Supplement Table 1. Patient and health system TB treatment related costs. *			
Variable	Base-Case Value	SD	Source
Hourly wage (INT$) §	3.14	0	World Bank [1]
Health system costs			
Cost per outpatient visit (INT$)	20.40	20.67	HFQ (see methods)
Cost per DOT/pill-collection visit (INT$)	6.79	7.88	HFQ (see methods)
Cost per inpatient bed-day (INT$)	123.82	229.75	HFQ (see methods)
Initial Std	13.62	0	Global Drug Facility
Initial EMB	18.28	0	Global Drug Facility
Retreat Std	35.77	0	Global Drug Facility
Retreat Str	157.05	0	Global Drug Facility
MDR Std	637.60	0	Global Drug Facility
Patient visits and costs during pre-treatment period			
Average number of outpatient visits per patient	4.8	4.3	PCQ
Average direct cost per outpatient visit (INT$)	40.84	52.23	PCQ
Average time lost per outpatient visit (hours)	3.91	4.61	PCQ
Average total cost per outpatient visit (INT$)	53.12	54.20	PCQ
Patient visits and costs during treatment period			
Number of DOT/pill-collection visits per patient			
Initial Std/Initial EMB	88	0	WHO [2]
Retreat Std/Retreat Str	120	0	WHO [2]
MDR Std	500	0	5 days/week for 23 months
Number of outpatient/follow-up visits per patient			
Initial Std/Initial EMB	6	0	Assumed 1 visit/month
Retreat Std/Retreat Str	8	0	Assumed 1 visit/month
MDR Std	23	0	Assumed 1 visit/month
Average direct cost per DOT/pill-collection visit (INT$)	1.83	6.69	PCQ
Average time lost per DOT/pill-collection visit (hours)	0.8	1.1	PCQ
Average total cost per DOT/pill-collection visit ($)	4.35	7.54	PCQ
Patient visits and costs during treatment period (cont'd)			
Average direct cost per outpatient/follow-up visit (INT$)	13.29	36.73	PCQ
Average time lost per outpatient/follow-up visit (hours)	1.8	4.6	PCQ
Average total cost per outpatient/follow-up visit ($)	18.86	39.47	PCQ

Patient bed-days and costs during hospitalization period

Average number of bed-days per patient (days)

Non-MDR regimen⌘	16.3	28.2	PCQ
MDR Std	43.8	24.6	PCQ
Average direct cost per inpatient bed-day (INT$)	1.83	6.69	PCQ
Average family time lost per inpatient bed-day (hours)	3.47	5.08	PCQ

Patient bed-days and costs during hospitalization period (continued.)

Average patient time lost per inpatient bed-day (hours)	8	0	Assumed 8h workdays
Average total cost per inpatient bed-day (hours)	55.92	29.10	PCQ

Total treatment-related costs per patient

Initial Std	4530.04	5391.73	(see methods)
Initial EMB	4534.71	5391.73	(see methods)
Retreat Std	4987.51	5469.73	(see methods)
Retreat Str	5108.79	5469.73	(see methods)
MDR Std	15341.82	11989.62	(see methods)

*All costs are expressed at 2010 international US dollars (INT$), which is the PPP-adjusted value of local currency converted into US dollars, and are taken from surveys and data in Ecuador. PCQ = Patient cost questionnaire; HFQ = Health facility cost questionnaire.

§ Hourly wages are based on average working hours of 48h/week

⌘ Non-MDR regimens include: standardized initial regimen (*Initial Std*), initial regimen with EMB (*Initial EMB*), 1st-line retreatment regimen (*Retreat Std*) and 1st/2nd-line Retreatment regimen (*Retreat Str*).

Supplement Table 2. Additional sensitivity analyses †			
Treatment Strategy	Cost per MDR case Averted (INT$) Range (low-high) ⌘	Cost per TB Death averted (INT$) Range (low-high) ⌘	Cost per DALY gained (INT$) Range (low-high)⌘
S2A: Probability of blindness after 6-8 months treatment with EMB (0.0% – 0.6%)			
5% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Dominant to less effective (>0.1%)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	588,854 – 583,956	47,108 – 47,348	5,744 – 5,753
15% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Dominant to less effective (>0.1%)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	723,470 – 717,458	40,193 – 39,859	4,861 – 4,859
5% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Dominant to less effective (>0.1%)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	2,967,543 – 2,943,036	23,515 – 23,357	2,862 – 2,850
15% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Dominant to less effective (>0.1%)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	2,607,569 – 2,586,032	23,527 – 23,368	2,864 – 2,852
S2B: Relative efficacy of *Initial EMB* regimen compared to *Initial Std* (1.3– 4.0 times)*			
5% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	586,978 – 586,978	46,988 – 46,988	5,745 – 5,745
15% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Less effective to dominant (>2.7)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	721,168 – 721,168	39,697 – 39,697	4,867 – 4,867
5% Mono-INH resistant TB; 10% MDR-TB			

Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	2,958,162 – 2,958,162	23,477-23,477	2,857-2,857
15% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Less effective to dominant (>2.9)
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	2,599,325 – 2,599,325	23,488 – 23,488	2,860 – 2,860

S2C: Relative efficacy of *Retreat Str* compared to *Retreat Std* retreatment (1.3 – 4.0times)*

5% Mono-INH resistant TB; 1% MDR-TB

Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	14,565 to dominant (>2.0)	40,052 to dominant (>2.0)	5,826 to dominant (>2.0)
MDR-Failures	586,978 – 586,978	46,958 -46,958	5,745 – 5,745
15% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	721,168 – 721,168	39,697 – 39,697	4,867 – 4,867
5% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	13,767 to dominant (>1.9)	34,417 to dominant (>1.9)	4,831 to dominant (>1.9)
MDR-Failures	2,958,162 – 2,958,162	23,478 – 23,478	2,857 – 2,857
15% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	2,599,325 – 2,599,325	23,488 – 23,488	2,860 – 2,860

S2D: Duration of hospitalization during standardized MDR treatment (0 – 6 months)

5% Mono-INH resistant TB; 1% MDR-TB

|			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	7,929 to dominant (>1)	19,517 to dominant (>1)	2,788 to dominant (>1)
MDR-Failures	190,956 – 2,558,634	15,276 – 204,691	1,869 – 25,044
15% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	222,039 – 3,206,153	12,222 – 176,485	1,499 – 21,639

5% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	7,386 to dominant (>1)	17,045 to dominant (>1)	2,435 to dominant (>1)
MDR-Failures	687,158 – 14,264,687	5,454 – 113,212	664 – 13,777
15% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Always dominant	Always dominant	Always less effective
Str-Retreat	Always dominant	Always dominant	Always dominant
MDR-Failures	603,716 – 12,534,759	5,455 – 113,266	664 – 13,790
S2E: Using WHO-recommended discount rates ◆			
5% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Dominant	Dominant	Less effective
Str-Retreat	1,774	3,903	552
MDR-Failures	669,808	48,537	4,651
15% Mono-INH resistant TB; 1% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Dominant	Dominant	Less effective
Str-Retreat	Dominant	Dominant	Dominant
MDR-Failures	687,391	40,835	3,951
5% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Dominant	Dominant	Less effective
Str-Retreat	Dominant	Dominant	Dominant
MDR-Failures	2,848,846	23,701	2,358
15% Mono-INH resistant TB; 10% MDR-TB			
Standard	(ref)	(ref)	(ref)
EMB-Initial	Dominant	Dominant	Less effective
Str-Retreat	Dominant	Dominant	Dominant
MDR-Failures	2,503,256	23,690	2,359

†A strategy was dominant if it was more effective and less costly. The ICER ranges correspond to results when the input parameter is varied from low to high. If the incremental cost-effectiveness changes from a number to either "dominant" or "less effective", or vice versa, the threshold values of the corresponding input parameter are indicated in parentheses.

⌘ Ecuador treatment costs were used for estimating the average cost.

*For details on efficacy assumptions, see Methods.

◆ WHO recommends annual discounting of 6% for costs and 0% for health outcomes
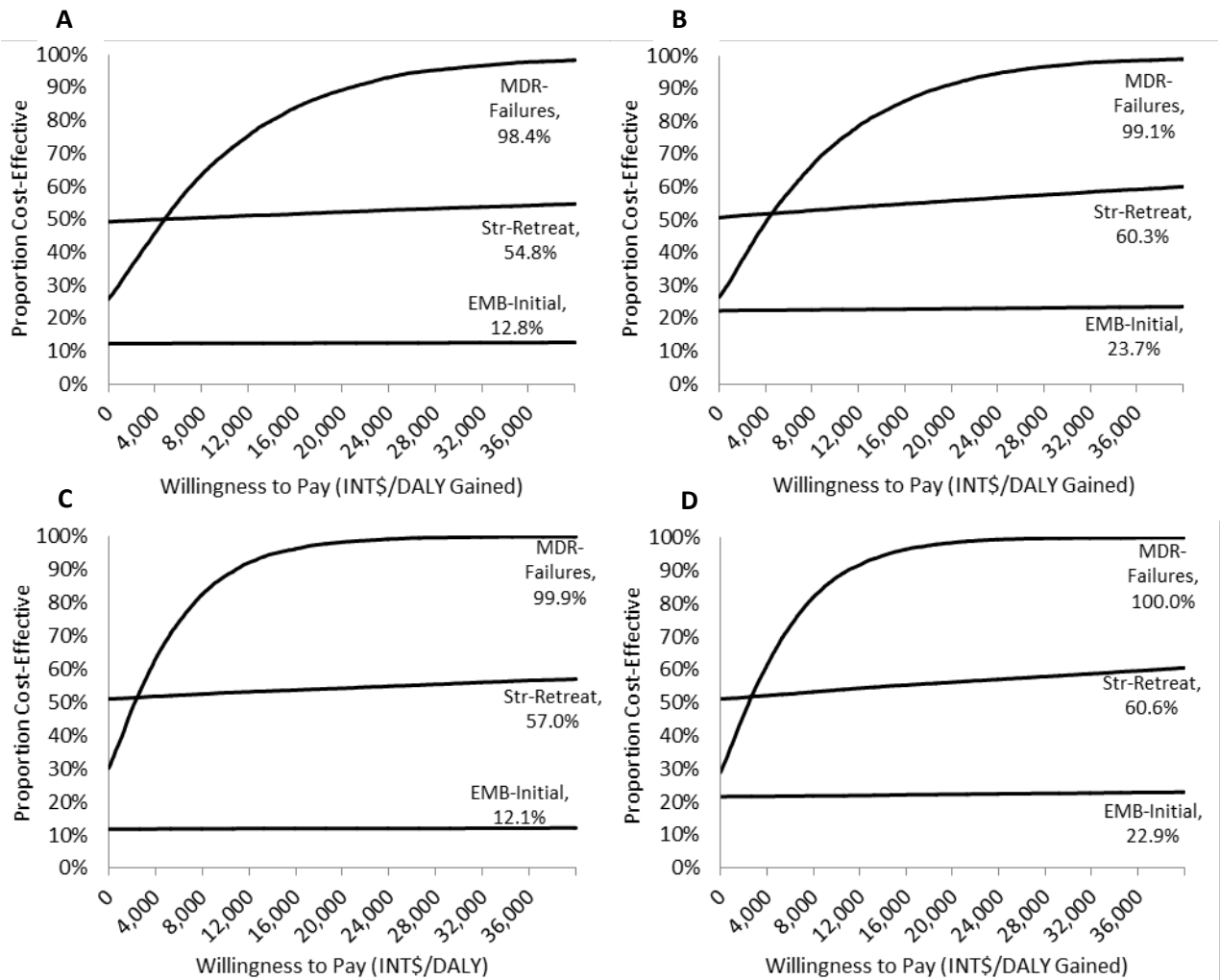
Supplement Figure 1. Cost-effectiveness acceptability curves of individual treatment strategies in four hypothetical settings

Results from PSA performed using 10,000 second-order Monte Carlo simulation trials are represented in three cost-effectiveness acceptability curves, each compares one of three individual treatment strategies (*EMB-Initial, Str-Retreat and MDR-Failures*) to *Standard*. The four settings are: **A)** 5% mono-INH resistant TB, 1% MDR-TB; **B)** 15% mono-INH resistant TB, 1% MDR-TB; **C)** 5% mono-INH resistant TB, 10% MDR-TB; and **D)** 15% mono-INH resistant TB, 10% MDR-TB. Depending on the willingness to pay or threshold ICER (INT$/DALY Gained), the curves show the likelihood that each strategy would be cost-effective compared to *Standard.*

References

1. World Bank. World Development Indicators database. World Bank, Washington, DC, 2010.
2. WHO. Treatment of tuberculosis: guidelines - 4th ed. Geneva: World Health Organization; 2010. Report No.: WHO/HTM/TB/2009.420.