Respiratory Assessment, Monitoring & Nursing Care of the Critically Ill Adult in Intensive Care - Full Clinical Guideline

Reference no.:CG-CLIN/4429/24

Introduction

Critically ill patients are vulnerable to respiratory dysfunction due to the underlying nature of their injury or illness or as a potential unavoidable consequence of the intensive therapies that they require. It is essential therefore to undertake a comprehensive respiratory assessment and deliver the prescribed therapy and nursing care in a safe and effective way.

Aim and Purpose

The purpose of this guideline is to ensure that safe and effective respiratory monitoring, therapy and nursing care is delivered to critically ill adults in intensive care.

It aims to promote the maintenance of a safe environment for patients, their relatives and the multidisciplinary team, to direct the delivery of excellent and informed nursing care and to ensure the nurse acts as patient advocate. (NMC. 2018)

Keywords – Respiratory, Critically Ill Adult, Intensive Care Unit

Main Body of Guidelines

If the patient is diagnosed with or suspected as having a disease that is known to be transmitted via the respiratory tract OR where they are undergoing an Aerosol Generating Procedure (AGP) care must be delivered whilst adhering to Airborne / Droplet respiratory precautions (NHS England 2023).

Respiratory Assessment, Monitoring & Nursing Care

1. Check the patency / vulnerability of the patient's airway and escalate, manage and record signs of airway compromise immediately.

2. Observe the patient's general appearance and assess their respiratory pattern, ease of breathing, use of accessory muscles / level of distress. Record respiratory rate hourly or as frequently as the patient's individual condition dictates on the 24-hour observation chart and report / escalate if outside of patient specific parameters.

3. Assess the patient's chest for symmetry of movement and auscultate lung fields for the presence of normal or abnormal breath sounds. Record findings and report the presence of abnormal breath sounds or where breath sounds are absent (Bohadana *et al* 2014).

4. Administer prescribed oxygen via an appropriate oxygen delivery device at an appropriate flow rate and assess its effectiveness. Record the oxygen percentage, delivery device and all associated settings hourly on 24-hour observation chart.

5. Administer device specific oxygen humidification as directed by the ICU Humidification Guidelines (2024).

6. Ensure the oxygen delivery device is secured and padded effectively so as to prevent drag or rubbing on vulnerable pressure points and to ensure any tube condensate flows away from the patient's airway (American Thoracic Society 2005). Complete the appropriate local documentation at least once per shift. Treat, document and report skin breakdown / pressure damage within the UHDB Wound Management Care Pathway (2021).

7. Continuously monitor oxygen saturations (SpO_2) and Perfusion Index (PI) using pulse oximetry in order to assess the patient's oxygenation (Peate *et al* 2016) and peripheral perfusion status. Record oxygen percentage hourly on 24 - hourly observation chart and report if outside of prescribed target range. Change the position of the probe as a minimum 4 hourly to reduce the risk of pressure / temperature damage (Royal Marsden 2020)

   N.B. The Perfusion Index (PI), where >1 is optimal, 0.3 – 1 is acceptable and < 0.3 indicates inadequate perfusion. PI is an indicator of the pulsatile strength that reflects a numerical non-invasive measure of peripheral perfusion (Lima *et al* 2002, Hasanin *et al* 2017) and can be used fundamentally to assess the quality / reliability of the SpO_2 measurement. (Mindray, 2011)

8. Change the position of the oxygen saturation probe as a minimum 4 hourly to reduce the risk of pressure / temperature damage (Royal Marsden 2020).

9. Where an arterial line is in situ, undertake arterial blood gas analysis as directed by The Royal Marsden Manual of Clinical & Cancer Nursing Procedures (2020) as frequently as the patient's condition directs / minimum 8 hourly in order to assess their ventilation and acid / base status and to ascertain electrolyte, lactate and haemoglobin levels (Keogh 2017). Record results on the 24-hour observation chart and report if outside of the patient specific parameters.

10. In liaison with the multiprofessional team perform the appropriate patient specific chest physiotherapy and where required, undertake the appropriate method of suctioning as directed by The Royal Marsden Manual of Clinical & Cancer Nursing Procedures (2020), the ICU Closed Suctioning Guidelines (2024) or the ICU Tracheostomy Guidelines (2024).

11. Assess the amount, colour and consistency of chest secretions. Report and document significant changes and send sputum specimens as required.

12. Should the patient require the introduction of a chest drain deliver nursing care as directed by The Royal Marsden Manual of Clinical & Cancer Nursing Procedures (2020) and complete UHDB chest drain observation chart hourly. Record fluid drainage on the 24-hour observation chart and report changes in activity / drainage, the development of surgical emphysema or any evidence of respiratory distress.

13. Ensure that an adequate number of the healthcare team are available to alter the patient's position as frequently as their condition requires and in accordance with the UHDB Prevention & Management of Pressure Ulcers Care Pathway (2023). Where the patient has an artificial airway in situ, a minimum of three staff must perform the move with a competent registered professional supporting the airway while also coordinating the turn.

References

American Thoracic Society (2005)	Guidelines for the Management of Adults with Hospital-acquired, Ventilator-associated and Healthcare-associated Pneumonia. American Journal of Respiratory Care Medicine 171. pp.388 – 416.
Bohadana. A., Izbicki. G., Kramer. S. (2014)	Fundamentals of Lung Auscultation. The New England Journal of Medicine 370.8. pp.744 -51
Keogh. J. (2017)	Nursing Laboratory & Diagnostic Tests. 2nd Edition. New York. McGraw-Hill
NHS England (2023)	National infection prevention and control manual for England. 24 April 2023. V2.5.
NMC (2018)	The Code. Professional standards of practice and behaviour for nurses, midwives and nursing associates. http://www.nmc.org.uk/code.
Peate. I., Wild. K. (2018)	Nursing Practice: Knowledge and Care. Second Edition. Oxford: Wiley Blackwell.
Royal Marsden (2020)	Chest Drains. The Royal Marsden Manual of Clinical and Cancer Nursing Procedure. Ch12
Royal Marsden (2020)	Tracheostomy and laryngeal care. The Royal Marsden Manual of Clinical and Cancer Nursing Procedures. Chapter 12
Royal Marsden (2020)	Arterial Blood Gas. The Royal Marsden Manual of Clinical and Cancer Nursing Procedures. Chapter 13
Royal Marsden (2020)	Respiration and Pulse Oximetry. The Royal Marsden Manual of Clinical and Cancer Nursing Procedures. Chapter 14.
UHDB (2024)	ICU Closed Suctioning Guidelines
UHDB (2024)	ICU Humidification Guidelines
UHDB (2024)	ICU Tracheostomy Guidelines
UHDB (2023)	Prevention & Management of Pressure Ulcers Care Pathway
UHDB (2021)	Wound Management Care Pathway

Documentation Controls

<table>
<tr><td>Reference Number

CG-CLIN/4429/24</td><td colspan="2">Version:1.0.0</td><td>Status

Final</td><td></td></tr>
<tr><td rowspan="3">Version / Amendment History</td><td>Version</td><td>Date</td><td>Author</td><td colspan="2">Reason</td></tr>
<tr><td>1.0.0</td><td>Aug 24</td><td>Cath Rowe</td><td colspan="2">New</td></tr>
<tr><td></td><td></td><td></td><td colspan="2"></td></tr>
<tr><td colspan="6">Intended Recipients: State who the Clinical Guideline is aimed at – staff groups etc.</td></tr>
<tr><td colspan="6">Training and Dissemination: How will you implement the Clinical Guideline, cascade the information and address training</td></tr>
<tr><td colspan="6">Development of Guideline: Cath Rowe
Job Title: Cath Rowe – Senior Clinical Educator ICU</td></tr>
<tr><td colspan="6">Consultation with:</td></tr>
<tr><td colspan="6">Linked Documents: State the name(s) of any other relevant documents</td></tr>
<tr><td colspan="6">Keywords: Respiratory, Critically Ill Adult, Intensive Care Unit</td></tr>
<tr><td colspan="3">Business Unit Sign Off</td><td colspan="3">Group:A&T
Date:June 2024</td></tr>
<tr><td colspan="3">Divisional Sign Off</td><td colspan="3">Group: Surgery
Date:June 2024</td></tr>
<tr><td colspan="3">Date of Upload</td><td colspan="3">01/08/2024</td></tr>
<tr><td colspan="3">Review Date</td><td colspan="3">August 2027</td></tr>
<tr><td colspan="3">Contact for Review</td><td colspan="3">Cath Rowe – Senior Clinical Educator ICU</td></tr>
</table>