavior

TB policy is presently at the crossroads. The continued persistence of TB has led stakeholders to call for a reassessment of TB policy. One such call argues for interventions directed towards the expansion of DOTS in the private sector. The necessity for such a policy action must hinge on two conditions. First, a sizeable segment of the TB population either seeks treatment from private providers or do not seek treatment at all. Second, most private providers are not applying DOTS or a similar treatment protocol. When these two conditions are satisfied, then public interventions towards the private sector can be of benefit.

The first requisite can easily be assessed by looking at treatment seeking behavior of TB symptomatics. Table 9 shows the treatment seeking behavior of TB symptomatics with confirmed TB. Here it can be seen that around 13 percent of those who have been confirmed through bacteriological methods to have TB go to private providers and that around 60 percent do not seek treatment from professional medical care providers¹¹.

Table 9. TB Provider chosen by symptomatics w/ bacteriologically confirmed TB

Action taken by TB symptomatics w/ bacteriologically confirmed TB	Percent
None	34.50
Self-medication	22.40
Family Member	1.70
Traditional Healer	3.40
Health Center	15.50
Public Hospital	9.81
Private MD	10.40
Private Hospital	2.29
Total	100.00

Source: 1997 NTPS. *Hospital provided treatment is broken by public-private using 2001 UHNP.

Having made a determination that a significantly large portion of the TB population either goes or could potentially go private providers for TB treatment, it is only fitting that a subsequent determination be made as to whether private providers do

¹¹ Extrapolations from Table 10 also shows that among those who do seek professional medical care, around a third go to either private clinics or private hospitals.

apply DOTS or practice a similar protocol. Such a determination can be made by examining private provider TB case management and their awareness of DOTS. To facilitate this assessment, recourse is made towards the 2002 PhilCAT Survey of 188 physicians in Metro Manila and Cavite¹². Although the sample size is quite small to be representative of the entire pool of private MDs with TB practices, the 2002 PhilCAT survey however is the only available dataset that contains pertinent information regarding DOTS awareness and TB case management.

TB Treatment in the Private Sector

i. TB-Patient Load

The patient-load characteristics of the sample physicians are shown in Table 10. On the average, private physicians see 33.4 patients per day, 7.6 TB patients per week and 3.6 new TB cases per month. This indicates that private physicians do handle TB cases and that the number of new cases per month is certainly not negligible. Their effectiveness in controlling TB in the country therefore depends also TB case finding and case-holding practices.

Table 10. Average Patient Load

Practice Setting	Number of MDs	Per clinic per day	TB patients Per week	New TB cases Per month
Mixed Practice	9	14.7	5.6	2.6
Pure Private	100	35.0	7.8	3.7
Total	109	33.4	7.6	3.6

Source of raw data: 2002 PhilCAT Survey of 188 MDs.

ii. Awareness of and Adherence to TB-DOTS practices

The 2002 PhilCAT dataset reveals a lot about the awareness of and adherence to TB-DOTS practices of private physicians. It can be seen from Table 11, for example, that three-fourths of the physicians interviewed admit familiarity with DOTS. However upon further prodding, only a smaller proportion of physicians revealed equal familiarity with individual elements of DOTS. In particular, only around one-fourth of the physicians realized that political commitment is a critical element of DOTS. One may argue this result could be due to the physicians' lack of familiarity with DOTS jargon, but which does not necessarily imply their total ignorance of DOTS. This supposition, however, does not find strong support from the results of the survey. It can be seen from the table also, for example, that only around 50 percent are aware of the use of AFB smear test as the prescribed primary diagnostic tool under the DOTS program. Hence, it may be said that even those 63 percent of the respondents who claimed awareness of DOTS, not all

¹²Although the survey was designed to elicit information on private physician practice (including those of physicians with mixed public and private practices), the survey inadvertently included 2 physicians with pure public practice. Since the physicians with purely public practice are effectively under-represented in the sample, the authors have excluded this sub-sample in the analysis of the data.

are fully knowledgeable of DOTS. Their insufficient knowledge of DOTS is further manifested in their practices.

Table 11. Awareness of and Adherence to TB-DOTS Practices of Private Physicians

TB-DOTS Practice Profile	Practice Setting*					
	Mixed Practice		Pure Private		Total	
	Percent	Total Number	Percent	Total Number	Percent	Total Number
Awareness of DOT	76.0	25	72.5	160	73.0	185
Awareness of DOT Elements						63
Diagnosis through AFB Smear Test					52.4	
Availability of TB Drugs					58.7	
Recording and Reporting System					42.3	
Requires a Treatment Partner					63.5	
Political Commitment					25.4	
Choice of Initial Diagnostic Procedure		25		161		186
Used AFB Smear Test	72.0		56.6		58.7	
Only	24.0		2.5		5.4	
With X-Ray	28.0		28.0		28.0	
With X-Ray and PPD	20.0		26.1		25.3	
Did not use AFB Smear	28.0		43.5		41.4	
Compliance with NTCP-Prescribed TB Drug Regimen						
Category I (New Smear +)	27.7	11	21.6	51	22.7	62
Category II (Treatment Failure)	0.0	8	0.0	42	0.0	50
Category III (New Smear -)	72.7	11	64.7	51	66.1	62
Recording and Monitoring Systems		25		161		186
Maintain clinical records of TB patients	90.9		95.4		95.0	
Monitor drug intake of their TB patients	92.0		94.3		94.0	

*The percentage computed here is based on the total number of valid responses. The latter is reported here under the column "Total Number" and may vary across survey questions and do not always add up to the total number of sample physicians. Source of data: 2002 PhilCAT Survey of 188 MDs.

From Table 11, it can be seen further that although nearly 59 percent of the respondents used the AFB smear exam, only one in four used it alone as the initial diagnostic tool. This is clearly a deviation from the prescribed procedure under the TB-DOTS protocol. More critically, at least 40 percent of the sample appears to have not used the AFB smear at all as their initial case-finding method. This suggests that a significant number of private physicians already deviate from the prescribed TB practice in at least one aspect of DOTS.

However, the deviations from the DOTS protocol seem to extend to the prescription of drug regimen as well. Under the DOTS protocol, the appropriate drug regimen is the Short-Course Chemotherapy (SCC). Seemingly, this drug regimen is not adhered to widely in the private sector. The results reported in Table 11 show that only 23 percent of the respondents followed the SCC for new smear-positive cases (category I) and none even seemed to have observed the SCC for defaulters and treatment failures (category II). Only in the case of smear-negative patients (category III) did a majority (about 66 %) of the private physicians appeared to have complied with the SCC. Thus

the evidence only points out the private physicians' weak adherence to the recommended SCC drug regimen.

However, many private physicians keep records of and monitor their TB patients. The same PhilCAT survey reveals that at least 90 percent of the respondents maintain clinical records of their TB patients or track their patient's drug intake. When probed further, however, a majority of the private physicians said that their monitoring of drug intake is limited to a direct inquiry of their patient's drug intake, and not necessarily an insistence to take drugs with a treatment partner, as prescribed under the DOTS protocol. Thus, the high rate of record-keeping and monitoring in the private sector may not exactly be in line with DOTS.

In sum, the evidence suggests that a significant number of TB symptomatic patients consult private physicians for treatment. And yet, many private physicians manage TB cases and many of them apparently do not adhere to at least three aspects of DOTS protocol, namely: diagnosis by AFB smear exam, use of the SCC drug regimen and proper recording and reporting of TB cases.

IV. A TB Policy Evaluation Framework

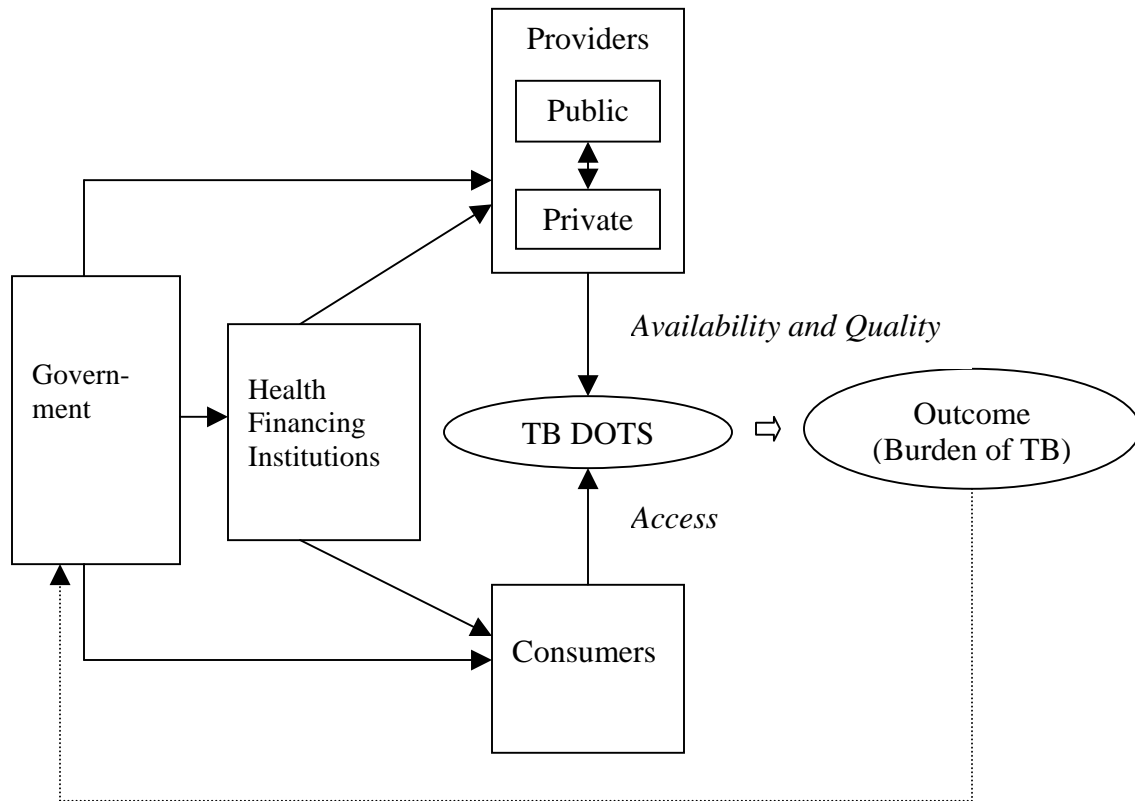
The findings reported in the previous section indicate that private providers must be either uninformed or unconvinced of the merits of TB-DOTS. Considering that government is at the forefront of the anti-TB drive and, in particular, in the advocacy of TB-DOTS there must be something remiss with government's efforts. To be able to make a proper evaluation of what is missing in public policy, an inventory and assessment must be made of government's anti-TB policy.

The various government policies, programs and instruments for TB control can be analyzed in terms of their direct and indirect effects on the decisions of the various players involved, whose choices and actions ultimately bear on health outcomes. Embedded in government policies are sets of incentives and constraints that either positively or adversely affect the choices not only of the targeted players, but often also those of other players in the market for TB DOTS services. There are four sets of players in the market for TB DOTS services, namely: service users (or consumers), health financing institutions (or third-party payors), the service providers (or suppliers), and the government (comprising national government agencies and local government units). Since the choices of all the market players jointly determine the health outcome, a full accounting of the intended and unintended consequences of policies is therefore necessary.

To trace the possible effects of policies, the following evaluation framework is proposed. In Figure 1, the major players in the TB DOTS services are identified (in boxes), their interrelationships are traced (by arrows), and the linkages between policies, players' decisions and health outcomes are depicted (broken lines). The evaluation framework is essentially a market-based one since the market is the relevant setting for

most physicians engaged in private practice. Though important, the physicians in the voluntary or non-profit sector constitute only a minority and their actions or decisions are also likely to be conditioned by market forces. Moreover, the market often provides useful benchmarks to assess the overall efficiency and equity of government interventions. Finally, changes in health outcomes should be fed back into the policy assessment stage to identify further risks and opportunities for TB control programs.

Figure 1. A TB Policy Evaluation Framework



The framework is also used to classify the existing TB policies and programs into those that essentially affect the provision (i.e., supply-side interventions) or the utilization (i.e., demand-side interventions) of TB-DOTS services. Some policies though may not easily fit into either of these two categories; therefore, their classification will be arbitrary. Nonetheless, the simple scheme leads to two evaluation criteria, namely: the impact of supply-side interventions on the availability and quality of TB DOTS services provided in the private sector, and the impact of demand-side interventions on the consumers' access to TB DOTS in the private sector.

Many policies are promulgated with only indirect reference to TB, but which have implications on the supply of and demand for TB services. Restrictive licensing requirements for hospitals and laboratory facilities, for example, could limit the number of sputum microscopy in the private health facilities. Thus, with the mapping of policies

onto the elements of DOTS strategy, it may be possible to spot the inconsistencies, conflicts or overlaps in the different government policies and programs. Appropriate corrective measures may then ensue.

TB DOTS services as a product

TB DOTS services have special features that differentiate it from other products in the health care markets. DOTS represent a bundle of goods and services, whose clinical and economic values are diminished if consumed incompletely. An incompletely treated patient poses greater clinical risks because of the likelihood of developing multi-drug resistant TB strain. Moreover, an incompletely treated patient may also unwittingly expose other to TB, thus increasing the economic burden of TB. Since a complete treatment is necessary, this would require a financial and time commitment on the part of the patient. Various incentive schemes like health insurance and company-provided health services are some of the mechanisms that help secure the patient's commitment to complete treatment.

The other critical feature of TB DOTS as a product is that it is an *experienced good*, i.e., its true quality can only be ascertained once consumed. It is unlike a *search good* whose quality is easily ascertained through ocular inspection. Given the potential and irreparable harm of a substandard TB DOTS services to the patient's health, then the quality assurance of TB DOTS services is paramount to the patient's decision. It is for this reason, therefore, that the quality of TB-DOTS services is an important policy issue, and, therefore, an acceptable rationale for regulations.

The Service Users

The demand side of the market comprises the segment of the population that needs TB-DOTS services. Besides the overall health status of the population, however, the other primary policy concern here is the people's effective access to TB DOTS services. The factors that influence health-seeking behavior of consumers of TB services include financial, psychological, physical or socio-cultural factors. Among the most relevant of these factors to policy are the consumer's knowledge and awareness of TB, household income, direct and indirect costs of TB treatment, insurance coverage and the social stigma attached to TB.

The Service Providers

Comprising the supply side of the market are the service providers that include public and private health professionals, facilities, and the sellers of drugs, medicines and equipment. They vary in location, practice setting, cost and pricing protocols, residency training, years of practice and, most importantly, willingness to provide TB-DOTS services. However, these characteristics are often within the control of the service provider, and, therefore, may be influenced by financial and non-financial factors.

Two sets of information are critical to the formulation of policies that will enhance the participation of private physicians in TB DOTS, namely: their existing capacity (knowledge, availability) to deliver TB DOTS services, and the factors that influence their willingness to provide adequate and quality-assured TB DOTS services. Thus a profile of all doctors with TB practices in the country is essential. The profile would include information on their competence and capacity to deliver DOTS, treatment and pricing practices, and patient load characteristics. Further, it is necessary to identify whether they serve a specific segment of the TB-afflicted population or compete for the same population with the public sector. With this information, appropriate policy instruments like information dissemination, social recognition, or financial incentives may then be adopted. More importantly, perhaps, various models can be devised to promote private-private mix in TB service delivery. Such public-private mix could lead to a complementary arrangement, for example, built on the client base of the private sector and on the DOTS expertise of the public sector.

The Health Financing Institutions

Like other markets for medical services, the market for TB treatment increasingly involves a third party that directly pays the service providers and insures the service users against losses due to TB. The third-party payors include both the public and private health financing institutions. Clearly, therefore, the particulars of the benefit coverage and reimbursement schemes adopted by these institutions will not only determine the health seeking behavior of the insured TB patients but as well as the effective participation of private doctors in the market for TB services. Thus, the following sets of information are critical:

- The membership profile of the different health financing institutions;
- The amount and nature of benefits extended to eligible members and dependents; and
- Accreditation policies and reimbursement schemes concerning service providers.

These data would enable policymakers to assess the extent of insurance coverage of the TB-afflicted population, the effective benefits received by the insured population and some of the factors that limit private sector participation in TB DOTS.

The Government

The government is the single biggest and most influential market player. Relative to each of the other players, it has more resources, controls more potent instruments to influence others, and has the bigger mandate to eradicate TB in the country. This mandate to eradicate TB has its economic basis.

The first economic rationale concerns the inefficiency of the market due to demand-side externalities. Such externalities arises when a TB patient may not be aware of the full consequence of incomplete treatment, which include the increased risks of infection imposed to others and the likelihood of developing Multi-Drug Resistant TB

strain. Even if the patient is fully aware, however, he or she may not still complete treatment because he or she does not fully internalize the social benefits of TB cure, while he or she alone bears the full cost of treatment. Consequently, a lower level of treatment than socially warranted is sought if patients are left to themselves. Thus government intervention is justified.

Equity consideration is another rationale for government intervention. Since TB afflicts the poor more than any other income groups, the poor shoulder a disproportionate share of the economic burden of TB and suffer a lower quality of life than others. Thus government intervention is warranted to improve the health of the poor, and thereby expand their economic opportunities and quality of life.

Since both reasons arise from the weaknesses or failures on the demand side of the market, demand-side policy interventions like social health insurance therefore are the most appropriate, other things being equal. However, given resource constraints and the difficulty of targeting and monitoring of TB-afflicted population groups, supply-side interventions such as the public provision of services are employed.

While social health insurance and public provision are the more known TB interventions, the government also influences the choices of the market players in other ways. The other forms of interventions include the conduct of advocacy, information and education campaign and the regulation of market players. Accreditation, licensing, certification, and other regulatory policies essentially restrict the actions and number of service providers for quality assurance purposes.

In general, however, the different forms of government interventions may be directed at the demand-side, supply-side, and financing-side of the market. For example, subsidies and other tax breaks may be granted to HMOs (financing-side) or private hospitals and clinics (supply-side). Regulations and licensing requirements are imposed on HMOs and all hospitals in the country. Likewise, the practice of medicine and other health professions is regulated through board exams. Yet, some policy pronouncements are simply meant to coordinate the actions and expectations of the various market players.

Often, however, policy interventions on side of the market lead to unintended and possibly adverse reactions from the other sides of the market. To illustrate, while public provision of TB services may bring down TB incidence, it may also crowd out private providers who may not be able to compete with subsidized prices in the public hospitals and other health facilities. Thus, a full evaluation of both the intended and unintended consequences of TB policies, especially as these impinge of the decision of the private physicians, is necessary. Once the policy inventory is accomplished, the different policies shall be evaluated in order to identify gaps, inconsistencies or weaknesses that must be addressed to enhance the role of the private physicians in TB DOTS.

V. Policy Inventory and Assessment

To assess the impact of TB policy on the private sector, it is necessary to enumerate policies directly and indirectly relevant to the anti-TB drive and analyze the possible implications of these policies on private physicians' participation in TB control. The following inventory of TB policies and programs is limited to those promulgated during the last thirty years, since more recent policies are likely to supersede or amend previous ones.

To facilitate analysis, the existing TB policies and other relevant policies are classified using two schemes. The first scheme divides the policies into either supply-side or demand-side interventions. In general, supply-side interventions have more direct effects than demand-side interventions on the participation of the private physicians in TB-DOTS services. The other scheme maps the relevance of the different policies onto the various elements of the DOTS strategy. Thus, with such a mapping, it would be possible to identify and correct for the inconsistencies across policies.

Shown in Appendix 2 are the supply-side interventions that include direct provision of TB services in the public health sector and regulatory policies that affect all health professionals and facilities. Presented in Appendix 3 are the relevant demand-side interventions, the principal among which are the health insurance schemes and other financing programs that improve the access of the health service users to providers. Thus, while supply-side interventions directly influence the availability and quality of health services provided, demand-side interventions only help facilitate access to such services. It should be noted, however, that a number of TB policies simultaneously affect the supply of and demand for TB services.

Among the supply-side policies and programs that directly concern the availability and quality of TB DOTS services in the public sector, the principal ones are:

- The Health Sector Reform Agenda (HSRA) and the National Tuberculosis Control Program (NTCP) of the Department of Health,
- TB Prevention and Control Program of the Department of Education,
- Local Government Tuberculosis Control Strategy of the Department of the Interior and Local Government, and
- Support to the National TB Control of the National Economic and Development Authority.

At best, these interventions only provide information to the private sector, and thus, do not fully encourage private sector involvement in DOTS. At worst, these programs may even have adversely affected private sector participation. A look at the design and implementation features of these policies is revealing:

- The NTCP is primarily directed at the public health system. Information and education campaigns concerning DOTS and other incentive schemes are directed at government doctors and facilities. Publicly procured TB drugs are distributed at

government health centers. Also, it does not include, much less specify a function for, the private sector in the list of health workers tasked to carry out the NTCP.

- The TB programs adopted by other national government agencies only apply to their own employees and dependents, such as those of the Department of Education and Department of National Defense. Further, the DOTS service providers in these agencies are also government workers.
- The DILG Memorandum Circular No. 98-155 is rather weak in that it only provides the legal setting whereby public-private partnerships in local TB control may be undertaken. Moreover, it does not specify how such partnerships may be formed, mobilized and sustained. Also, it appears that the implementation of this policy is not monitored.
- Applicable NEDA policy directly concerns only private voluntary activities in TB control, thus excluding the majority of private physicians.
- Current occupational health and safety standards are relevant to the detection and treatment of TB among the employed. However, existing guidelines do not specifically prescribe the application of DOTS. Thus, the private corporations are allowed to choose their own mode of TB treatment.

With the built-in subsidies in these programs that favor public service providers, it is possible that the private sector may have been crowded out of the market for TB DOTS. In addition to the lop-sided competition, however, the entry and practice of the private doctors are also regulated, thus limiting their participation in the market for TB DOTS. Among the relevant government regulations and their possible implications to private physicians' provision of TB DOTS services are as follows:

- Policies on generic drugs (RA 6675; DOH AO #51, s. 1988; AO #55, s. 1988; AO #62, s. 1989; AO #63, s. 1989; AO #65, s. 1992). These policies regulate the prescribing, labeling, promotion and dispensing of drugs in both public and private sectors.
- Laws on drug manufacturing and dispensing (RA 3720; RA 5921). These limit the manufacturing of drugs to licensed drug producers, and grant sole authority to dispense drugs to licensed pharmacists.
- Policies hospital establishment and operation (RA 5921; DOH AO# 70-A, s. 2002). These specify the human and other resource requirements for operating a hospital and, therefore, laboratory facilities in the country.
- Essential drugs list (RA 6675; E.O. 49, s. 1993; BFAD Circular #01, s.1997). These policies identify, among others, the essential TB drugs that must be prioritized in government procurement, and the requirement for bioavailability tests for such drugs.
- Policies to lower the price of selected drugs through parallel importation (DOH AO N#85, s. 2000; DOH AO # 69, s. 2001; DOH DO #367-H, s. 2001; DOH AO#70, s.2002). These administrative orders set the guidelines for the Pharma 50

Project of the DOH, in line with the promises of President Gloria Macapagal Arroyo in her 2001 SONA. Since the privilege to participate in the parallel drug importation is limited to government agencies, this policy may crowd out private drug companies and distributors. This may also lead to a more aggressive marketing of branded drugs among private physicians.

- Policies on government procurement of goods and services (RA 9184). This policy unifies and updates all government procurement procedures. With the new procedures, it is expected that bidding competition among private suppliers will become more transparent and fairer, leading to lower prices and improved quality of drugs, medicines, health equipments and services. The implementing rules and regulations (IRR) of RA 9184 are currently finalized by the Department of Budget and Management.

Arguably, the regulatory requirements are imposed for quality assurance purposes and for the protection of the patient. Consequently also, however, these add to the toils and troubles of the private providers, who unlike those in public health system bear the full cost of accreditation and licensing. The full impact of these policies, however, largely depends on their enforcement. However, it appears that the enforcement capacity of implementing agencies is very limited.

In their study on the poor's access to affordable drugs, Lim and Pascual [2002] report that BFAD lacks appropriate capacity to ascertain the quality of medicine through inspection, registration and licensing of drug manufacturers. Further, the authors conclude that "... only 16 of the 80 or so pharmaceutical manufacturers are 100% compliant with current good manufacturing processes. There are complaints that culprits responsible for counterfeit and substandard drugs are not properly prosecuted and punished." The manpower resources of the NTCP are also reportedly inadequate, largely as a result of the streamlining of the DOH bureaucracy in the late 1990s. This results to delays in the retrieval of quarterly NTP reports and reduced number of field visits and supervision by the DOH and CHD TB staff.

Recent policy developments, nonetheless, ascribe an expanded role for the private sector in the country's campaign against TB. Specifically, the Executive Order No. 187 mandates the collaboration between the national government agencies on the one hand, and private sector organizations, on the other, in the conduct of information and education campaign for the Comprehensive and Unified Policy for Tuberculosis Control in the Philippines (CUP). Those in the private health sector enjoined in the campaign are the Philippine Coalition Against Tuberculosis (PhilCAT), Philippine Medical Association, and the Association of Health Maintenance Organizations of the Philippines. Furthermore, the CUP deputizes the PhilCAT to carry out monitoring and accreditations functions.

Other recent DOH initiatives include the Health Sector Reform Agenda (HSRA) and its implementing guidelines (DOH A.O. # 37, series 2001) and the promotion of DOTS services in private clinics. The HSRA sets among the national health objectives the increased DOTS coverage to 100 percent of the population and the increased

compliance among private doctors with the National Consensus on TB Diagnosis and Treatment. In line with the promotion of DOTS, the DOH in 2002 has formally agreed with United Laboratories, Inc. (Unilab), a private corporation, to supply the latter with TB drugs to be used for the treatment of TB patients in Unilab clinics.

These policies are certainly innovative in that the government builds on, instead of crowds out, existing private sector capacities and patient load. However, these policies have yet to be fleshed out fully and implemented on a wider scale to see their full impact on private sector participation in DOTS.

Unlike supply-side policies, demand-side policies and programs only indirectly affect private sector participation in DOTS. While these policies are designed to stimulate the demand for TB services, however, they could influence the patient's decision to seek treatment and, even less so, his or her choice of health service provider. The principal demand-side policies and programs are:

- The social health insurance packages of the Philippine Health Insurance Corporation (PhilHealth), and
- The disability payment policies of the Government Service Insurance System, Social Security System and Employees Compensation Commission.

While not specifically intended for TB, the total benefits provided by PhilHealth, SSS, GSIS and ECC to their members who used such benefits for TB treatment are substantial. For example, PhilHealth, SSS and GSIS together paid close to 100 million pesos in 2001 for TB treatment. While no estimates exist, a portion of this amount was spent presumably for privately-provided TB services.

In April 2003, PhilHealth adopted a new benefit package that promotes TB DOTS in the private sector. Now called the TB out-patient benefit package, the new program extends a flat rate of 4000-peso benefit to each qualified member or her dependent for outpatient TB treatment in accredited DOTS clinics or providers, which may be public or private. However, the amount shall be released directly to the DOTS center and in two tranches: 2,500 pesos upon the initiation of treatment, and 1,500 pesos upon successful completion of the treatment. Originally planned for implementation in seven DOTS clinics, the new program is currently fine tuned with the help of PhilCAT. The detailed design and implementation features of the program will prove critical in engaging the private sector in TB DOTS.

Relevance to the elements of the DOTS strategy

From another perspective, policies may also be evaluated in terms of their relevance to the different elements of DOTS strategy. According to the WHO, a successful TB control program would have the following five essential elements:

- Political commitment – which means essentially a commitment to insure adequate financial and human resources for TB control;

- Access to quality assured TB sputum microscopy – which means that TB symptomatic patients should be properly screened using sputum smear exam;
- Directly observed treatment using standardized short-course chemotherapy – which means that the patient follow a prescribed drug regimen with the aid of a treatment partner;
- Uninterrupted supply of quality-assured drugs – which implies that the patient would have reliable access to TB drugs in the course of treatment; and
- Recording and reporting system – which implies that the patient is effectively monitored from the first visit to a physician until the completion of treatment.

Viewed from a different lens, the various TB and TB-relevant policies arrayed according to their relevance to the specific DOTS elements may yet reveal other areas for policy intervention. Such an array is attempted in Appendix 4, where the same supply-side and demand-side interventions are displayed.

It can be seen from the table that all elements of the DOTS strategy are directly promoted, albeit only largely in the public sector, by a number of supply-side policies, namely: HSRA and DOH AO#37, s. 2001; NTCP, NEDA Support to NTCP; DepEd-TB Prevention and Control Program; and the DILG Memorandum Circular #98-155. In contrast to the other government agencies, however, only the DOH and DepEd are in a command position to carry out fully the DOTS strategy, owing to their mandates and own TB programs. While these policies allow for private sector participation in DOTS, they will have to be amended to include specific roles and functions for private physicians, and the possible terms of reference for public-private partnerships in DOTS. The partnership may involve patient referrals, access to drugs and lab facilities, and maintenance of a TB patient registry.

As mentioned above, two recent policies explicitly draw in the involvement of the private sector in all aspects of TB DOTS. The EO 187, s. 2003 provides at least the enabling environment for public-private partnership in DOTS as specified in the CUP. In contrast, the new TB-OP Benefit Package of PhilHealth offers more than an enabling environment. It is a financial incentive meant to entice private physicians to adopt the DOTS protocol. To the accredited physician, the new insurance program may yet lead to a windfall, provided that a number of design and implementation issues are addressed at once. Among these issues are the caps on professional fees, public-private referral system, access to cheap drugs for private TB patients and the expansion in the number of certified DOTS centers.

In contrast, however, the other policies are only relevant to specific elements of the DOTS strategy. Among these are regulatory policies concerning generic drugs and the operation of medical facilities in the country, which may affect the availability of TB drugs and access to TB sputum microscopy in the private sector, including the potential DOTS centers. The regulations concerning generic drugs may invite a more aggressive marketing from manufacturers and distributors of branded drugs among private physicians, who by and large determine the treatment regimen for their TB patients. To

counter such marketing strategies, the government may have offer incentives to private physicians in order to promote generic TB drugs.

Ostensibly, the parallel drug importation (PDI) policy (as enunciated in AO #56, s. 1989; AO #85, s. 2000; AO #69, s. 2001; DO #367-H, s. 2001; AO #70, s. 2002; and AO #70-A, s. 2002) does not help the TB patient have access to cheap TB drugs. While the PDI policy is designed to bring down the domestic price of essential drugs, it however does not include any of the TB drugs for importation through the PDI facility. While a separate TB drug procurement system with the same intended results as PDI may be currently employed, the PDI system seems more adaptable to elicit the participation of private drug suppliers and local government units. Reportedly, some local government units procure their own TB drugs from private drug suppliers to supplement their quota of TB drugs from the DOH. To bring down the price of drugs further, private drug suppliers may also have to be allowed to participate in the parallel drug importation.

The need to bring down the price of TB drugs is paramount since the required chemotherapy constitutes the biggest cost component of TB treatment and that the government's budget for TB remains limited (the WHO-estimated funding gap for 2003 is US\$5.8 million). Reportedly, both the landed cost and the average retail price of imported TB drugs in the country are higher than is warranted. For example, a 6-months TB DOTS drug regimen for category I patient would cost around 5,390 pesos (blister packs) or 8,450 pesos (loose drugs), when the drugs are purchased drugstores in Metro Manila. When the drugs are bought through the Global Drug Facility, however, the total cost drugs for the same drug regimen is only about 910 pesos (fixed dose). While this claim is not investigated here, for it will require a detailed cross-country cost or price comparison, it is broadly supported by previous studies.

To conclude, most of the existing DOTS policies are not designed to elicit private physicians' participation; regulatory policies that affect private physicians' are not particular to DOTS. However, the CUP and the PhilHealth's TB OP benefit package are initial steps in the right direction.

VI. A Window of Opportunity

Potentially, some of policy issues raised above can be immediately addressed with the recent introduction of the PhilHealth TB Out-patient benefit package and with the distribution of TB drugs provided under the GDF. Initiated by the WHO in 2000, the GDF is "a global mechanism to ensure the uninterrupted access to quality TB drugs for DOTS implementation". Recently, the Philippines won a US\$1.5 million grant under the GDF. The grant constitutes globally procured, quality assured TB drugs to be released three batches: the first batch of TB drugs for 5,000 cases is to be released in 2003; the second batch for 20,000 cases will come in 2004; and the third batch for 50,000 cases will come in 2005. Under the terms of the GDF grant, the drugs shall be provided for free to all TB DOTS patients and in support of the National TB Control Program of the country. Notwithstanding the expected gains, these two new initiatives have yet to be

implemented and it is essential that the details and guidelines accompanying the implementation these two initiatives be examined if only to anticipate potentials problems that may arise during their inception.

Unlike previous TB policies, the PhilHealth TB OP benefit package represents an explicit financial incentive to adopt DOTS that may yet appeal to many private practitioners. Specifically, an accredited private DOTS provider or DOTS center is relatively assured of a captured market, i.e. the PhilHealth members and beneficiaries with TB. In addition to the guaranteed caseload, the accredited provider is allowed some flexibility in allocating the 4,000-peso benefit amount among the various treatment components. Consequently he/she can get a higher amount out of the 4,000 pesos than his/her normal professional fee. Moreover, he/she is more assured of payment since it is made by Philhealth rather than the by TB patient, who is likely to be an indigent. More importantly, perhaps, the PhilHealth accreditation, which is largely a market signal for quality DOTS services, may also serve as a badge of distinction among peers. It is obvious, therefore, that the success of the success of the new TB-OP insurance program critically depends on a number of factors.

Whether or not a DOTS center or provider will have a captured market will depend largely on the profile of the local population, in particular the membership in PHIC and TB incidence. Such information will enable the would-be DOTS provider to assess the demand facing his/her services, and therefore his/her returns on investments in getting DOTS-certified.

Another critical factor would be the adequacy of the 4,000-peso support value for each TB patient who seeks treatment in private DOTS centers. Seemingly, however, this is not the case, as can be seen from Table 7 (refer to Section II) where a schedule of out-of-pocket payments by a category I TB patient is presented.

Expectedly, a Category I TB patient will shell out for a full-course treatment between a low-end estimate of 6,990 pesos and a high-end estimate of 14,398 pesos. If the patient can and does avail of the new PHIC TB OP benefit package, then his or her direct out-of-pocket payments will be reduced to between 2,990 pesos and 10,398 pesos. It can be seen that at least 50 percent of the cost of medication comprises drugs. Thus, the affordability of treatment in the private sector depends a lot on the availability of cheap TB drugs.

There are several and not necessarily mutually exclusive ways of reducing the price of TB drugs available in private DOTS centers. The first one is to develop a TB drug procurement facility for all private DOTS centers, which can then pool their procurement orders to bargain for a lower price. Not to develop an entirely new one, the existing TB drug procurement system of the DOH may be used for this purpose. Another way would be to allow private DOTS centers to participate in the GDF procurement system.

It is important that private DOTS centers should be made to provide drugs to their patients as a part of the benefit package lest the new program becomes a milking cow. If the private patients are simply referred to public health centers for drugs, the private DOTS providers would be pocketing enormous *rents*, i.e., the funds for drugs now become part of the income. Further, the public health centers would be overburdened with TB patients, who will now face long queues and harassed public health providers.

To insure the availability of TB drugs at the private DOTS centers, the DOH may supplement the supply of the private DOTS centers. The additional drugs may come from the DOH's own buffer stock or from the GDF cache, which according to the guidelines must be given out only as a clear add-on to existing TB drug supply. Alternatively, the private patients may be referred to public health centers for TB drugs, but in a regulated manner. Both approaches, however, put additional pressure on the DOH's own funds, which is limited, and distribution network, which in some instances has led to delays and poor inventory management.

In addition to the drug procurement and distribution issues, there are a number of adverse effects that could result from the PHIC insurance program. One likely unwarranted consequence is the public-to-private referral of patients. In this scenario, public and private providers may connive to split the 4,000-peso insurance coverage of each patient referred by the public physician to the private DOTS center. Under this referral system, the overall TB cure rate may not change, since the referred patient would have been cured in the public health facilities anyway, but more resources are now spent because of the PHIC TB OP benefit package.

Another referral-related issue is the cap on professional fees, especially of specialists. If a low cap is imposed, then specialists may not want to participate in the program and only general practitioners would find it worth their while. This then may lower the average quality of physicians providing DOTS services. If a high cap is set, then many will join; but this will reduce the available support for drugs and laboratory exams. Thus, setting the acceptable cap level would be critical.

Still another critical referral issue pertains to the possibility that a referring doctor might lose a patient to a private DOTS center that also provides competing services. To entice the referring physician, therefore, he or she must be given an incentive, possibly a "finder's fee", or an assurance that he will lose his patient.

It is likely that the domestic drug industry may put up a resistance to the suggested use of the GDF procurement system, in much the same way that they have complained about the adverse effects to them of the parallel drug importation policy. While it is difficult to satisfy all drug suppliers and manufacturers with a single policy, it is nonetheless consistent with the objective of ensuring adequate TB drug supply to allow all suppliers to participate in the PDI or use the GDF system, whenever possible. This should be open to all to ensure that no monopoly over cheap imported TB drugs will arise that will defeat the purpose of the new procurement system.

Another critical factor to the success of the program is number and location of certified DOTS centers or providers. Only when these centers or providers can meet the demand for TB services can the nominal insurance benefit turn in to effective benefits, which will general acceptability of the program. Even as the PHIC therefore insure the quality of DOTS in the selected centers, it will have work with the DOH to strengthen existing referral networks between private and public providers, especially in places where the private sector is dominant or where the two sectors complement each other.

The new PHIC TB OP benefit package is therefore a welcome opportunity to enhance the participation of the private physicians in TB DOTS. Potentially, the total financial package could reach up to 1 billion pesos, calculated on the basis of the estimated 250,000 new TB cases annually (Peabody et al 2003) and assuming, of course, that each of these cases is eligible to receive the TB OP benefit package.¹³ Arguably, this amount can be leveraged to elicit greater provision of TB DOTS services in the private sector, bring down the price of TB drugs, or facilitate other financial mechanisms that will help ensure the viability of private DOTS centers.

¹³ Note that the PHIC is mandated to achieve universal coverage.

Appendix 1. TB Incidence* in Select Western Pacific Countries

Sex and Age Group	Philippines**	Cambodia	China	Thailand	Viet Nam
<u>Women</u>					
0-14	23	2	2	0	0
15-24	82	84	33	24	38
25-34	190	282	33	40	78
35-44	284	504	31	36	120
45-54	134	818	31	62	202
55-64	355	1069	38	111	358
65+	810	831	29	160	484
<u>Male</u>					
0-14	50	2	2	0	0
15-24	326	93	42	33	67
25-34	549	331	51	100	211
35-44	1047	567	58	113	371
45-54	1582	824	73	156	540
55-64	1331	1502	104	224	687
65+	1004	1838	120	340	889
Overall	321	572	107	140	189

*Estimated by smear-positive notification rate, per 100,000. Source: Global TB Control. WHO Report 2002 (WHO/CDS/TB/2002.295). **1997 National TB Prevalence Survey. Source of Table: Peabody et al [2003].

Appendix 2. List of Policies Concerning the Supply of TB Services

Policy (Implementing Agency)	Main Provisions/Features	Implications for private MDs' participation
Health Sector Reform Agenda (HSRA) (DOH)	<ul style="list-style-type: none"> - A comprehensive strategy to reform the public health sector, including key public health programs like TB control - Sets investment targets for TB control; sets target percentage of private doctors complying with the National Consensus on TB diagnosis and treatment 	- For information
DOH Administrative Order No. 37, series 2001 (DOH)	<ul style="list-style-type: none"> - <i>Guidelines on the Operationalization of the Health Sector Reform Agenda Implementation Plan by all Bureaus, Programs, Offices, Centers for Health Development and Attached Agencies of the Department of Health</i> - Delineates the roles of the different divisions and attached agencies of the DOH in the implementation of the five strategic reform initiatives in the health sector 	- For information
National Tuberculosis Control Program (NTCP) (DOH)	<ul style="list-style-type: none"> - The NTCP is the government's main anti-TB policy. The NTP officially adopted the DOTS strategy in 1996 (with the issuance of A.O. No. 24). The NTCP Manual of Procedures specifies guidelines and instructions for case finding and case holding for all government health workers involved in TB Control. 	- For information
Executive Order No. 187, series of 2003 (Comprehensive and Unified Policy for Tuberculosis Control, CUPTC) (DOH, all NGAs, private sector orgs.)	<ul style="list-style-type: none"> - <i>Instituting a Comprehensive and Unified Policy for the Tuberculosis Control in the Philippines</i> - Mandates the collaboration among key national government agencies, health financing institutions, and private sector organizations: <ul style="list-style-type: none"> - To adopt DOTS as the basis of implementation of TB control in the country, and within each national government agency; and - To conduct the dissemination of, and the training on, the Comprehensive and Unified Policy for TB Control in the Philippines (CUPTCP) 	<ul style="list-style-type: none"> - For information - Enjoins the participation of PhilCAT, PMA and AHMOPHI in the IEC and training related to CUPTC
TB Prevention and Control Program (TPCP) (DepEd- School Health and Nutrition Center)	<ul style="list-style-type: none"> - Program components consist of case finding, treatment, information education and communication, capability building, and monitoring and evaluation - Adopt DOTS protocol: use chest X-ray examinations and sputum microscopy in screening TB cases among all primary and secondary school teachers and non-teaching personnel; provide drugs to category I and category II TB patients; follow up and monitor treatment of TB positive cases. 	<ul style="list-style-type: none"> - For information - Occasional joint anti-TB activity with Cure TB foundation, PTSI and Glaxo Smithkline
Local Government Tuberculosis Control Strategy (DILG Memorandum Circular No. 98-155) (DILG)	<ul style="list-style-type: none"> - As specified in DILG Memorandum Circular No. 98-155 - Enjoins all LGUs to pass a resolution declaring TB Control as the No. 1 public health program for 1998-2004, to adopt DOTS, and to create an Anti-TB Task Force comprising public health personnel, representatives from local medical schools, civic organizations and private medical practitioners - Enjoins all LGUs to make every public health center or facility a DOTS unit, with the requisite trained manpower, microscopy services, anti-TB drugs, and reporting books to monitor progress of patients. - Identifies best local practices in TB Control 	<ul style="list-style-type: none"> - For information - Enjoins the participation of the private medical practitioners in local anti-TB programs
Support to the National TB Control Program (SNTCP) (NEDA)	<ul style="list-style-type: none"> - NEDA coordinates the formulation, evaluation and monitoring of socioeconomic policies and programs consistent with the national development objectives. Principally, the NEDA <ul style="list-style-type: none"> - Facilitates the inclusion of programs and projects in support of the NTP in the Medium-Term Public Investment Plan - Monitors the progress of implementation of ODA-Assisted TB control programs - Assists in the evaluation for tax deductions of private donations for TB control programs and projects 	<ul style="list-style-type: none"> - For information - Regulate private voluntary contributions to TB control programs and projects

Policy (Implementing Agency)	Main Provisions/Features	Implications for private MDs' participation
Occupational Safety and Health Standards (OSHS) (DOLE)	<ul style="list-style-type: none"> - Promulgated under the <i>Labor Code of the Philippines</i> - Specifies the standards and procedures for the adoption of occupational safety and health services in all workplaces in the Philippines. Also, it mandates the company health programs for workers to include the provision of trained occupational safety and health personnel, the provision of first-aid kits and emergency medicines and facilities, periodic conduct of health examinations, immunization programs, and health education and counseling 	<ul style="list-style-type: none"> - For information - Possibly increase the demand for industrial physicians and for TB diagnostic/treatment services
Republic Act No. 6675 (Generics Drug Act of 1988) (DOH)	<ul style="list-style-type: none"> - <i>An Act to Promote, Require, and Ensure the Production of an Adequate Supply, Distribution, Use and Acceptance of Drugs and Medicines Identified by their Generic Names</i> - Mandates the use of generic names in all transactions related to purchasing, prescribing, dispensing, and administering of drugs and medicines in the public and private sectors. - Also specifies the applicable penalties for violations 	<ul style="list-style-type: none"> - For information - Regulate drug prescription/ dispensing
Republic Act No. 3720 (Food, Drugs and Cosmetic Act of 1963), (DOH)	<ul style="list-style-type: none"> - <i>An Act to Ensure the Safety and Purity of Foods, Drugs, and Cosmetics being made available to the Public by creating the Food and Drug Administration which shall administer and enforce the laws pertaining thereto</i> - Mandates the standardization and quality of food, drug and cosmetics, and the adoption of measures to insure pure and safe supply of food, drug and cosmetics in the country. - Establishes within the DOH the Food and Drug Administration, now the Bureau of Food and Drugs (BFAD) 	<ul style="list-style-type: none"> - For information - Regulate drug mfg
Republic Act No. 5921 (Pharmacy Law of 1969), (DOH)	<ul style="list-style-type: none"> - <i>An Act Regulating the Practice of Pharmacy and Settings Standards of Pharmaceutical Education in the Philippines and Other Purposes</i> - Mandates the standardization and regulation of pharmaceutical education, and the supervision, control and regulation of the practice of pharmacy in the Philippines 	<ul style="list-style-type: none"> - For information - Regulate drug mfg
R.A. No. 4226 (Hospital Act of 1965), (DOH)	<ul style="list-style-type: none"> - <i>An Act Requiring the Licensure of All Hospitals in the Philippines and Authorizing the Bureau of Medical Services to Serve as the Licensing Agency</i> - Establishes the regulatory policy for the construction and operation of hospital or clinic in the country 	<ul style="list-style-type: none"> - For information - Regulate practice setting
R.A. No. 9184 (Government Procurement Reform Act of 2002) (DBM)	<ul style="list-style-type: none"> - <i>An Act Providing for the Modernization, Standardization and Regulation of the Procurement Activities of the Government and Other Purposes</i> - Sets the guidelines for government's procurement activities, including procurement planning, bid solicitation, evaluation and award, implementation and termination of the bid contract, use of alternative methods of procurement, protest mechanisms, dispute resolutions and the imposition of civil liabilities and administrative sanctions. - Applies to the procurement of infrastructure project, goods and consulting services, regardless of source of funds (whether local or foreign), by all branches and instrumentalities of the government, its departments, offices and agencies, including GOCCs and LGUs. Supersedes/amends prior procurement policies (E.O. No. 40, s. 2001; E.O. No. 262, s. 2000) 	<ul style="list-style-type: none"> - For information - Regulate sale of goods and services to gov't
Executive Order No. 49, series 1993 (DOH)	<ul style="list-style-type: none"> - Directing the Mandatory Use of the Philippine National Drug Formulary Volume 1 as the Basis for Procurement of Drug Products by the Government - Lists down essential drugs of proven safety, efficacy and quality at affordable cost. Limits government procurement to listed drugs and the basis for reimbursement of claims for drugs by members of PhilHealth. Included as vital drugs are TB drugs (isoniazid, rifampicin, pyrazinamide, ethambutol and streptomycin) 	<ul style="list-style-type: none"> - For information

Policy (Implementing Agency)	Main Provisions/Features	Implications for private MDs' participation
DOH Administrative Order No. 51, series 1988 (DOH)	- <i>Implementing Guidelines for Department of Health Compliance with R.A. No. 6675</i> - Sets the DOH's own implementing guidelines for the Generics Drug Act of 1988	- For information
DOH Administrative Order No. 55, series 1988 (DOH)	- <i>Requirements for Labeling Materials of Pharmaceutical Products</i> - Sets the font type, size and color, and the positioning of generic name of a drug product as printed in the label	- For information
DOH Administrative Order No. 62, series 1989 (DOH)	- <i>Rules and Regulations to Implement Prescribing Requirements under the Generics Drug Act of 1988</i> - Delineates the guidelines on the proper prescription of drugs pursuant to the Generics Drug Act of 1988	- For information - Regulate drug prescription
DOH Administrative Order No. 63, series 1989 (DOH)	- <i>Rules and Regulations to Implement Dispensing Requirements under the Generics Drug Act of 1988</i> - Delineates the guidelines on proper dispensing of drugs pursuant to the Generics Drug Act of 1988	- For information - Regulate drug dispensing
DOH Administrative Order No. 65, series 1992 (DOH-BFAD)	- <i>Guidelines on Advertisement and Promotions to Implement the Generics Act of 1988</i> - Specifies the rules and regulations pertaining to the advertisement and promotions of pharmaceutical products	- For information
Bureau of Food and Drugs Circular No. 01, series 1997 (DOH-BFAD)	- <i>Enforcement of the Requirements for Bioavailability Studies for Registration of Products included in the List B' under the DOH Administrative Order No. 67, series 1989</i> - Requires the conduct of bioavailability of certain drugs, including two TB drugs, namely: pyrazinamide (tablet) and rifampicin (capsule/tablet/syrup)	- For information
DOH Administrative Order No. 56, series 1989 (DOH-BFAD)	- <i>Revised Regulations for the Licensing of Drug Establishments and Outlets</i> - Specifies the requirements for obtaining license to operate any organization or companies involves in the manufacture, importation, repacking, distribution and/or sale of drugs or medicines	- For information
DOH Administrative Order No. 85, series 2000 (DOH-OSR)	- <i>Registration Requirements for a Government Agency Importing a Pharmaceutical Product with a Registered Counterpart Brand in the Philippines</i> - Sets down the licensing rules and procedures for government agencies that want to import drugs that similar but cheaper than locally available branded products.	- For information
DOH Administrative Order No. 69, series 2001 (DOH-BFAD)	- <i>Guidelines and Procedures in the Utilization of Funds for Drug Importation and Distribution for the Pharma 50 Project</i> - Specifies the guidelines and procedures in the use of funds for imported drugs to lower the price of selected by 50 percent.	- For information
DOH Department Order No. 367-H, series 2001 (DOH-BFAD)	- <i>Creation of Pharma 50 Project Management Unit</i> - Creates a unit within the BFAD to administer and supervise the DOH's Pharma 50 Project (i.e., the project intended to lower the price of selected drugs by 50 percent through parallel drug importation).	- For information
DOH Administrative Order No. 70, series 2002 (DOH-BFAD)	- <i>Licensing of Botika ng Barangay in various Local Government Units</i> - With the goal of ensuring wide access low priced, good quality medicine, this A.O. sets the guidelines for the licensing of barangay-level pharmacies run by local government units, non-government organizations or community organizations	- For information
DOH Administrative Order No. 70-A, series 2002 (DOH-OHR-BHFS)	- <i>Revised Rules and Regulations Governing the Registration, Licensure and Operation of Hospitals and other Health Facilities in the Philippines</i> - Mandated under Hospital Licensure Act (R.A. 4226) - Specifies the procedures for securing and renewing license to operate hospitals or health facilities both in the public and private sectors. - Specifies the licensing requirements such as service capability, personnel, equipment and instrument, and physical plant for first-level, second-level and third-level referral hospitals and other health facilities	- For information

Source of table: Capuno et al. [2003].

Appendix 3. List of Policies Concerning the Demand for TB Services

Policy (Implementing Agency)	Main Provisions/Features	Implications for private MDs participation
PhilHealth In-Patient Benefit Package (PHIC)	<ul style="list-style-type: none"> - Promulgated under the National Health Insurance Act of 1995 (R.A. 7875) - Aims to provide a basic health insurance coverage for all Filipinos, indigents or otherwise. - As of Dec. 2002, the basic insurance covers only in-patient care services 	<ul style="list-style-type: none"> - For information - May increase demand for TB DOTS services
PhilHealth TB Out-Patient Benefit Package (PHIC)	<ul style="list-style-type: none"> - This an expansion of the basic health insurance coverage provided by PhilHealth. It includes an out-patient benefit package to eligible members with TB. - To be implemented in May 2003 	<ul style="list-style-type: none"> - For information - May increase demand for TB DOTS services
Disability and Sickness-Income Benefits for Government Workers (GSIS)	<ul style="list-style-type: none"> - Promulgated under the GSIS Act of 1997 (RA 8291) - Provides for increased and expanded social security protection of all government workers. The social security benefits include: - Disability benefits (which are granted to a member due to the loss or reduction in earning capacity caused by a loss or impairment of the of the normal functions of the member's physical or mental faculties as a result of an injury or disease); and - Optional pre-need coverage (for hospitalization products). - The Act specifies the requirements and procedures for enrollment, payment of premiums, and eligibility for benefit claims 	<ul style="list-style-type: none"> - For information - May increase demand for TB DOTS services
Disability and Sickness-Income Benefits for Workers in the Private Sector (SSS)	<ul style="list-style-type: none"> - Promulgated under the SSS Act of 1997 (RA 8282) - Provides for increased and expanded social security protection of workers in the private sector, including: - Disability benefits (which are granted to a member due to the loss or reduction in earning capacity caused by a loss or impairment of the of the normal functions of the member's physical or mental faculties as a result of an injury or disease); and - Optional pre-need coverage (for hospitalization products). - The Act specifies the requirements and procedures for enrollment, payment of premiums, and eligibility for benefit claims 	<ul style="list-style-type: none"> - For information - May increase demand for TB DOTS services
Employees' Compensation Program (SSS-ECC)	<ul style="list-style-type: none"> - Promulgated under P.D. No. 626, and amended later; administered by SSS - Provides a list of ailments which are deemed work-connected, such as pulmonary tuberculosis. - Specifies the procedures and requirements for claiming employee's compensation benefits by members with work-connected disabilities - The employees' compensation benefits are in addition to whatever the members may claim under the GSIS or SSS Disability Benefits schemes. 	<ul style="list-style-type: none"> - For information - May increase demand for TB DOTS services

Source of table: Capuno et al. [2003].

Appendix 4. Relevance of TB Policies to the Elements of DOTS Strategy

Policies	Elements of DOTS Strategy*					Remarks
	Political Commitment (Financing)	Directly Observed Treatment	Access to TB Sputum Microscopy	Adequate Supply of TB Drugs	Recording and Monitoring	
Supply-Side Interventions	Directly promote all DOTS elements in the public sector.					Amend to delineate a specific role for private MDs and the terms of partnership between public and private providers of TB DOTS.
Health Sector Reform Agenda						
DOH A.O. # 37, series 2001						
National TBs Control Program						
NEDA-Support to NTCP						
DepEd- TB Prev. and Control Prog.						
DILG Memo. Circular # 98-155	Directly promote all DOTS elements in both the public and private sector. Public-private partnership limited to training and information dissemination of the CUPTC.					Issue another E.O. to fully operationalize the CUPTC.
E.O. # 187, series 2003 (CUPTC)						
DOLE-OSHS		Allows all employers to choose TB treatment regimen for employees				Require annual physical exams of employees to be consistent with NTP
Food, Drugs and Cosmetics Law				Drug regulatory policies apply to both public and private sectors		Monitor compliance in the private sector, Undertake information and education campaign, Adopt incentives to countervail the ones offered by private drug companies
Pharmacy Law						
Hospital Law			Affects availability of lab facilities			Should be consistent with certification requirements for TB DOTS
Government Procurement Reform Law			Applies to all procurement in the public sector.			IRR should help insure availability of TB drugs in RHUs and DOTS centers.
E.O. # 49, series 1993				Applies only to the public sector		Promote PNDF in the private sector
Generics Drug Law				Promote generic drugs for TB and other diseases in the public and private sectors		Monitor compliance in the private sector, Undertake information and education campaign, Adopt incentives to countervail the ones offered by private drug companies
DOH A.O. # 51, series 1988						
DOH A.O. # 55, series 1988						
DOH A.O. # 62, series 1989						
DOH A.O. # 63, series 1989						
DOH A.O. # 65, series 1992						
BFAD Circular # 01, series 1997						

Policies	Elements of DOTS Strategy*					Remarks
	Political Commitment (Finan-cing)	Directly Observed Treatment	Access to TB Sputum Microscopy	Adequate Supply of TB Drugs	Recording and Monitoring	
DOH A.O. # 56, series 1989						
DOH A.O. # 85, series 2000				Parallel importation to lower prices of selected drugs, excluding TB drugs		Include TB drugs in the list, Allow local government units, private hospitals/drug distributors to participate in the importation of TB drugs
DOH A.O. # 69, series 2001						
DOH D.O. # 367-H, series 2001						
DOH A.O. # 70, series 2002						
DOH A.O. # 70-A, series 2002						
Demand-Side Interventions						
PhilHealth TB OP Benefit Package	Directly promotes all DOTS elements in both the public and private sector	No caps on professional fees; ensure patient's access to free drugs; certify more DOTS centers				
(Regular) PhilHealth TB IP Benefit Package			The beneficiary may choose his provider, who then suggest the TB treatment regimen		Amend to require sputum smear exam as part of annual physical exam, keep records and monitor treatment of workers with TB	
GSIS-Disability Benefit Program						
SSS-Disability Benefit Program						
ECC-Employees' Compensation Program						

* Gray areas mean no direct relevance. Source of table: Capuno et al. [2003].

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