



Mechanical ventilation core outcome set uptake in Cochrane systematic reviews

A cross-sectional study

Luis Garegnani

Trusted evidence.

Informed
decisions.

Better health.



Conflict of interest

I have no actual or potential conflict of interest in relation to this presentation

Background

- Core Outcome Sets (COS) is “an agreed standardised set of outcomes that should be measured and reported, as a minimum, in all clinical trials in specific areas of health or health care”.
- The choice of outcomes for a systematic review raises concerns because clinical trialists and systematic reviewers are interested in different outcomes.
- Cochrane Reviews evaluating mechanical ventilation (MV) strategies highlighted substantial variation in outcome selection.
- Development of a COS for trials intended to modify mechanical ventilation duration in critical care. → **Blackwood et al. 2019** ([10.1097/CCM.0000000000003904](https://doi.org/10.1097/CCM.0000000000003904))
- We aim to assess the uptake of the MV COS in Cochrane systematic reviews of interventions.
 - We hypothesise that MV COS uptake in Cochrane systematic reviews of interventions is low.

Methods

Search: Cochrane database of systematic reviews

Inclusion criteria:

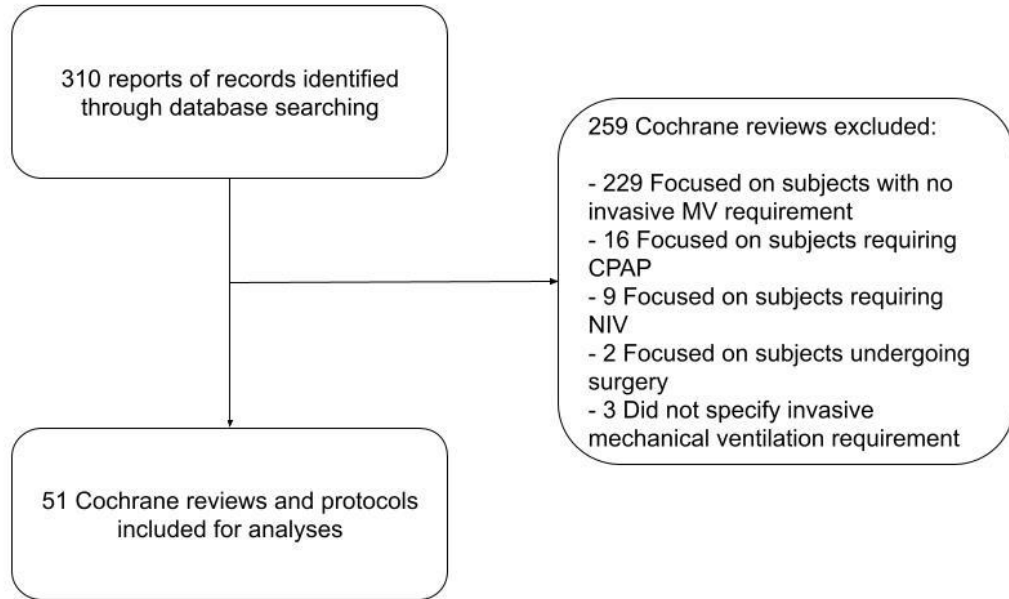
- Reviews and protocols published after 2019
- Any intervention
- Mechanically ventilated patients
- No restrictions based on age or setting

Selection → Validation

Data extraction → Validation

- PICO question
- Individual component of the MV COS reporting rate
- Blackwood et al citation by inspection of references

Results



Reviews: 47 (91.16%)

NMA: 1 (1.96%)

Protocols: 3 (5.88%)

Table 1. Characteristics of included studies

Variable	Estimate
Year of publication	
- 2019	15/51 (29.41%)
- 2020	10/51 (19.61%)
- 2021	15/51 (29.41%)
- 2022	8/51 (15.69%)
- 2023	3/51 (5.88%)
Population age	
- Adults	20/51 (39.22%)
- Children	23/51 (45.10%)
- No age restriction	8/51 (15.69%)
Specific population	
- MV participants only	21/51 (41.18%)
- Mixed population	30/51 (58.82%)
Health condition	
- ARDS	11/51 (21.57%)
- Airway disease	3/51 (5.88%)
- COVID-19	8/51 (15.69%)
- Critical illness, in general	10/51 (19.61%)
- Delirium in the ICU	1/51 (1.96%)
- Guillain-Barré syndrome	1/51 (1.96%)
- Heart failure	1/51 (1.96%)
- Gastrointestinal disease	4/51 (7.84%)
- Preterm infants	5/51 (9.80%)
- Other pulmonary diseases	4/51 (7.84%)
- Surgery	3/51 (5.88%)
Cochrane Review Group (CRG)	
- Cochrane Acute Respiratory Infections Group	5/51 (9.80%)
- Cochrane Anaesthesia Group	2/51 (3.92%)
- Cochrane Consumers and Communication Group	1/51 (2.13%)
- Cochrane Emergency and Critical Care Group	9/51 (17.65%)
- Cochrane Gut Group	2/51 (3.92%)
- Cochrane Haematology Group	7/51 (13.73%)
- Cochrane Heart Group	1/51 (1.96%)
- Cochrane Kidney and Transplant Group	1/51 (1.96%)
- Cochrane Neonatal Group	20/51 (39.22%)
- Cochrane Neuromuscular Group	1/51 (1.96%)
- Cochrane Oral Health Group	1/51 (1.96%)
- Cochrane Wounds Group	1/51 (1.96%)

MV: Mechanical ventilation. ARDS: Acute respiratory distress syndrome. COVID-19: CoronaVirus Disease of 2019. ICU: Intensive Care Unit.

Results

- Number of outcomes, median (IQR): 11(8.5-17)
- **49 (96.08%) reviews reported at least one outcome from the MV COS**
- **Only one (1.96%) review reported all the outcomes from the MV COS.**
- **None of the included Cochrane reviews and protocols cited the publication of the MV COS by Blackwood et al.**
- Reviews focusing exclusively on adults were more likely to report QoL (OR 11.86, 95%CI 1.91-122.71, p=0.0011)
- Outcomes not included in the MV COS, median (IQR): 9 (6-14)

Table 3. Uptake of the Mechanical Ventilation Core Outcome Set in Cochrane systematic reviews and protocols.

MV COS	All Cochrane reviews. n(%)	MV participants only. n(%)	Mixed population. n(%)
Extubation	4/51 (7.84%)	3/21 (14.29%)	1/30 (3.33%)
Reintubation	3/51 (5.88%)	2/21 (9.52%)	1/30 (3.33%)
Duration of MV	24/51 (47.06%)	13/21 (61.19%)	11/30 (36.67%)
Duration of stay	34/51 (66.67%)	16/21 (76.19%)	18/30 (60.00%)
Mortality	47/51 (92.16%)	21/21 (100%)	26/30 (86.67%)
Quality of life	11/51(21.57%)	2/21 (9.52%)	9/30 (30.00%)

MV: Mechanical ventilation. COS: Core Outcome Set.

Conclusions

- Overall limited uptake of the MV COS in Cochrane systematic reviews and protocols.
- Mortality and duration of stay were the most reported outcomes.
- Extubation and reintubation were the least informed.

Peter

Pearl



Thank you for your attention



Luis Garegnani, Diego Ivaldi, Mariana Burgos, Gisela Oltra, Camila Escobar

Trusted evidence.
Informed
decisions.
Better health.

