

Online Supplementary Document

Zhang et al. Cost-effectiveness analysis of revised WHO guidelines for management of childhood pneumonia in 74 Countdown countries

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Supplementary material for
“Cost-effectiveness analysis of 2013 WHO
guidelines for management of childhood
pneumonia in 74 countdown countries”

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Supplementary 1 table: Total cost savings at national level by HIV prevalence and CCM implementation status

HIV Prevalence	CCM implementation	Country	Total Cost Savings = 2013 Guidelines - 2005 Guidelines (Thousands, US\$ 2013)				
			HIV+	HIV-	Total		
Low HIV Prevalence	Yes	Afghanistan	0.18	-7,545.94	-7,545.77		
		Azerbaijan	14.00	-4,749.49	-4,735.49		
		Bangladesh	0.27	-21,719.94	-21,719.66		
		China	32.55	-199,454.33	-199,421.77		
		Eritrea	4.39	-1,587.07	-1,582.68		
		Guatemala	0.81	-1,473.90	-1,473.09		
		India	523.54	-470,813.10	-470,289.56		
		Indonesia	23.96	-28,014.19	-27,990.23		
		Korea, Democratic People's Republic	0.07	-3,873.31	-3,873.24		
		Kyrgyzstan	0.06	-881.16	-881.09		
		Lao People's Democratic Republic	1.56	-1,519.98	-1,518.42		
		Madagascar	2.24	-3,441.29	-3,439.05		
		Mexico	19.81	-61,334.08	-61,314.27		
		Myanmar	9.03	-5,822.95	-5,813.92		
		Nepal	0.99	-2,368.22	-2,367.23		
		Niger	1.78	-3,419.43	-3,417.64		
		Pakistan	2.98	-34,518.97	-34,516.00		
		Papua New Guinea	4.47	-1,542.58	-1,538.11		
		Peru	7.75	-7,412.32	-7,404.57		
		Philippines	0.92	-27,310.63	-27,309.71		
		Senegal	5.08	-2,365.19	-2,360.11		
		Somalia	0.08	-2,087.11	-2,087.03		
		Tajikistan	0.56	-1,263.21	-1,262.65		
		Turkmenistan	1.50	-2,314.97	-2,313.48		
Uzbekistan	5.27	-4,994.20	-4,988.92				
Yemen	2.66	-8,927.94	-8,925.28				
Total		666.52	-910,755.50	-910,088.98			
	No	Bolivia (Plurinational State of)	1.04	-1,370.51	-1,369.47		
		Brazil	4.36	-21,311.35	-21,306.99		
		Cambodia	2.73	-1,343.13	-1,340.40		
		Comoros	0.01	-174.55	-174.54		
		Egypt	0.30	-10,726.93	-10,726.63		
		Iraq	77.51	-16,318.11	-16,240.60		
		Morocco	1.29	-5,309.51	-5,308.22		
		Solomon Islands	0.12	-101.91	-101.79		
		Viet Nam	11.98	-11,371.87	-11,359.88		
		Total	99.34	-68,027.86	-67,928.52		
		High HIV Prevalence	Yes	Benin	4.50	-1,602.96	-1,598.46
				Burkina Faso	8.07	-4,504.05	-4,495.98
				Burundi	0.38	-695.93	-695.55
				Cameroon	60.82	-4,271.57	-4,210.75
				Congo	45.18	-2,197.63	-2,152.46
Congo, Democratic Republic	-1.38			-9,019.26	-9,020.64		
Ethiopia	15.30			-8,146.25	-8,130.95		
Gambia	0.99			-293.42	-292.43		
Ghana	21.87			-3,403.20	-3,381.33		
Guinea	4.58			-1,721.13	-1,716.55		
Liberia	0.13			-483.09	-482.96		
Malawi	12.89			-1,102.01	-1,089.12		
Mali	6.83			-3,056.12	-3,049.30		
Mauritania	2.22			-842.57	-840.35		
Mozambique	67.37			-3,174.15	-3,106.78		
Nigeria	641.43			-40,432.83	-39,791.39		
Rwanda	3.71			-849.31	-845.59		

HIV Prevalence	CCM implementation	Country	Total Cost Savings = 2013 Guidelines - 2005 Guidelines (Thousands, US\$ 2013)			
			HIV+	HIV-	Total	
No		Sierra Leone	1.01	-854.28	-853.27	
		Togo	5.67	-851.70	-846.03	
		Uganda	28.17	-4,199.12	-4,170.95	
		Zambia	106.51	-2,073.81	-1,967.29	
		Total	1,036.26	-93,774.39	-92,738.14	
		Angola	219.62	-18,035.08	-17,815.46	
		Botswana	118.48	-1,723.48	-1,605.01	
		Central African Republic	5.71	152.92	158.64	
		Chad	28.48	-3,367.77	-3,339.29	
		Côte d'Ivoire	72.20	-5,733.55	-5,661.34	
		Djibouti	1.65	-203.13	-201.48	
		Equatorial Guinea	261.41	-3,605.83	-3,344.42	
		Gabon	58.04	-2,104.47	-2,046.44	
		Guinea-Bissau	2.53	-270.79	-268.26	
		Haiti	3.97	-953.21	-949.24	
		Kenya	81.52	-5,064.06	-4,982.54	
		Lesotho	22.78	-252.58	-229.79	
		Sao Tome and Principe	0.20	-21.89	-21.69	
		South Africa	3,361.71	-32,904.18	-29,542.47	
		Sudan	15.84	-16,515.01	-16,499.17	
		Swaziland	50.55	-287.93	-237.37	
		Tanzania, United Republic of	44.03	-3,978.01	-3,933.98	
		Zimbabwe	50.07	-1,130.81	-1,080.74	
		Total	4,398.79	-95,998.86	-91,600.07	
			Subgroup (No. of countries)	HIV +	HIV -	Total Cost Saving
			CCM (47)	1,702.77	-1,004,529.89	-1,002,827.12
			NO-CCM (27)	4,498.13	-164,026.72	-159,528.59
	Low HIV Prevalence (34)	765.86	-978,783.36	-978,017.50		
	High HIV Prevalence (40)	5,435.05	-189,773.25	-184,338.20		
	TOTAL	6,200.91	-1,168,556.61	-1,162,355.70		

I. High cost scenario

High cost scenario assumptions:

1. CCM Coverage: 100% coverage of rural population in countries with CCM
2. Unit cost of medicine changed based on review by Zhang et al 2015 (in press)

All other assumptions remain the same as the main model.

Supplementary 2 table: Total cost of pneumonia treatment in a high cost scenario

Delivery Levels	Total Cost for Pneumonia Treatment in 2013				
	(Billions, in US\$ 2013)				
	2005 Guidelines		2013 Guidelines(2013/2005%
Total Cost	%Total	Total Cost	%Total		
Community	2.52	59.5%	2.51	83.3%	99.4%
First Level Facility	0.15	3.5%	0.17	5.8%	117.2%
Hospital	1.57	37.0%	0.33	10.9%	21.0%
Total cost	4.24	100%	3.01	100.0%	71.0%

Supplementary 3 table: Total cost of pneumonia treatment at national level by HIV status in a high cost scenario

Country	2005 Guidelines (Thousands, US\$)			2013 Guidelines(Thousands, US\$)			Total Cost Savings (Thousands, US\$)	2013 Guidelines		National healthcare expenditure per capita (US\$)
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita (US\$)	Proportion of national healthcare expenditure per capita	
Afghanistan	4.79	41,353.93	41,358.72	4.98	32,271.29	32,276.27	9,082.44	1.06	1.89	55.93
Azerbaijan	39.61	11,549.23	11,588.85	53.66	6,693.26	6,746.92	4,841.93	0.72	0.20	356.92
Bangladesh	3.67	141,956.16	141,959.83	3.96	117,337.27	117,341.22	24,618.61	0.75	2.82	26.54
China	89.67	925,232.53	925,322.21	122.36	720,361.46	720,483.83	204,838.38	0.52	0.19	278.02
Eritrea	19.43	7,012.79	7,032.22	23.88	5,325.57	5,349.45	1,682.77	0.84	6.08	13.90
Guatemala	20.64	9,894.60	9,915.24	21.54	8,188.10	8,209.65	1,705.59	0.53	0.25	213.94
India	1,853.51	1,466,513.18	1,468,366.70	2,381.22	973,976.43	976,357.66	492,009.04	0.78	1.32	59.10
Indonesia	143.61	162,156.09	162,299.70	168.01	131,798.36	131,966.38	30,333.32	0.53	0.56	94.99
Korea, Democratic People's Republic	0.23	14,801.09	14,801.32	0.30	10,760.73	10,761.03	4,040.29	0.43	1.15	37.62
Kyrgyzstan	0.50	4,783.63	4,784.14	0.57	3,809.90	3,810.47	973.66	0.69	0.96	71.25
Lao People's Democratic Republic	10.51	6,499.48	6,509.99	12.11	4,838.86	4,850.96	1,659.03	0.72	1.95	36.74
Madagascar	65.36	20,781.75	20,847.11	67.89	16,767.74	16,835.62	4,011.49	0.73	3.87	18.98
Mexico	45.88	105,690.21	105,736.10	65.74	43,507.76	43,573.50	62,162.60	0.36	0.06	619.62
Myanmar	79.71	43,523.94	43,603.64	89.04	37,059.04	37,148.07	6,455.57	0.70	3.09	22.54
Nepal	17.91	26,244.24	26,262.15	18.97	23,515.89	23,534.86	2,727.29	0.85	2.57	33.00
Niger	88.48	20,833.71	20,922.19	90.66	16,739.41	16,830.06	4,092.12	0.94	4.69	20.11
Pakistan	23.92	174,406.13	174,430.05	26.98	136,168.76	136,195.73	38,234.32	0.75	2.52	29.70
Papua New Guinea	23.51	8,413.58	8,437.08	28.05	6,752.68	6,780.73	1,656.35	0.93	1.17	78.87
Peru	20.40	16,362.31	16,382.71	28.18	8,773.92	8,802.10	7,580.61	0.29	0.10	288.95
Philippines	4.03	88,615.51	88,619.54	4.96	59,653.38	59,658.34	28,961.20	0.61	0.63	96.51
Senegal	43.30	11,593.75	11,637.05	48.54	8,972.44	9,020.97	2,616.08	0.64	0.95	66.97
Somalia	56.99	10,422.14	10,479.13	57.33	7,903.28	7,960.61	2,518.52	0.76	19.65	3.86
Tajikistan	5.71	8,204.51	8,210.22	6.29	6,779.03	6,785.32	1,424.90	0.83	1.53	54.08

Country	2005 Guidelines (Thousands, US\$)			2013 Guidelines(Thousands, US\$)			Total Cost Savings (Thousands, US\$)	2013 Guidelines		National healthcare expenditure per capita (US\$)
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita (US\$)	Proportion of national healthcare expenditure per capita	
Turkmenistan	4.31	5,680.81	5,685.12	5.81	3,296.20	3,302.01	2,383.11	0.63	0.49	129.07
Uzbekistan	29.98	25,395.01	25,424.99	35.34	19,996.99	20,032.33	5,392.65	0.69	0.78	88.40
Yemen	16.06	30,290.64	30,306.70	18.77	20,594.14	20,612.91	9,693.79	0.84	0.96	88.35
Bolivia (Plurinational State of)	4.59	2,063.32	2,067.90	5.64	615.55	621.19	1,446.71	0.06	0.05	118.12
Brazil	16.95	30,751.76	30,768.72	21.35	8,372.61	8,393.97	22,374.75	0.04	0.004	1,120.56
Cambodia	29.91	2,325.99	2,355.90	32.75	829.63	862.38	1,493.52	0.06	0.12	51.21
Comoros	0.28	695.00	695.27	0.29	498.13	498.42	196.86	0.77	1.81	42.55
Egypt	1.18	15,579.34	15,580.52	1.48	4,329.63	4,331.11	11,249.40	0.06	0.04	136.58
Iraq	334.43	31,006.42	31,340.85	412.44	14,056.13	14,468.57	16,872.28	0.47	0.14	331.59
Morocco	6.77	11,527.88	11,534.65	8.07	5,969.74	5,977.81	5,556.84	0.20	0.11	185.89
Solomon Islands	0.94	217.12	218.06	1.06	106.71	107.77	110.29	0.21	0.16	133.99
Viet Nam	86.43	19,745.62	19,832.05	98.67	7,390.32	7,488.99	12,343.06	0.09	0.09	94.81
Benin	53.98	7,896.64	7,950.62	58.70	6,091.59	6,150.29	1,800.33	0.60	1.62	36.70
Burkina Faso	158.95	19,296.58	19,455.54	167.71	14,107.88	14,275.59	5,179.95	0.84	2.27	37.21
Burundi	79.42	10,241.17	10,320.58	80.17	9,384.00	9,464.17	856.42	0.93	3.99	23.37
Cameroon	424.31	16,442.50	16,866.81	486.61	11,768.36	12,254.97	4,611.84	0.55	0.81	68.24
Congo	155.34	4,570.15	4,725.49	200.84	2,278.13	2,478.97	2,246.52	0.56	0.64	87.38
Congo, Democratic Republic	539.44	58,209.59	58,749.03	540.63	47,401.89	47,942.52	10,806.51	0.71	3.60	19.73
Ethiopia	692.27	88,359.51	89,051.78	710.79	78,813.55	79,524.34	9,527.45	0.85	5.09	16.61
Gambia	15.75	1,270.27	1,286.02	16.80	935.08	951.88	334.14	0.51	1.88	27.41
Ghana	138.53	17,060.18	17,198.70	160.85	13,358.45	13,519.30	3,679.40	0.52	0.70	75.02
Guinea	116.96	10,434.55	10,551.51	122.03	8,428.03	8,550.06	2,001.45	0.73	2.45	29.73
Liberia	21.45	4,081.57	4,103.02	21.67	3,501.68	3,523.35	579.67	0.57	1.03	54.90
Malawi	608.95	15,428.66	16,037.61	624.58	14,114.16	14,738.74	1,298.87	0.90	2.91	30.93
Mali	122.94	15,410.62	15,533.56	130.26	11,877.86	12,008.11	3,525.45	0.78	1.76	44.57
Mauritania	20.47	3,798.48	3,818.95	22.76	2,857.39	2,880.15	938.80	0.74	1.28	57.71

Country	2005 Guidelines (Thousands, US\$)			2013 Guidelines(Thousands, US\$)			Total Cost Savings (Thousands, US\$)	2013 Guidelines		National healthcare expenditure per capita (US\$)
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita (US\$)	Proportion of national healthcare expenditure per capita	
Mozambique	1,795.55	25,845.05	27,640.59	1,869.72	22,021.97	23,891.69	3,748.91	0.92	2.63	35.22
Nigeria	4,545.67	163,610.14	168,155.80	5,200.30	119,295.14	124,495.44	43,660.37	0.72	0.90	79.56
Rwanda	71.63	10,673.84	10,745.47	75.64	9,691.49	9,767.13	978.34	0.83	1.32	62.72
Sierra Leone	50.23	5,062.17	5,112.40	51.46	4,055.25	4,106.71	1,005.69	0.67	0.98	68.54
Togo	125.19	5,566.03	5,691.22	131.40	4,579.61	4,711.01	980.21	0.69	1.54	44.88
Uganda	950.05	37,474.71	38,424.76	972.01	32,586.46	33,558.48	4,866.29	0.89	2.11	42.40
Zambia	786.80	11,860.99	12,647.79	891.27	9,584.90	10,476.17	2,171.62	0.72	0.83	87.22
Angola	635.97	24,583.14	25,219.12	856.57	6,024.95	6,881.52	18,337.60	0.32	0.17	186.26
Botswana	283.79	2,246.15	2,529.95	402.54	494.63	897.17	1,632.77	0.42	0.10	431.91
Central African Republic	574.13	7,560.54	8,134.67	580.58	7,584.76	8,165.34	-30.66	1.77	9.67	18.28
Chad	355.45	5,570.50	5,925.95	385.29	1,774.13	2,159.42	3,766.53	0.17	0.48	35.20
Côte d'Ivoire	669.09	10,846.73	11,515.81	743.44	4,487.67	5,231.11	6,284.71	0.26	0.32	79.43
Djibouti	11.96	325.79	337.75	13.64	103.45	117.09	220.66	0.13	0.13	105.20
Equatorial Guinea	521.30	4,561.92	5,083.22	782.84	942.26	1,725.10	3,358.11	2.15	0.17	1,236.15
Gabon	132.09	2,732.22	2,864.31	190.23	601.46	791.69	2,072.62	0.46	0.13	358.30
Guinea-Bissau	50.33	464.76	515.09	53.06	153.73	206.79	308.29	0.12	0.32	37.18
Haiti	66.57	1,965.85	2,032.42	70.79	875.70	946.49	1,085.94	0.09	0.16	57.66
Kenya	1,251.93	13,210.48	14,462.41	1,337.33	7,428.01	8,765.34	5,697.07	0.20	0.54	36.25
Lesotho	203.37	395.33	598.70	226.89	115.39	342.27	256.43	0.16	0.11	141.10
Sao Tome and Principe	1.89	66.22	68.12	2.10	42.04	44.14	23.98	0.23	0.19	117.44
South Africa	8,288.46	43,342.47	51,630.93	11,658.89	9,847.35	21,506.24	30,124.69	0.38	0.06	689.27
Sudan	146.87	36,283.41	36,430.28	163.14	17,989.64	18,152.78	18,277.51	0.48	0.46	103.53
Swaziland	187.34	430.54	617.88	238.27	129.71	367.98	249.90	0.28	0.11	264.81
Tanzania, United Republic of	1,445.94	15,843.48	17,289.42	1,494.17	11,086.63	12,580.80	4,708.63	0.25	0.68	37.33
Zimbabwe	864.96	2,239.95	3,104.91	918.25	945.63	1,863.88	1,241.04	0.13	0.34	38.38
Total	30,358.51	4,207,386.31	4,237,744.82	36,621.06	2,971,370.34	3,007,991.41	1,229,753.42			

Supplementary 4 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines in a high cost scenario

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted of GDP per capita (%)	
		2005	2013	2005	2013
Afghanistan	875.44	47.24	36.87	7.62	5.95
Azerbaijan	45.64	253.91	147.82	3.43	2.00
Bangladesh	910.09	155.98	128.93	20.87	17.25
China	1,752.85	527.90	411.04	8.53	6.64
Eritrea	98.98	71.05	54.04	14.09	10.72
Guatemala	132.69	74.73	61.87	2.23	1.85
India	8,522.64	172.29	114.56	11.57	7.69
Indonesia	1,137.93	142.63	115.97	4.01	3.26
Korea, Democratic People's Republic	82.09	180.31	131.09	35.63	25.91
Kyrgyzstan	24.97	191.60	152.61	16.52	13.16
Lao People's Democratic Republic	124.61	52.24	38.93	3.73	2.78
Madagascar	370.93	56.20	45.39	12.56	10.14
Mexico	212.37	497.88	205.17	5.11	2.10
Myanmar	327.07	133.32	113.58	11.65	9.93
Nepal	165.78	158.41	141.96	22.42	20.09
Niger	635.69	32.91	26.48	8.60	6.92
Pakistan	3,212.46	54.30	42.40	4.21	3.29
Papua New Guinea	96.55	87.39	70.23	4.00	3.22
Peru	57.94	282.76	151.92	4.31	2.31
Philippines	595.98	148.70	100.10	5.75	3.87
Senegal	165.98	70.11	54.35	6.80	5.27
Somalia	476.59	21.99	16.70	0.29	0.22
Tajikistan	107.30	76.52	63.24	12.57	10.39
Turkmenistan	46.83	121.40	70.51	1.86	1.08
Uzbekistan	241.88	105.11	82.82	6.12	4.82
Yemen	303.25	99.94	67.97	6.69	4.55
Bolivia (Plurinational State of)	81.97	25.23	7.97	0.98	0.31
Brazil	167.92	183.23	50.14	1.62	0.44
Cambodia	120.25	19.59	7.72	2.07	0.82
Comoros	13.03	53.36	43.49	6.43	5.24
Egypt	227.57	68.47	19.98	2.15	0.63
Iraq	265.05	118.25	60.16	1.83	0.93
Morocco	151.78	75.99	43.94	2.62	1.51
Solomon Islands	4.47	48.78	26.77	3.21	1.76
Viet Nam	214.59	92.42	37.85	5.79	2.37
Benin	191.87	41.44	32.05	5.51	4.26
Burkina Faso	390.63	49.81	36.55	7.85	5.76
Burundi	250.15	41.26	37.83	16.44	15.08
Cameroon	499.15	33.79	24.55	2.93	2.13
Congo	37.44	126.21	66.21	4.00	2.10
Congo,	1,770.31	33.19	27.08	12.20	9.96

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted of GDP per capita (%)	
		2005	2013	2005	2013
Democratic Republic of Ethiopia	1,568.40	56.78	50.70	12.07	10.78
Gambia	29.69	43.31	32.06	8.46	6.26
Ghana	352.92	48.73	38.31	3.04	2.39
Guinea	224.05	47.09	38.16	7.97	6.46
Liberia	64.60	63.52	54.54	15.06	12.93
Malawi	215.99	74.25	68.24	27.70	25.46
Mali	515.92	30.11	23.28	4.34	3.35
Mauritania	80.87	47.22	35.61	4.27	3.22
Mozambique	423.41	65.28	56.43	11.28	9.75
Nigeria	4,499.06	37.38	27.67	2.40	1.78
Rwanda	174.96	61.42	55.82	9.91	9.00
Sierra Leone	184.08	27.77	22.31	4.37	3.51
Togo	117.10	48.60	40.23	1.08	0.90
Uganda	654.10	58.74	51.30	10.74	9.38
Zambia	311.04	40.66	33.68	2.77	2.29
Angola	971.25	25.97	7.00	0.47	0.13
Botswana	9.75	259.48	87.27	3.61	1.21
Central African Republic	113.76	71.51	71.74	15.13	15.18
Chad	516.30	11.48	4.15	1.30	0.47
Côte d'Ivoire	391.80	29.39	13.27	2.36	1.07
Djibouti	11.01	30.67	10.57	2.89	1.00
Equatorial Guinea	14.30	355.51	113.60	1.48	0.47
Gabon	16.33	175.43	47.11	1.53	0.41
Guinea-Bissau	41.79	12.32	4.91	2.28	0.91
Haiti	172.73	11.77	5.47	1.53	0.71
Kenya	817.99	17.68	10.67	2.04	1.23
Lesotho	24.95	23.99	13.29	2.01	1.11
Sao Tome and Principe	2.46	27.72	17.93	1.98	1.28
South Africa	320.65	161.02	62.97	10.19	3.99
Sudan	772.94	47.13	23.48	1.55	0.77
Swaziland	15.91	38.83	21.84	4.45	2.50
Tanzania, United Republic of	634.76	27.24	19.78	4.74	3.44
Zimbabwe	238.01	13.05	7.72	1.66	0.98
Total	39,613.61				
Median	212.37	56.20			
(IQR)	(82.00-493.51)	(34.69-120.61)			

II. Low cost scenario

Low cost scenario Assumptions:

1. CCM Coverage: coverage reduced to 50% coverage of rural population in countries with CCM, the remaining 50% were treated in health centre.
2. 1/5000 ratio of Community Health Works/ rural population\

All other assumptions are the same as the main model.

Supplementary 5 table: Total cost of pneumonia treatment in a low cost scenario

Delivery Levels	Total Cost for Pneumonia Treatments in 2013				
	(Billions, in US\$ 2013)				
	2005 Guidelines		2013 Guidelines		2013/2005 %
Total Cost	%Total	Total Cost	%Total		
Community	0.25	12.9%	0.25	32.6%	101.4%
First Level Facility	0.18	9.3%	0.23	29.0%	126.0%
Hospital	1.51	77.8%	0.30	38.4%	19.9%
Total cost	1.94	100%	0.78	100.0%	40.3%

Supplementary 6 table: Total cost of pneumonia treatment by HIV status in a low cost scenario

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Afghanistan	4.78	34,135.63	34,140.41	4.95	26,589.69	26,594.64	7,545.77	0.57	1.03
Azerbaijan	39.30	9,656.73	9,696.03	53.31	4,907.24	4,960.54	4,735.49	0.35	0.10
Bangladesh	3.03	84,736.32	84,739.35	3.30	63,016.38	63,019.68	21,719.66	0.12	0.47
China	83.52	586,413.86	586,497.37	116.07	386,959.53	387,075.60	199,421.77	0.09	0.03
Eritrea	17.15	4,497.40	4,514.55	21.54	2,910.33	2,931.87	1,582.68	0.16	1.13
Guatemala	16.60	5,851.12	5,867.72	17.41	4,377.21	4,394.63	1,473.09	0.09	0.04
India	1,669.57	1,024,440.35	1,026,109.93	2,193.12	553,627.25	555,820.37	470,289.56	0.18	0.30
Indonesia	125.39	100,469.43	100,594.82	149.35	72,455.25	72,604.59	27,990.23	0.10	0.10
Korea, Democratic People's Republic	0.21	9,792.33	9,792.54	0.27	5,919.03	5,919.30	3,873.24	0.08	0.22
Kyrgyzstan	0.43	2,949.80	2,950.22	0.49	2,068.64	2,069.13	881.09	0.12	0.17
Lao People's Democratic Republic	8.92	4,182.93	4,191.84	10.47	2,662.95	2,673.42	1,518.42	0.14	0.38
Madagascar	54.14	12,884.32	12,938.46	56.38	9,443.03	9,499.41	3,439.05	0.15	0.80
Mexico	44.11	91,613.44	91,657.55	63.93	30,279.36	30,343.29	61,314.27	0.16	0.03
Myanmar	67.27	25,527.24	25,594.51	76.30	19,704.29	19,780.59	5,813.92	0.11	0.49
Nepal	15.35	14,976.83	14,992.18	16.34	12,608.62	12,624.96	2,367.23	0.13	0.40
Niger	80.04	14,302.62	14,382.67	81.83	10,883.19	10,965.02	3,417.64	0.30	1.47
Pakistan	21.97	120,173.52	120,195.50	24.95	85,654.55	85,679.50	34,516.00	0.22	0.75
Papua New Guinea	20.99	5,268.41	5,289.40	25.47	3,725.83	3,751.30	1,538.11	0.17	0.22
Peru	19.10	12,763.31	12,782.41	26.85	5,350.99	5,377.84	7,404.57	0.09	0.03
Philippines	3.61	62,967.52	62,971.13	4.54	35,656.88	35,661.42	27,309.71	0.16	0.17
Senegal	37.10	7,458.85	7,495.95	42.18	5,093.66	5,135.84	2,360.11	0.14	0.21
Somalia	47.85	7,093.02	7,140.86	47.93	5,005.91	5,053.84	2,087.03	0.24	6.22
Tajikistan	5.36	5,479.34	5,484.70	5.92	4,216.14	4,222.05	1,262.65	0.23	0.42
Turkmenistan	4.00	4,301.07	4,305.08	5.50	1,986.10	1,991.60	2,313.48	0.18	0.14

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Uzbekistan	26.54	16,226.31	16,252.84	31.81	11,232.11	11,263.92	4,988.92	0.14	0.16
Yemen	14.65	22,461.41	22,476.07	17.31	13,533.47	13,550.78	8,925.28	0.29	0.33
Bolivia (Plurinational State of)	4.06	1,948.07	1,952.13	5.10	577.56	582.66	1,369.47	0.06	0.05
Brazil	15.10	29,158.90	29,174.00	19.46	7,847.54	7,867.01	21,306.99	0.04	0.004
Cambodia	24.87	2,097.41	2,122.28	27.60	754.28	781.88	1,340.40	0.06	0.11
Comoros	0.25	661.70	661.95	0.26	487.15	487.41	174.54	0.76	1.78
Egypt	1.05	14,799.49	14,800.54	1.35	4,072.57	4,073.92	10,726.63	0.05	0.04
Iraq	310.48	30,063.38	30,373.86	387.99	13,745.27	14,133.26	16,240.60	0.46	0.14
Morocco	6.27	11,156.99	11,163.26	7.55	5,847.48	5,855.04	5,308.22	0.20	0.11
Solomon Islands	0.83	204.44	205.27	0.95	102.53	103.48	101.79	0.21	0.15
Viet Nam	74.25	18,278.60	18,352.85	86.23	6,906.74	6,992.97	11,359.88	0.08	0.09
Benin	43.96	4,878.91	4,922.87	48.47	3,275.94	3,324.41	1,598.46	0.11	0.30
Burkina Faso	132.04	12,763.14	12,895.19	140.12	8,259.09	8,399.21	4,495.98	0.21	0.57
Burundi	75.95	6,156.61	6,232.56	76.33	5,460.68	5,537.02	695.55	0.20	0.85
Cameroon	355.52	10,737.84	11,093.36	416.34	6,466.27	6,882.61	4,210.75	0.12	0.18
Congo	140.61	3,670.67	3,811.28	185.79	1,473.04	1,658.82	2,152.46	0.23	0.27
Congo, Democratic Republic	429.87	34,908.51	35,338.38	428.49	25,889.25	26,317.74	9,020.64	0.13	0.68
Ethiopia	552.14	48,956.23	49,508.37	567.44	40,809.98	41,377.42	8,130.95	0.12	0.71
Gambia	13.10	846.88	859.98	14.09	553.47	567.55	292.43	0.14	0.51
Ghana	118.24	10,671.04	10,789.28	140.10	7,267.84	7,407.95	3,381.33	0.10	0.13
Guinea	99.32	6,646.82	6,746.14	103.90	4,925.69	5,029.59	1,716.55	0.18	0.60
Liberia	17.86	2,465.72	2,483.58	17.99	1,982.63	2,000.62	482.96	0.12	0.22
Malawi	543.94	8,873.99	9,417.94	556.83	7,771.98	8,328.82	1,089.12	0.18	0.59
Mali	108.31	10,637.06	10,745.37	115.13	7,580.94	7,696.07	3,049.30	0.25	0.56
Mauritania	18.69	2,740.12	2,758.81	20.91	1,897.56	1,918.47	840.35	0.27	0.46
Mozambique	1,774.32	18,813.27	20,587.58	1,841.68	15,639.12	17,480.80	3,106.78	0.41	1.16

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines		
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita	of
Nigeria	4,233.83	123,748.56	127,982.39	4,875.27	83,315.73	88,190.99	39,791.39	0.31	0.39	
Rwanda	62.14	6,052.42	6,114.56	65.85	5,203.11	5,268.96	845.59	0.13	0.21	
Sierra Leone	41.06	3,140.00	3,181.06	42.06	2,285.72	2,327.79	853.27	0.15	0.21	
Togo	105.00	3,433.18	3,538.18	110.67	2,581.48	2,692.15	846.03	0.15	0.34	
Uganda	788.10	21,666.61	22,454.70	816.27	17,467.48	18,283.75	4,170.95	0.16	0.37	
Zambia	690.95	7,479.67	8,170.62	797.46	5,405.86	6,203.32	1,967.29	0.19	0.22	
Angola	588.79	23,802.80	24,391.59	808.42	5,767.72	6,576.13	17,815.46	0.30	0.16	
Botswana	270.49	2,204.32	2,474.81	388.96	480.84	869.80	1,605.01	0.41	0.09	
Central African Republic	538.84	7,368.55	7,907.39	544.55	7,521.47	8,066.02	-158.64	1.75	9.55	
Chad	289.80	4,931.14	5,220.94	318.28	1,563.37	1,881.65	3,339.29	0.15	0.41	
Côte d'Ivoire	565.27	9,913.63	10,478.90	637.47	4,180.08	4,817.55	5,661.34	0.24	0.30	
Djibouti	10.07	297.13	307.20	11.72	94.00	105.72	201.48	0.12	0.11	
Equatorial Guinea	514.83	4,541.29	5,056.12	776.24	935.46	1,711.70	3,344.42	2.13	0.17	
Gabon	127.20	2,693.01	2,820.21	185.24	588.53	773.77	2,046.44	0.45	0.13	
Guinea-Bissau	40.40	404.74	445.14	42.93	133.95	176.88	268.26	0.10	0.28	
Haiti	54.97	1,761.58	1,816.55	58.94	808.36	867.31	949.24	0.08	0.15	
Kenya	1,064.89	12,138.81	13,203.70	1,146.41	7,074.75	8,221.16	4,982.54	0.18	0.51	
Lesotho	168.05	354.51	522.56	190.83	101.93	292.76	229.79	0.14	0.10	
Sao Tome and Principe	1.68	62.80	64.49	1.89	40.91	42.80	21.69	0.22	0.19	
South Africa	7,868.39	42,460.96	50,329.35	11,230.10	9,556.77	20,786.88	29,542.47	0.37	0.05	
Sudan	126.39	33,629.99	33,756.38	142.23	17,114.97	17,257.20	16,499.17	0.45	0.44	
Swaziland	169.06	411.29	580.35	219.61	123.37	342.98	237.37	0.26	0.10	
Tanzania, United Republic of	1,243.91	14,681.66	15,925.57	1,287.95	10,703.65	11,991.59	3,933.98	0.24	0.65	
Zimbabwe	709.98	1,996.04	2,706.02	760.05	865.22	1,625.27	1,080.74	0.11	0.29	
Total	27,566.10	2,911,933.58	2,939,499.68	33,767.00	1,743,376.97	1,777,143.97	1,162,355.70			

Supplementary 7 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines in a low cost scenario

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)	Percentage of cost per DALY averted in GDP per capita (%)			
			2005	2013	2005	2013
Afghanistan	875.44	28.64	20.02	4.62	3.23	
Azerbaijan	45.64	175.32	71.57	2.37	0.97	
Bangladesh	910.09	45.29	21.43	6.06	2.87	
China	1,752.85	183.09	69.32	2.96	1.12	
Eritrea	98.98	26.08	10.09	5.17	2.00	
Guatemala	132.69	21.50	10.40	0.64	0.31	
India	8,522.64	81.22	26.04	5.45	1.75	
Indonesia	1,137.93	46.41	21.81	1.30	0.61	
Korea, Democratic People's Republic	82.09	72.59	25.41	14.35	5.02	
Kyrgyzstan	24.97	62.42	27.13	5.38	2.34	
Lao People's Democratic Republic	124.61	19.78	7.60	1.41	0.54	
Madagascar	370.93	18.71	9.44	4.18	2.11	
Mexico	212.37	382.68	93.97	3.93	0.96	
Myanmar	327.07	35.70	17.92	3.12	1.57	
Nepal	165.78	36.42	22.14	5.15	3.13	
Niger	635.69	13.68	8.31	3.57	2.17	
Pakistan	3,212.46	23.38	12.63	1.81	0.98	
Papua New Guinea	96.55	29.03	13.10	1.33	0.60	
Peru	57.94	174.37	46.57	2.65	0.71	
Philippines	595.98	72.89	27.07	2.82	1.05	
Senegal	165.98	26.17	11.95	2.54	1.16	
Somalia	476.59	9.66	5.28	0.13	0.07	
Tajikistan	107.30	29.31	17.54	4.81	2.88	
Turkmenistan	46.83	69.66	20.26	1.07	0.31	
Uzbekistan	241.88	37.58	16.95	2.19	0.99	
Yemen	303.25	52.98	23.55	3.55	1.58	
Bolivia (Plurinational State of)	81.97	23.81	7.50	0.92	0.29	
Brazil	167.92	173.73	47.00	1.53	0.41	
Cambodia	120.25	17.65	7.05	1.87	0.75	
Comoros	13.03	50.80	42.64	6.12	5.13	
Egypt	227.57	65.04	18.85	2.04	0.59	
Iraq	265.05	114.60	58.90	1.78	0.91	
Morocco	151.78	73.55	43.13	2.53	1.49	
Solomon Islands	4.47	45.92	25.81	3.02	1.70	
Viet Nam	214.59	85.53	35.54	5.36	2.23	
Benin	191.87	14.16	5.83	1.88	0.77	
Burkina Faso	390.63	20.65	9.14	3.26	1.44	
Burundi	250.15	10.87	8.09	4.33	3.22	
Cameroon	499.15	13.94	5.50	1.21	0.48	
Congo	37.44	85.04	27.55	2.70	0.87	
Congo,	1,770.31	10.24	5.14	3.76	1.89	

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)	Percentage of cost per DALY averted in GDP per capita (%)			
			2005	2013	2005	2013
Democratic Republic						
Ethiopia	1,568.40	12.24	7.06	2.60	1.50	
Gambia	29.69	18.64	8.79	3.64	1.72	
Ghana	352.92	16.87	7.29	1.05	0.45	
Guinea	224.05	16.98	9.32	2.87	1.58	
Liberia	64.60	19.14	11.66	4.54	2.77	
Malawi	215.99	18.82	13.77	7.02	5.14	
Mali	515.92	13.34	7.43	1.92	1.07	
Mauritania	80.87	23.19	12.80	2.10	1.16	
Mozambique	423.41	32.33	25.00	5.59	4.32	
Nigeria	4,499.06	20.90	12.06	1.34	0.78	
Rwanda	174.96	13.82	8.99	2.23	1.45	
Sierra Leone	184.08	9.48	4.84	1.49	0.76	
Togo	117.10	16.21	8.99	0.36	0.20	
Uganda	654.10	15.51	9.13	2.83	1.67	
Zambia	311.04	15.23	8.91	1.04	0.61	
Angola	971.25	25.11	6.68	0.46	0.12	
Botswana	9.75	253.83	84.47	3.53	1.17	
Central African Republic	113.76	69.51	70.87	14.71	14.99	
Chad	516.30	10.11	3.62	1.14	0.41	
Côte d'Ivoire	391.80	26.75	12.21	2.15	0.98	
Djibouti	11.01	27.90	9.54	2.63	0.90	
Equatorial Guinea	14.30	353.62	112.66	1.47	0.47	
Gabon	16.33	172.73	46.01	1.51	0.40	
Guinea-Bissau	41.79	10.65	4.20	1.97	0.78	
Haiti	172.73	10.52	5.01	1.36	0.65	
Kenya	817.99	16.14	10.00	1.87	1.16	
Lesotho	24.95	20.94	11.31	1.76	0.95	
Sao Tome and Principe	2.46	26.25	17.38	1.87	1.24	
South Africa	320.65	156.96	60.73	9.93	3.84	
Sudan	772.94	43.67	22.32	1.43	0.73	
Swaziland	15.91	36.47	20.27	4.18	2.32	
Tanzania, United Republic of	634.76	25.09	18.85	4.37	3.28	
Zimbabwe	238.01	11.37	6.71	1.44	0.85	
Total	39,613.61					
Median	212.37	26.17	12.80			
(IQR)	(82.00-493.51)	(16.90-64.38)	(8.82-25.71)			

III. Effective access to care scenario

Based on data from published studies reporting effective access to care (product of geographic access, staff availability and medicine availability)

1. In countries without CCM in place, effective access rate for rural population is 9%
2. In countries with CCM in place, effective access rate for rural population is 30% in a typical setting

Supplementary 8 table: Total cost of pneumonia treatment in 2013 using effective access to care scenario

Delivery Levels	Total Cost for Pneumonia Treatment in 2013				
	(Billions, in US\$ 2013)				
	2005 Guidelines		2013 Guidelines		2013/2005 %
Total Cost	% OG Total	Total Cost	% RG Total		
Community	1.25	55.7%	1.25	80.0%	100.1%
First Level Facility	0.11	4.9%	0.14	8.7%	123.9%
Hospital	0.88	39.4%	0.18	11.3%	20.0%
Total cost	2.24	100.0%	1.56	100.0%	69.7%

Supplementary 9 table: Total cost of pneumonia treatment by HIV status using effective access to care scenario

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Afghanistan	2.37	22,983.10	22,985.46	2.45	19,476.64	19,479.09	3,506.38	0.64	1.14
Azerbaijan	27.23	7,353.17	7,380.40	36.68	4,145.55	4,182.23	3,198.17	0.44	0.12
Bangladesh	1.53	69,824.89	69,826.42	1.66	58,995.22	58,996.88	10,829.54	0.38	1.42
China	54.76	498,861.94	498,916.70	76.06	368,378.92	368,454.97	130,461.73	0.27	0.10
Eritrea	7.75	3,358.98	3,366.73	9.72	2,645.94	2,655.66	711.06	0.42	3.02
Guatemala	10.87	5,143.65	5,154.53	11.40	4,187.95	4,199.35	955.17	0.27	0.13
India	870.08	734,072.33	734,942.41	1,141.77	489,753.22	490,894.99	244,047.43	0.39	0.66
Indonesia	83.32	86,960.50	87,043.82	99.01	68,611.90	68,710.92	18,332.91	0.27	0.29
Korea, Democratic People's Republic	0.15	8,416.72	8,416.87	0.20	5,619.39	5,619.59	2,797.29	0.23	0.60
Kyrgyzstan	0.24	2,412.91	2,413.14	0.27	1,930.55	1,930.81	482.33	0.35	0.49
Lao People's Democratic Republic	4.85	3,263.79	3,268.64	5.69	2,443.38	2,449.07	819.57	0.36	0.98
Madagascar	29.18	10,445.32	10,474.50	30.36	8,628.49	8,658.85	1,815.65	0.38	1.99
Mexico	37.40	79,663.01	79,700.42	54.18	27,724.08	27,778.26	51,922.16	0.23	0.04
Myanmar	35.99	21,776.89	21,812.88	40.76	18,699.48	18,740.24	3,072.64	0.35	1.56
Nepal	6.56	12,832.62	12,839.19	6.98	11,840.68	11,847.65	991.53	0.43	1.29
Niger	35.32	10,360.75	10,396.07	36.08	8,907.97	8,944.05	1,452.02	0.50	2.49
Pakistan	12.63	93,620.30	93,632.93	14.28	74,519.50	74,533.78	19,099.16	0.41	1.38
Papua New Guinea	8.21	3,956.95	3,965.17	9.95	3,359.61	3,369.55	595.61	0.46	0.58
Peru	16.07	11,272.29	11,288.36	22.59	5,039.79	5,062.38	6,225.99	0.17	0.06
Philippines	2.35	49,581.11	49,583.46	2.94	32,050.96	32,053.90	17,529.56	0.33	0.34
Senegal	22.56	6,098.60	6,121.16	25.59	4,684.96	4,710.56	1,410.61	0.33	0.50
Somalia	27.87	5,510.87	5,538.74	27.92	4,333.33	4,361.24	1,177.49	0.42	10.76
Tajikistan	2.72	4,247.62	4,250.35	2.99	3,634.21	3,637.20	613.15	0.44	0.82
Turkmenistan	2.58	3,234.31	3,236.89	3.54	1,750.36	1,753.89	1,482.99	0.33	0.26

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Uzbekistan	14.94	13,076.41	13,091.35	17.86	10,312.87	10,330.73	2,760.62	0.36	0.40
Yemen	7.93	15,916.27	15,924.20	9.33	11,218.24	11,227.57	4,696.63	0.46	0.52
Bolivia (Plurinational State of)	2.83	1,359.93	1,362.76	3.56	401.53	405.09	957.67	0.04	0.03
Brazil	12.99	25,078.55	25,091.54	16.74	6,600.47	6,617.21	18,474.33	0.03	0.003
Cambodia	6.76	570.01	576.77	7.50	204.99	212.49	364.28	0.02	0.03
Comoros	0.09	228.38	228.46	0.09	168.13	168.22	60.24	0.26	0.61
Egypt	0.51	7,190.24	7,190.75	0.66	1,978.63	1,979.29	5,211.46	0.03	0.02
Iraq	215.74	20,889.61	21,105.35	269.60	9,550.93	9,820.53	11,284.82	0.32	0.10
Morocco	3.82	6,794.47	6,798.29	4.60	3,561.05	3,565.65	3,232.64	0.12	0.06
Solomon Islands	0.23	56.46	56.69	0.26	28.32	28.58	28.11	0.06	0.04
Viet Nam	27.65	6,806.54	6,834.19	32.11	2,571.91	2,604.02	4,230.16	0.03	0.03
Benin	27.17	4,074.22	4,101.40	29.94	3,089.34	3,119.28	982.12	0.30	0.82
Burkina Faso	65.22	9,399.75	9,464.97	69.14	7,212.77	7,281.91	2,183.06	0.43	1.16
Burundi	29.68	5,097.29	5,126.97	29.82	4,835.35	4,865.17	261.80	0.48	2.05
Cameroon	237.32	8,895.12	9,132.44	277.74	6,055.97	6,333.71	2,798.72	0.28	0.42
Congo	105.28	2,947.56	3,052.84	138.97	1,308.99	1,447.96	1,604.88	0.33	0.37
Congo, Democratic Republic	235.60	28,962.86	29,198.46	234.85	24,093.41	24,328.26	4,870.20	0.36	1.83
Ethiopia	233.11	42,589.05	42,822.16	239.52	39,175.95	39,415.46	3,406.69	0.42	2.52
Gambia	9.33	717.10	726.43	10.03	511.45	521.47	204.96	0.28	1.03
Ghana	79.06	9,149.47	9,228.53	93.56	6,892.37	6,985.93	2,242.60	0.27	0.36
Guinea	55.99	5,383.43	5,439.42	58.50	4,440.23	4,498.73	940.69	0.38	1.29
Liberia	11.71	2,166.24	2,177.95	11.79	1,858.42	1,870.22	307.73	0.30	0.55
Malawi	230.20	7,635.97	7,866.17	235.48	7,184.49	7,419.96	446.21	0.45	1.47
Mali	61.18	8,179.02	8,240.20	64.89	6,515.06	6,579.96	1,660.24	0.43	0.96
Mauritania	11.48	2,125.86	2,137.34	12.79	1,628.51	1,641.30	496.03	0.42	0.73
Mozambique	986.58	14,462.60	15,449.18	1,021.50	12,817.44	13,838.93	1,610.24	0.54	1.52

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Nigeria	2,853.71	97,968.95	100,822.65	3,268.98	71,792.26	75,061.24	25,761.41	0.43	0.54
Rwanda	27.64	5,268.18	5,295.82	29.25	4,899.86	4,929.11	366.71	0.42	0.67
Sierra Leone	24.06	2,595.81	2,619.88	24.64	2,104.92	2,129.56	490.31	0.35	0.51
Togo	60.84	2,864.08	2,924.91	64.05	2,381.95	2,446.00	478.91	0.36	0.80
Uganda	326.97	18,022.59	18,349.57	339.20	16,305.36	16,644.56	1,705.01	0.44	1.04
Zambia	405.28	6,179.11	6,584.39	467.22	4,988.60	5,455.82	1,128.57	0.38	0.43
Angola	370.15	14,963.65	15,333.79	508.21	3,625.88	4,134.09	11,199.70	0.19	0.10
Botswana	176.10	1,435.08	1,611.18	253.23	313.04	566.27	1,044.91	0.27	0.06
Central African Republic	240.03	3,282.44	3,522.47	242.58	3,350.56	3,593.14	-70.67	0.78	4.26
Chad	83.55	1,421.72	1,505.28	91.76	450.74	542.51	962.77	0.04	0.12
Côte d'Ivoire	314.77	5,520.43	5,835.20	354.98	2,327.69	2,682.67	3,152.53	0.13	0.17
Djibouti	7.97	235.11	243.08	9.27	74.38	83.65	159.43	0.10	0.09
Equatorial Guinea	231.29	2,040.21	2,271.50	348.73	420.26	769.00	1,502.51	0.96	0.08
Gabon	111.23	2,354.94	2,466.17	161.98	514.65	676.63	1,789.54	0.39	0.11
Guinea-Bissau	19.78	198.20	217.98	21.02	65.59	86.61	131.36	0.05	0.14
Haiti	31.67	1,014.95	1,046.62	33.96	465.75	499.71	546.91	0.05	0.08
Kenya	328.10	3,740.01	4,068.11	353.21	2,179.75	2,532.97	1,535.14	0.06	0.16
Lesotho	57.29	120.85	178.14	65.06	34.75	99.80	78.34	0.05	0.03
Sao Tome and Principe	1.11	41.49	42.60	1.25	27.03	28.27	14.33	0.15	0.12
South Africa	5,147.07	27,775.63	32,922.70	7,346.12	6,251.52	13,597.63	19,325.06	0.24	0.04
Sudan	45.52	12,112.82	12,158.34	51.23	6,164.45	6,215.68	5,942.66	0.16	0.16
Swaziland	47.90	116.53	164.43	62.22	34.95	97.18	67.26	0.07	0.03
Tanzania, United Republic of	414.45	4,891.70	5,306.15	429.12	3,566.29	3,995.41	1,310.74	0.08	0.22
Zimbabwe	313.32	880.88	1,194.20	335.42	381.84	717.26	476.95	0.05	0.13
Total	15,614.82	2,220,050.34	2,235,665.16	19,416.61	1,538,300.92	1,557,717.53	677,947.63		

Supplementary 10 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines using effective access to care scenario

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted in GDP per capita (%)	
		2005	2013	2005	2013
Afghanistan	875.44	26.26	22.25	4.24	3.59
Azerbaijan	45.64	161.70	91.63	2.19	1.24
Bangladesh	910.09	76.72	64.83	10.27	8.67
China	1,752.85	284.63	210.20	4.60	3.40
Eritrea	98.98	34.01	26.83	6.74	5.32
Guatemala	132.69	38.85	31.65	1.16	0.94
India	8,522.64	86.23	57.60	5.79	3.87
Indonesia	1,137.93	76.49	60.38	2.15	1.70
Korea, Democratic People's Republic	82.09	102.53	68.46	20.26	13.53
Kyrgyzstan	24.97	96.65	77.33	8.33	6.67
Lao People's Democratic Republic	124.61	26.23	19.65	1.87	1.40
Madagascar	370.93	28.24	23.34	6.31	5.22
Mexico	212.37	375.29	130.80	3.85	1.34
Myanmar	327.07	66.69	57.30	5.83	5.01
Nepal	165.78	77.45	71.47	10.96	10.11
Niger	635.69	16.35	14.07	4.27	3.68
Pakistan	3,212.46	29.15	23.20	2.26	1.80
Papua New Guinea	96.55	41.07	34.90	1.88	1.60
Peru	57.94	194.84	87.38	2.97	1.33
Philippines	595.98	83.20	53.78	3.22	2.08
Senegal	165.98	36.88	28.38	3.57	2.75
Somalia	476.59	11.62	9.15	0.15	0.12
Tajikistan	107.30	39.61	33.90	6.51	5.57
Turkmenistan	46.83	69.12	37.45	1.06	0.58
Uzbekistan	241.88	54.12	42.71	3.15	2.49
Yemen	303.25	52.51	37.02	3.51	2.48
Bolivia (Plurinational State of)	81.97	16.62	5.23	0.65	0.20
Brazil	167.92	149.42	40.43	1.32	0.36
Cambodia	120.25	4.80	1.92	0.51	0.20
Comoros	13.03	17.53	14.72	2.11	1.77
Egypt	227.57	31.60	9.16	0.99	0.29
Iraq	265.05	79.63	40.93	1.23	0.63
Morocco	151.78	44.79	26.27	1.54	0.91
Solomon Islands	4.47	12.68	7.13	0.84	0.47
Viet Nam	214.59	31.85	13.24	2.00	0.83
Benin	191.87	21.38	16.26	2.84	2.16
Burkina Faso	390.63	24.23	18.64	3.82	2.94
Burundi	250.15	20.50	19.45	8.17	7.75
Cameroon	499.15	18.30	12.69	1.59	1.10
Congo	37.44	81.53	38.67	2.59	1.23
Congo,	1,770.31	16.49	13.74	6.06	5.05

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted in GDP per capita (%)	
		2005	2013	2005	2013
Democratic Republic of Ethiopia	1,568.40	27.30	25.13	5.81	5.34
Gambia	29.69	24.46	17.56	4.78	3.43
Ghana	352.92	26.15	19.79	1.63	1.23
Guinea	224.05	24.28	20.08	4.11	3.40
Liberia	64.60	33.72	28.95	8.00	6.87
Malawi	215.99	36.42	34.35	13.59	12.82
Mali	515.92	15.97	12.75	2.30	1.84
Mauritania	80.87	26.43	20.29	2.39	1.83
Mozambique	423.41	36.49	32.68	6.30	5.65
Nigeria	4,499.06	22.41	16.68	1.44	1.07
Rwanda	174.96	30.27	28.17	4.88	4.54
Sierra Leone	184.08	14.23	11.57	2.24	1.82
Togo	117.10	24.98	20.89	0.56	0.46
Uganda	654.10	28.05	25.45	5.13	4.65
Zambia	311.04	21.17	17.54	1.44	1.19
Angola	971.25	15.79	4.20	0.29	0.08
Botswana	9.75	165.25	54.99	2.30	0.76
Central African Republic	113.76	30.97	31.57	6.55	6.68
Chad	516.30	2.92	1.04	0.33	0.12
Côte d'Ivoire	391.80	14.89	6.80	1.20	0.55
Djibouti	11.01	22.08	7.54	2.08	0.71
Equatorial Guinea	14.30	158.86	50.61	0.66	0.21
Gabon	16.33	151.05	40.23	1.32	0.35
Guinea-Bissau	41.79	5.22	2.06	0.97	0.38
Haiti	172.73	6.06	2.89	0.79	0.37
Kenya	817.99	4.97	3.08	0.58	0.36
Lesotho	24.95	7.14	3.86	0.60	0.32
Sao Tome and Principe	2.46	17.34	11.48	1.24	0.82
South Africa	320.65	102.68	39.73	6.50	2.51
Sudan	772.94	15.73	8.04	0.52	0.26
Swaziland	15.91	10.33	5.74	1.18	0.66
Tanzania, United Republic of	634.76	8.36	6.28	1.46	1.09
Zimbabwe	238.01	5.02	2.96	0.64	0.38
Total	39,613.61				
Median	212.37	28.05	22.25		
(IQR)	(82.00-493.51)	(16.80-68.51)	(11.85-39.46)		

IV. New (unpublished) data for proportion of pneumonia signs in HIV+ children

In high HIV prevalence setting (Malawi) the proportion of pneumonia cases with fast breathing only/ chest indrawing/ dangerous signs has been reported 85%, 1.5%, 13.5% (Tim Colbourn, personal communication). These are program data reported by health workers trained in iCCM. We applied this split to the estimated number of HIV-infected children with pneumonia reported in the literature. Split for HIV uninfected children remained as before- i.e. 85%, 13%, 2%. All other assumptions remain the same as the main model.

Supplementary 11 table: Total cost of pneumonia treatment in 2013 using unpublished data on proportion of clinical signs in children with pneumonia in a high HIV burden setting

Total Cost for Pneumonia Treatments in 2013					
(Billions, in US\$ 2013)					
Delivery Levels	2005 Guidelines (OG)		2013 Guidelines(RG)		2013/2005 %
	Total Cost	%Total	Total Cost	%Total	
Community	1.25	42.3%	1.25	70.7%	100.3%
First Level Facility	0.18	6.1%	0.23	12.8%	126.0%
Hospital	1.52	51.6%	0.29	16.5%	19.1%
Total cost	2.95	100%	1.77	100.0%	60.0%

Supplementary 12 table: Total cost of pneumonia treatment by HIV status using unpublished data on proportion of clinical signs in children with pneumonia in high HIV burden settings

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Afghanistan	6.21	34,135.63	34,141.84	5.24	26,589.69	26,594.93	7,546.92	0.87	1.56
Azerbaijan	54.66	9,656.73	9,711.39	53.97	4,907.24	4,961.21	4,750.18	0.53	0.15
Bangladesh	4.29	84,736.32	84,740.60	3.53	63,016.38	63,019.91	21,720.69	0.40	1.52
China	121.39	586,413.86	586,535.25	118.11	386,959.53	387,077.64	199,457.61	0.28	0.10
Eritrea	24.65	4,497.40	4,522.05	22.35	2,910.33	2,932.68	1,589.37	0.46	3.33
Guatemala	23.40	5,851.12	5,874.51	18.78	4,377.21	4,395.99	1,478.52	0.28	0.13
India	2,412.75	1,024,440.35	1,026,853.11	2,256.05	553,627.25	555,883.30	470,969.81	0.44	0.75
Indonesia	176.69	100,469.43	100,646.12	156.11	72,455.25	72,611.36	28,034.76	0.29	0.31
Korea, Democratic People's Republic	0.30	9,792.33	9,792.63	0.28	5,919.03	5,919.31	3,873.32	0.24	0.63
Kyrgyzstan	0.60	2,949.80	2,950.40	0.52	2,068.64	2,069.16	881.24	0.37	0.52
Lao People's Democratic Republic	12.73	4,182.93	4,195.66	11.02	2,662.95	2,673.97	1,521.69	0.39	1.08
Madagascar	75.40	12,884.32	12,959.72	60.71	9,443.03	9,503.74	3,455.98	0.41	2.18
Mexico	64.24	91,613.44	91,677.68	64.51	30,279.36	30,343.87	61,333.81	0.25	0.04
Myanmar	95.27	25,527.24	25,622.51	80.80	19,704.29	19,785.08	5,837.42	0.37	1.65
Nepal	21.35	14,976.83	14,998.18	17.49	12,608.62	12,626.11	2,372.07	0.45	1.38
Niger	108.11	14,302.62	14,410.73	87.78	10,883.19	10,970.97	3,439.76	0.62	3.06
Pakistan	29.93	120,173.52	120,203.45	26.15	85,654.55	85,680.70	34,522.76	0.47	1.58
Papua New Guinea	29.82	5,268.41	5,298.22	26.56	3,725.83	3,752.39	1,545.84	0.51	0.65
Peru	27.81	12,763.31	12,791.12	27.26	5,350.99	5,378.25	7,412.87	0.18	0.06
Philippines	5.13	62,967.52	62,972.64	4.69	35,656.88	35,661.57	27,311.07	0.36	0.38
Senegal	52.05	7,458.85	7,510.90	44.53	5,093.66	5,138.19	2,372.72	0.36	0.54
Somalia	65.29	7,093.02	7,158.31	51.83	5,005.91	5,057.74	2,100.57	0.48	12.48
Tajikistan	7.23	5,479.34	5,486.57	6.23	4,216.14	4,222.36	1,264.21	0.51	0.95

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Turkmenistan	5.80	4,301.07	4,306.87	5.61	1,986.10	1,991.71	2,315.16	0.38	0.29
Uzbekistan	37.41	16,226.31	16,263.72	33.21	11,232.11	11,265.32	4,998.40	0.39	0.44
Yemen	20.33	22,461.41	22,481.74	18.06	13,533.47	13,551.53	8,930.21	0.56	0.63
Bolivia (Plurinational State of)	5.72	1,948.07	1,953.78	5.26	577.56	582.82	1,370.96	0.06	0.05
Brazil	21.54	29,158.90	29,180.44	20.04	7,847.54	7,867.59	21,312.85	0.04	0.004
Cambodia	34.32	2,097.41	2,131.73	29.18	754.28	783.47	1,348.26	0.06	0.11
Comoros	0.30	661.70	662.00	0.27	487.15	487.42	174.58	0.76	1.78
Egypt	1.49	14,799.49	14,800.98	1.39	4,072.57	4,073.96	10,727.03	0.05	0.04
Iraq	412.44	30,063.38	30,475.82	395.50	13,745.27	14,140.77	16,335.05	0.46	0.14
Morocco	8.11	11,156.99	11,165.11	7.71	5,847.48	5,855.20	5,309.91	0.20	0.11
Solomon Islands	1.09	204.44	205.53	0.98	102.53	103.51	102.02	0.21	0.15
Viet Nam	101.84	18,278.60	18,380.45	90.05	6,906.74	6,996.79	11,383.66	0.08	0.09
Benin	62.63	4,878.91	4,941.54	51.77	3,275.94	3,327.71	1,613.83	0.32	0.88
Burkina Faso	185.04	12,763.14	12,948.19	150.42	8,259.09	8,409.51	4,538.67	0.50	1.33
Burundi	101.02	6,156.61	6,257.63	81.89	5,460.68	5,542.57	715.06	0.55	2.33
Cameroon	509.17	10,737.84	11,247.01	438.77	6,466.27	6,905.04	4,341.96	0.31	0.45
Congo	202.51	3,670.67	3,873.18	190.72	1,473.04	1,663.75	2,209.43	0.37	0.43
Congo, Democratic Republic	601.89	34,908.51	35,510.40	467.42	25,889.25	26,356.67	9,153.73	0.39	1.98
Ethiopia	781.87	48,956.23	49,738.10	616.02	40,809.98	41,426.00	8,312.10	0.44	2.65
Gambia	18.20	846.88	865.09	15.04	553.47	568.50	296.58	0.31	1.12
Ghana	168.34	10,671.04	10,839.38	147.01	7,267.84	7,414.86	3,424.52	0.29	0.38
Guinea	136.73	6,646.82	6,783.55	111.40	4,925.69	5,037.09	1,746.46	0.43	1.44
Liberia	24.35	2,465.72	2,490.07	19.42	1,982.63	2,002.05	488.02	0.32	0.59
Malawi	739.44	8,873.99	9,613.44	598.20	7,771.98	8,370.18	1,243.25	0.51	1.65
Mali	147.36	10,637.06	10,784.42	122.55	7,580.94	7,703.49	3,080.93	0.50	1.13
Mauritania	25.29	2,740.12	2,765.41	21.95	1,897.56	1,919.51	845.91	0.49	0.86

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Mozambique	2,291.26	18,813.27	21,104.53	1,944.45	15,639.12	17,583.57	3,520.95	0.68	1.93
Nigeria	5,688.48	123,748.56	129,437.04	5,074.64	83,315.73	88,390.36	41,046.67	0.51	0.64
Rwanda	85.87	6,052.42	6,138.29	70.45	5,203.11	5,273.56	864.73	0.45	0.71
Sierra Leone	57.12	3,140.00	3,197.12	45.47	2,285.72	2,331.20	865.92	0.38	0.56
Togo	145.54	3,433.18	3,578.73	118.65	2,581.48	2,700.13	878.59	0.40	0.88
Uganda	1,104.52	21,666.61	22,771.13	880.49	17,467.48	18,347.97	4,423.15	0.49	1.15
Zambia	965.35	7,479.67	8,445.02	837.37	5,405.86	6,243.24	2,201.78	0.43	0.49
Angola	848.87	23,802.80	24,651.67	823.20	5,767.72	6,590.92	18,060.75	0.28	0.15
Botswana	393.85	2,204.32	2,598.17	393.13	480.84	873.97	1,724.20	0.28	0.06
Central African Republic	593.11	7,368.55	7,961.66	555.61	7,521.47	8,077.08	-115.42	1.74	9.54
Chad	406.55	4,931.14	5,337.69	338.85	1,563.37	1,902.22	3,435.47	0.14	0.40
Côte d'Ivoire	773.93	9,913.63	10,687.56	670.01	4,180.08	4,850.09	5,837.47	0.23	0.29
Djibouti	14.15	297.13	311.28	12.31	94.00	106.31	204.97	0.12	0.11
Equatorial Guinea	755.10	4,541.29	5,296.39	778.27	935.46	1,713.73	3,582.66	1.36	0.11
Gabon	185.37	2,693.01	2,878.37	186.77	588.53	775.30	2,103.07	0.37	0.10
Guinea-Bissau	56.48	404.74	461.21	46.04	133.95	179.99	281.23	0.10	0.27
Haiti	74.67	1,761.58	1,836.25	62.58	808.36	870.94	965.30	0.08	0.14
Kenya	1,397.86	12,138.81	13,536.67	1,205.03	7,074.75	8,279.78	5,256.89	0.18	0.50
Lesotho	237.46	354.51	591.97	201.90	101.93	303.83	288.14	0.11	0.08
Sao Tome and Principe	2.15	62.80	64.96	1.95	40.91	42.86	22.09	0.22	0.19
South Africa	11,428.06	42,460.96	53,889.02	11,361.75	9,556.77	20,918.52	32,970.50	0.23	0.03
Sudan	168.97	33,629.99	33,798.95	148.65	17,114.97	17,263.62	16,535.33	0.45	0.44
Swaziland	239.27	411.29	650.57	225.34	123.37	348.71	301.86	0.17	0.06
Tanzania, United Republic of	1,564.63	14,681.66	16,246.29	1,351.26	10,703.65	12,054.91	4,191.38	0.24	0.65
Zimbabwe	970.42	1,996.04	2,966.46	808.62	865.22	1,673.84	1,292.61	0.11	0.27
Total	38,222.58	2,911,933.58	2,950,156.16	34,927.15	1,743,376.97	1,778,304.12	1,171,852.04		

Supplementary 13 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines using unpublished data on proportion of clinical signs in children with pneumonia in high HIV burden settings

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted in GDP per capita (%)	
		2005	2013	2005	2013
Afghanistan	875.44	39.00	30.38	6.29	4.90
Azerbaijan	45.64	212.77	108.70	2.88	1.47
Bangladesh	910.09	93.11	69.25	12.46	9.27
China	1,752.85	334.62	220.83	5.41	3.57
Eritrea	98.98	45.69	29.63	9.06	5.88
Guatemala	132.69	44.27	33.13	1.32	0.99
India	8,522.64	120.49	65.22	8.09	4.38
Indonesia	1,137.93	88.45	63.81	2.49	1.79
Korea, Democratic People's Republic	82.09	119.29	72.11	23.58	14.25
Kyrgyzstan	24.97	118.16	82.87	10.19	7.15
Lao People's Democratic Republic	124.61	33.67	21.46	2.41	1.53
Madagascar	370.93	34.94	25.62	7.81	5.73
Mexico	212.37	431.68	142.88	4.43	1.47
Myanmar	327.07	78.34	60.49	6.85	5.29
Nepal	165.78	90.47	76.16	12.80	10.78
Niger	635.69	22.67	17.26	5.92	4.51
Pakistan	3,212.46	37.42	26.67	2.90	2.07
Papua New Guinea	96.55	54.88	38.87	2.51	1.78
Peru	57.94	220.77	92.83	3.36	1.41
Philippines	595.98	105.66	59.84	4.08	2.31
Senegal	165.98	45.25	30.96	4.39	3.00
Somalia	476.59	15.02	10.61	0.20	0.14
Tajikistan	107.30	51.13	39.35	8.40	6.46
Turkmenistan	46.83	91.97	42.53	1.41	0.65
Uzbekistan	241.88	67.24	46.57	3.92	2.71
Yemen	303.25	74.13	44.69	4.96	2.99
Bolivia (Plurinational State of)	81.97	23.83	7.50	0.93	0.29
Brazil	167.92	173.77	47.01	1.53	0.41
Cambodia	120.25	17.73	7.07	1.87	0.75
Comoros	13.03	50.81	42.64	6.12	5.13
Egypt	227.57	65.04	18.85	2.04	0.59
Iraq	265.05	114.98	58.93	1.78	0.91
Morocco	151.78	73.56	43.14	2.53	1.49
Solomon Islands	4.47	45.97	25.81	3.03	1.70
Viet Nam	214.59	85.65	35.56	5.37	2.23
Benin	191.87	25.75	17.34	3.43	2.31
Burkina Faso	390.63	33.15	21.53	5.23	3.39
Burundi	250.15	25.02	22.16	9.97	8.83
Cameroon	499.15	22.53	13.83	1.96	1.20
Congo	37.44	103.44	44.43	3.28	1.41
Congo, Democratic	1,770.31	20.06	14.89	7.38	5.47

Country	Total DALY averted (Thousands)	Cost per DALY averted (US\$,2013)		Percentage of cost per DALY averted in GDP per capita (%)	
		2005	2013	2005	2013
Republic					
Ethiopia	1,568.40	31.71	26.41	6.74	5.62
Gambia	29.69	29.13	19.15	5.69	3.74
Ghana	352.92	30.71	21.01	1.91	1.31
Guinea	224.05	30.28	22.48	5.12	3.80
Liberia	64.60	38.55	30.99	9.14	7.35
Malawi	215.99	44.51	38.75	16.60	14.46
Mali	515.92	20.90	14.93	3.01	2.15
Mauritania	80.87	34.19	23.74	3.09	2.15
Mozambique	423.41	49.84	41.53	8.61	7.17
Nigeria	4,499.06	28.77	19.65	1.85	1.26
Rwanda	174.96	35.08	30.14	5.66	4.86
Sierra Leone	184.08	17.37	12.66	2.74	1.99
Togo	117.10	30.56	23.06	0.68	0.51
Uganda	654.10	34.81	28.05	6.36	5.13
Zambia	311.04	27.15	20.07	1.85	1.37
Angola	971.25	25.38	6.18	0.46	0.11
Botswana	9.75	266.48	57.62	3.71	0.80
Central African					
Republic	113.76	69.99	70.77	14.81	14.97
Chad	516.30	10.34	3.50	1.17	0.40
Côte d'Ivoire	391.80	27.28	11.81	2.19	0.95
Djibouti	11.01	28.27	9.21	2.66	0.87
Equatorial					
Guinea	14.30	370.42	72.24	1.54	0.30
Gabon	16.33	176.30	38.15	1.54	0.33
Guinea-Bissau	41.79	11.04	4.07	2.05	0.75
Haiti	172.73	10.63	4.96	1.38	0.64
Kenya	817.99	16.55	9.78	1.91	1.13
Lesotho	24.95	23.73	9.32	1.99	0.78
Sao Tome and					
Principe	2.46	26.43	17.20	1.89	1.23
South Africa	320.65	168.06	37.57	10.64	2.38
Sudan	772.94	43.73	22.27	1.44	0.73
Swaziland	15.91	40.88	13.27	4.69	1.52
Tanzania, United					
Republic of	634.76	25.59	18.70	4.46	3.26
Zimbabwe	238.01	12.46	6.26	1.58	0.79
Total	39,613.61	74.47	44.67		
Median	212.37	39.00	26.67		
(IQR)	(82.00-493.51)	(26.61-87.75)	(17.28-44.62)		

V. High cost less effective scenario

High cost less effective scenario assumptions:

1. CCM Coverage: 100% coverage of rural population in countries with CCM
2. Unit cost of medicine changed based on review by Zhang et al 2015 (in press)
3. Mortality reduction with 2013 guidelines: 36%, 2005 guidelines remain 70%.

All other assumptions are the same as the main model.

Supplementary 14 table: Total cost of pneumonia treatment in a high cost less effective scenario

Delivery Levels	Total Cost for Pneumonia Treatment in 2013				
	(Billions, in US\$ 2013)				
	2005 Guidelines		2013 Guidelines		2013/2005 %
Total Cost	%Total	Total Cost	%Total		
Community	2.52	59.5%	2.51	83.3%	99.4%
First Level Facility	0.15	3.5%	0.17	5.8%	117.2%
Hospital	1.57	37.0%	0.33	10.9%	21.0%
Total cost	4.24	100%	3.01	100.0%	71.0%

Supplementary 15 table: Total cost of pneumonia treatment at national level by HIV status in a high cost less effective scenario

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Afghanistan	4.79	41,353.93	41,358.72	4.98	32,271.29	32,276.27	9,082.44	1.06	1.89
Azerbaijan	39.61	11,549.23	11,588.85	53.66	6,693.26	6,746.92	4,841.93	0.72	0.20
Bangladesh	3.67	141,956.16	141,959.83	3.96	117,337.27	117,341.22	24,618.61	0.75	2.82
China	89.67	925,232.53	925,322.21	122.36	720,361.46	720,483.83	204,838.38	0.52	0.19
Eritrea	19.43	7,012.79	7,032.22	23.88	5,325.57	5,349.45	1,682.77	0.84	6.08
Guatemala	20.64	9,894.60	9,915.24	21.54	8,188.10	8,209.65	1,705.59	0.53	0.25
India	1,853.51	1,466,513.18	1,468,366.70	2,381.22	973,976.43	976,357.66	492,009.04	0.78	1.32
Indonesia	143.61	162,156.09	162,299.70	168.01	131,798.36	131,966.38	30,333.32	0.53	0.56
Korea, Democratic People's Republic	0.23	14,801.09	14,801.32	0.30	10,760.73	10,761.03	4,040.29	0.43	1.15
Kyrgyzstan	0.50	4,783.63	4,784.14	0.57	3,809.90	3,810.47	973.66	0.69	0.96
Lao People's Democratic Republic	10.51	6,499.48	6,509.99	12.11	4,838.86	4,850.96	1,659.03	0.72	1.95
Madagascar	65.36	20,781.75	20,847.11	67.89	16,767.74	16,835.62	4,011.49	0.73	3.87
Mexico	45.88	105,690.21	105,736.10	65.74	43,507.76	43,573.50	62,162.60	0.36	0.06
Myanmar	79.71	43,523.94	43,603.64	89.04	37,059.04	37,148.07	6,455.57	0.70	3.09
Nepal	17.91	26,244.24	26,262.15	18.97	23,515.89	23,534.86	2,727.29	0.85	2.57
Niger	88.48	20,833.71	20,922.19	90.66	16,739.41	16,830.06	4,092.12	0.94	4.69
Pakistan	23.92	174,406.13	174,430.05	26.98	136,168.76	136,195.73	38,234.32	0.75	2.52
Papua New Guinea	23.51	8,413.58	8,437.08	28.05	6,752.68	6,780.73	1,656.35	0.93	1.17
Peru	20.40	16,362.31	16,382.71	28.18	8,773.92	8,802.10	7,580.61	0.29	0.10
Philippines	4.03	88,615.51	88,619.54	4.96	59,653.38	59,658.34	28,961.20	0.61	0.63
Senegal	43.30	11,593.75	11,637.05	48.54	8,972.44	9,020.97	2,616.08	0.64	0.95
Somalia	56.99	10,422.14	10,479.13	57.33	7,903.28	7,960.61	2,518.52	0.76	19.65
Tajikistan	5.71	8,204.51	8,210.22	6.29	6,779.03	6,785.32	1,424.90	0.83	1.53
Turkmenistan	4.31	5,680.81	5,685.12	5.81	3,296.20	3,302.01	2,383.11	0.63	0.49

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Uzbekistan	29.98	25,395.01	25,424.99	35.34	19,996.99	20,032.33	5,392.65	0.69	0.78
Yemen	16.06	30,290.64	30,306.70	18.77	20,594.14	20,612.91	9,693.79	0.84	0.96
Bolivia (Plurinational State of)	4.59	2,063.32	2,067.90	5.64	615.55	621.19	1,446.71	0.06	0.05
Brazil	16.95	30,751.76	30,768.72	21.35	8,372.61	8,393.97	22,374.75	0.04	0.004
Cambodia	29.91	2,325.99	2,355.90	32.75	829.63	862.38	1,493.52	0.06	0.12
Comoros	0.28	695.00	695.27	0.29	498.13	498.42	196.86	0.77	1.81
Egypt	1.18	15,579.34	15,580.52	1.48	4,329.63	4,331.11	11,249.40	0.06	0.04
Iraq	334.43	31,006.42	31,340.85	412.44	14,056.13	14,468.57	16,872.28	0.47	0.14
Morocco	6.77	11,527.88	11,534.65	8.07	5,969.74	5,977.81	5,556.84	0.20	0.11
Solomon Islands	0.94	217.12	218.06	1.06	106.71	107.77	110.29	0.21	0.16
Viet Nam	86.43	19,745.62	19,832.05	98.67	7,390.32	7,488.99	12,343.06	0.09	0.09
Benin	53.98	7,896.64	7,950.62	58.70	6,091.59	6,150.29	1,800.33	0.60	1.62
Burkina Faso	158.95	19,296.58	19,455.54	167.71	14,107.88	14,275.59	5,179.95	0.84	2.27
Burundi	79.42	10,241.17	10,320.58	80.17	9,384.00	9,464.17	856.42	0.93	3.99
Cameroon	424.31	16,442.50	16,866.81	486.61	11,768.36	12,254.97	4,611.84	0.55	0.81
Congo	155.34	4,570.15	4,725.49	200.84	2,278.13	2,478.97	2,246.52	0.56	0.64
Congo, Democratic Republic	539.44	58,209.59	58,749.03	540.63	47,401.89	47,942.52	10,806.51	0.71	3.60
Ethiopia	692.27	88,359.51	89,051.78	710.79	78,813.55	79,524.34	9,527.45	0.85	5.09
Gambia	15.75	1,270.27	1,286.02	16.80	935.08	951.88	334.14	0.51	1.88
Ghana	138.53	17,060.18	17,198.70	160.85	13,358.45	13,519.30	3,679.40	0.52	0.70
Guinea	116.96	10,434.55	10,551.51	122.03	8,428.03	8,550.06	2,001.45	0.73	2.45
Liberia	21.45	4,081.57	4,103.02	21.67	3,501.68	3,523.35	579.67	0.57	1.03
Malawi	608.95	15,428.66	16,037.61	624.58	14,114.16	14,738.74	1,298.87	0.90	2.91
Mali	122.94	15,410.62	15,533.56	130.26	11,877.86	12,008.11	3,525.45	0.78	1.76
Mauritania	20.47	3,798.48	3,818.95	22.76	2,857.39	2,880.15	938.80	0.74	1.28
Mozambique	1,795.55	25,845.05	27,640.59	1,869.72	22,021.97	23,891.69	3,748.91	0.92	2.63

Country	2005 Guidelines (Thousands)			2013 Guidelines(Thousands)			Total Cost Savings (Thousands)	2013 Guidelines	
	HIV+	HIV-	Total	HIV+	HIV-	Total		Total cost per capita	Proportion of national healthcare expenditure per capita
Nigeria	4,545.67	163,610.14	168,155.80	5,200.30	119,295.14	124,495.44	43,660.37	0.72	0.90
Rwanda	71.63	10,673.84	10,745.47	75.64	9,691.49	9,767.13	978.34	0.83	1.32
Sierra Leone	50.23	5,062.17	5,112.40	51.46	4,055.25	4,106.71	1,005.69	0.67	0.98
Togo	125.19	5,566.03	5,691.22	131.40	4,579.61	4,711.01	980.21	0.69	1.54
Uganda	950.05	37,474.71	38,424.76	972.01	32,586.46	33,558.48	4,866.29	0.89	2.11
Zambia	786.80	11,860.99	12,647.79	891.27	9,584.90	10,476.17	2,171.62	0.72	0.83
Angola	635.97	24,583.14	25,219.12	856.57	6,024.95	6,881.52	18,337.60	0.32	0.17
Botswana	283.79	2,246.15	2,529.95	402.54	494.63	897.17	1,632.77	0.42	0.10
Central African Republic	574.13	7,560.54	8,134.67	580.58	7,584.76	8,165.34	-30.66	1.77	9.67
Chad	355.45	5,570.50	5,925.95	385.29	1,774.13	2,159.42	3,766.53	0.17	0.48
Côte d'Ivoire	669.09	10,846.73	11,515.81	743.44	4,487.67	5,231.11	6,284.71	0.26	0.32
Djibouti	11.96	325.79	337.75	13.64	103.45	117.09	220.66	0.13	0.13
Equatorial Guinea	521.30	4,561.92	5,083.22	782.84	942.26	1,725.10	3,358.11	2.15	0.17
Gabon	132.09	2,732.22	2,864.31	190.23	601.46	791.69	2,072.62	0.46	0.13
Guinea-Bissau	50.33	464.76	515.09	53.06	153.73	206.79	308.29	0.12	0.32
Haiti	66.57	1,965.85	2,032.42	70.79	875.70	946.49	1,085.94	0.09	0.16
Kenya	1,251.93	13,210.48	14,462.41	1,337.33	7,428.01	8,765.34	5,697.07	0.20	0.54
Lesotho	203.37	395.33	598.70	226.89	115.39	342.27	256.43	0.16	0.11
Sao Tome and Principe	1.89	66.22	68.12	2.10	42.04	44.14	23.98	0.23	0.19
South Africa	8,288.46	43,342.47	51,630.93	11,658.89	9,847.35	21,506.24	30,124.69	0.38	0.06
Sudan	146.87	36,283.41	36,430.28	163.14	17,989.64	18,152.78	18,277.51	0.48	0.46
Swaziland	187.34	430.54	617.88	238.27	129.71	367.98	249.90	0.28	0.11
Tanzania, United Republic of	1,445.94	15,843.48	17,289.42	1,494.17	11,086.63	12,580.80	4,708.63	0.25	0.68
Zimbabwe	864.96	2,239.95	3,104.91	918.25	945.63	1,863.88	1,241.04	0.13	0.34
Total	30,358.51	4,207,386.31	4,237,744.82	36,621.06	2,971,370.34	3,007,991.41	1,229,753.42		

Supplementary 16 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines in a high cost less effective scenario

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$,2013)	Cost effectiveness comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of cost per DALY saved in GDP per capita (%)
Afghanistan	457.30	875.44	70.58	21.72	3.51
Azerbaijan	23.97	45.64	281.51	223.39	3.02
Bangladesh	483.36	910.09	242.76	57.69	7.72
China	930.73	1,752.85	774.11	249.16	4.03
Eritrea	51.49	98.98	103.89	35.43	7.03
Guatemala	69.42	132.69	118.26	26.96	0.80
India	4,488.62	8,522.64	217.52	121.97	8.19
Indonesia	599.09	1,137.93	220.28	56.29	1.58
Korea, Democratic People's Republic	43.07	82.09	249.83	103.55	20.46
Kyrgyzstan	13.25	24.97	287.54	83.10	7.17
Lao People's Democratic Republic	64.96	124.61	74.67	27.82	1.99
Madagascar	193.75	370.93	86.90	22.64	5.06
Mexico	113.72	212.37	383.18	630.09	6.46
Myanmar	171.85	327.07	216.17	41.59	3.64
Nepal	86.92	165.78	270.76	34.58	4.89
Niger	330.60	635.69	50.91	13.41	3.50
Pakistan	1,670.98	3,212.46	81.51	24.80	1.92
Papua New Guinea	50.26	96.55	134.92	35.78	1.64
Peru	30.70	57.94	286.72	278.30	4.24
Philippines	314.84	595.98	189.49	103.01	3.98
Senegal	86.87	165.98	103.84	33.07	3.21
Somalia	247.51	476.59	32.16	10.99	0.15
Tajikistan	55.89	107.30	121.40	27.72	4.55
Turkmenistan	24.38	46.83	135.45	106.13	1.63
Uzbekistan	126.38	241.88	158.51	46.69	2.72
Yemen	159.17	303.25	129.50	67.28	4.50
Bolivia (Plurinational State of)	42.56	81.97	15.34	35.90	1.39
Brazil	91.80	167.92	91.73	293.56	2.59
Cambodia	62.68	120.25	14.82	24.79	2.62
Comoros	6.80	13.03	83.27	20.67	2.49
Egypt	119.66	227.57	37.99	102.26	3.21
Iraq	139.24	265.05	114.52	122.37	1.90
Morocco	79.31	151.78	84.10	67.12	2.31
Solomon Islands	2.34	4.47	51.09	46.23	3.05

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$,2013)	Cost effectiveness comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of cost per DALY saved in GDP per capita (%)
Viet Nam	115.43	214.59	70.37	118.08	7.40
Benin	99.76	191.87	61.65	19.54	2.60
Burkina Faso	204.23	390.63	69.90	27.79	4.38
Burundi	129.84	250.15	72.89	7.12	2.84
Cameroon	259.10	499.15	47.30	19.21	1.67
Congo	19.80	37.44	125.20	127.33	4.04
Congo, Democratic Republic	204.74	1,770.31	234.16	6.90	2.54
Ethiopia	815.04	1,568.40	97.57	12.65	2.69
Gambia	15.50	29.69	61.40	23.55	4.60
Ghana	183.04	352.92	73.86	21.66	1.35
Guinea	116.81	224.05	73.20	18.66	3.16
Liberia	33.70	64.60	104.55	18.76	4.45
Malawi	112.32	215.99	131.22	12.53	4.67
Mali	267.58	515.92	44.88	14.20	2.05
Mauritania	42.13	80.87	68.36	24.23	2.19
Mozambique	221.78	423.41	107.73	18.59	3.21
Nigeria	2,335.38	4,499.06	53.31	20.18	1.30
Rwanda	90.65	174.96	107.74	11.60	1.87
Sierra Leone	95.41	184.08	43.04	11.34	1.79
Togo	60.93	117.10	77.32	17.45	0.39
Uganda	339.83	654.10	98.75	15.48	2.83
Zambia	161.14	311.04	65.01	14.49	0.99
Angola	502.54	971.25	13.52	39.31	0.72
Botswana	5.18	9.75	164.42	367.03	5.10
Central African Republic	59.19	113.76	137.89	-0.49	-0.10
Chad	268.10	516.30	8.00	15.23	1.72
Côte d'Ivoire	204.74	391.80	25.39	33.77	2.72
Djibouti	5.75	11.01	20.22	42.12	3.97
Equatorial Guinea	7.43	14.30	218.58	503.68	2.10
Gabon	8.57	16.33	89.78	269.99	2.36
Guinea-Bissau	21.72	41.79	9.45	15.43	2.86
Haiti	89.54	172.73	10.55	13.08	1.70
Kenya	424.58	817.99	20.55	14.59	1.69
Lesotho	13.00	24.95	25.52	22.34	1.87
Sao Tome and Principe	1.28	2.46	34.45	20.42	1.46
South Africa	168.74	320.65	119.66	206.96	13.10
Sudan	405.41	772.94	44.76	49.75	1.63
Swaziland	8.28	15.91	42.00	35.38	4.06
Tanzania, United Republic of	333.09	634.76	37.69	15.70	2.73
Zimbabwe	123.57	238.01	14.86	11.08	1.41
Total	20,722.69	204.50	145.23	59.27	
Median	112.32 (42.69	56.20 (34.69 –	83.27 (45.48 –	26.96	

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$,2013)	Cost effectiveness comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of cost per DALY saved in GDP per capita (%)
(IQR)	-256.20)	120.61)	133.99)	(16.14-67.24)	

VI. Less effective scenario

Less effective scenario assumptions:

1. Mortality reduction with 2005 and 2013 guidelines: 36%

All other assumptions are the same as the main model.

Supplementary 17 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines in a less effective scenario

Country	Total DALY averted (Thousands)	Cost per DALY averted (Thousands)		Percentage of cost per DALY saved in GDP per capita (%)	
		2005	2013	2005	2013
Afghanistan	457.30	74.66	58.16	12.05	9.39
Azerbaijan	23.97	404.56	206.97	5.47	2.80
Bangladesh	483.36	175.31	130.38	23.46	17.45
China	930.73	630.15	415.88	10.18	6.72
Eritrea	51.49	87.68	56.94	17.39	11.29
Guatemala	69.42	84.52	63.30	2.52	1.89
India	4,488.62	228.60	123.83	15.35	8.31
Indonesia	599.09	167.91	121.19	4.72	3.41
Korea, Democratic People's Republic	43.07	227.35	137.43	44.93	27.16
Kyrgyzstan	13.25	222.63	156.14	19.20	13.46
Lao People's Democratic Republic	64.96	64.52	41.15	4.61	2.94
Madagascar	193.75	66.78	49.03	14.93	10.96
Mexico	113.72	806.02	266.83	8.27	2.74
Myanmar	171.85	148.94	115.10	13.02	10.06
Nepal	86.92	172.48	145.25	24.41	20.55
Niger	330.60	43.51	33.17	11.36	8.66
Pakistan	1,670.98	71.93	51.27	5.57	3.97
Papua New Guinea	50.26	105.24	74.64	4.82	3.42
Peru	30.70	416.38	175.18	6.34	2.67
Philippines	314.84	200.01	113.27	7.73	4.38

Country	Total DALY averted (Thousands)	Cost per DALY averted (Thousands)		Percentage of cost per DALY saved in GDP per capita (%)	
		2005	2013	2005	2013
Senegal	86.87	86.29	59.12	8.36	5.73
Somalia	247.51	28.85	20.42	0.38	0.27
Tajikistan	55.89	98.13	75.54	16.12	12.41
Turkmenistan	24.38	176.60	81.70	2.71	1.25
Uzbekistan	126.38	128.61	89.13	7.49	5.19
Yemen	159.17	141.21	85.13	9.45	5.70
Bolivia (Plurinational State of)	42.56	45.87	14.44	1.78	0.56
Brazil	91.80	317.81	85.99	2.80	0.76
Cambodia	62.68	33.86	13.53	3.58	1.43
Comoros	6.80	97.28	81.65	11.71	9.83
Egypt	119.66	123.68	35.84	3.88	1.12
Iraq	139.24	218.14	112.12	3.38	1.74
Morocco	79.31	140.76	82.55	4.85	2.84
Solomon Islands	2.34	87.64	49.25	5.77	3.24
Viet Nam	115.43	159.00	66.08	9.96	4.14
Benin	99.76	49.35	33.32	6.56	4.43
Burkina Faso	204.23	63.14	41.13	9.95	6.48
Burundi	129.84	48.00	42.65	19.13	16.99
Cameroon	259.10	42.82	26.56	3.72	2.31
Congo Congo, Democratic Republic	19.80	192.49	83.78	6.10	2.66
Ethiopia	204.74	172.60	128.54	63.46	47.26
Gambia	815.04	60.74	50.77	12.92	10.80
Ghana	15.50	55.47	36.61	10.83	7.15
Guinea	183.04	58.94	40.47	3.67	2.52
Liberia	116.81	57.75	43.06	9.77	7.29
Malawi	33.70	73.70	59.37	17.48	14.08
Mali	112.32	83.85	74.15	31.28	27.66
Mauritania	267.58	40.16	28.76	5.79	4.14
Mozambique	42.13	65.48	45.53	5.92	4.12
Nigeria	221.78	92.83	78.82	16.04	13.62
Rwanda	2,335.38	54.80	37.76	3.52	2.43
Sierra Leone	90.65	67.45	58.12	10.88	9.38
Togo	95.41	33.34	24.40	5.25	3.84
Uganda	60.93	58.07	44.19	1.29	0.98
Zambia	339.83	66.08	53.80	12.08	9.84
Angola	161.14	50.70	38.50	3.45	2.62
Botswana	502.54	48.54	12.91	0.88	0.24
Central African Republic	5.18	478.19	159.13	6.65	2.21
Chad	59.19	133.60	136.21	28.26	28.82
Côte d'Ivoire	268.10	19.47	6.97	2.20	0.79
Djibouti	204.74	51.18	23.37	4.11	1.88
Equatorial Guinea	5.75	53.39	18.25	5.03	1.72
Gabon	7.43	680.42	216.78	2.83	0.90
Guinea-Bissau	8.57	329.20	87.69	2.88	0.77
Haiti	21.72	20.49	8.07	3.80	1.50
	89.54	20.29	9.66	2.63	1.25

Country	Total DALY averted (Thousands)	Cost per DALY averted (Thousands)		Percentage of cost per DALY saved in GDP per capita (%)	
		2005	2013	2005	2013
Kenya	424.58	31.10	19.27	3.60	2.23
Lesotho	13.00	40.20	21.71	3.37	1.82
Sao Tome and Principe	1.28	50.44	33.41	3.60	2.38
South Africa	168.74	298.27	115.40	18.88	7.30
Sudan	405.41	83.26	42.55	2.74	1.40
Swaziland	8.28	70.13	38.98	8.04	4.47
Tanzania, United Republic of	333.09	47.81	35.92	8.33	6.26
Zimbabwe	123.57	21.90	12.93	2.78	1.64
Total	20,722.69	141.85	85.83	12.05	9.39
Median (IQR)	112.32 (42.69-256.20)	74.66(50.51-171.34)	53.80 (35.86-88.77)		

VII. Not cost-effective scenario

High cost less effective scenario assumptions:

- CCM Coverage: 100% coverage of rural population in countries with CCM
- Unit cost of medicine changed based on review by Zhang et al 2015 (in press)
- Mortality reduction with 2013 guidelines: 9%, 2005 guidelines remain 70%.

All other assumptions are the same as the main model.

Supplementary 18 table: Total DALYs averted and cost-effectiveness of implementing 2013 guidelines in not cost-effective scenario

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$, 2013)	Percentage of cost per DALY saved in 2013 in GDP per capita (%)	Cost effectiveness ratio comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of Cost-effectiveness ratio comparing 2005 and 2013 in GDP per capita (%)
Afghanistan	125.25	875.44	257.70	41.59	12.11	1.95
Azerbaijan	6.75	45.64	998.83	13.51	124.51	1.68
Bangladesh	144.49	910.09	812.11	108.67	32.16	4.30
China	277.87	1,752.85	2592.86	41.90	138.88	2.24
Eritrea	13.78	98.98	388.33	77.00	19.75	3.92
Guatemala	19.18	132.69	428.07	12.77	15.03	0.45
India	1,285.13	8,522.64	759.73	51.01	67.98	4.56
Indonesia	171.19	1,137.93	770.89	21.67	31.38	0.88
Korea, Democratic People's	12.09	82.09	890.20	175.93	57.72	11.41

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$, 2013)	Percentage of cost per DALY saved in 2013 in GDP per capita (%)	Cost effectiveness ratio comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of Cost-effectiveness ratio comparing 2005 and 2013 in GDP per capita (%)
Republic Kyrgyzstan	3.95	24.97	965.38	83.25	46.32	3.99
Lao People's Democratic Republic	17.60	124.61	275.58	19.70	15.50	1.11
Madagascar	53.04	370.93	317.41	70.94	12.62	2.82
Mexico	35.37	212.37	1231.86	12.64	351.20	3.60
Myanmar	48.59	327.07	764.58	66.83	23.18	2.03
Nepal	24.30	165.78	968.61	137.07	19.28	2.73
Niger	88.31	635.69	190.57	49.78	7.48	1.95
Pakistan	446.87	3,212.46	304.78	23.62	13.83	1.07
Papua New Guinea	13.50	96.55	502.19	22.99	19.95	0.91
Peru	9.07	57.94	970.67	14.78	155.12	2.36
Philippines	91.58	595.98	651.44	25.18	57.42	2.22
Senegal	24.05	165.98	375.09	36.36	18.43	1.79
Somalia	65.60	476.59	121.36	1.62	6.13	0.08
Tajikistan	15.07	107.30	450.21	73.94	15.45	2.54
Turkmenistan	6.55	46.83	504.43	7.75	59.16	0.91
Uzbekistan	34.65	241.88	578.05	33.68	26.02	1.52
Yemen	44.75	303.25	460.59	30.82	37.50	2.51
Bolivia (Plurinational State of)	11.26	81.97	57.99	2.25	20.01	0.78
Brazil	31.34	167.92	268.66	2.37	163.63	1.44
Cambodia	16.96	120.25	54.75	5.79	13.82	1.46
Comoros	1.86	13.03	304.42	36.65	11.52	1.39
Egypt	33.98	227.57	133.79	4.20	57.00	1.79
Iraq	39.33	265.05	405.45	6.28	68.20	1.06
Morocco	21.75	151.78	306.63	10.57	37.41	1.29
Solomon Islands	0.65	4.47	183.48	12.09	25.77	1.70
Viet Nam	36.68	214.59	221.43	13.88	65.82	4.12
Benin	26.61	191.87	231.12	30.74	10.89	1.45
Burkina Faso	56.20	390.63	254.01	40.04	15.49	2.44
Burundi	34.29	250.15	275.97	109.96	3.97	1.58
Cameroon	68.47	499.15	178.99	15.55	10.71	0.93
Congo, Democratic Republic	56.20	1,770.31	853.09	313.67	6.30	2.32
Ethiopia	216.79	1,568.40	366.83	78.01	7.05	1.50
Gambia	4.23	29.69	224.89	43.92	13.12	2.56
Ghana	48.14	352.92	280.84	17.50	12.07	0.75
Guinea	31.65	224.05	270.16	45.71	10.40	1.76
Liberia	9.16	64.60	384.51	91.18	10.46	2.48
Malawi	30.00	215.99	491.33	183.29	6.98	2.61

Country	Total DALY averted in 2013 guidelines (Thousands)	Total DALY averted in 2005 guidelines (Thousands)	Cost per DALY averted in 2013 guidelines (US\$, 2013)	Percentage of cost per DALY saved in 2013 in GDP per capita (%)	Cost effectiveness ratio comparing 2005 and 2013 guidelines (Cost per DALY saved, US\$, 2013)	Percentage of Cost-effectiveness ratio comparing 2005 and 2013 in GDP per capita (%)
Mali	70.36	515.92	170.66	24.59	7.91	1.14
Mauritania	11.37	80.87	253.28	22.90	13.51	1.22
Mozambique	61.65	423.41	387.51	66.95	10.36	1.79
Nigeria	617.17	4,499.06	201.72	12.97	11.25	0.72
Rwanda	23.70	174.96	412.09	66.47	6.47	1.04
Sierra Leone	24.99	184.08	164.31	25.88	6.32	1.00
Togo	16.31	117.10	288.78	6.43	9.73	0.22
Uganda	90.26	654.10	371.78	67.97	8.63	1.58
Zambia	42.10	311.04	248.82	16.94	8.07	0.55
Angola	130.32	971.25	52.14	0.95	21.91	0.40
Botswana	1.54	9.75	551.60	7.67	204.58	2.84
Central African Republic	15.86	113.76	514.68	108.89	-0.27	-0.06
Chad	70.99	516.30	30.22	3.41	8.49	0.96
Côte d'Ivoire	56.20	391.80	92.49	7.44	18.83	1.51
Djibouti	1.58	11.01	73.65	6.94	23.47	2.21
Equatorial Guinea	1.98	14.30	821.44	3.42	280.74	1.17
Gabon	2.40	16.33	319.89	2.80	150.49	1.32
Guinea-Bissau	5.78	41.79	35.50	6.58	8.60	1.59
Haiti	23.48	172.73	40.21	5.22	7.29	0.95
Kenya	112.17	817.99	77.78	8.99	8.13	0.94
Lesotho	3.51	24.95	94.57	7.93	12.45	1.04
Sao Tome and Principe	0.34	2.46	128.59	9.17	11.38	0.81
South Africa	48.10	320.65	419.76	26.57	115.35	7.30
Sudan	113.54	772.94	159.81	5.25	27.73	0.91
Swaziland	2.21	15.91	157.30	18.03	19.72	2.26
Tanzania, United Republic of	93.54	634.76	134.21	23.38	8.75	1.52
Zimbabwe	32.69	238.01	56.18	7.13	6.18	0.78
Total	11,431.00	204.50	263.27	41.59	107.45	
Median (IQR)	31.34 (11.55 -64.61)	56.20 (34.69 - 120.61)	304.42 (172.74 - 499.48)		15.45(9.88-37.48)	

Supplementary 19 table: Years of Life Saved and deaths averted in each country by implementing 2013 guidelines

Country	Number of deaths averted	Years of Life Saved (Years)
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Country	Number of deaths averted	Years of Life Saved (Years)
Afghanistan	14,065.1	860,870.2
Angola	18,503.8	965,004.0
Azerbaijan	629.3	44,624.6
Bangladesh	12,378.8	878,558.1
Benin	3,179.4	189,644.0
Bolivia	1,201.2	81,147.9
Botswana	197.4	9,418.2
Brazil	2,111.2	156,735.0
Burkina Faso	6,786.5	383,766.7
Burundi	4,552.8	247,700.2
Cambodia	1,647.8	118,524.1
Cameroon	8,929.9	494,226.7
Central African Republic	2,228.8	112,342.2
Chad	9,933.0	511,019.4
China	22,367.8	1,692,596.7
Comoros	209.3	12,815.8
Congo	614.6	36,324.7
Dem. Rep. of the Congo	34,817.3	1,752,467.8
Côte d'Ivoire	7,546.0	385,116.8
Djibouti	174.3	10,822.6
Egypt	3,106.6	222,153.1
Equatorial Guinea	264.6	14,138.9
Eritrea	1,552.6	97,777.8
Ethiopia	24,313.8	1,551,032.8
Gabon	250.6	15,976.7
Gambia	493.5	29,218.0
Ghana	5,693.1	349,750.9
Guatemala	1,800.4	130,257.2
Guinea	3,915.8	220,789.8
Guinea-Bissau	756.0	41,323.6
Haiti	2,701.3	171,264.2
India	124,437.6	8,305,330.8
Indonesia	15,588.3	1,109,376.8
Iraq	3,703.7	259,019.7
Kenya	13,056.4	809,952.7
Dem. Peoples's Rep. of Korea	1,144.5	80,329.8
Kyrgyzstan	354.9	24,123.3
Lao People's Dem. Republic	1,792.7	122,790.4
Lesotho	493.5	24,607.4
Liberia	1,047.9	63,612.2
Madagascar	5,614.7	364,793.5
Malawi	3,845.8	213,434.1
Mali	9,250.5	511,294.9
Mauritania	1,288.0	79,755.0
Mexico	2,613.8	203,115.4
Morocco	2,094.4	149,216.4
Mozambique	8,202.6	415,132.1
Myanmar	4,878.3	319,571.7
Nepal	2,364.6	162,357.7
Niger	10,710.7	628,135.7
Nigeria	84,436.1	4,454,629.1
Pakistan	47,395.6	3,173,625.6
Papua New Guinea	1,518.3	95,295.4
Peru	746.2	56,080.2

Country	Number of deaths averted	Years of Life Saved (Years)
Philippines	8,374.8	578,819.4
Rwanda	2,709.7	173,580.6
Sao Tome and Principe	36.4	2,426.6
Senegal	2,557.8	162,869.1
Sierra Leone	3,985.1	182,558.4
Solomon Islands	64.4	4,381.7
Somalia	8,519.7	471,631.5
South Africa	5,445.3	312,757.2
Sudan	12,126.1	756,689.6
Swaziland	317.1	15,726.3
Tajikistan	1,562.4	105,836.0
United Republic of Tanzania	10,047.8	621,073.3
Togo	2,034.2	115,661.8
Turkmenistan	701.4	46,228.9
Uganda	10,874.5	647,026.4
Uzbekistan	3,462.9	237,798.7
Viet Nam	2,684.5	204,153.3
Yemen	4,673.2	296,641.3
Zambia	5,306.7	308,620.2
Zimbabwe	3,911.6	235,614.4
Total	632,897.3	38,893,083.7

Supplementary Box 1 Key changes in the classification of pneumonia and recommended treatment in the 2005 guideline and 2013 guideline

2005 Guidelines				2013 Guidelines		
Patient Group	Classification of Pneumonia	Major Symptoms	Recommended Treatment	Classification of Pneumonia	Major Symptoms	Recommended Treatment
HIV-	Pneumonia	Fast breathing	5 days treatment at community or first level health facility with co-trimoxazole (non-dispersible tablet at recommended dose)	Pneumonia	Fast breathing	5 days treatment at community or first level health facility with oral amoxicillin (dispersible tablet at recommended dose)
	Severe pneumonia	Chest indrawing	Admit to hospital		Chest indrawing	5 days treatment at first level health facility
	Very severe pneumonia	Danger signs	Admit to hospital	Severe pneumonia	Danger signs	Admit to hospital
HIV+	Pneumonia	Fast breathing	5 days treatment at community or first level health facility with co-trimoxazole (non-dispersible	Pneumonia	Fast breathing	5 days treatment at community or first level health facility with oral amoxicillin (dispersible

		tablet at recommended dose)			tablet at recommended dose)
Severe pneumonia	Chest indrawing	Admit to hospital		Chest indrawing	Admit to hospital
Very severe pneumonia	Danger signs	Admit to hospital	Severe pneumonia	Danger signs	Admit to hospital

Supplementary Box 2 Description of scenarios

Scenarios	New Assumptions
Baseline scenario	<ol style="list-style-type: none"> 1. Universal coverage: 100% patients get treatment at community, fist level facility or hospital. 2. CCM Coverage: 50% rural population would be treated by CHWs and the remaining 50% would be treated at a health facility. [15,29] 3. The proportion of pneumonia signs (i.e. fast breathing, lower chest wall indrawing and danger signs) are the same in HIV-infected and uninfected children with pneumonia – 85% of children with pneumonia have fast breathing, 13% have chest wall indrawing and about 2% have danger signs – based on the results of studies carried out at the community level. [15,22,23] 4. The number of CHWs needed per country: one CHW per 1000 rural population.[29] 5. Deaths averted by pneumonia treatment were calculated based on the reported estimates of 70% child mortality reduction from universal coverage of community management of childhood pneumonia [34] 6. Unit cost of medicine : We used median supplier prices from Management Sciences for Health (MSH) International Price Indicator (2012)[30], UNICEF supply division data, and UNICEF report for cost of medicines[31] for the list of drugs based on the WHO guidelines
High cost scenario	<ol style="list-style-type: none"> 1. CCM Coverage: 100% coverage of rural population in countries with CCM 2. Unit cost of medicine changed based on review by Zhang et al 2016 [19]
Low cost scenario	<ol style="list-style-type: none"> 1. CCM Coverage: coverage reduced to 50% coverage of rural population in countries with CCM, remaining 50% were treated at health centre. 2. One Community Health Worker per 5000 rural population
Effective access scenario	<p>Based on data from published studies[39] (Guenther et al. 2012) reporting effective access to care (product of geographic access, staff availability and medicine availability)</p> <ol style="list-style-type: none"> 1. In countries without CCM in place, effective access rate for rural population is 9%, the remaining 91% of rural population will not have access to care 2. In countries with CCM in place, effective access rate for rural population is 30% in a typical setting, the remaining 70% of rural population will not have access to care

<p>New (unpublished) data for proportion of pneumonia signs in HIV+ children</p>	<p>In high HIV prevalence setting (Malawi) the proportion of pneumonia cases with fast breathing only/ chest indrawing/ dangerous signs has been reported 85%, 1.5%, 13.5% (Tim Colbourn, personal communication). These are program data reported by health workers trained in iCCM. We applied this split to the estimated number of HIV-infected children with pneumonia reported in the literature. Split for HIV uninfected children remained as before- i.e. 85%, 13%, 2%.</p>
<p>High cost less effective scenario</p>	<ol style="list-style-type: none"> 1. CCM Coverage: 100% coverage of rural population in countries with CCM 2. Unit cost of medicine changed based on review by Zhang et al 2016 [19] 3. Mortality reduction with 2013 guideline: 36% (Theodoratou et al, 2010)[34], 2005 guideline remains 70%.