Table S1. Characteristics of reviews included in the overview

Author, year published	RCTs /participants	Eligibility criteria		Outcomes results	Limitations
		Inclusion	Exclusion		
Huang et al, 2018	9/2126	Patients received MV; Intervention: SSD; Control: non-subglottic secretion suctioning, standard endotracheal tubes; RCTs	Studies in which the primary outcome was not the microorganisms of VAP.	Incidence of VAP	Possible selection bias related to RCTs included/excluded. The limitations of each RCT included.
Sun et al, 2017	13/2052	Patients received MV hospitalized in an ICU; Intervention: SSD; Control: non-subglottic secretion suctioning; Incidence of VAP; RTCs	Patients younger than 18 years old; Outcomes not available; Reviews or case reports; Non-Chinese and non-English literature.	Incidence of VAP ICU/Hospital mortality Duration of MV Hospital length of stay	Impossible to conduct a meta-analysis based on the complications (tracheal mucosal injury, haemorrhage…). Possible selection bias.
Mao et al, 2016	20 / 3544	Patients received MV; Intervention: SSD; Control: non-subglottic secretion suctioning; Incidence of VAP; RTCs	Patients younger than 18 years old; Repeat data.	Incidence of VAP ICU / Hospital mortality Duration of MV ICU length of stay	RCTs performed in different patient groups. SSD not blinded for physicians and nurses. Confounding interventions in some included RCTs. Cost-effectiveness of SSD unavailable

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Author, year published	RCTs /participants	Eligibility criteria		Outcomes results	Limitations
		Inclusion	Exclusion		
Caroff et al, 2016	17 / 3369	Adults received MV; Intervention: SSD; Control: standard endotracheal tubes; Incidence of VAP; RTCs	N/A	Incidence of VAP ICU / Hospital mortality Duration of MV ICU length of stay	Variability in VAP definitions, inclusion criteria, study populations and study quality. High heterogeneity for duration of MV and ICU length of stay outcomes.
Frost et al, 2013	9 / 2280	Patients received MV; Intervention: SSD; Control: non-subglottic secretion suctioning; Incidence of VAP; RTCs	Studies with others cointerventions in the intervention group	Incidence of VAP ICU / Hospital mortality Duration of MV ICU/ hospital length of stay Time to VAP	Possible selection bias related to RCTs included/excluded. Significant heterogeneity between study population and generalization of results.
Leasure et al, 2012	10 / 1709	Patients received MV hospitalized in an ICU; Intervention: SSD; Control: non-subglottic secretion suctioning; Incidence of VAP; RTCs/ factorial design	Studies with others cointerventions in the intervention group	Incidence of VAP ICU / Hospital mortality Duration of MV ICU/ hospital length of stay Time to VAP	Possible publication bias. Intermittent/ continuous SSD technique indistinctly.

Table S1. Characteristics of reviews included in the overview

Author, year published	RCTs /participants	Eligibility criteria		Outcomes results	Limitations
		Inclusion	Exclusion		
Wang et al, 2012	10 / 2213	Adults patients undergoing MV; Intervention: endotracheal tubes with SSD functionality; Control: not SSD with endotracheal tubes with SSD functionality or standard endotracheal tube Incidence of VAP; RTCs	N/A	Incidence of VAP Overall mortality Duration of MV ICU / Hospital length of stay Time to VAP	High risk of bias of included RCTs (only two had low risk of bias). Variability in VAP definitions, inclusion criteria, study populations, methods of SSD and concurrent measures. Did not intention-to-treat data from trials.
Muscedere et al, 2011	13 / 2442	Adults critically patients received MV; Intervention: SSD; Control: standard endotracheal tube Incidence of VAP; RTCs	N/A	Incidence of VAP ICU / Hospital mortality Duration of MV ICU length of stay	Minimal data reported on airway difficulties with SSD. The majority of RCTs used the same endotracheal tube with SSD, is not possible generalize to other tubes with SSD.
Dezfulian et al, 2005	5/ 896	Patients undergoing MV; Intervention: SSD Control: not SSD Incidence of VAP; RTCs	N/A	Risk of/ Incidence of VAP Overall mortality Duration of MV ICU / Hospital length of stay Time to VAP	Moderate quality of RCTs. Clinical and statistical heterogeneity.

MV, mechanical ventilator; N/A, not available; SSD, subglottic secretion drainage; VAP, ventilator-associated pneumonia; RCTs, randomized controlled trials; ICU, intensive care unit