Oxygen Therapy: Risk Assessment

SOUTH EAST LONDON OXYGEN STUDY DAY 26/5/2016

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Considerations when prescribing oxygen

As with any medicine:

• Indication
• Dose
• Duration
• Monitoring
• Interactions
• Side effects
• Risks
Oxygen Risk Assessment

Mandatory part of initial assessment
Responsibility of prescriber

**Barriers:**
- Failure of leadership
- Non-specialist prescribing
- Lack of commissioned HOSAR – gatekeep and follow up
- Pressures of hospital discharge (70% in London)
- Incomplete clinical information
- Fragmented care
Factors to consider

- Tobacco dependence
- Alcohol dependence
- Substance misuse
- Cognitive impairment
- Sensory impairment
- Mental health disorder
- Impaired mobility/poor balance/falls
- Social isolation
- Multiple occupancy dwellings
- Social deprivation/poor housing/hoarding
- Pets
Prevalence of home oxygen use by age
Risk Assessment Proforma

- LCON example
- National screening tool being developed
- HOSAR local versions
- Involve Fire Service, GP, carers
- MDT decision
Responsibility of Home Oxygen Supplier (company)

National Framework Agreement for HOS 2000

- Desk based risk assessment on receiving HOOF
- Field based assessment at installation and every 6/12
- Concern flagged to HOSAR/nominated lead
- Fire risk assessed – working smoke detectors – FRS
- O2 equipment well ventilated, away from naked flame
- O2 equipment not obstructing access
- Need for fixing tubing to reduce trip hazards
- Verbal and written info for patient and carers
- Regular checks – filters, flow meters, concentration of O2
Fire and Rescue Service

• Provided with list of addresses where O2 in place

• Community Fire Safety Officer can visit:
  fire safety
  smoke alarms
  safe exit routes
  fire retardant bedding

• Part of MDT
Smoking and oxygen – what is the real risk?

Patients treated for burns when using oxygen:

• 24% required skin grafting
• 12% sustained inhalational injury requiring intensive care
• Mean hospital stay 42 days with 10 days within a burns intensive therapy unit
• After recovery, there was a 35% reduction in patients able to return home and/or live independently
• 12% died

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Oxygen related domestic fires with FRS:

- 1 in 4 results in death
- 1 in 3 results in serious injury

• In most cases of smoking and oxygen related domestic fire, the fire is limited in extent and the fire services are not involved
• Fire services can only report fires known to them
• No national data on number of patients on oxygen who smoke (COPD = 40% in London)
• No NHS reporting system – prescriber may not know that patient has been admitted/treated for burns
## Incidents in London – Dec 2013 to Aug 2014

<table>
<thead>
<tr>
<th>Borough</th>
<th>Incident</th>
<th>Cause</th>
<th>Outcome</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromley</td>
<td>August 2014 pt burned nose</td>
<td>Smoking whilst using oxygen</td>
<td>Patient had facial burns. Died following week but not related to incident</td>
<td>Oxygen removed</td>
</tr>
<tr>
<td>Barking &amp; Dagenham</td>
<td>July 2014 pt burned nose and face</td>
<td>Smoking whilst using oxygen</td>
<td>Awaiting detail ?admitted</td>
<td>Oxygen removed</td>
</tr>
<tr>
<td>Havering</td>
<td>June 2014 pt burned face, refused admission</td>
<td>Smoking whilst using oxygen</td>
<td>Patient died within 2 weeks</td>
<td>Requested fuller detail from GP in detail of d.cert.</td>
</tr>
<tr>
<td>Hounslow</td>
<td>June 2014 pt burned face, Admitted to hospital</td>
<td>Smoking whilst using oxygen</td>
<td>In pt care at Barts, OPD care of Broomfield burns unit</td>
<td>Patient still has oxygen supply. Requested fuller detail &amp; current status from GP</td>
</tr>
<tr>
<td>Lewisham</td>
<td>January 2014 pt found smoking using oxygen. No harm.</td>
<td>Smoking whilst using oxygen</td>
<td>Patient re-educated. Oxygen supply remains in place.</td>
<td>Supplier and NHS have lost contact with this patient. Urgent action requested from local team.</td>
</tr>
<tr>
<td>Hounslow</td>
<td>December 2013 pt set fire to her legs and cloths. Large explosion destroyed flat. Admitted to hospital</td>
<td>Smoking whilst using oxygen</td>
<td>Significant injuries 93 day admission to C&amp;W, Nursing Home and further IP care. Died 7 months later ?cause</td>
<td>GP has limited detail; now following NHome GP reviewing for detail of d.cert.</td>
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<td>Hounslow</td>
<td>December 2013 pt burned nose and face, Admitted to hospital</td>
<td>Smoking whilst using oxygen</td>
<td>Patient supported removal of equipment.</td>
<td>Requested fuller detail &amp; current status from GP</td>
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<td>Barking &amp; Dagenham</td>
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<td>Patient had facial burns and chest burns. Oxygen removed.</td>
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Electronic cigarettes

Cigarettes and E-cigarettes - The Risks

This leaflet gives guidance on the dangers of smoking whilst using oxygen therapy.

The dangers of using an electronic cigarette or similar device whilst using oxygen therapy are exactly the same as it would be with smoking ordinary cigarettes.

Electronic devices also carry a risk of explosion or ignition and can cause a fire whilst recharging.

Smoking should be avoided in a home where oxygen is used.

Oxygen itself does not burn, but it does help a fire to start and to keep burning. If air is enriched with increased levels of oxygen, there is a chance that a fire will spread and spread more quickly, and continue to burn hotter and faster.

Exposure from oxygen can build up unnoticed and saturate our surroundings, and oxygen users are at greater risk from their clothing, bedding, furniture and hair catching fire if they smoke, or if other people smoke in close proximity to them. In oxygen-rich areas, fabrics, wood, paper and other materials which normally do not burn easily in air could suddenly catch fire on contact with a small spark from a lit cigarette or electronic cigarette.

Remember:

Never smoke a cigarette or use an electronic cigarette whilst on oxygen therapy or close to a patient using oxygen.

Never charge an electronic cigarette or similar device whilst on oxygen therapy or near to the oxygen source itself.

Please contact your Healthcare Professional for further advice on how to stop smoking.

Estate and Facilities Alert

Ref: EFA/2014/002
Issued: 16 JUNE 2014

Device

E-cigarettes, batteries and chargers
Includes reusable and disposable electronic cigarettes (e-cigarettes), cigars, pipes and similar battery powered tobacco replacement products which use a heating element (atomiser) to produce a vapour which resembles smoke.

Problem

Potential fire or explosion during:
- recharging the battery
- use in an oxygen rich environment

Disposable e-cigarettes are not affected by the charging problem.

Action

- All staff should be made aware of the fire hazard associated with the use and recharging of e-cigarettes.
- E-cigarette batteries should not be recharged in premises or vehicles.
- E-cigarettes should not be used in an oxygen rich environment
- Safety advice should be given to patients receiving therapies at home (see Annex)
CO monitoring

- Part of respiratory assessment
- Physiological measure of nicotine dependence
- Helps to assess risk and have the right conversations
- Motivational tool
- Simple, easy test
- “Would you like to know your level”?
- See London Clinical Senate Helping Smokers Quit supporting documents
• Previous acidotic hypercapnic respiratory failure
• Compensated type 2 respiratory failure
• Elevated bicarbonate on ABGs (venous too)
  (COPD, cystic fibrosis, kyphoscoliosis, chest wall disease, neuromuscular disease, obesity hypoventilation)

TARGET SATS 88-92%
Document held electronically by LAS

- Treatment that is outside standard pre hospital clinical practice guidelines
- Specific treatment of patients with high risk medical conditions
- Paediatric patients with complicated life limiting conditions where resuscitation should be/should not be withheld

Flags address
Alerts crew to clinical info being held
Copy in patient’s home – patient and carers must be aware
Review date from 1-3 years
Example PSP for patient at risk of type 2 RF

This protocol has been specifically prepared for the patient named below and details the treatment to be given in specified circumstances.

Patient’s Name:               Date of Birth:

Address:                      NHS Number:

The above patient is known to be at risk of hypercapnic respiratory failure should they receive high flow oxygen.

In an emergency please give controlled oxygen therapy to maintain oxygen saturations not higher than 88%-92% even in sepsis and trauma.

The lowest flow rate possible to maintain target saturations should be used, including lowering rate once in range.

**Specific Treatment / Instructions:**

Please ensure the patient has used their own air driven nebuliser before transporting to hospital if held.

Do not nebulise with oxygen under any circumstance.

*If required please transport to the nearest A&E Department.*

All other aspects of clinical care remain unchanged.

*If required contact EOC and ask for the Clinical Support Desk*

Referring Clinicians: XXXXXXXX

Fenella Wrigley QHP (c) BSc, MRCPCH, Dip IMC (RCSEd), FRCEM, Medical Director

London Ambulance Service NHS Trust

Review Date:
Thank you

www.networks.nhs.uk/nhs-networks/london-lungs

- Getting Oxygen Right for Discharge
- Home Oxygen Risk Assessment Tool
- Responsible Oxygen Prescribing Messages
- Guide to writing a Patient Specific Protocol
- Example PSP for controlled oxygen therapy
- Oxygen in Cluster Headache Guidance