Table S1 Principal characteristics of conventional home care ventilation and the newer dual VAP-NIV modes

Mode	Pressure targeted	Volume targeted	VAP-NIV: Vt assured	VAP-NIV: Va assured
Definition	Assisted Pressure Controlled Ventilation (APCV); Pressure Support Ventilation (PSV)	Assisted Volume Controlled Ventilation (ACV)	Volume assured pressure support ventilation targeting Vt (i.e. AVAPS, Phillips Respironics®; Vt Smart Eove®)	Volume assured pressure support ventilation targeting Va (i.e. iVAPS, ResMed®)
Controlled variable	Inspiratory pressure	Vt at constant inspiratory preset flow	Minimal and Maximal Inspiratory Pressure	Minimal and Maximal Inspiratory pressure
Baseline variable	ZEEP or a given EPAP *	ZEEP or a given EPAP*	ZEEP or a given EPAP*. Alternatively, automatic EPAP adjustment	ZEEP or a given EPAP*. Alternatively, automatic EPAP adjustment
Trigger variable	Pressure and flow in active respiration. Time in passive respiration.	Pressure and flow in active respiration. Time in passive respiration.	Pressure and flow in active respiration. Time in passive respiration.	Only Flow trigger is available in active respiration. Time in passive respiration
Cycling variable	Time or a percentage of inspiratory flow decay (PSV or any other pressure controlled flow cycled mode)	Time	Time or a percentage of inspiratory flow threshold according to manufacturer's algorithm. Inspiratory time depends on a given set Ti, a Ti min or an I/E ratio	The percentage of inspiratory flow threshold is always the first cycling factor. Time cycling depends on a given set Ti min or Ti max
Tidal Volume	Variable according to airway impedance and patient's effort	Constant	A minimum average Vt is maintained	A Vt value to achieve the preset Va is maintained
Alveolar ventilation	Influenced by patient's effort and respiratory frequency	Influenced by patient's respiratory frequency	Influenced by patient's effort and respiratory frequency	Maintained constant at set target Va
Flow shape profile	-	Squared, ascended, descended	-	-
Pressure ramp profile	Settable**	-	Settable	Settable
Unintentional Leak Compensation	Good for mild to moderate leaks	No increase in flow rate to compensate for leakage	Good for mild to moderate leaks	Good for mild to moderate leaks
Advantages	Leak compensation Flow adaptability to patient´s requirements	Guarantees a constant Vt (if no leaks)	Guarantees a minimal average Vt	Guarantees a minimal average Va
Disadvantages	No guarantees for a certain Vt	No leak compensation Less patient comfort	Vt under- or overestimation. Overshooting after a disruption cessation	Va under- or overestimation
Used circuits	Non-vented (exhalation valve) or intentional leak "vented" circuit	Non-vented (exhalation valve). Newer ventilators also have intentional leak "vented" circuit	Non-vented (exhalation valve) or intentional leak "vented" circuit. AVAPS (Philips Respironics®) only uses an intentional leak "vented" circuit	Intentional leak "vented" circuit only

VTPC, volume-targeted pressure controlled NIV; Vt, volume tidal; Va, alveolar ventilation; AVAPS, Average Volume Assured Pressure Support; iVAPS, intelligent volume assured pressure support; EPAP, end positive expiratory pressure; ZEEP, zero end expiratory pressure; Ti, inspiratory time; Ti min, minimal inspiratory time; I/E ratio, inspiratory/expiratory ration; Ti max, maximal inspiratory time.

* All ventilators using an intentional leak "vented" circuit have per default a certain level of EPAP.

** Pressure ramp represents the time taken by the ventilator to reach the set inspiratory pressure. In a pressure controlled flow cycled breath, its setting may modify inspiratory time and overall inspiratory flow.