

Trust Guideline for the Distribution of Oxygen Alert Cards to Adult Patients with or at risk of Hypercapnic Respiratory Failure

Quick reference guideline:

Patient identified according to selection criteria:

- PaCO₂ > 6.5kPa on admission
- Stable patients with PaCO₂ > 6.5kPa



Consultant Respiratory Physician/Respiratory SpR decides to issue Oxygen Alert Card



Respiratory Nurse Specialist (RNS) issues Oxygen Alert Card to patient with instructions for use and information leaflet.



Alert Card Register to be maintained by RNS



RNS to ensure alerts placed on hospital and ambulance service computer systems



RNS to be informed by A&E/EAU staff in event of patient with Oxygen Alert card being admitted

Contact Respiratory Nurse Specialist on Ext 5654 or via Bleep 0090 8-5 Mon to Fri, Out of hours leave message on answering machine.

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Objective of Guideline:

- To provide guidance for medical and nursing staff caring for breathless patients at risk of hypercapnic respiratory failure and to help ensure safe and effective delivery of oxygen therapy to vulnerable patients.

Rationale for the recommendations:

The administration of high oxygen concentrations in acute chronic obstructive pulmonary disease (COPD) and other conditions (chronic musculoskeletal and neurological disorders, obesity-hypoventilation syndrome) may lead to worsening of hypercapnic respiratory failure and respiratory acidosis.

This has typically occurred when these patients present to the emergency services with acute breathlessness and exacerbation of their condition, prior to measurement of arterial blood gases and before a definitive diagnosis is known. Optimal oxygen therapy during transfer to hospital, assessment in Accident and Emergency (A & E) and admission to hospital is crucial but ambulance teams may not be aware of the presence of high risk conditions. Uncontrolled oxygen therapy in patients with impaired respiratory drive may result in severe respiratory acidosis, particularly if a prolonged rural ambulance journey is required, and is associated with a significant increase in complication rate during admission.

This guideline has been developed in association with Norfolk Respiratory Interest Group (NRIG) to reduce the risk of hypercapnia from over-oxygenation in at risk patients by issuing selected patients with an Oxygen Alert Card.

Broad recommendations:

Procedure for the distribution of Oxygen Alert Cards:

1. Patients will be selected to be given an Oxygen Alert Card according to the following criteria:
 - a) **Patients admitted with a raised PaCO₂ (>6.5kPa)**
 - b) **Stable patients with a PaCO₂ greater than 6.5kPa.**
2. The decision to issue an oxygen alert card to the patient will be made by the Consultant Respiratory Physician or the Respiratory SpR.
3. Patients will be issued with the Oxygen Alert Card by the Respiratory Nurse Specialist. They will be provided with an information leaflet explaining the role of the Oxygen Alert Card.

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4. The patient will be instructed to give the Oxygen Alert Card to paramedic/medical staff attending in an emergency. The patient will be told that they should initially be treated with no more than 28% oxygen via Venturi mask until they have had their blood gases checked unless the emergency services feel more oxygen would be more appropriate for their presenting complaint. Refer to Trust guideline Prescription and Administration of Oxygen in Adults CA4062.
5. The Oxygen Alert Card will be presented to A&E/EAU staff on immediate arrival (15-30 minutes of arrival) to hospital, the patient will have blood gases checked and the inspired oxygen will be altered according to the results of these blood gases.
6. A&E/EAU staff will be asked to inform the Respiratory Nurses (ext 5654/bleep 0090) when a patient is admitted with an Oxygen Alert Card. Outside Mon – Fri 8am – 5pm messages should be left on the respiratory nurses' answerphone ext 5654. The messages will be collected on Monday mornings.

Communication:

- A register of patients issued with the Oxygen Alert Card will be kept and updated by the Respiratory Nurse Specialist (RNS).
- An alert will be placed on the Hospital PAS system by the RNS.
- A named person at the Ambulance Trust will be informed of patient details by the RNS so that an alert can be added to the Ambulance Trust computer system (Ambulance Trust to be informed if the patient dies so that alert can be removed from their records).
- Patient's personalised details to be recorded on information leaflet by the RNS and a copy sent to the patient's GP.

Evaluation:

6 monthly report to lead clinician and Directorate to include:

- Number of patients issued with Oxygen Alert Cards.
- Number of patients with respiratory acidosis (inappropriately high PaO₂ and raised PaCO₂).

6 monthly clinical audit to include:

- That patients issued with Oxygen Alert Card meet selection criteria.
- That patients receive information leaflet and advice at the time the Oxygen Alert Card is issued.

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- Concentration of inspired oxygen on admission to hospital/blood gas status.
- That the Oxygen Alert Card was presented to A&E/EAU staff on arrival.
- That blood gases were performed within 15-30 minutes of arrival.
- That the Respiratory Nurses were informed of patient's admission to hospital.

Summary of development and consultation process undertaken before registration and dissemination

This protocol was drafted by the author listed above. During its development it has been circulated for comment to all Consultant Physicians in Respiratory Medicine, Consultant Physician EAU(M), Nursing Practice Dept. Discussed at Norfolk Respiratory Interest Group. Comments have been discussed and points clarified as appropriate.

This version has been endorsed by the Clinical Guidelines Assessment Panel.

Distribution list/ dissemination method

All Consultant Physicians in Respiratory Medicine
Consultant Physician, EAU(M)
Named registered nurses in Respiratory Medicine
Nursing Practice Department
Trust Intranet

References/ source documents:

British Thoracic Society Guideline for emergency oxygen use in adult patients. Thorax 2008; 63 (suppl VI): vi1-vi68

British Thoracic Society Guidelines for the management of chronic obstructive pulmonary disease. Thorax 1997; 52 (suppl V): S1-28

Durrington HJ et al Initial oxygen management in patients with an exacerbation of chronic obstructive pulmonary disease. QJM 2005; 98 (7): 499-504

National Institute for Clinical Excellence. National clinical guideline on the management of chronic obstructive pulmonary disease in adults in primary and secondary care. Thorax 2004; 59 (Suppl 1): 1-232

Murphy R et al Emergency oxygen therapy for the breathless patient. Guidelines prepared by the North West Oxygen Group. Emerg Med J 2001; 18: 421-423

Hale K et al Audit of oxygen use in emergency ambulances and in a hospital emergency department. Emerg Med J 2008; 285, 773-776.

Goptu B et al Oxygen alert cards and controlled oxygen: preventing emergency admissions at risk of hypercapnic respiratory acidosis receiving high inspired oxygen concentrations in ambulances and A&E departments. Emerg Med J 2006; 23:636-8

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Appendix 1

Oxygen Alert Card

NOTES FOR PATIENT:
Please carry this card with you at all times and show it to Ambulance staff or Emergency Department doctors.

Name: _____

Chest Consultant: Dr _____

Case Note No: _____

Norfolk and Norwich University Hospital **NHS**
NHS Foundation Trust

Oxygen Alert Card

INFORMATION FOR EMERGENCY MEDICAL TEAMS

I am at risk of type II respiratory failure with a raised CO₂ level.

Please use a _____ % Venturi mask to achieve an oxygen saturation of _____ % to _____ %

Use compressed air to drive nebulisers with nasal oxygen at 2 l/min
If compressed air not available limit oxygen-driven nebulisers to 6 minutes



With thanks to the North West Oxygen Group & James Paget Healthcare NHS Trust.