Figure 1A: **Detailed decision tree depicting the two treatment options (standard of care and standard of care plus bCPAP) for severe pediatric pneumonia in Malawi**

Decision Tree						DALYs				Costs									
Population	Treatment Course of Action	Survival	Sequelae	Path Probability	# in path	Per episode	Per outcome	Total per person	Total given # in path	Number of days receiving bCPAP	Cost for bCPAP per day	One time costs per person for bCPAP	Total cost of bCPAP per person	Number of hospital days	Cost per hospital day	One time hospital costs	Hospital costs per person	Cost of long-term sequelae	Total costs given # in path
		Die																	
		0.24		0.24	24.00	0	28.88	28.88	693.12	0	$0.00	$0.00	$0.00	1	$4.48	$5.10	$9.58	$0.00	$229.92
			Long-term Sequelae																
	Standard of Care		0.136	0.103	10.34	0.28	2.86	3.13	32.40	0	$0.00	$0.00	$0.00	4	$4.48	$5.10	$23.02	$656.43	$7,022.80
		Survive																	
Children with		0.76	No Long-term Sequelae																
severe pneumonia			0.864	0.657	65.66	0.28	0	0.28	18.12	0	$0.00	$0.00	$0.00	4	$4.48	$5.10	$23.02	$0.00	$1,511.59
n=100				**1.00**	**100.00**				**743.64**										**$8,764**
		Die																	
		0.063		0.063	6.30	0	28.88	28.88	181.94	2	$15.41	$10.57	$41.39	2	$4.48	$5.10	$14.06	$0.00	$349.34
	Combined bCPAP																		
			Long-term Sequelae																
			0.136	0.127	12.74	0.28	2.86	3.13	39.95	2	$15.41	$10.57	$41.39	5	$4.48	$5.10	$27.50	$656.43	$9,242.90
		Survive																	
		0.937	No Long-term Sequelae																
			0.864	0.810	80.96	0.28	0	0.28	22.34	2	$15.41	$10.57	$41.39	5	$4.48	$5.10	$27.50	$0.00	$5,577.11
				1.00	**100.00**				**244.23**										**$15,169**

Table 1A: Detailed cost inputs including relevant adjustments and assumptions

	Net Present Value* (2016 USD)	Source	Assumptions/Comments
One Time Costs for bCPAP per Patient Hospitalization			
Nasal prongs	$8·82	Hospital supplier (Chen 2014)	
Stockinette hat	$0·16	Hospital supplier (Chen 2014)	
Glass bottle	$1·00	Vendor	
Suction catheter	$0·59	Hospital supplier (Chen 2014)	
Total One Time Cost	**$10·57**		
Daily Costs for bCPAP per Patient Day			
Oxygen concentrator	$1,484·30	Vendor	WHO certified device, delivers up to 10 LPM
Shipping and handling	$605·04	Enarson 2008	
Nasopharyngeal suction machine	$439·99	Vendor	
Pulse oximeter and reusable probes	$1,966·00	Vendor	
Gross particle filter (15)	$89·06	Vendor	WHO recommended 5-year supply
Intake product filter (5)	$89·06	Vendor	WHO recommended 5-year supply
Firebreak device	$9·80	Vendor	
Spare parts for ongoing maintenance and repair (filters, tubing, valve kits, sieve beds)	$461·14	Enarson 2008	Electrical Engineering Department created in 2005 for Child Lung Health Programme in Malawi
Surge prevention device	$107·00	Vendor	
Provider training (per site)	$1,774·96	Enarson 2008	Training per site
Total Daily Cost	**$15·41**		System life 5 years, used 3 mo/year
Hospital Costs per Patient Day			
Hospital bed day	$2·49	WHO-CHOICE	
Antibiotics (ampicillin, gentamicin)	$1·99	MSH 2015	
Total Daily Hospital Cost	**$4·48**		
One Time Hospital Costs per Patient Hospitalization			
Chest radiograph	$2·00	Ayieko 2009	
Laboratory investigations	$3·10	Ayieko 2009	Adjusted by GDP ratio
Total One-Time Hospital Costs	**$5·10**		
Other Costs			
Cost of long-term sequealae (per lifetime)Ŧ	**$656·43**	MSH 2015	Median buyer's price of daily beclomethasone and salbutamol

* Net present value based on Consumer Price Index (2016 US$)
Ŧ Discounted cost (3%)
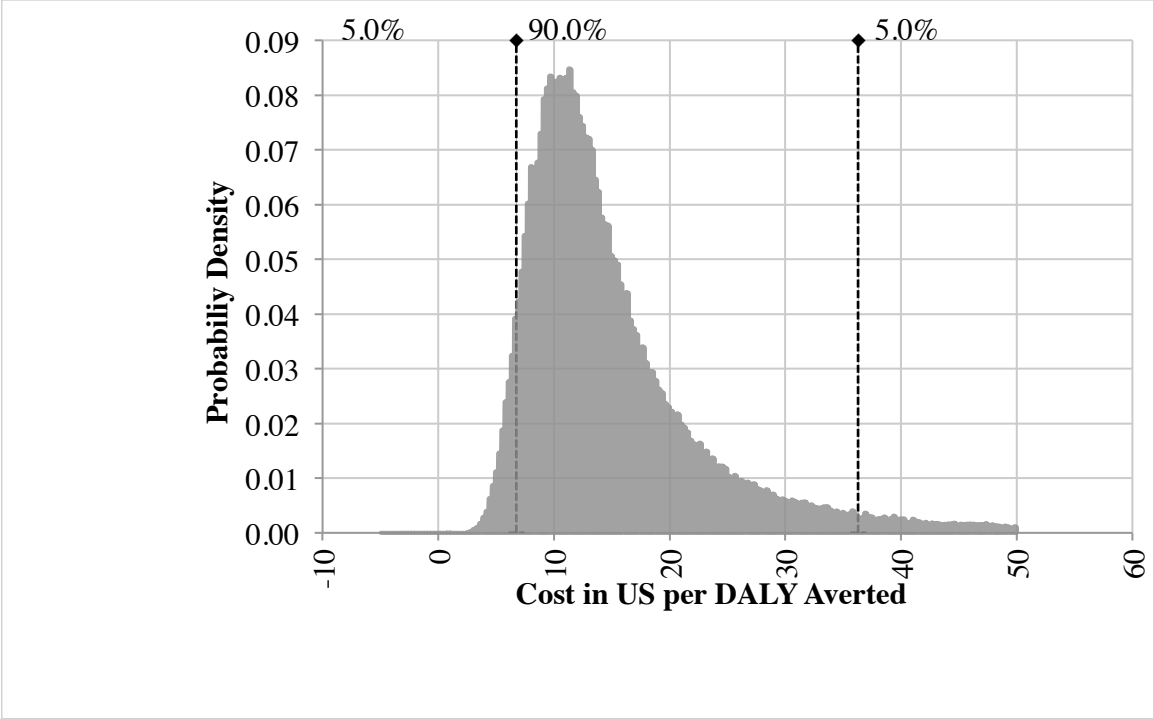
Figure 2A: Multi-way probabilistic sensitivity analysis displaying distribution of ICER values. *Median ICER: $12.97 per DALY averted. Interquartile range: $9.83 to $18.15 per DALY averted.*