




## **BTS Model of Care for Complex Home Ventilation: Appendices**



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## Appendix 1 Consumables for tracheostomy invasive ventilated patients


ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER																
<b>AIRWAY</b>																					
Tracheostomy Tube	CHC / NRS	NHS supply chain (NHS SC)	TBC by hospital discharge team	TBC but usually monthly	1 per month																
Tracheostomy inner cannulas	CHC / NRS	NHS SC	TBC by hospital discharge team	Monthly / PRN	TBC																
Heat-moisture exchanger (HME) for self-ventilating tracheostomy tube. 	ATOS care – order direct once patient is registered. All products are on prescription so the GP will be charged. Therefore, orders can be placed by care agency / patient / family member	<table border="1"> <tr> <td>1.</td> <td>NHS SC</td> </tr> <tr> <td>2.</td> <td>ATOS care</td> </tr> <tr> <td>3.</td> <td>ATOS care</td> </tr> <tr> <td>4.</td> <td>ATOS care</td> </tr> </table> ATOS care – order direct once patient is registered. All products are on prescription so the GP will be charged.	1.	NHS SC	2.	ATOS care	3.	ATOS care	4.	ATOS care	<table border="1"> <tr> <td>1.</td> <td>Portex Thermovent PC: 100/570/022 NHS code: FTC242 – pack 50</td> </tr> <tr> <td>2.</td> <td>Freevent Xtracare PC: 7768 blue - pack 30</td> </tr> <tr> <td>3.</td> <td>Freevent Xtracare PC: 7767 white – pack 30</td> </tr> <tr> <td>4.</td> <td>Trachephone PC: 7704 pack 50</td> </tr> </table>	1.	Portex Thermovent PC: 100/570/022 NHS code: FTC242 – pack 50	2.	Freevent Xtracare PC: 7768 blue - pack 30	3.	Freevent Xtracare PC: 7767 white – pack 30	4.	Trachephone PC: 7704 pack 50	Changed daily / PRN	Depending on how many in the pack: If 50 then 1 pack per month If 30 then 2 packs each month
1.	NHS SC																				
2.	ATOS care																				
3.	ATOS care																				
4.	ATOS care																				
1.	Portex Thermovent PC: 100/570/022 NHS code: FTC242 – pack 50																				
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3.	Freevent Xtracare PC: 7767 white – pack 30																				
4.	Trachephone PC: 7704 pack 50																				
HME for ventilated patients to go into ventilator circuit 	CHC / NRS	NHS SC	<ol style="list-style-type: none"> <li>Intersurgical Hydrotherm PC: 1850000 NHS: FDB 1020 Box 20</li> <li>HME with catheter mount Intersurgical PC: 1341012s NHS FDD5394 pack 50</li> <li>HME with catheter mount Intersurgical PC: 1941351 NHS FTC 134 Box 20</li> </ol>	Changed daily or PRN	Depends on the amount per package																




ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER
			4. HME Portex PC: 100/582/000 NHS FTC 076 Box 20		
Tracheostomy tube ties	As above	ATOS care	Freevent Neck Band 2-piece Small – PC: 1752 pack 100 Large – PC: 1762 pack 100	Changed daily / PRN	1 pack per month
Trache stoma dressing	As above	ATOS care	Metalline PC: 23094 pack 50 Trachi dressing small PC: TRDRE0001 pack 20 Advadraw T PC: CR/4416 pack 20	Changed daily / PRN	Depending on how many in a pack
Tracheostomy tube shower cover	As above	ATOS care	Shower cover cascade PC: AS3835 pack 1	Changed when damaged	PRN
Tracheostomy tube inner cannula cleaning swabs 	As above	ATOS care	PROVOX swabs Medium PC: 8251 pack 50 Large PC: 8252 pack 50		2 packs
Lubricant for tracheostomy tube changes	As above	ATOS care	Optilube tube 42g PC:1121 pack 1	As required	
Dressing pack	As above	ATOS care	Sterile dressing pack PC: DP SPEC35 pack 12	Single use daily	3 packs
Normal saline for cleaning	As above	ATOS care	Normasol 25ml PC: NOR206B pack 25	Single use	2 packs
Suction catheters for tracheal deep suction. Size will	CHC / NRS	NHS SC	All suction catheters must have a suction port: Tendertip <b>size 10</b> PC: TT01-10-060 NHS: FSQ 580	Single use only	5-6 boxes of 100 per month

ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER
depend on trache tube size 10, 12, 14			Tendertip size 12 PC: TT01-12-060 NHS FSQ 576 Tendertip size 14 PC: TT01-14-060 NHS FSQ 578 Argyle Size 12 01952061 / NHS FDR305 Gen Cath GXM-7860SCC12 / FSQ2825  All come in box 100		
Suction unit x 2 which are portable (has an internal battery) reusable cannister I large 1 portable to go out of the house	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>• Laerdal with reusable cannister PC: 78000003 NHS FSL 984 Pack 1</li> <li>• Laerdal LSCU4 300ml cannister PC: 880052 NHS FDR608 <ul style="list-style-type: none"> <li>○ Carry case PC: 886110 NHS FSL 1082</li> </ul> </li> </ul>	Should be under contract with local medical equipment supply chain	
Suction tubing for suction unit	CHC / NRS	NHS SC	Serres PC: 5833181 NHS FSL 1702 Pack 1	Change monthly PRN	2 monthly
Suction catheter for oral secretions: Yankauer	CHC / NRS	NHS SC	PC: PB-431004 NHS: FDF2259 pack 20 PC: YS-3005 NHS: FDB 136 1 per pack PC: 1180501106 NHS FWP 501 pack 10	Change weekly / PRN	Depends on the number in each pack
Nebuliser compressor /device	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>• Pari-Turbo BoySX PC: 085G3204 NHS FAG071</li> <li>• Respironics UK PC: 1112279 NHS FAG1072</li> </ul>	Change when broken. Needs to be under a local medical service agreement	

ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER
			<ul style="list-style-type: none"> <li>Clement Clarke PC: 3605050HW NHS FAG034</li> </ul>		
Nebuliser chamber with T-piece 	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>Hudson Teleflex Medical PC: 41745 NHS FDD2311 Box 50</li> <li>Cirrus 2 nebuliser breathing kit Intersurgical PC: 2605000 Box 40</li> </ul>	Change weekly / PRN (may need 2 nebuliser pots depending on the type of drugs being used)	
Tracheostomy mask for self-ventilating patients with trache tube requiring nebuliser 	CHC / NRS	NHS SC	Vyair Medical PC: 001225 NHS FDQ3519 Box 50	Change weekly	
Bag valve mask circuit with self-inflating reservoir bag	Patient should be given the one they had in hospital	NHS SC	Ambu resuscitator PC: 335002000RH NHS FDE375 Pack 1	When damaged	N/A

ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER								
													
<p>Upper airway restoration valve / speaking valve <b>(ONLY TO BE ORDERED IF PRESCRIBED BY A SPECIALIST CLINICIAN)</b></p>		<table border="1"> <tr> <td data-bbox="645 343 696 416">1.</td> <td data-bbox="701 343 927 416">GP prescription</td> </tr> <tr> <td data-bbox="645 419 696 459">2.</td> <td data-bbox="701 419 927 459">ATOS care</td> </tr> </table>	1.	GP prescription	2.	ATOS care	<table border="1"> <tr> <td data-bbox="981 343 1032 930">1.</td> <td data-bbox="1037 343 1375 930">           Kapitex: Passy Muir Valve            a. Aqua for <u>in line with ventilator circuit</u>:  <b>PC: TRPMV0002</b> (pack of 1)            b. Purple/clear for self-ventilating patients:  <b>PC: TRPMV1003 / TRPMV1002</b> (pack of 1)         </td> </tr> <tr> <td data-bbox="981 810 1032 930">2.</td> <td data-bbox="1037 810 1375 930">           Speaking valve for <u>self-ventilating patient only</u>:  <b>PC: TSV/100</b> (pack 12)         </td> </tr> </table>	1.	Kapitex: Passy Muir Valve a. Aqua for <u>in line with ventilator circuit</u> : <b>PC: TRPMV0002</b> (pack of 1) b. Purple/clear for self-ventilating patients: <b>PC: TRPMV1003 / TRPMV1002</b> (pack of 1)	2.	Speaking valve for <u>self-ventilating patient only</u> : <b>PC: TSV/100</b> (pack 12)	<p>Changed when damaged or after 3 months</p>	<p>1 every 3 months</p>
1.	GP prescription												
2.	ATOS care												
1.	Kapitex: Passy Muir Valve a. Aqua for <u>in line with ventilator circuit</u> : <b>PC: TRPMV0002</b> (pack of 1) b. Purple/clear for self-ventilating patients: <b>PC: TRPMV1003 / TRPMV1002</b> (pack of 1)												
2.	Speaking valve for <u>self-ventilating patient only</u> : <b>PC: TSV/100</b> (pack 12)												
<b>VENTILATION</b>													
Domiciliary ventilator with internal and	Home mechanical	Specialist team	N/A	N/A	N/A								

ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER
portable batteries x 2 and 1 carry case.	ventilation specialist team				
Active heated humidifier: Fisher and Paykal MR550 or MR850 with temp wires	As above	Specialist team			
MI-E Device (cough assist): Breas clearway or Phillips Respironics	As above as should be responsible for prescription	As above			
Heated breathing ventilator circuit with humidification chamber 	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>• Fisher &amp; Paykel PC: RT202 NHS FDC205 Box 10</li> <li>• F&amp;P PC: RT319FE NHS FDC202 Box 10</li> <li>• Breas Medical PC: 0810/SP1 NHS FAG2548 Box 10</li> <li>• Intersurgical PC: 2026310 HNS FDC534 Box 7</li> </ul>	Every 2 months	
Dry circuit for day use and mobility	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>• Breas Medical breathing circuit with CO2 exhaust port (leak valve) PC: 0792/SP2 NHS FAG442 Box 10</li> </ul>	Change 2 monthly	
Sterile water for inhalation /irrigation for heated	CHC / NRS	NHS SC	<ul style="list-style-type: none"> <li>• Aquiant 1000mls PC: 500.186 NHS FDD4490 Box 10</li> </ul>	As required – usually daily	2-4 boxes per month

ITEM	WHO TO ORDER	ORDER SYSTEM	PRODUCT CODES / SYSTEM CODES	FREQUENCY OF CHANGE	MONTHLY ORDER
humidification system			<ul style="list-style-type: none"> <li>Viaflo 1litre bag PC: 34962211000001107 / 5413760137247</li> </ul>		
Flexible catheter mount with suction port 	CHC	NHS SC	<ul style="list-style-type: none"> <li>Intersurgical PC: 3516000 HNS FDB939 Box 50</li> <li>Intersurgical PC: 5180000 NHS FDB938 Box 50</li> </ul>	Change daily / PRN	1 box per month
Exhalation port / Leak valve/port or CO2 leak port disposable 	CHC / NRS	NHS SC	Intersurgical PC: 5802001 NHS: FDB1030 Box 30	Change weekly / PRN wash daily	1 box per month
Exhalation port / leak valve/port re-usable for 6 months 	CHC / NRS	NHS SC	Respirationics Swivel valve PC: 332113 NHS: FAG4900 Pack 1	Change every 6 months if not damaged. Wash daily	2 per year





Appendix 2 Evidence for LTV

<p>COPD</p>	<p>Home NIV may be considered for patients with chronic stable hypercapnic COPD,<sup>18</sup> or following an episode of acute hypercapnic respiratory failure if hypercapnia persists.<sup>18-19</sup></p> <p>Home NIV may also be considered in COPD where LTOT is required but causes significant hypercapnia.<sup>20</sup></p> <p>Where COPD exists in an overlap syndrome e.g. with obstructive sleep apnoea/hypopnoea syndrome (OSAHS), home NIV may be considered instead of CPAP if hypercapnia is severe (<math>\text{PaCO}_2 &gt; 7\text{kPa}</math>).<sup>21</sup></p>
<p>Obstructive sleep apnoea / hypopnoea syndrome (OSAHS)</p>	<p>CPAP is the recommended treatment for OSAHS. Home NIV may be considered where OSAHS is refractory to maximal CPAP therapy.<sup>22</sup></p>
<p>Obesity hypoventilation syndrome (OHS)</p>	<p>Acute NIV should be utilised in OHS with acute respiratory failure. After stabilisation and control of hypercapnia, home NIV should be considered if decompensation occurs after acute NIV is stopped and/or a trial of CPAP therapy fails.<sup>22</sup></p> <p>CPAP is the first-line treatment for patients with OHS and severe OSAHS who do not have acute respiratory failure.<sup>22</sup> Home NIV should be considered for OHS with severe OSAHS refractory to maximal CPAP therapy.<sup>22</sup></p> <p>Home NIV should be considered for patients with OHS and nocturnal hypoventilation in the absence of OSAHS, who do not have acute respiratory failure.<sup>22</sup></p>
<p>Neuromuscular disorders</p>	<p>Home ventilation may offer survival benefit, reduce unplanned hospital admissions, and relieve symptoms for patients with neuromuscular disorders and hypoventilation.<sup>23,24</sup></p> <p>In MND, respiratory function tests and symptoms should be monitored in line with NICE guidance. Referral to the ventilation service may be made on the basis of respiratory function, or on symptoms of hypoventilation or sleep-related respiratory disturbance alone. Blood gas analysis should be done by referrer if oxygen saturation is <math>\leq 92\%</math> with known lung disease, or <math>\leq 94\%</math> without. Where <math>\text{PaCO}_2</math> is <math>&gt; 6\text{kPa}</math>, urgent referral is required and a complex ventilation service should see the patient within 1 week.<sup>25</sup></p>
<p>Restrictive thoracic disorders</p>	<p>Home ventilation may offer survival benefit, reduce unplanned hospital admissions, and relieve symptoms for patients with restrictive thoracic disorders and hypoventilation.<sup>23</sup></p>
<p>Central hypoventilation</p>	<p>Home ventilation may be required, with clinical indication and level of treatment complexity determined by severity of hypoventilation (impairment of neural drive).<sup>26</sup></p>

## Appendix 2 Evidence for LTV

Pulmonary hypertension	Patients with pulmonary hypertension associated with hypoventilation may be considered for home NIV, based on possible physiological benefit. <sup>27</sup>
Spinal cord injury	Home ventilation may be required, with clinical indication and level of treatment complexity determined by degree of respiratory impairment. <sup>26</sup>
Cystic fibrosis	Home NIV may be offered for control of hypercapnia and bridge to transplant in CF. <sup>28</sup> NIV may also be considered as an adjunct to airway clearance in selected cases. <sup>29</sup>
Paediatric transition	Planned transition from paediatric to adult ventilation services should be undertaken with patients established on or expected to require long-term invasive or non-invasive ventilation, with services working collaboratively. <sup>30</sup>

# Appendix 3 - Ventilator Set-up

## Neuromuscular & Chest Wall Disease

**Monitoring**  
- Capnography  
- Oximetry

**Ventilators to use**  
1<sup>st</sup> NIPPY 3-plus  
2<sup>nd</sup> NIPPY 3  
3<sup>rd</sup> Harmony2/Synchrony  
4<sup>th</sup> VPAP-S/VPAP 4\*  
\*only has back up of rate of 10 so only use if specified by consultant

**Ti Settings**  
NIPPY 3-plus/3 1.2s  
Harmony 2/Synchrony 1.2s  
VPAP-S/VPAP 4 Ti Min 1.2s  
Ti Max 2.0s

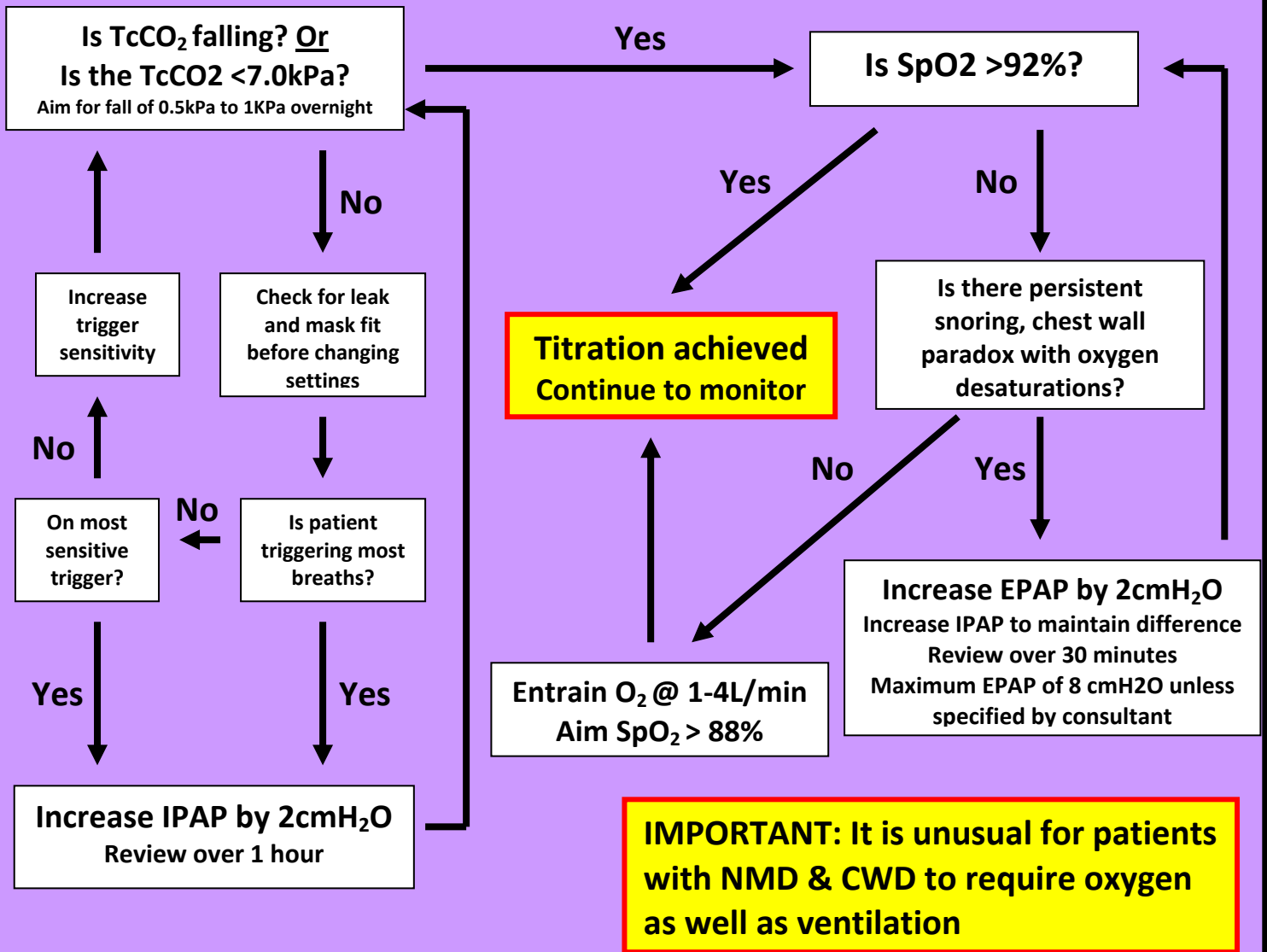
**Backup rate**  
N3-plus/N3/Harmony 14bpm  
VPAP 10bpm (mandatory)

**Trigger settings**  
N3 4i/4e  
Harmony 2/Synchrony Fixed  
VPAP-S/VPAP 4 Medium

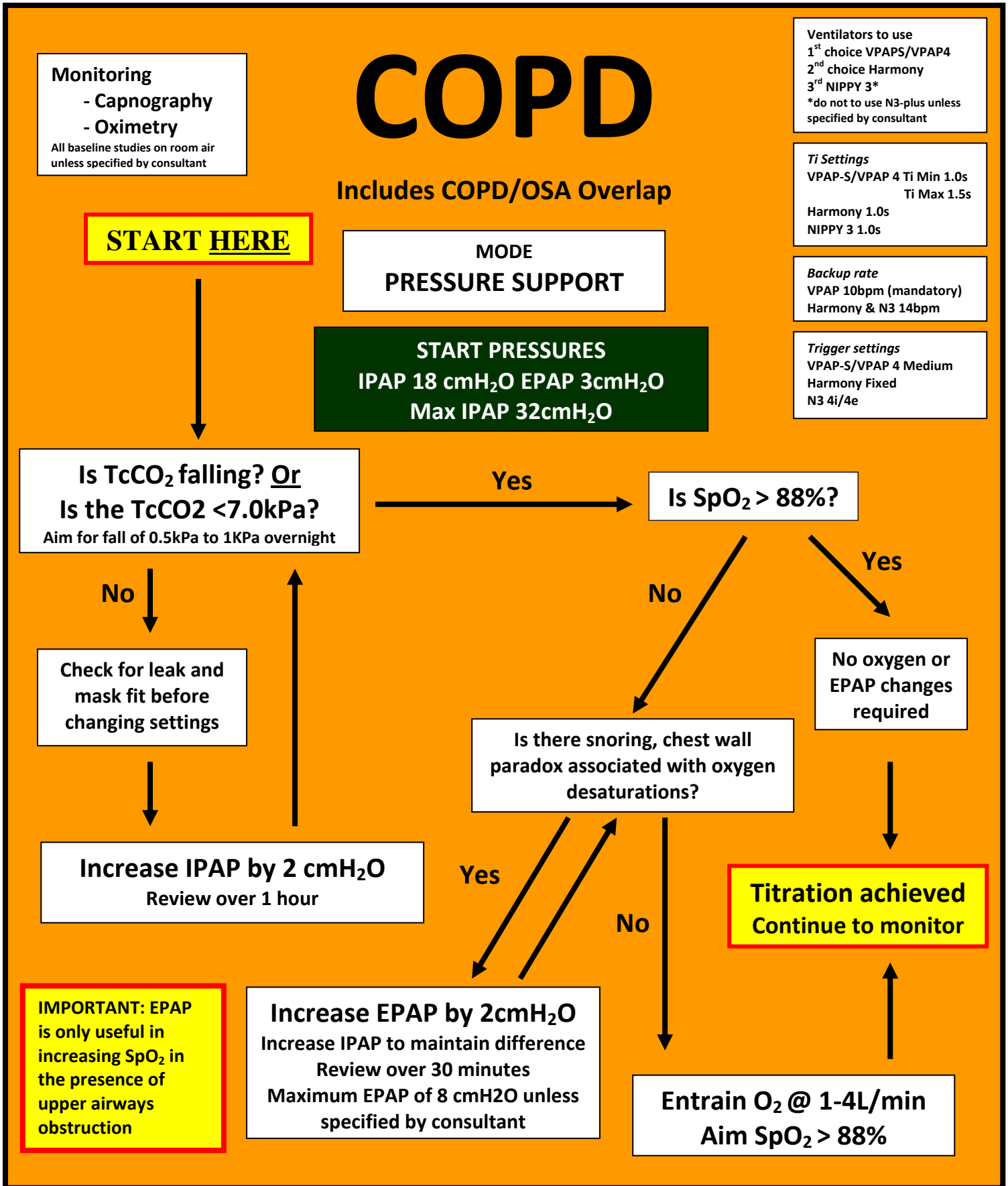
**START HERE**

**INITIAL MODE  
PRESSURE SUPPORT**

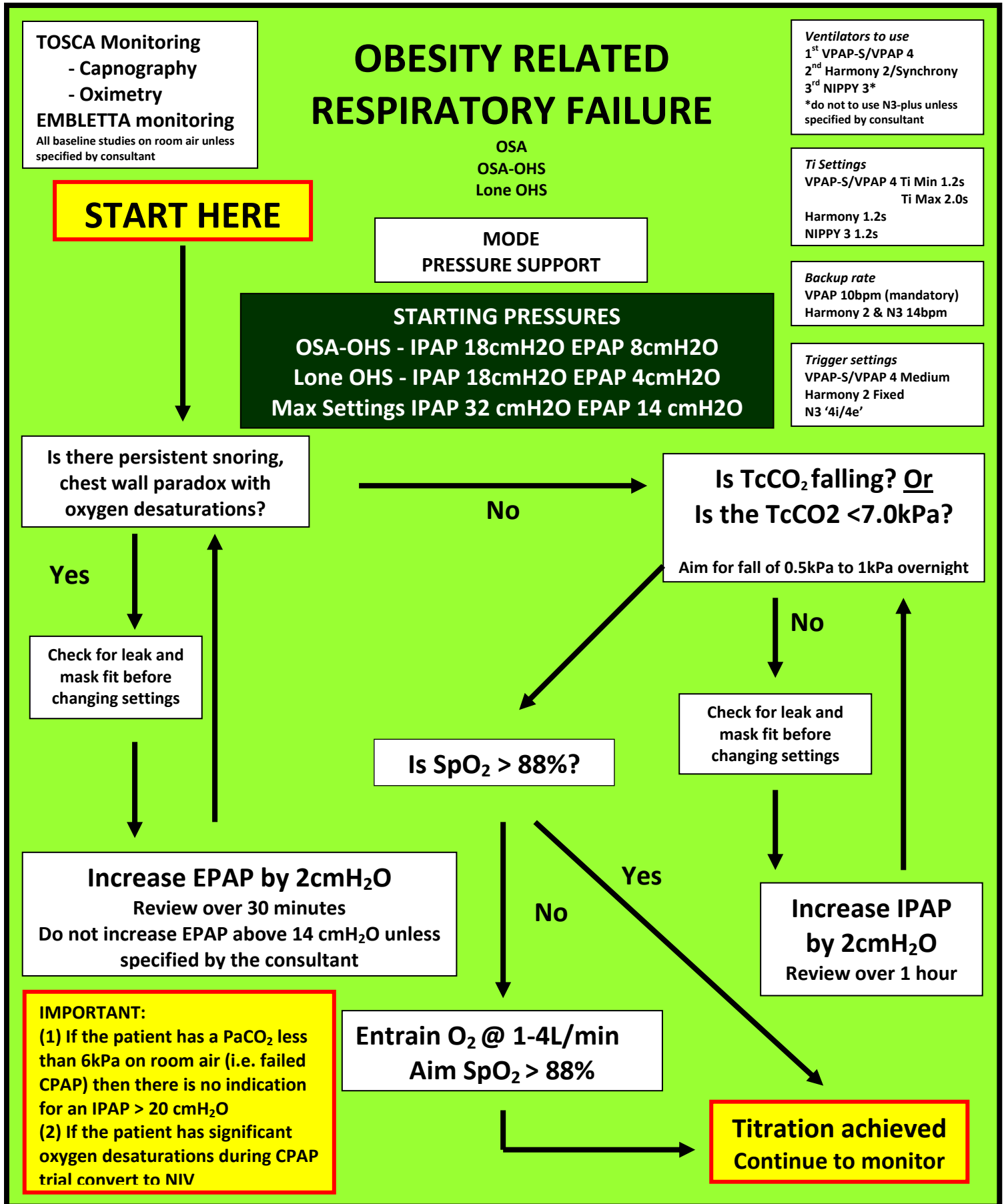
**START PRESSURES**  
NMD IPAP 15 cmH<sub>2</sub>O EPAP 3 cmH<sub>2</sub>O  
(IPAP 12cmH<sub>2</sub>O if <50kg)  
CWD IPAP 18 cmH<sub>2</sub>O EPAP 3 cmH<sub>2</sub>O



# Appendix 4: Ventilator Set-up

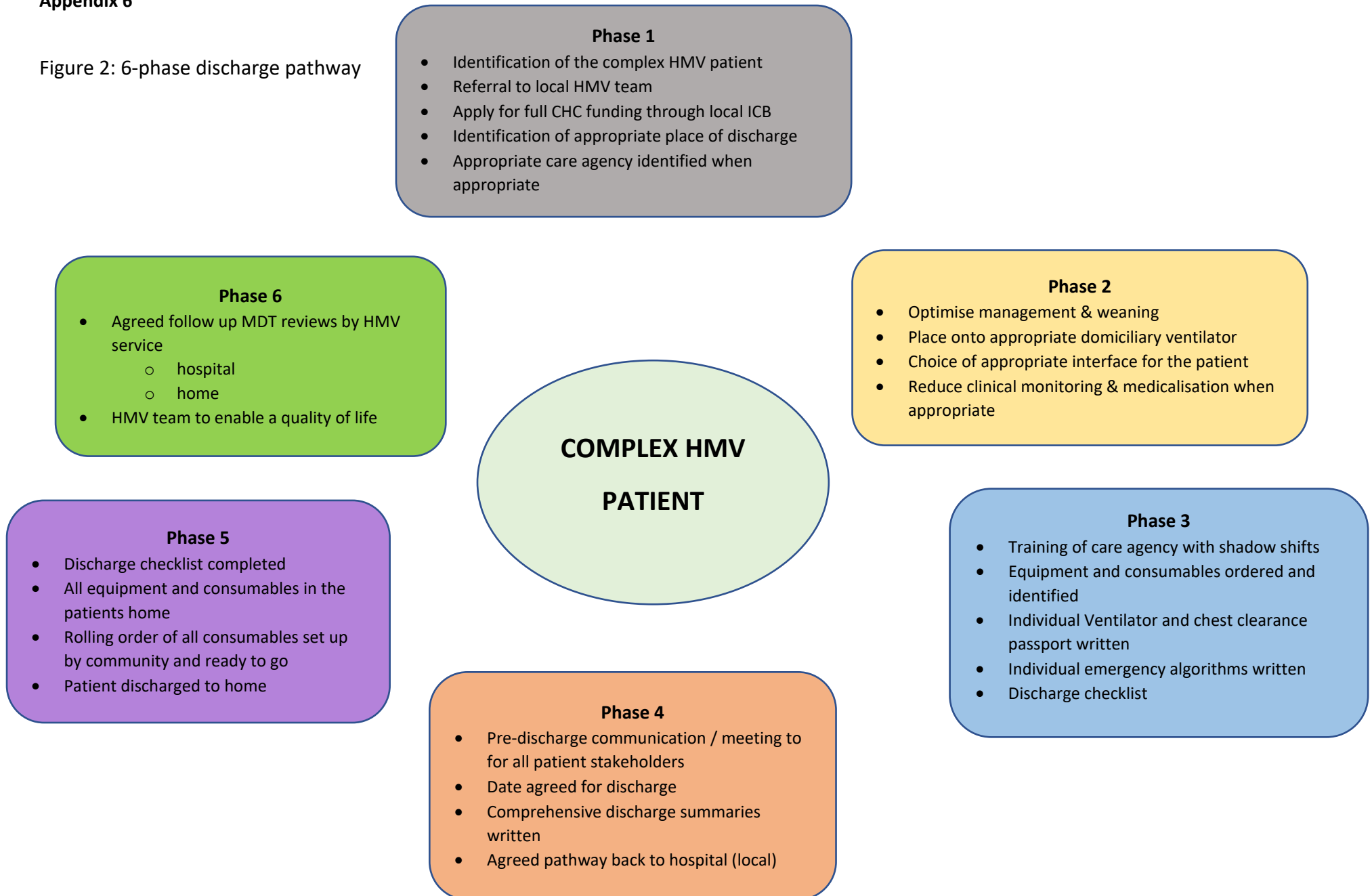


# Appendix 5: Ventilator Set-up



## Appendix 6

Figure 2: 6-phase discharge pathway





## Tracheostomy Tube Care and Mechanical Ventilation: Routine and Emergency

### Safe Practice Training for carers

Staff Name:

Assessor Name:

Job Title:

Job Title:

Date of Assessment:

#### Competency Statement

The carer will demonstrate **SAFE PRACTICE** for patients with a tracheostomy tube requiring invasive mechanical ventilation.

Key skills	Discuss Theory and Observe Practice	Safe to Practice
<p>Understands the principles and practices of tracheostomy care and mechanical ventilation: Routine and Emergency</p> <ul style="list-style-type: none"> <li>• Knows the type and size of tracheostomy tube the patient has</li> <li>• Knows why the patient has a tracheostomy</li> <li>• Essential information about patient’s upper airway</li> <li>• Previous red flags</li> <li>• How often the patient’s tracheostomy tube has to be changed and who should carry this out</li> <li>• The correct position of the tracheostomy tube</li> <li>• Type of Humidification</li> <li>• How the tracheostomy tube is secured</li> <li>• Stoma cleaning and observation</li> <li>• Inner tracheostomy cannula cleaning</li> <li>• Patency of tracheostomy tube</li> <li>• Routine suctioning (separate training)</li> <li>• Cuff pressure (where appropriate)</li> <li>• Cuff deflation (where appropriate)</li> <li>• Use of upper airway restoration one-way valve (where appropriate)</li> <li>• Emergency algorithms and how they are managed:                             <ul style="list-style-type: none"> <li>○ Blocked tracheostomy tube</li> <li>○ Dislodged tracheostomy tube</li> <li>○ Respiratory distress</li> <li>○ Bleeding</li> </ul> </li> <li>• Identifies the ventilator used</li> <li>• Understands why the patient requires ventilation</li> <li>• Identifies the mode of ventilation the patient is on</li> <li>• Identifies what the ventilator alarms mean</li> </ul>		



## Appendix 7

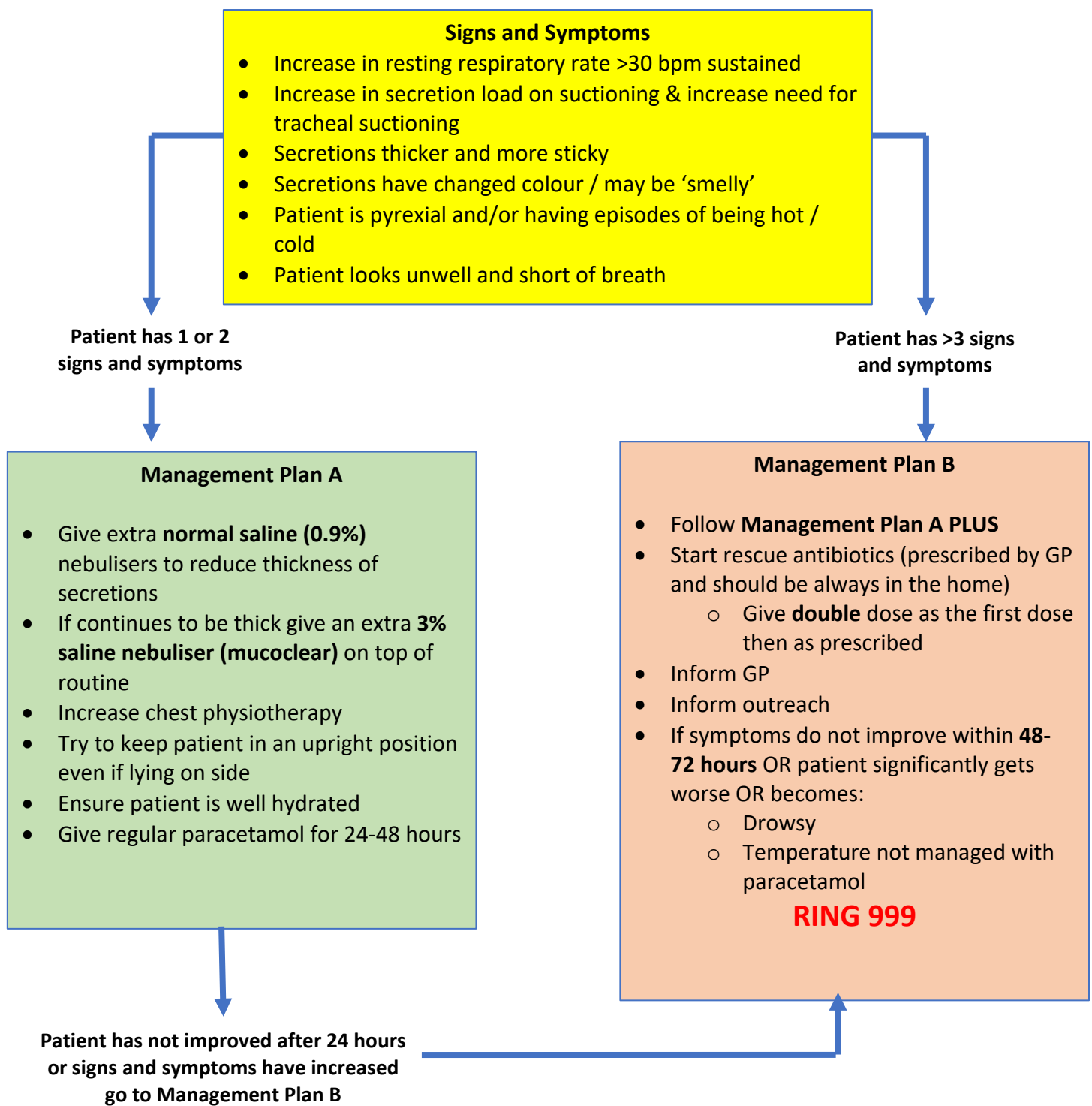
<ul style="list-style-type: none"> <li>Identify <b>ALL</b> the components of the ventilator circuit, humidifier, and cough assist with their generic names</li> <li>Identify the signs and symptoms of respiratory distress and chest infections</li> <li>Understands the algorithms and how to manage the above</li> </ul>		
<p><b>1. Carer is able to demonstrate:</b></p> <ul style="list-style-type: none"> <li>Two person technique in cleaning stoma, changing tracheostomy tapes/collar and dressing</li> <li>Discuss the potential risks when cleaning and changing tracheostomy tape/collar</li> </ul>		
<p><b>2. Carer is able to demonstrate:</b></p> <ul style="list-style-type: none"> <li>Safe removal of inner cannula and replacement with clean inner cannula</li> <li>Appropriate cleaning and storage of spare inner cannula</li> <li>How to measure cuff pressure and how to troubleshoot</li> <li>How to carry out safe cuff deflation</li> <li>How to use the nebuliser in the ventilator circuit</li> <li>How to put any of the following into the ventilator circuit: <ul style="list-style-type: none"> <li>HME</li> <li>Oxygen entrainer</li> <li>Upper airway restoration one-way valve (PMV – speaking valve)</li> <li>Nebuliser</li> </ul> </li> </ul>		
<p><b>3. Carer can identify all emergency equipment:</b></p> <ul style="list-style-type: none"> <li>working appropriately</li> <li>fully charged</li> <li>In easy access</li> <li>All spare emergency tracheostomy tubes are in date</li> <li>Emergency tracheostomy box is correct</li> </ul>		
<p><b>4. Carer can demonstrate safe and effective tracheal suction</b></p> <ul style="list-style-type: none"> <li>Identifies when patient needs suction</li> <li>Gathers the correct equipment</li> <li>Sets the correct suction pressure</li> <li>Carries out effective deep tracheal suction</li> <li>Observes type and amount of secretions obtained</li> </ul>		
<p><b>5. Carer can identify an emergency and is able to discuss / carry out the steps required for each emergency:</b></p> <ul style="list-style-type: none"> <li>Sputum plug</li> <li>Dislodged tracheostomy tube</li> <li>Respiratory distress</li> <li>Bleeding</li> <li>Vasal vagal response to suctioning</li> </ul>		
<p><b>6. Carer demonstrates the correct use of the bag-mask-valve resuscitation device (e.g. AMBU bag)</b></p>		
<p><b>7. Carer demonstrates how to troubleshoot ventilator alarms &amp; when / who to escalate issues</b></p>		
<p><b>8. Carer demonstrates how to set up and change all components of the:</b></p> <ul style="list-style-type: none"> <li>Ventilator Circuit &amp; exhalation valve for:</li> </ul>		

**Appendix 7**

<ul style="list-style-type: none"> <li>▪ Dry circuit with HME</li> <li>▪ Wet circuit with Fisher &amp; Paykal humidification system</li> <li>• Cough Assist device circuit</li> </ul>		
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Outcome of assessment	Safe to practice	Not safe to practice <i>(complete action plan)</i>	Action Plan Completed
Signatures		Signature of Trainee:	Signature of Assessor:

**MANAGEMENT OF POSSIBLE CHEST INFECTION  
TIV**



### MANAGEMENT OF SUSPECTED SPUTUM PLUG WITH MI-E

- Difficulty in breathing & patient is distressed
- Respiratory rate is greater than 28bpm, for more than 1 minute
- Observed use of accessory muscles (abdomen, shoulders)
- Ventilator is alarming

- Reassure patient
- Check all ventilator tubing and exhalation valve are free from obstruction (water in tubing, sputum in exhalation valve)
- Check inner cannula for blockage, replace with clean inner cannula
- Give deep tracheal suction x 2

RESOLVED

NOT RESOLVED

- Reassure Patient
- Give 3% saline nebuliser
- Give extra 0.9% saline nebulisers if required
- Ensure patient is well hydrated
- Think about giving an extra cough assist
- Keep a close observation of secretions tenacity and amount

RESOLVED

RESOLVED

RESOLVED

- Commence cough assist therapy
- Re-connect ventilator and carry out deep tracheal suction x 2
- Repeat cough assist therapy
- Re-connect ventilator and carry out deep tracheal suction x 2

NOT RESOLVED

- Deflate cuff
- Give deep suction

NOT RESOLVED

- Disconnect patient from ventilator and attach patient to **AMBU BAG** via trache tube
- Give **5** deep breaths using the **AMBU BAG**
- Re-connect ventilator and carry out deep tracheal suction

NOT RESOLVED

- Repeat **AMBU BAG** breaths if still in distress
  - If not able to ventilate patient via Tracheostomy Tube **TAKE OUT TUBE**
  - **Try re-inserting new tracheostomy tube**
  - **IF UNABLE TO** commence **AMBU BAG** ventilation via patient's nose and mouth using face mask – ENSURE TRACHE STOMA IS COVERED
- CALL 999**

**SUSPECTED SPUTUM PLUG**  
**Patients with uncuffed or cuff down tracheostomy tube**  
**THINK A – B - C**

- Difficulty in breathing & patient is distressed
- Respiratory rate is greater than 25 bpm for more than 1 minute
- Observed use of accessory muscles (abdomen, shoulders)

- Reassure patient
- Remove tracheostomy inner cannula and replace with clean one
- Give deep tracheal suction x 2

**RESOLVED**

**NOT RESOLVED**

- Reassure patient
- Give 0.9% saline nebuliser
- Give extra saline nebulisers if required
- Ensure patient is well hydrated
- Keep a close observation of secretions tenacity and amount

- Give 0.9% saline nebuliser
- Carry out deep tracheal suction x 2
- Give 0.9% saline nebuliser
- Carry out deep tracheal suction x 2

**RESOLVED**

**NOT RESOLVED**

- Attach patient to **AMBU BAG** via tracheostomy tube
- Give **5** deep breaths using the **AMBU BAG**
- Carry out deep tracheal suction

**RESOLVED**

**NOT RESOLVED**

- Repeat **AMBU BAG** breaths if still in distress
  - If not able to ventilate patient via Tracheostomy Tube **TAKE OUT TUBE**
  - **Try re-inserting new tracheostomy tube – same size or 1 size smaller**
  - **IF UNABLE TO re-insert and patient not breathing** Commence **AMBUBAG** ventilation via patient’s nose and mouth using face mask – **ENSURE TRACHE STOMA IS COVERED**
- CALL 999**

### MANAGEMENT OF SUSPECTED SPUTUM PLUG TIV

- Difficulty in breathing & patient is distressed
- Respiratory rate is greater than 30bpm, for more than 1 minute
- Observed use of accessory muscles (abdomen, shoulders)
- Ventilator is alarming

- Reassure patient
- Check all ventilator tubing and exhalation valve are free from obstruction (water in tubing, sputum in exhalation valve)
- Check inner cannula for blockage, replace with clean inner cannula
- Give deep tracheal suction x 2

RESOLVED

NOT RESOLVED

- Reassure patient
- Re-inflate cuff if deflated
- Give 3% saline nebuliser
- Give extra 0.9% saline nebulisers if required
- Ensure patient is well hydrated
- Keep a close observation of secretions tenacity and amount

RESOLVED

RESOLVED

RESOLVED

- Instil 5mls 0.9% saline directly into tracheostomy tube
- Give deep suction

NOT RESOLVED

- Deflate trache tube cuff
- Carry out deep tracheal suction x 2

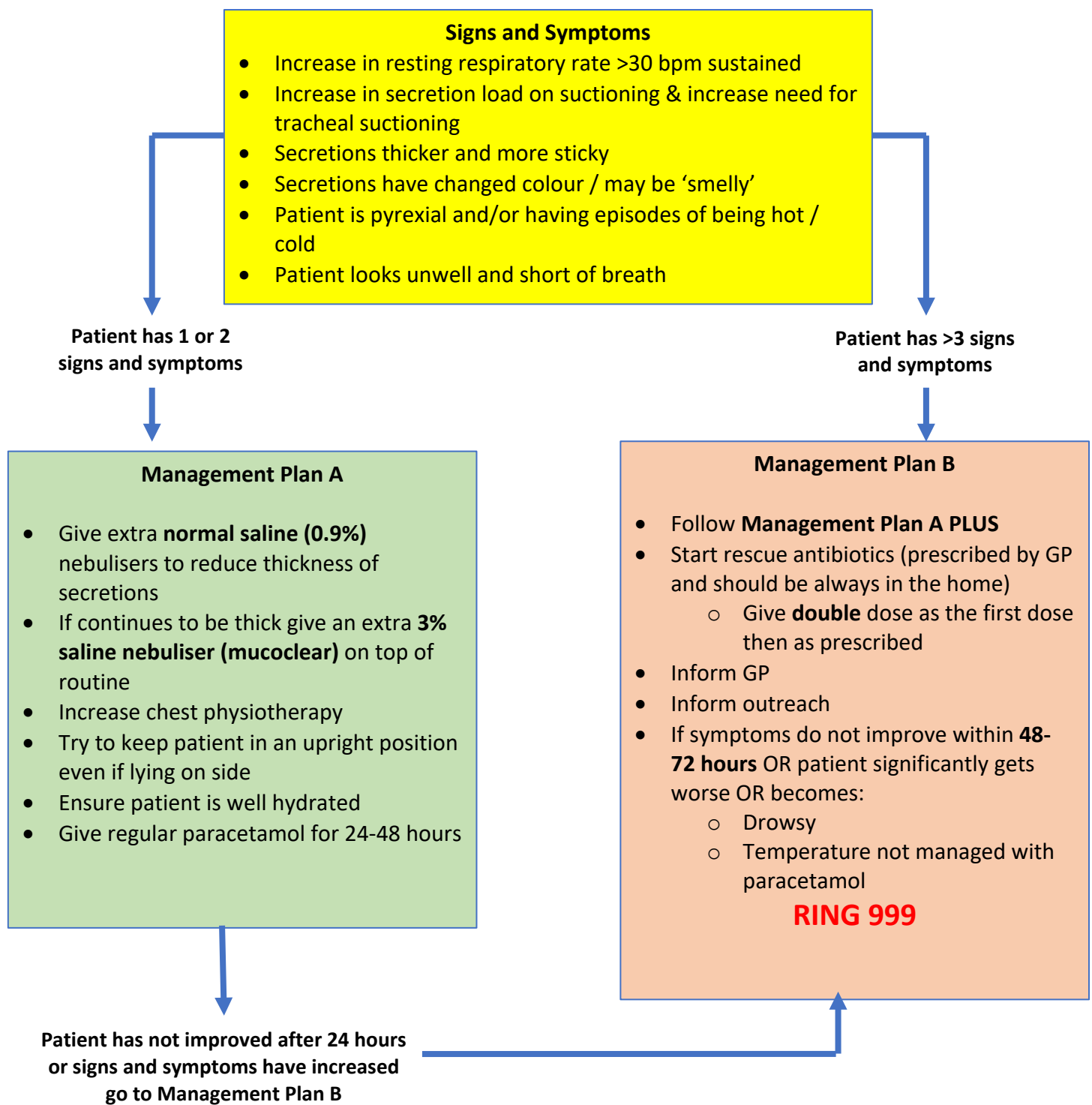
NOT RESOLVED

- Disconnect patient from ventilator and attach patient to **AMBU BAG** via trache tube
- Give **5** deep breaths using the **AMBU BAG**
- Re-connect ventilator and carry out deep tracheal suction

NOT RESOLVED

- Repeat **AMBU BAG** breaths if still in distress
  - If not able to ventilate patient via Tracheostomy Tube **TAKE OUT TUBE**
  - **Try re-inserting new tracheostomy tube – same size or 1 size smaller**
  - **IF UNABLE TO re-insert commence AMBU BAG ventilation via patient's nose and mouth using face mask – ENSURE TRACHE STOMA IS COVERED**
- CALL 999**

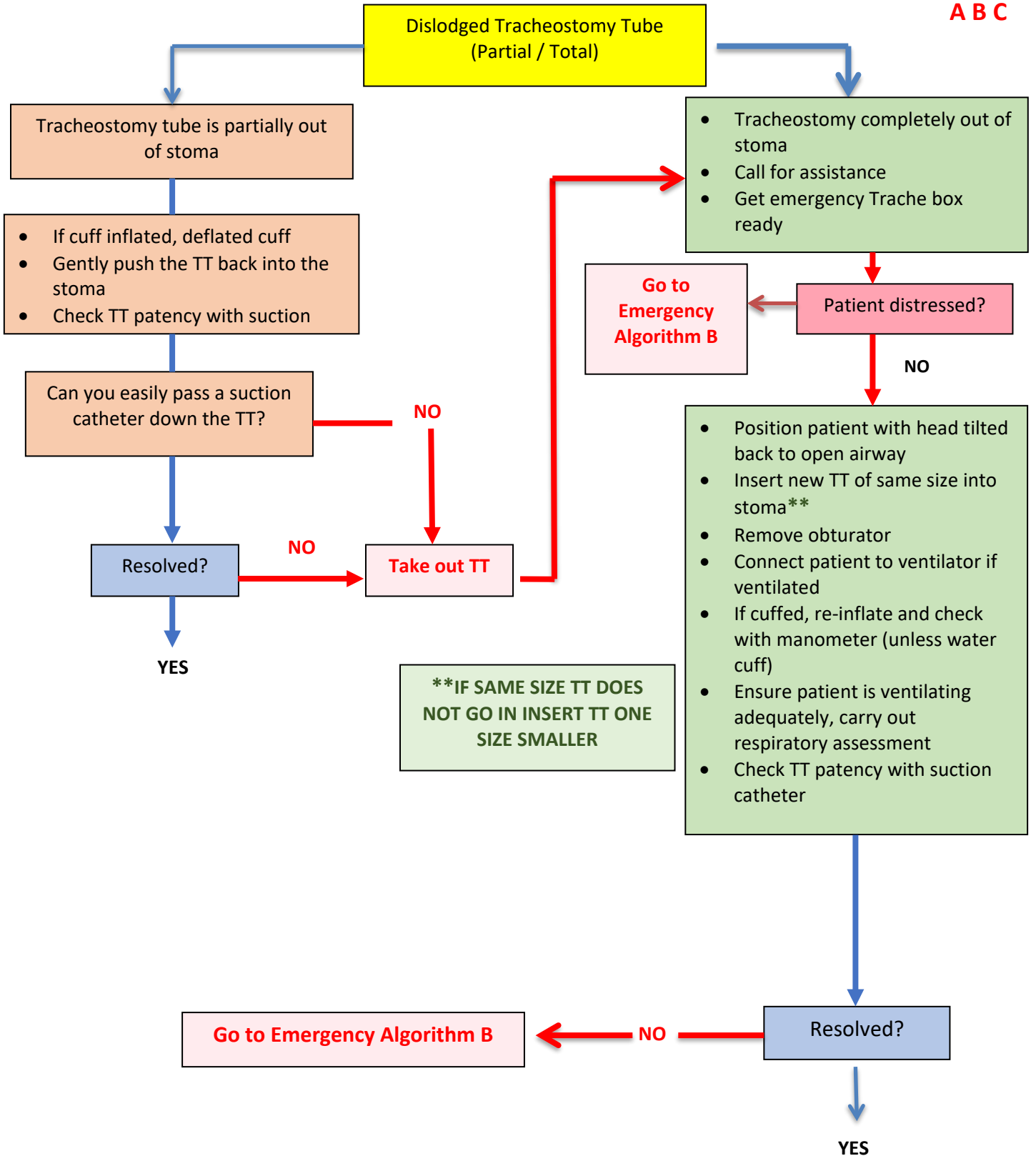
**MANAGEMENT OF POSSIBLE CHEST INFECTION  
TIV**



## DISLODGED TRACHEOSTOMY TUBE (TT)

### ALGORITHM A

**REMEMBER  
A B C**





## EMERGENCY ALGORITHM B

### CALL 999 FOR MEDICAL ASSISTANCE

- Tracheostomy tube completely out of stoma
- Patient distressed and / or not breathing
- **Carry out ABC basic life support assessment**



- Connect **ambu-bag** to facemask
- Position patient with head tilted back to open airway
- 1 person to cover tracheostoma with gauze and gloved hand
- Second person to place ambu-bag face mask over patient's nose and mouth ensure a good seal
- Give breaths using ambu-bag, ensure chest is rising and falling\*\*
- Keep checking ABC as per BLS protocol
- Wait for ambulance crew

**\*\*After 10-12 breaths if you are confident try to re-insert a new tracheostomy tube same size or 1 size smaller**

- If re-inserted reconnect to ventilator if ventilated
- Secure TT with ties
- If cuffed re-inflate cuff
- Check tube patency with suction catheter
- Carry out respiratory assessment
- Wait for ambulance crew to do further respiratory assessment
- At an appropriate time Inform RBHT outreach team/ GP



# Tracheostomy Passport

**NAME:**

**Hospital identifier:**

**DEMOGRAPHICS**

<b>NAME</b>	
<b>DOB</b>	

<b>MEDICAL DIAGNOSIS &amp; RELEVANT HISTORY</b>	
<b>COMMUNITY CONTACT</b>	
<b>HOSPITAL CONTACT</b>	

<b>GRADE</b>	<b>DIFFICULTY OF CHANGE</b>	<b>WHERE &amp; BY WHO</b>
<b>1</b>	<b>Low risk</b> for self-ventilating patients	Community RN / Level 3 Carer
<b>2</b>	<b>Low risk</b> for invasively ventilated patients who can self-ventilate (SV) for >5 minutes	Community RN/ Level 3 carer
<b>3</b>	<b>Medium risk</b> for invasively ventilated patients who are fully dependent on ventilation and cannot Self Ventilate. Has some <b>RED FLAGS</b>	Community RN
<b>4</b>	<b>High risk</b> for any patient with some tracheal bronchial malacia / tracheal stenosis but able to maintain airway for > 5 minutes with trache tube removed. <b>RED FLAG</b>	Community / Hospital Specialist Tracheostomy Practitioner
<b>5</b>	<b>High risk</b> for any patient with severe dynamic airway collapse / tracheal bronchial malacia,. Unable to maintain any airway without tracheostomy tube in situ. <b>Severe RED FLAGS</b>	Hospital ENT specialist team

**CURRENT STATUS**

<b>Type &amp; size of trache</b>																	
<b>State of stoma</b>																	
<b>Routine cuff management</b>																	
<b>Upper Airway Patency</b>																	
<b>Communication</b>																	
<b>Respiratory support</b>	<table border="1"> <tr> <td><b>MODE</b></td> <td></td> </tr> <tr> <td><b>Circuit type e.g passive</b></td> <td></td> </tr> <tr> <td><b>IPAP</b></td> <td></td> </tr> <tr> <td><b>EPAP</b></td> <td></td> </tr> <tr> <td><b>PC / PS</b></td> <td></td> </tr> <tr> <td><b>Ti</b></td> <td></td> </tr> <tr> <td><b>RR</b></td> <td></td> </tr> <tr> <td><b>Tirgger</b></td> <td></td> </tr> </table>	<b>MODE</b>		<b>Circuit type e.g passive</b>		<b>IPAP</b>		<b>EPAP</b>		<b>PC / PS</b>		<b>Ti</b>		<b>RR</b>		<b>Tirgger</b>	
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<b>Eating and Drinking</b>																	
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