

Supplementary material for

Development of a physiotherapy-led bronchoscopy service: a regional hospital perspective

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Video Assisted Airway Clearance by Senior Physiotherapists Training

SDMS Id Number	P19/000011
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Applies to	Senior Physiotherapy staff working in ICU at LGH
Key Words	Physiotherapist, ICU, Video assisted airway clearance, training

Part A – Protocol

1. Protocol Statement

Senior Physiotherapists working in the Intensive Care Unit (ICU) are required to work within their scope of practice and competency in performing Video Assisted Airway Clearance (VAAC). Intensive care specialists with support from the Discipline Lead of Physiotherapy are responsible for the establishment and running of training and competency assessment programmes for areas of extended scope practice performed by senior physiotherapists including performing VAAC on intubated and mechanically ventilated patients. The Tasmanian Health Service is to provide clinical governance and oversight of the use of VAAC by Senior Physiotherapists employed by the THS.

Rationale

Physiotherapists routinely perform both open and closed suctioning as part of a range of airway clearance techniques for intubated and mechanically ventilated patients who are unable to independently clear their airways and are therefore at high-risk of clinical deterioration. Video Assisted Airway Clearance (VAAC) on intubated and mechanically ventilated patients will provide senior physiotherapists working in the ICU a better set of tools to perform their clinical practice of airway clearance and allows an increased degree of precision and safety during suctioning of the airways

2. Process

The process for training and competency assessment will be as follows:

- Senior physiotherapists, under the guidance and close supervision of an intensive care specialist will pursue learning opportunities to gain and demonstrate the required knowledge as per the Tasmanian Health Service Senior Physiotherapy Video Assisted Airway Clearance (VAAC) (Attachment 1).
- Senior Physiotherapists will perform and log 20 fully supervised (Attachment 2) (by either an intensive care specialist or a senior ICU Registrar) VAAC treatments on intubated and mechanically ventilated patients in the ICU.

- An intensive care specialist will perform a competency and safety assessment of senior physiotherapists undertaking a VAAC treatment as per the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) Final Competency Assessment (Attachment 3) to assess for competent practice and determine what level of supervision is required.
- The senior physiotherapist will make an electronic application via the Mercury E-Credentialing System to the Tasmanian Health Service Credentialing Committee once all elements of the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) training and competency assessment programme have been completed. This application will include their current Curriculum Vitae, evidence of achieving the competency set out below including relevant education certificates, logs of practice and specification of the procedure/service they require credentialing for.
- The senior physiotherapist will perform VAACs as per the protocol and is required to participate in regular clinical supervision (of their practice) with an intensive care specialist, to continue to verify their individual competency and currency of practice. If competency is not met, the senior physiotherapist will only perform VAACs under the clinical supervision of an intensive care specialist until adequate skills and competency is demonstrated.

The process for governance is as follows:

- The Intensive care specialist and the Discipline Lead of Physiotherapy will identify potential senior physiotherapy staff who meet the criteria to undertake extended scope training in VAAC. Criteria requirements are as follows: (1) at least 10 years' clinical experience, and (2) at least 5 years ICU clinical experience with specific expertise in the physiotherapy management of intubated and mechanically ventilated patients.
- The intensive care specialist introduces the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) Training programme, and any local/external processes for gaining competency to the senior physiotherapist meeting the criteria and ensures they have access to training to gain competency.
- The Discipline Lead of Physiotherapy with the support from the intensive care specialist maintains a register of competency and performs audits to confirm that any senior physiotherapist performing VAACs have been deemed competent and safe to do so by the THS Credentialing Committee.

3. Definitions

1. **Competency** – “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being service” (Carr 2004)
2. **Credentialing** – the process of validating an individuals' qualifications, skills, experience, training and/or competency to perform certain procedures or service activities against a set of recognised standards
3. **Video Assisted Airway Clearance (VAAC)** – for the purposes of this document refers to the use of a bronchoscope to clear sputum from the airways of intubated and mechanically ventilated patients
4. **Intensive Care Specialist** – a medical specialist trained and assessed to be proficient in the comprehensive clinical management of critically ill patients as the leader of a multidisciplinary team
5. **Senior Physiotherapist** – for the purpose of this document; Senior Physiotherapists must have at least 10 years clinical experience and at least 5 years ICU clinical experience with specific expertise in the physiotherapy management of intubated and mechanically ventilated patients

4. Responsibilities

Tasmanian Health Service Credentialing Committee

- Responsible for credentialing senior Physiotherapy applicants for the performance of VAACs

Executive Director Allied Health/Director Allied Health

- Responsible for overseeing implementation of the protocol in practice and the competency program
- Providing support to applicants of the credentialing process

Discipline Lead of Physiotherapy and Intensive care specialists

- Responsible for identifying senior staff meeting the criteria to undertake extended scope training
- Responsible for the establishment and running of competency programs for areas of extended clinical practice in ICU, including VAAC

Intensive care specialist supervisor

Competency training and assessment will be overseen by a nominated supervisor who is an intensive care specialist and possesses current scope in the performance of VAAC.

The intensive care specialist supervisor is responsible for:

- Familiarising the senior physiotherapist with the requirements of the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) training and competency assessment programme
- Regularly evaluating the senior physiotherapists performance against the clinical competences outlined in this document
- Facilitating the achieving of competency by employing appropriate teaching methods and encouraging reflective practice.
- Assisting the senior physiotherapist to make an electronic application via the Mercury E-Credentialing System to the Tasmanian Health Service Credentialing Committee once all elements of the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) training and competency assessment programme have been completed.
- Advising the Discipline Lead of Physiotherapy upon the senior physiotherapists achievement of competency

Senior Physiotherapists

All senior physiotherapists are responsible for practicing within their level of competency and personal scope of practice.

Senior physiotherapists who undertake training in VAAC are expected to:

- Be committed to progression through competency program in a timely manner
- Be responsible for directing their own learning and take a lead role in seeking appropriate clinical opportunities
- Must complete and log 20 fully supervised VAAC procedures (Attachment 2) and undergo a formal assessment by an intensive care specialist (Attachment 3)
- Be aware that their intensive care specialist supervisor in consultation with the Discipline Lead of Physiotherapy, may decide to cease their practice of performing of VAACs at any time if suitable progress is not being achieved

- Make an electronic application via the Mercury e-credentialing system to the Tasmanian Health Service Credentialing Committee once all elements of the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) training and competency assessment programme have been completed.

Senior physiotherapists who successfully achieve credentialing in performing VAACS on intubated and mechanically ventilated patients are expected to:

- Perform VAAC treatments as required by intensive care specialist's referrals and as per the Extended Scope of Practice for Senior Physiotherapists Working in the Intensive Care Unit (ICU) Protocol
- Actively seek opportunities for skill maintenance
- Senior physiotherapists may also identify patients who require VAAC treatment – however this **must** be discussed with the treating intensive care specialist prior to performing the VAAC
- Any medication required for the VAAC procedure **MUST** be prescribed by the intensive care specialist and administered by the ICU nursing staff as per the Extended Scope of Practice for Senior Physiotherapists Working in the Intensive Care Unit (ICU) Protocol
- Contribute to service development as required

5. References

1. Carr, S. (2004) Assessing clinical competency in medical senior house officers: how and why should we do it? Postgrad Med J 2004 80:63-66

6. Related Documents

1. Extended Scope of Practice for Senior Physiotherapists Working in the Intensive Care Unit (ICU) Protocol

7. Acknowledgements

We would like to acknowledge and thank the Alfred Health Physiotherapy Department for providing and allowing their resources including the 'Alfred Bronchoscopy Assessment Tool (ABAT) for Physiotherapists' to be utilised and adapted for this protocol.

Senior Physiotherapy Video Assisted Airway Clearance (VAAC)

Entry into the programme

Element	Performance Criteria	Evidence required by the THS CC
Demonstrates underpinning knowledge required for the safe performance of VAAC	Provides evidence of successful attendance at the Alfred Bronchoscopy Course	Course Completion Certificate
	Able to demonstrate detailed knowledge of the respiratory anatomy including airway and lobes and known anatomical landmarks for VAAC	Supervisor Signature
	Demonstrates knowledge of the clinical indications for VAAC	Supervisor Signature
	Demonstrates knowledge of precautions and contraindications to VAAC	Supervisor Signature
	Demonstrates knowledge of potential adverse events and complications for VAAC	Supervisor Signature
	Able to demonstrate detailed knowledge and understanding the ventilator settings used in the ICU and implications to the performance of VAAC	Supervisor Signature

Supervisor Name: _____

Senior Physiotherapist Name: _____

Supervisor Signature: _____

Senior Physiotherapist Signature: _____

Supervisor Designation: _____

Senior Physiotherapy Video Assisted Airway Clearance (VAAC) Final Competency Assessment

Demonstrates safe clinical practice for performing VAAC	Able to discuss the clinical indication for VAAC appropriately	Supervisor Signature
	Demonstrate safe assessment of the ventilator settings (including mode, oxygen requirement, tidal volume) and demonstrates the ability to change settings and alarms as required in preparation for VAAC	Supervisor Signature
	Able to correctly identify any individualised risk to patient including bleeding, cardiovascular and respiratory stability	Supervisor Signature
	Able to identify number of staff and skill mix required for the procedure	Supervisor Signature
	Demonstrates appropriate communication with team and the patient	Supervisor Signature
	Demonstrates an appropriate medication plan in liaison with the intensive care specialists including; appropriate sedation and paralysis plan and demonstrates knowledge of effects, side-effects and duration of action of each medication (Please note; only intensive care specialists, medical registrars or intensive care nursing staff will be responsible for prescribing and administering the planned medication NOT the senior ICU Physiotherapist)	Supervisor Signature

	Demonstrates the ability to safely set up all equipment including: the bronchoscopy unit, sputum traps, suction unit, lubricant, swivel y connector	Supervisor Signature
	Demonstrates the ability to position the patient appropriately and safely	Supervisor Signature
	Demonstrates a therapist position appropriate, safe and justified relative to patient and equipment	Supervisor Signature
	Able to correctly identify all bronchopulmonary segments	Supervisor Signature
	Demonstrates an ability to maintain a safe and appropriate view of the airways at all times during performance of VAAC	Supervisor Signature
	Demonstrates an appropriate use of suction during VAAC and avoids any airway wall trauma	Supervisor Signature
	Demonstrates an ability to review appropriate position of the endotracheal or tracheostomy tube prior, during and after VAAC and escalates as appropriate (notify Doctors and adjust as appropriate by ICU Nursing Staff)	Supervisor Signature
	Demonstrates appropriate management and escalation of any abnormal findings to the intensive care specialist	Supervisor Signature
	Demonstrates the ability to recognise and manage any complications including desaturation, bleeding, bronchospasm, patient discomfort and haemodynamic instability. Demonstrates appropriate strategies and escalation to the intensive care specialist	Supervisor Signature

	Demonstrates appropriate post VAAC plan for the patient and transition plan for ventilator settings and monitoring post procedure. Appropriate VAAC documentation completed	Supervisor Signature
	Demonstrates appropriate care of VAAC equipment, including the scope suctioned post procedure, equipment disassembled correctly and safely, labelling of sputum samples correctly and equipment taken to respiratory store for cleaning	Supervisor Signature

Date: _____

COMPETENT TO PERFORM VAAC: YES NO

CONDITIONS/LEVEL OF SUPERVISION:

Assessor Name: _____

Senior Physiotherapist Name: _____

Assessor Signature: _____

Senior Physiotherapist Signature: _____

Assessor Designation: _____

Extended Scope of Practice for Senior Physiotherapists working in the Intensive Care Unit (ICU) Protocol for Video Assisted Airway Clearance

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SDMS Category	Allied Health - Physiotherapy
Effective Date	November 2018
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Applies to	Senior Physiotherapy staff working in ICU at LGH
Key Words	Physiotherapist, ICU, Video assisted airway clearance

Part A – Protocol

1. Protocol Statement

The scope of extended practice for senior physiotherapists in the Intensive Care Unit (ICU) is limited to the performance of Video Assisted Airway Clearance (VAAC) in adults with an artificial airway (endotracheal tube (ETT) or tracheostomy), that meet the indications and inclusion criteria and none of the exclusion criteria as set out in this document.

Rationale

Physiotherapists routinely perform both open and closed suctioning as part of a range of airway clearance techniques for intubated and mechanically ventilated patients who are unable to independently clear their airways and are therefore at high-risk of clinical deterioration. Video Assisted Airway Clearance (VAAC) on intubated and mechanically ventilated patients will provide senior physiotherapists working in the ICU a better set of tools to perform their clinical practice of airway clearance and allows an increased degree of precision and safety during suctioning of the airways

2. Process

The senior physiotherapist in conjunction with the intensive care specialist is responsible for assessing the patient for any contraindications or precautions to the VAAC, determining staff requirements for the intervention, performance of the VAAC for the indications listed below, adequate monitoring before, during and after the procedure, completion of appropriate documentation and appropriate communication with ICU medical and nursing staff.

The senior physiotherapist will commence working under the direct supervision of the intensive care specialist as per the Video Assisted Airway Clearance (VAAC) by Senior Physiotherapists training protocol until competency has been achieved as per the Senior Physiotherapy Video Assisted Airway Clearance (VAAC) Final Competency Assessment standards.

Once competency has been achieved, the senior physiotherapist will be deemed able to work autonomously with patients meeting the inclusion criteria as set out in this document **provided** an intensive care specialist and/or a senior member of the ICU medical team is available for assistance throughout the whole VAAC procedure as per the standard staffing requirements of ICU.

Regardless of being deemed competent, a collaborative, team-based approach to patient care is strongly encouraged at all times and the senior physiotherapist should remain in direct consultation with the intensive care specialist and Senior ICU Registrars regarding patient management and any patient concerns. Patients who require a VAAC but meet any of the contraindication and/or precaution criteria will need to be discussed with the intensive care specialist.

This protocol also outlines the use of medications for this procedure.

Indications for VAAC by the Senior Physiotherapist

The scope of practice for the Senior Physiotherapist will be limited to:

1. Clearance of secretions with associated lobar collapse
2. Collection of sputum specimens for microscopy and culture

Inclusions

- Patients with an artificial airway (ETT or tracheostomy) insitu in ICU that meet the indications for VAAC and none of the Exclusion criteria.

Exclusions

- Lung Transplant recipients
- Airway burn assessment
- Acute bronchospasm/Asthma

Requires Direct and Continuous Intensive Care Specialist Supervision

- CVS instability
- Patients on VA or VV ECMO
- Paediatric patients (< 16 years of age)
- Elevated bleeding risk, (INR > 2.0, APTT > 50, Platelets < 60)
- Respiratory compromise, (FiO₂ > 0.8, PEEP > 15)
- Known or suspected pregnancy
- Acute head injury with ICP monitor insitu
- Chronic lung disease

Patients that meet any of the above should be discussed with the intensive care specialist. Additionally, any issue or concerns regarding a patient referral for VAAC to the senior physiotherapist should be immediately raised and discussed with the intensive care specialist nominated to supervise the senior physiotherapist

Referral

Referral for VAAC to the senior physiotherapist can **only** be performed by an intensive care specialist.

After completion of credentialing, the senior physiotherapist may also identify patients who require VAAC treatment – however this **must** be discussed with the treating intensive care specialist prior to performing the VAAC.

Staff requirements for Senior Physiotherapist VAAC treatments

In stable, patients with an artificial airway that meet inclusion criteria and none of the exclusion criteria, the minimum number of staff and skill mix is as follows:

1. Senior Physiotherapist
2. ICU Nursing Staff with post-graduate training x 1 (to administer medication prescribed by the intensive care specialist prior to VAAC, to hold the ETT/Tracheostomy throughout the procedure and to continuously monitor the patient)
3. An intensive care specialist and/or a senior member of the ICU medical team must be present in the ICU unit throughout the VAAC procedure as per the standard staffing requirements for ICU

Medication management during VAAC

Sedation and local anaesthetic (Lignocaine) is preferred during VAAC in ICU especially for myopathic patients however, paralysis may sometimes be required for VAACs to occur safely.

The decision to use local anaesthetic or paralysing agent will be made **only** by the intensive care specialist.

Procedural sedation and local anaesthetic will be as per Flowchart A.

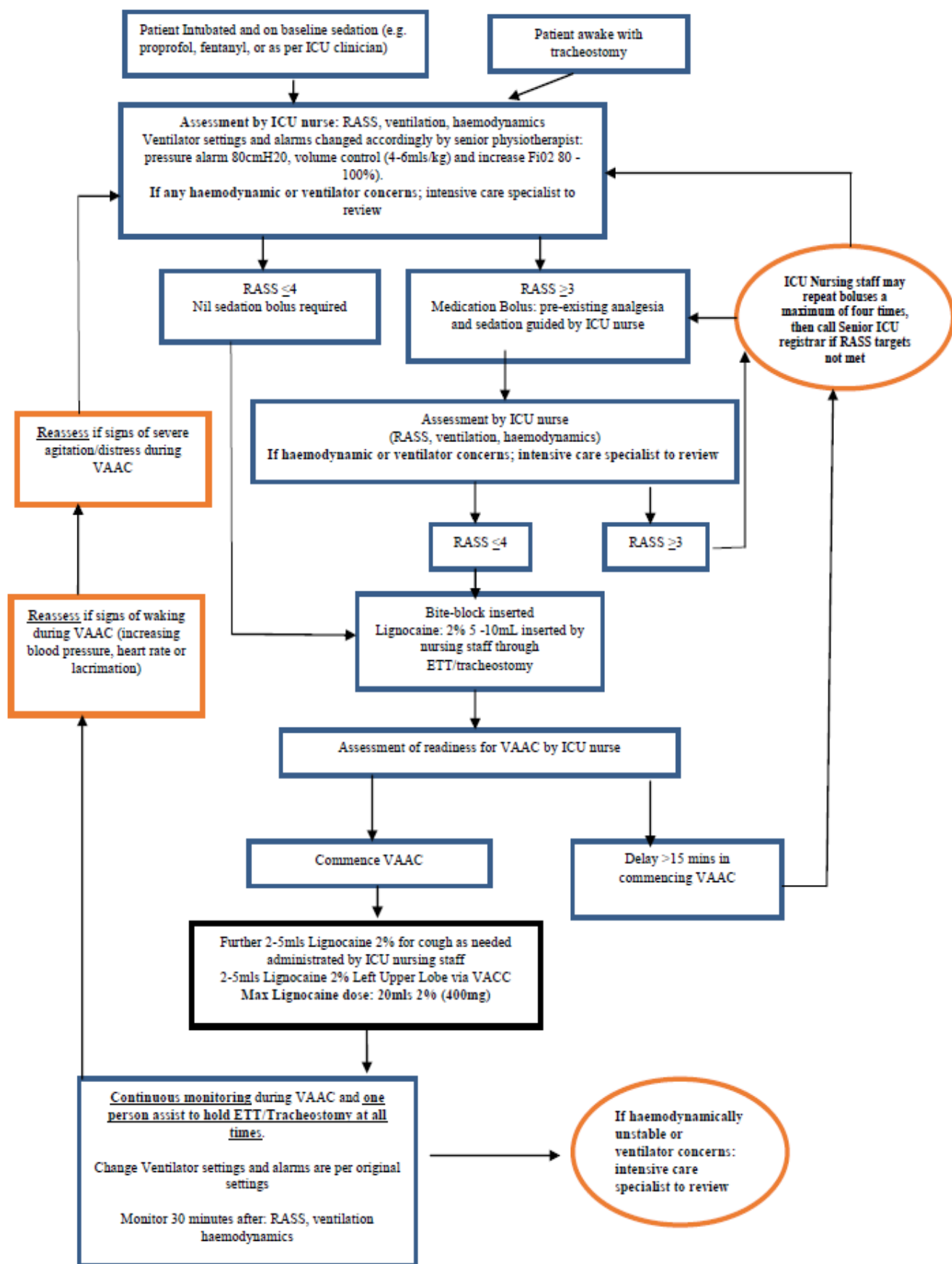
Procedural sedation and paralysis will be as per Flowchart B.

A medication order will be prescribed on the patient's existing medical chart by the intensive care specialist when the referral for Senior Physiotherapy VAAC is made and before administration by the ICU nursing staff.

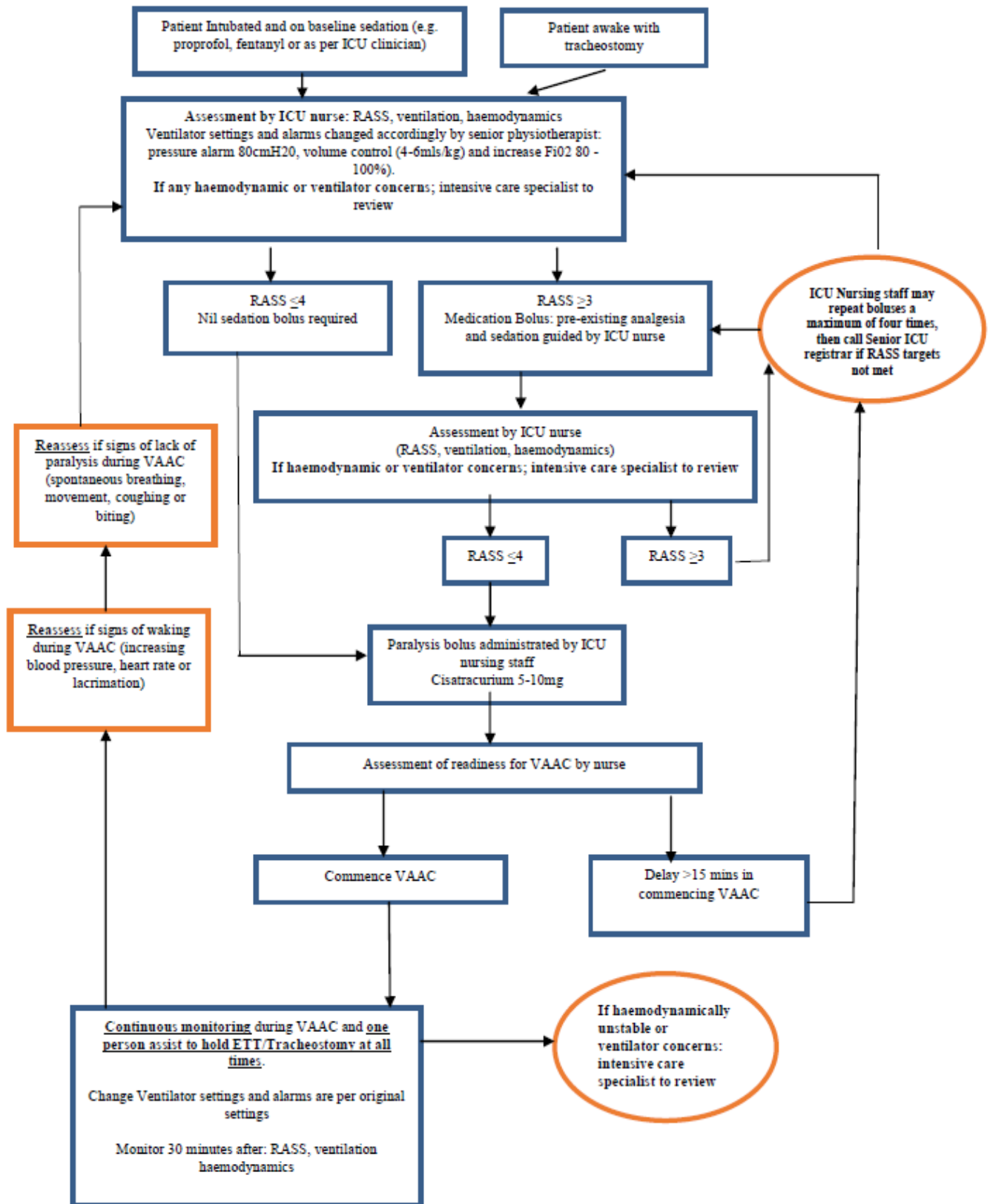
Prior to commencement of the VAAC the medications charted will be obtained from the drug room by the Intensive Care Nurse attending the VAAC procedure.

The following flowchart details monitoring to be undertaken by the intensive care registered nurse. If a patient becomes haemodynamically unstable or has any ventilation concerns, the intensive care registered nurse can use existing measures already in place or escalate to the intensive care specialist for review if new treatment or further assessment is required.

FLOWCHART A: Sedation and Lignocaine



FLOWCHART B: Sedation and paralysis



Monitoring

Patient monitoring should be done prior, after and continuously throughout the VAAC treatment. The following should be monitored:

- Patient level of consciousness
- Medications administered by ICU nursing staff including; dosage, route and time of delivery
- Cardiovascular; arterial blood pressure, mean arterial blood pressure, heart rate and rhythm
- Respiratory; oxygen saturations, respiratory rate, end tidal carbon dioxide
- Ventilator: baseline settings, tidal volume, peak inspiratory pressure, fraction of inspired Oxygen required

Assistant Role

The senior physiotherapist may be requested by the intensive care specialist to act as an assistant during any VAAC procedure, including (but not limited to) the following:

- Tracheostomy insertion
- Foreign body removal

The assistant role must be under **continuous and direct** supervision from an intensive care specialist present throughout the procedure.

Risk Management

There are potential adverse events to performing VAAC. As per the standard staffing requirements for ICU, a senior member of the ICU medical team must be present in the ICU unit throughout the VAAC procedure in case of the following unlikely events:

- ETT accidentally removed or dislodged
- Any concerns with ventilation (EtCO₂ monitor)
- Bleeding
- Bronchospasm
- Norad > 10µ/min above baseline or >15µ/min overall
- Any desaturation < 80%
- Desaturation < 85% for more than 2 minutes
- Any new arrhythmia
- Other concerns: abnormal ventilator parameters such as persistently raised inspiratory airway pressure, low ventilation tidal volumes, signs of gas trapping, suspicion of pneumothorax

Care and cleaning of equipment

The senior physiotherapist should complete a thorough manual cleaning of the VAAC equipment immediately after the procedure as per the standard cleaning instructions, before delivery to the respiratory storeroom for disinfection.

3. Definitions

1. **Competency** – “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being service” (Carr 2004)
2. **Video Assisted Airway Clearance (VAAC)** – for the purposes of this document refers to the use of a bronchoscope to clear sputum from the airways of intubated and mechanically ventilated patients
3. **Intensive Care Specialist** – a medical specialist trained and assessed to be proficient in the comprehensive clinical management of critically ill patients as the leader of a multidisciplinary team
4. **Senior Physiotherapist** – for the purpose of this document; Senior Physiotherapists must have at least 10 years clinical experience and at least 5 years ICU clinical experience with specific expertise in the physiotherapy management of intubated and mechanically ventilated patients

4. Responsibilities

Intensive care specialist supervisor

A nominated supervisor who is an intensive care specialist and possesses current scope in the performance of VAAC will oversee the senior physiotherapist’s VACC competency training and assessment. The intensive care specialist supervisor is responsible for:

- Regularly evaluating the senior physiotherapists performance against the clinical competences outlined in the Video Assisted Airway Clearance (VAAC) by Senior Physiotherapists protocol
- Facilitating the achieving of competency by employing appropriate teaching methods and encouraging reflective practice

Intensive care specialist

All intensive care specialists can supervise the senior physiotherapist’s during the VACC procedure and all can refer appropriate patients to the senior physiotherapist.

The intensive care specialists are responsible for:

- Providing appropriate referrals to the senior physiotherapist for VACC
- Prescribing the appropriate medication required for the VAC
- Assessing the patient for any contraindications or precautions to the VAAC in conjunction with the senior physiotherapist
- Providing direct and continuous supervision when required during VAAC procedures

Senior Physiotherapists

All senior physiotherapists are responsible for practicing within their level of competency and personal scope of practice. Senior physiotherapists who undertake training in VAAC are expected to:

- Perform VAAC treatments as required by intensive care specialist’s referrals and as per this protocol
- Actively seek opportunities for skill maintenance
- Senior physiotherapists may also identify patients who require VAAC treatment – however this **must** be discussed with the treating intensive care specialist prior to performing the VAAC
- Any medication required for the VAAC procedure **MUST** be prescribed by the intensive care specialist and administered by the ICU nursing staff as per this protocol

- Contribute to service development as required

5. References

- I. Carr, S. (2004) Assessing clinical competency in medical senior house officers: how and why should we do it? Postgrad Med J 2004 80:63-66

6. Related Documents

1. Video Assisted Airway Clearance (VAAC) by Senior Physiotherapists training protocol

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