Supplementary Data: A Comparative Life Cycle Assessment between a Metered Dose Inhaler and Electric Nebulizer

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Figure S1 shows the two devices assessed in this comparative life cycle assessment (LCA) study.



Figure S1. (a) DeVilbiss Pulmo-Aide[®] electric nebulizer and (b) 3M's Proventil[®] HFA metered dose inhaler.

Figures S2, S3, and S4 show the GaBi flow diagram inventories of the scenarios modeled: metered dose inhaler, nebulizer with hand washing, and nebulizer with dish washing, respectively.



Figure S2. Life cycle assessment (LCA) inventory for the manufacturing and use of a metered dose inhaler (MDI).

DeVilbiss Pulmo	Aide Nebulizer - Handwash
Process plan: Mass [kg]	

Neb Exterior Shell	D-1	Nation: Assembly of DeVilbiss Pulmo-Aide Nebulizer (materials for one	US: Electricity grid mix ts			
Neb Stator Coils	D .	dose divided by 2000)				
Neb Rotor Squirrel Cage						
Neb Fan/Fan Housing	DH		us	: Electricity grid mix ts		
Neb ball bearings/central shaft	D D					: Glycerine (from chlorohydrine) ts
Neb Mouthpiece	D =)			S: Use of Nebulizer X	, Sterilize and clean	*
Neb Tubing	(DR)			s: use of Nebulizer X @r iu-so>	nebulizer parts [Hand	
Neb Medicine Chamber	<u></u>		(and the second s	Albuterol sulfate inhalation	Vinegar Solution	EU-28: Tap water ts
Neb Suction Chamber		_	Saline	solution(Neb)		
Neb Stator Core						
Neb Stator Cover	D 4	_				
Neb Cross Brace	D-1					
leb Power Cord	D-)					

Figure S3. Life cycle assessment (LCA) inventory for the manufacturing and use of an electrical nebulizer when it is washed by hand.

DeVilbiss Pulmo-Aide Nebulizer - Dishwasher Process plan: Mass [kg] The names of the basic processes are shown.

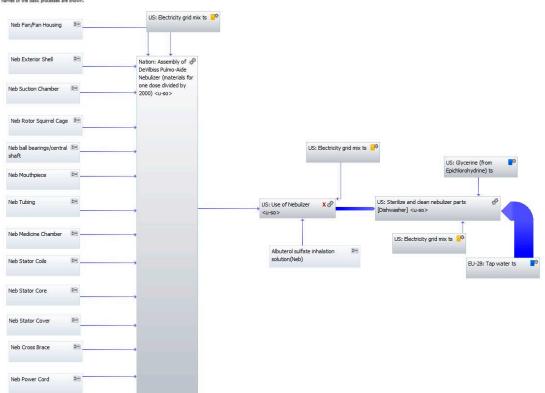


Figure S4. Life cycle assessment (LCA) inventory for the manufacturing and use of an electric nebulizer when it is washed in a dishwasher.