Rating scale used

RATING	WORD	DESCRIPTION
1	Essential	without this element the effective functioning of the protocol would be severely impaired
2	Very important	without this element the protocol would be less effective, but not severely impaired
3	Important	this element desirable, but its absence would not make the protocol noticeably less effective for most
4	Unimportant	absence of this element would have little impact on effectiveness
5	Undesirable	presence of this element would have a detrimental effect on effectiveness

Clinical Algorithm for the physiotherapeutic management of patients presenting with pulmonary dysfunction

Steps rated as **ESSENTIAL** reaching CONSENSUS SIQR < 0.5

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELLISTS	MEDIAN RATING
Initiate therapy when there is evidence of excessive amounts of secretions eg added breath sounds; palpable fremitus	INITIATION OF THERAPY	0	1-2	6/7	2	**ESSENTIAL (1)**
Initiate therapy when there are changes of volume loss visible on CxR: Radiographic density; fissure displacement; mediastinal shift; diaphragmatic elevation; compensatory hyperinflation **POSTED COMMENT**: • disagree as CXR is not a sensitive indicator of lung collapse or consolidation • If you specified want kind of theapy would be initiated, I would be more comfortable with a higher score.	INITIATION OF THERAPY	0	1-2	6/7	2	**ESSENTIAL (1)**
Unilateral infiltrates associated with volume loss on CxR as criterion to initiate CPT	INITIATION OF THERAPY	0.25	1-4	5/7	2;4	**ESSENTIAL (1)**

Ensure regular changes of position from side to side throughout the day **POSTED COMMENT**: • disagree as there is no strong evidence for routine positioning	PATIENT POSITIONING	0	1-2	6/7	2	**ESSENTIAL (1)**
Assess patient ability to cough effectively before extubation is attempted	CPT MANAGEMENT OPTIONS	0	1-2	6/7	2	**ESSENTIAL (1)**
Discuss patient suitability for extubation with interdisciplinary team members	CPT MANAGEMENT OPTIONS	0	1	7/7	-	**ESSENTIAL (1)**
Discuss adequate humidification with team members when increased secretion viscosity is identified	CPT MANAGEMENT OPTIONS	0	1	7/7	-	**ESSENTIAL (1)**
Observe arterial oxygen saturation SaO2 before initiation of hyperinflation	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.25	1-2	5/7	2;2	**ESSENTIAL (1)**
Ensure patient is not receiving high doses of vasoactive drugs • **POSTED COMMENT:** Hemodyanmic tolerance is important during a RM. However, if the patient can tolerate an Rm while on vasoactive agents - I would not be reticent to perform the RM	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0	1-3	6/7	3	**ESSENTIAL (1)**
Ensure that there are no cardiac arrhythmias present **POSTED COMMENT**: • the type of arrhythmia and effect on blood pressure is more important eg rapid AF or frequent VE's as opposed to occasional VE's or slow controlled AF	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.25	1-2	5/7	2;2	**ESSENTIAL (1)**
In the absence of PAC monitoring: Ensure that MAP > 65mmHg and does not fluctuate more than 15 mmHg with position change	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0	1	7/7	-	**ESSENTIAL (1)**

Ensure the peak inspiratory airway pressure is less than 40cmH20 before initiating a hyperinflation maneuver. **POSTED COMMENT**: • Some patients with chest wall compliance issues will need higher PIP • the reason why the PIP is high needs to be determined - if it is widespread collapse due to sputum plug or foreign body high up the airway then hyperinflation may be indicated to clear. If there is heterogenous changes then that of course may change considerations. I agree that 40 is generally considered an appropriate upper limit to avoid, but a blanket step in the pathway to exclude physio due to PIP>40 may deny some patients the benefit of rapid resolution of acute collapse that is causing the high PIP in the first place.	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.25	1-4	5/7	2;4	**ESSENTIAL (1)**
MHI: inflate to a minimal pressure of 30cmH20 **POSTED COMMENTS:** • I was trying to suggest that th epressure will be different with each patient and sometimes 30 will be too little, so times too large and sometimes just right - the Goldilocks principle.	HYPERINFLATION	0.25	1-3	5/7	2;3	**ESSENTIAL (1)**
MHI: Include an expiratory valve into the circuit	HYPERINFLATION	0	1	7/7	-	**ESSENTIAL (1)**
Document the outcome being measured and report findings for each treatment session	CPT DOSAGE	0	1	7/7	-	**ESSENTIAL (1)**
The duration of a single treatment session should be dependent on the outcome measured and the hemodynamic stability of the patient. The outcomes might include added sounds, fremitus, ventilation, gas exchange or volume of secretions	CPT DOSAGE	0	1	7/7	-	**ESSENTIAL (1)**
The frequency of physiotherapy intervention in patients presenting with excessive secretions or retained secretions must be based on patient outcome (breath sounds and clinical presentation) as interpreted by the therapist.	CPT DOSAGE	0	1-2	6/7	2	**ESSENTIAL (1)**
Duration of the hyperinflation application should be dependent on the outcome measured and might include added sounds, fremitus, ventilation, gas exchange or volume of secretions	CPT DOSAGE	0	1-3	6/7	3	**ESSENTIAL (1)**
Warn the patient of suction procedure	SUCTION PROCEDURE	0	1-3	6/7	3	**ESSENTIAL (1)**
If the open-system suction is employed: use a sterile, single-use catheter	SUCTION PROCEDURE	0.25	1-3	5/7	2;3	**ESSENTIAL (1)**
When using an open suction system: Use only sterile fluid to remove secretions from the suction catheter if the catheter is to be used for re-entry into the patient's	SUCTION PROCEDURE	0	1-3	5/7	3	**ESSENTIAL (1)**

lower respiratory tract **POSTED COMMENT:** • On review of this (and assuming I'm reading this step correctly) I would prefer to change my rating to a 5 - I don't consider that a catheter should be reused, even if 'cleaned' with sterile fluid. I need to say this to be consistent with other comments I am making, but appreciate that this is now varies from the median rating. If the assumption is to accept the reuse of a single use catheter then at the very least I would suggest a 1 rating - it would be essential that prior to re-insertion the catheter be cleaned with sterile fluid.						

Steps rated as **VERY IMPORTANT** reaching CONSENSUS SIQR < 0.5

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELLISTS	MEDIAN RATING
Only initiate therapy when decreased oxygenation is associated with at least one of the following: Volume loss on CxR; excessive secretions; unilateral infiltrates on CxR; or hypercarbia	INITIATION OF THERAPY	0.37	1-2	4/7	1;1;1	VERY IMPORTANT (2)
Position the patient in a head down tilt position when indicated (if no contra indications) **POSTED COMMENT:** I have not seen any compelling evidence for the use of head-down PD positions in preference to neutral or head-up positioning for treatment. Considering the deleterious effects of trendellenberg positioning (and I am aware that the proviso of no contraindications is given), and no proven benefit, I do not think this position can be advocated at this time.	PATIENT POSITIONING	0.25	2-4	5/7	3;4	VERY IMPORTANT (2)
Maintain specific treatment position for at least 15 minutes	PATIENT POSITIONING	0	1-3	5/7	1;3	VERY IMPORTANT (2)
Ensure that patients are routinely nursed in a 45 degree head up position (if not contra indicted) **POSTED COMMENT:** This position has been associated with a reduction in VAP	PATIENT POSITIONING	0	1-2	6/7	1	VERY IMPORTANT (2)
Initiate hyperinflation when there is evidence of volume loss **POSTED COMMENT:** • Hyperinflation has been demonstrated to effectively treat atelectasis	CPT MANAGEMENT OPTIONS	0.25	1-2	5/7	1;1	VERY IMPORTANT (2)
Use manual techniques in patients that are presenting with excessive secretions	CPT MANAGEMENT OPTIONS	0	2-3	6/7	3	VERY IMPORTANT (2)

Assist patient in clearing secretions ASAP after extubation	CPT MANAGEMENT OPTIONS	0	1-2	6/7	1	VERY IMPORTANT (2)
If PAC is used for invasive haemodynamic measures monitor cardiac output (N=4-7L/min) **POSTED COMMENT:** • Why an upper limit? So in a septic patient with a CO of 12 L/min you would avoid hyperinflation?	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0	2-4	6/7	4	VERY IMPORTANT (2)
In the absence of PAC monitoring: ensure the heart rate >70 and <130. **POSTED COMMENT:** • I think it is essential that heart rate be stable and in the range described • Either way I'm not sure if there is evidence to support whatever we put here…	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0	1-4	5/7	1;4	VERY IMPORTANT (2)
VHI is recommended for patients ventilated at PEEP levels of >7.5cmH20	HYPERINFLATION	0	2	7/7		VERY IMPORTANT (2)
Use VHI if patient is presenting with evidence of collapse **POSTED COMMENT:** • I don't think that there is sufficient evidence to advocate VHI over MHI or RM to treat collapse. In fact if the collapse is due to a sputum plug, a good suction & appropriate positioning and ventilation may be sufficient to resolve; I would think the VHI/MHI/RM would hasten the resolution of collapse but am not clear that one is preferential over another, unless we accept that there is a hierarchy of steps from the previous recommendation (VHI for those with PEEP>7.5)	HYPERINFLATION	0	1-4	5/7	1;4	VERY IMPORTANT (2)
Use a spring loaded manual bag when secretion clearance is priority and patients are ventilated at PEEP < 7.5cmH20	HYPERINFLATION	0	2	7/7	-	VERY IMPORTANT (2)
MHI: do not exceed a pressure of 40 cmH20 **POSTED COMMENT:** • I think this pressure limit is essential to minimise the risk of barotrauma.	HYPERINFLATION	0.25	1-2	5/7	1;1	VERY IMPORTANT (2)
VHI: Aim to reach a PIP of at least 30cmH20 or 130% of the set tidal volume depending on ventilator used and set the ventilator on 7 breaths per minute. **POSTED COMMENT:** • I think this is essential in order to ensure the RM is effective, with enough pressure to inflate atelectatic units.	HYPERINFLATION	0	1-2	6/7	1	VERY IMPORTANT (2)
VHI : Monitor pulmonary compliance (peak inspiratory pressure not more than 40cmH2O; inspiratory plateu pressure not exceding 35cmH2O; tidal volume) depending on ventilator used	HYPERINFLATION	0.25	1-2	5/7	1;1	VERY IMPORTANT (2)
Add a CPAP recruitment manouvre as possible setting: described as 30cmH2O CPAP* for 30-40 seconds * or 10 cmH2O above the plateau pressure level for the same duration	HYPERINFLATION	0	2-3	5/7	3	VERY IMPORTANT (2)
The addition of a manometre into the MHI circuit **POSTED COMMENT:** • I think this is essential so that actual pressure delivered is monitored in order to prevent barotrauma.	HYPERINFLATION	0.25	1-4	4/7	1;1;4	VERY IMPORTANT (2)

The addition of a PEEP valve into a MHI circuit	HYPERINFLATION	0	1-4	5/7	1;4	VERY IMPORTANT (2)
Patients presenting with volume loss on CxR should receive frequent physiotherapy intervention. This should include at least two sessions per day but not more than six per day **POSTED COMMENT:** • volume loss is not always treatable by CPT. Where is the evidence?	CPT DOSAGE	0.25	1-4	4/7	1;1;4	VERY IMPORTANT (2)
Clinician should document the outcome being measured during hyperinflation and report findings **POSTED COMMENTS:** • I think outcomes-based therapy is essential in order to ensure that the treatment delivered is beneficial, and not harmful. Without an objective outcome measure, this cannot be done. • it is essential to document the outcome being measured	CPT DOSAGE	0.25	1-2	5/7	1;1	VERY IMPORTANT (2)
In patients diagnosed with ARDS preferable use a closed suction system to prevent alveolar decruitment	CHOICE OF SUCTION SYSTEM	0	1-3	5/7	1;3	VERY IMPORTANT (2)
Except for ARDS patients, the choice of suction system is based on the availability of the system	CHOICE OF SUCTION SYSTEM	0	2	7/7		VERY IMPORTANT (2)
When using either OSS or CSS: Only use a clean/limited aseptic technique (wash hands before and after procedure and wear a glove during the procedure)	SUCTION PROCEDURE	0.25	2-3	5/7	3;3	VERY IMPORTANT (2)
When using an open suction system in ARDS patients include a VHI recuitment manouvre (two hyperinflations using the CPAP function of the ventilator to an airway pressure of 45cmH2O for 20 s, with an interval of 1 min in between)	SUCTION PROCEDURE	0	2-5	6/7	5	VERY IMPORTANT (2)
Ensure suction duration times of <10-15 seconds **POSTED COMMENT:** • may need longer period of suctioning especially if secretions tenacious and poor cough	SUCTION PROCEDURE	0.25	2-4	5/7	3;4	VERY IMPORTANT (2)
Pre oxygenate before initiation of suction procedure	SUCTION PROCEDURE	0	2-3	6/7	3	VERY IMPORTANT (2)
Only use limited aseptic technique (wash hands before and after procedure and wear glove during the procedure)	SUCTION PROCEDURE	0	2-4	6/7	4	VERY IMPORTANT (2)
Noisy breathing is indication for suction	INDICATION FOR SUCTION	0	2	7/7		VERY IMPORTANT (2)
Palpable fremitus to indication for suction	INDICATION FOR SUCTION	0	1-3	5/7	1;3	VERY IMPORTANT (2)
Saw tooth pattern on expiratory flow waveforms to indication for suction	INDICATION FOR SUCTION	0	1-3	5/7	1;3	VERY IMPORTANT (2)

Steps rated as **Desirable** reaching CONSENSUS (SIQR < 0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELLISTS	MEDIAN RATING
Initiate hyperinflation when there is evidence of excessive secretions **POSTED COMMENT:** • Hyperinflation has been shown to be effective in clearing exessive pulmonary secretions	INITIATION OF THERAPY	0.25	1-3	5/7	1;2	IMPORTANT (3)
Initiate hyperinflation when there is evidence of decreased oxygenation	INITIATION OF THERAPY	0.25	2-3	5/7	2;2	IMPORTANT (3)
If PAC is used for invasive haemodynamic measuring then monitor PAOP (N= 6mmHg - 12mmHg) **POSTED COMMENT**: • PAOP is no longer recommended to be measured routinely due to inidence of adverse events - I don't think we should be encouraging any physiotherapy assessment be guided by this measure	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.25	2-5	4/7	2;2;5	IMPORTANT (3)
Use a FiO2 of 1.0 for both MHI and VHI **POSTED COMMENT**: 100% osygen is rarely required	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0	3	7/7		IMPORTANT (3)
Specification of FiO2 to be delivered at preset level	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.25	2-4	4/7	2;4;4	IMPORTANT (3)
When a ARDS patient is presenting with exessive secretions use an OSS	CHOICE OF SUCTION SYSTEM	0.25	2-3	5/7	2;2	IMPORTANT (3)
Prolonged expiratory breath sounds is an indication for suction	INDICATION FOR SUCTION	0	2-4	5/7	2;4	IMPORTANT (3)
Clinically apparent increased work of breathing is indication for suction **POSTED COMMENT**: • I think one of the first actions one should take when a patient has clinically apparent increased WOB, in the absence of other contributing factors, is suctioning. Therefore I stick with my rating here!	INDICATION FOR SUCTION	0.25	1-4	4/7	1;2;4	IMPORTANT (3)
Decreased respiration is an indication for suction	INDICATION FOR SUCTION	0	3-4	6/7	4	IMPORTANT (3)

Steps rated as **UNIMPORTANT** reaching CONSENSUS (SIQR < 0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELLISTS	MEDIAN RATING
The addition of a blender into the MHI circuit	HYPERINFLATION	0.25	2-4	5/7	2;3	UNIMPORTANT (4)

Steps rated as **DETREMENTAL** reaching CONSENSUS (SIQR < 0.5)

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	AGREEMENT	ALTERNATIVE RATING BY PANELLISTS	MEDIAN RATING
Routinely instill 0.9% sodium chloride prior to suctioning for all patients **POSTED COMMENT**S: • It has been repeatedly shown that saline instillation does not reduce secretion viscosity, and has a deleterious effect on oxygenation. Therefore I do feel this is a dangerous practice to endorse • no evidence for positive effects with the use of saline • This (NaCl instillation) is something that should be reserved for unique, isolated situations only, and not something that is a routine part of an algorithm. I strongly disagree with the median that this is a very important element and that the protocol would be less effective without this step. Adequate sytemic hydration and humidification would be more appropriate routine steps prior to saline instillation I would have thought. Saline will not reduce the viscocity of the secretions per se - it may stimulate a stronger cough at time of instillation and may possibly moisten/lubricate the cilia / airway wall to facilitate sputum mobilisation. However I still think this is an undesirable step that has potential for misadventure if part of a routine protocol.	SUCTION PROCEDURE	0.25	3-5	5/7	3;4	DETREMENTAL (5)

Steps that did not reach consensus

CLINICAL ALGORITHM STEP	SUBJECT AREA	SIQR	RANGE	MEDIAN	ALTERNATIVE RATING BY PANELLISTS
Only suction when clinically indicated **POSTED COMMENT**: • routine suctioning may be indicated especially in scenrio when it may be useful as a means of assessment eg paralysed patient	SUCTION PROCEDURE	0.75	1-3	1	1;1;1;1;2;3;3
Initiate therapy when there is evidence of secretion retention with changes in viscosity or color of secretions	INITIATION OF THERAPY	0.5	1-2	1	1;1;1;1;2;2;2
Initiate therapy when patient presents with hypercarbia **POSTED COMMENT**: • treatment should be considered based on why the patient has hypercarbia and whrther it is cliincally significant • Hypercarbia alone is not an indication for physiotherapy. It may be secondary to narcotics, chronic lung disease, resp muscle weakness - the treatment should fit the etiology not the symptoms. • Hypercarbia in isolation may not be due to impaired airway clearance or reduced lung volumes and therefore one must ask what are we as physiotherapists treating? It may be due to many factors that will in no way be responsive to physiotherapy such as oversedation, acute exacerbation of COPD or asthma (non-infective), respiratory centre dysfunction etc. There is also the potential hypercarbia may be chronic / normal for the patient. I concur that we need to consider CO2 in our deliberations/clinical reasoning; but I do not agree that it is very important that we must initiate therapy when patient presents with hypercarbia (particularly if they are already ventilated) - adjustments to minute ventilation may be more appropriate. If they are not ventilated then NIV may be an option, but this is beyond the scope of discussions here and not necessarily a physio role in all jurisdictions. I'd be happy to compromise to a rating of 3 - it could be argued that hypercarbia is important, but perhaps not critical to the effectiveness of the protocol (as opposed to it being severly impaired without it). Is there any specific literature using hypercarbia as a trigger to the initiating of physio - I'm not aware of any that we could use to substantiate this step in the algorithm being rated 2.	INITIATION OF THERAPY	1	1-4	2	1;1;2;2;3;4;4
Initiate therapy when there is decreased oxygenation	INITIATION OF THERAPY	0.5	1-3	2	1;1;1;2;2;2;3
When indicated position the patient in side lying with most affected side uppermost (if no contra indications)	PATIENT POSITIONING	0.5	1-3	2	1;1;1;2;2;2;3
Use manual techniques specifically in patients that have a poor cough response to suction **POSTED COMMENT**: • Manual techniques such as percussion and vibrations have been shown to confer little benefit in inteubated and ventilated patients	CPT MANAGEMENT OPTIONS	0.5	1-4	2	1;2;2;2;2;2;4

• If there is minimal sputum and a poor cough then I do not feel that manual techniques will necessarily supplement the suction - you can't get what isn't there to be got, so I don't think it should be automatic to recommend manual techniques just because the cough is poor (I'm assuming that GADP has been instigated in the first instance to facilitate drainage to where the suction catheter may retrive secretions). The evidence for these techniques is clear in those with excessive secretions, but is lacking in the ventilated cohort. Stiller reported that the addition of manual techniques did not facilitate atelectasis recovery - whether this atelectais was due to reduced airway clearance or reduced lung volumes was not apparent. A compromise to consideration of rating 3 where manual techniques are considered important I could support, but I do not believe that the algorithm (or clinical practice) would be severly impaired if we did not routinely use manual techniques in those with an impaired cough response to suction. If however it is known that there are significant secretions then I think the justification for manual techniques is more sound, particularly if there are other cues such as auscultation changes, CXR changes, hypoxaemia etc.					
In the absence of PAC monitoring: ensure CVP > 6mmHg **POSTED COMMENT**: • The value for CVP is misleading - the tolerance of the patient should be investigated regardless of a single number; • I'm not sure of why 6 is the defined number; it is still within normal range - in isolation I would not accept using this criteria as a limiting factor for the application of MHI. Yes I would monitor the BP swing to ensure adequate perfusion was being maintained during the technique if some-one had a lowish CVP and maybe even modify my technique, but I think it is unimportant to have this point as a required step in the algorithm	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	1	2-5	2	2;2;2;2;4;4;5
VHI is recommended for ARDS patients (used in the first 24 hours after diagnosis of ARDS) **POSTED COMMENT**: • There is no evidence to support this treatment technique and it is potentially dangerous. I think a clear ditinction needs to be made between VHI (its aims and purpose) and a RM which is not VHI as described in the literature and is done for different outcomes • Ventilator hyperinflation, as I understand it, has not been conclusively shown to be helpful to patients with ARDS. The ARDSnet studies have shown conflicting results. Therefore, I hesitate to recommend it for ALL patients with ARDS, although some may benefit. • If CXR or CT shows signs of collapse.	HYPERINFLATION	0.75	2-5	2	2;2;2;2;3;4;5
Patients presenting with excessive secretions or retained secretions should receive at least two treatment sessions per day with the need for further interventions based on patient outcome (breath sounds and clinical presentation) as interpreted by the therapist	CPT DOSAGE	0.5	1-2	2	1;1;1;2;2;2;2

Instill 0.9% sodium chloride pryor to suctioning if secretions have increased viscosity or patient experiences difficulty in clearing secretions	SUCTION PROCEDURE	1.5	2-5	2	2;2;2;2;5;5;5
OSS: Use an aseptic technique (sterile glove) **POSTED COMMENT:** We have previously shown data which indicates that a clean technique is necessary - this means that although a new, clean, glove should be worn and contamination of that glove prevented, it does not have to be a completely sterile glove.	SUCTION PROCEDURE	0.5	2-5	2	2;2;2;2;2;4;5
Coarse breath sounds is indication for suction	INDICATION FOR SUCTION	0.5	1-2	2	1;1;1;2;2;2;2
Suction patient regularly throughout the day **POSTED COMMENT**S: • Because of the complications of suctioning, some of which may be severe, it is generally accepted that suctioning should NOT be done on a regular, routine, basis, but rather on clinical indications. Therefore, I think that recommending regular suctioning is incorrect and could lead to harm. • routine suction should be avoided	INDICATION FOR SUCTION	1	1-5	2	1;2;2;2;3;5;5
Decreased SaO2 or PaO2 as indication for suction **POSTED COMMENT**: • only if secretionretention is suspected.	INDICATION FOR SUCTION	0.5	2-4	2	2;2;2;2;2;4;4
The option to discuss with intensivist the hemodynamic stability and fluid status of a patient before initiation of a RM **POSTED COMMENT**: • Why would anyone disagree with consulting the intensivis	CARDIOVASCULAR AND PULMONARY STABILITY TO INITIATE HYPERINFLATION	0.5	1-4	3	1;2;3;3;3;4;4
Use a maximum of two suction passes **POSTED COMMENT** • The patient should be suctioned as often as required considereing their SaO2 • If secretions are still present after two suction passes, then subsequent passes are essential in order to clear the ETT of obstructive secretions (which will increase airway resistance and work of breathing and obsrtuct the airway) • disagree, should not limit to 2 suction passes but base it more on clinical need	SUCTION PROCEDURE	0.5	3-5	3	3;3;3;3;3;5;5
Increased or decreased blood pressure or decrease pulse is indication for suction **POSTED COMMENT:** • no evidence that suctioning improves BP	INDICATION FOR SUCTION	0.5	3-5	3	3;3;3;3;3;5;5
When using an open suction system(OSS): use a single suction catheter in a specific patient for a 24 hour period. This is only valid if tap water is suctioned through the catheter to clear the catheter after use and it is stored in a protective sheath.	SUCTION PROCEDURE	0.5	4-5	4	4;4;4;4;5;5;5
Increased PaCO2 as indication for suction	INDICATION FOR SUCTION	0.5	2-5	4	2;2;4;4;4;4;5