Best Practice Statement ~ March 2010

Home oxygen therapy for children being cared for in the community
NHS Quality Improvement Scotland is committed to equality and diversity. We have assessed this Best Practice Statement for likely impact on the six equality groups defined by age, disability, gender, race, religion/belief and sexual orientation. For a summary of the equality and diversity impact assessment, please see our website (www.nhshealthquality.org). The full report in electronic or paper form is available on request from the NHS QIS Equality and Diversity Officer.

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Introduction

NHS Quality Improvement Scotland (NHS QIS) leads the use of knowledge to promote improvement in the quality of health for the people of Scotland and performs three key functions:

- providing advice and guidance on effective clinical practice, including setting standards
- driving and supporting implementation of improvements in quality, and
- assessing the performance of the NHS, reporting and publishing the findings.

In addition, NHS QIS also has central responsibility for patient safety and clinical governance across NHS Scotland.

Key principles of best practice statements

A series of best practice statements has been produced within the Directorate of Implementation and Improvement Support in NHS QIS, designed to offer guidance on best and achievable practice in a specific area of care. These statements reflect the current emphasis on delivering care that is patient-centred, cost-effective and fair. They reflect the commitment of NHS QIS to sharing local excellence at a national level.

Best practice statements are produced by a systematic process, outlined overleaf, and underpinned by a number of key principles.

- They are intended to guide practice and promote a consistent, cohesive and achievable approach to care. Their aims are realistic but challenging.
- They are primarily intended for use by registered nurses, midwives, allied healthcare professionals, and the staff who support them, but will also be of relevant to medical professionals.
- They are developed where variation in practice exists and seek to establish an agreed approach for practitioners.
- Responsibility for implementation of these statements rests at local level.

Best practice statements are periodically reviewed, and, if necessary, updated in order to ensure the statements continue to reflect current thinking with regard to best practice.

This best practice statement is accessible electronically via the NHS QIS website (www.nhshealthquality.org).

Supporting implementation

Comments on best practice statements and in particular the use of the checklists and tools are very much welcomed. We are always keen to hear from anyone who has been involved with using the statements in their own area of practice. In particular, we would like to hear about specific successes or challenges relating to implementation and impact on quality of care provision.

Any information provided will be used to inform the next review of the statement.

Please forward any comments to: qis.bestpracticestatements@nhs.net

Privacy note: We will only use your email details to reply to your comment. Your address will not be passed on to any third parties.
Key stages in the development of best practice statements

1. Establish working group.
2. Topic selection and scoping process.
3. Review literature on topic. Source grey literature. Ascertain current policy and legislation. Seek information from manufacturers, voluntary groups and other relevant sources.
4. Establish reference group to advise on consultation drafts.
5. Determine focus and content of statement. Review evidence for relevance to practice. Determine how patients' views will be incorporated.
8. Review and revise statement in light of consultation comments.
10. Publish and disseminate statement.
Best practice statement: Home oxygen therapy for children being cared for in the community

Oxygen therapy is prescribed where the process of supply of oxygen through the lungs to tissue is impaired, for example through chronic lung disease, where there is difficulty with respiration and breathing, or where a condition affects oxygen levels in the blood stream. A more concentrated form of the oxygen than that found in the normal atmosphere, either held in a cylinder or drawn from the atmosphere through a concentrator, is delivered to the person through a mask or a nasal cannula (tube) to help the person access the gas more efficiently.

Although great improvements have been made to the design of equipment used to store compressed oxygen or extract it from the atmosphere and concentrate it, delivering oxygen to a child in a community setting can limit the child’s mobility, particularly if a continuous flow of oxygen is required. In addition, ensuring a regular supply of oxygen and maintenance of the equipment necessary to deliver it requires a co-ordinated and efficient service.

Oxygen is colourless, odourless and highly flammable. Considerable risks, therefore, accompany the issuing of a prescription for oxygen therapy, particularly to children. Risk assessment, and appropriate action to mitigate the risks, is a very important part of care, particularly in the community. The working group recognised that each institution or interest supporting the child (eg a school or nursery) would wish to develop and keep its own risk assessment from information initially supplied by health services.

In this statement the term ‘child’ is used for the sake of simplicity, but it is acknowledged that babies and young people are also discharged from hospital with an oxygen prescription, and assumed the practitioner will deliver care that is appropriate to the child’s age and maturity.

In addition, it is acknowledged that many healthcare professionals work in the community and that the configuration of community services varies across Scotland. Good communication between the many agencies and professions involved in a child’s care is very important to support and help the child lead as normal a life as possible.

The working group considered the possibility of developing an audit tool, in keeping with the other Best Practice Statements. Home oxygen therapy for children in the community relies on effective liaison between staff, usually in a paediatric unit, staff in the community and Health Facilities Scotland which has its own quality standards and the group agreed that a full audit on the discharge process would lack focus. The working group reviewing the statement considered, however, that elements of the statement could be converted into a checklist for staff overseeing a child’s discharge from hospital into the community. This would be helpful for a community children’s nurse or a local team to check that all the key areas were being addressed with parents/carers.

This best practice statement acknowledges that the planning and delivery of oxygen therapy to children in the community is a complex process involving many agencies and co-operation between parent or carer, healthcare professionals, and the oxygen suppliers. It seeks to identify what is best practice in the discharge of the child from hospital to living in the community, and the principles which, if followed, lead to child-centred and effective care.
Format of statement
The statement is divided into eight sections covering:

Section 1: The initial management plan  
Section 2: Discharge planning  
Section 3: Risk assessment and management  
Section 4: Information for parents/carers  
Section 5: Provision of oxygen delivery equipment and supplies  
Section 6: Oxygen therapy outside the home  
Section 7: Oxygen therapy at school or nursery  
Section 8: Oxygen therapy on holiday

Each section contains a table corresponding to the what, why and how of best practice, ie summarising the statement, the reason for the statement and how to achieve the statement or to demonstrate that it is being achieved, and highlights the underpinning philosophy of the statement and/or explicit skill requirements to achieve best practice. Key challenges of the statement reflect existing examples of best practice and highlight areas that may require specific action or development.

How can the statement be used?
This best practice statement can be used in a variety of ways, although primarily it is intended to serve as a guide to best practice and promote a consistent and cohesive approach to care. The statement is intended to be challenging but realistic and can be used:

- as a basis for developing and improving care directly and indirectly
- to stimulate learning among multidisciplinary teams
- to promote effective multiprofessional team working and enhance partnerships with patients, carer(s) and relevant others
- to stimulate ideas and priorities for research.
Section 1: The initial management plan

Key points:
1. Caring for a child receiving oxygen therapy at home is a complex process that requires planning and communication to ensure support and information are available to children and the parents/carers.
2. The child and the parents/carers should be involved in discussions as early as possible and on an ongoing basis.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
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</thead>
<tbody>
<tr>
<td>The clinical decision that a child requires oxygen therapy at home is taken by a medical consultant.</td>
<td>It is good practice that oxygen is supplied under the direction of a medical consultant. The British Thoracic Society guidelines (2009) recommend paediatric specialists rather than primary care. In the community setting, an oxygen prescription allows oxygen therapy to be supplied free of charge.</td>
<td>Each child has an individual management plan provided by the consultant with guidelines for use, and information relating to clinical signs and symptoms. It should include: • the oxygen prescription • the amount of oxygen required (litre/minute) • a sliding scale of parameters or variables with an indication of when to seek advice and who to contact for advice • the mode of delivery, ie by face mask, tracheostomy mask or nasal cannula • the delivery system required ie via oxygen concentrator, liquid oxygen, oxygen cylinders • the equipment to be used, eg humidifier, pulse oximeter, apnoea monitor.</td>
</tr>
<tr>
<td>Parents/carers: • understand the need for oxygen therapy • are willing and able to look after the child at home, and • it is practicable for them to do so.</td>
<td>Parents/carers should be confident in their ability to care for their child at home. A family-centred approach encourages the family to become active partners with healthcare professionals in the management, decision-making, and treatment and care of their child.</td>
<td>Parents/carers and all professionals involved in the child’s care receive a copy of the child’s management plan. Evidence of discussion with parents/carers on the practicalities of having a child on oxygen therapy at home, and on other relevant matters is documented in the medical notes. The lead healthcare professional is responsible for liaising with, and making necessary referrals to, professionals in the child’s community to ensure that the child and the parents/carers receive appropriate ongoing support.</td>
</tr>
</tbody>
</table>
Section 2: Discharge planning

Key points:
1. The transfer of information between hospital and community is central to the seamless discharge of a child from hospital to home.
2. Key to discharge planning is early contact with Health Facilities Scotland to discuss the supply of and training on the delivery system for home oxygen.
3. Parents/carers are aware who they can contact for advice or information.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
</tr>
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</table>
| The child’s discharge from hospital to home is planned in a consistent,   | This minimises risk of failure of communication or other systems.                                                                                                                                                      | As soon as possible after the child or young person has been identified as going home on oxygen therapy, discussion takes place with:  
  systematic and collaborative manner.                                                                                                                                                                                                                                                                                                                                                       |
| systematic and collaborative manner.                                      | There are risks with poor communication and failure of professionals working together, which can lead to duplication of care, poor management, failure to provide care, clinical risk and the family losing confidence in the services provided.  
  A comprehensive written parent-held discharge plan with multidisciplinary follow-up is recommended to ensure a safe and smooth transition into the community, and to avoid repeated or unnecessary hospitalisations.                                                                                                           |
<p>| The child’s ward nursing team is responsible for ensuring the parents     | This team is best placed to ensure the parents/carers are able to care for the child.                                                                                                                                                                                                 | Evidence of referral to these services is present in the medical notes. A discharge checklist is used to ensure that all areas are considered. Elements that should be included in a discharge checklist are listed in Appendix 1.                                                                                                                                                                                                                                         |
| carers are able to care for the child prior to discharge into the         |                                                                                                                                                                                                                      | A healthcare professional is responsible for liaising with, and making necessary referrals to, professionals in the child’s community to ensure that the child and its parents/carers receive appropriate support. This is documented. Appendix 2 has an example of a tool used to support parents/carers through the preparation prior to the child’s discharge. |
| community setting.                                                        |                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                        |</p>
<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
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</thead>
<tbody>
<tr>
<td>The parents/carers and child are supported through the period of discharge and know who to contact when seeking support.</td>
<td>A home visit by the community children’s nurse or nurse specialist is recommended within 24 hours of discharge by the British Thoracic Society guidelines.</td>
<td>Elements of support such as phone calls and home visits are documented.</td>
</tr>
<tr>
<td>The group reviewing this statement suggested that good communication, and knowledge of the child and parents/carers, should lead to care being tailored to the individual and that this should be paramount in supporting discharge.</td>
<td></td>
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</tr>
</tbody>
</table>

**Key challenges:**

- Ensuring that all those involved in the care of the child in the community are involved in discharge planning and effective care co-ordination involving the child and parents/carers.
- Ensuring that parents/carers are confident in undertaking the practical tasks involved in caring for a child on oxygen therapy.
Section 3: Risk assessment and management

Key point:
1. It is vital that parents/carers and the child are aware of the risks and potential hazards associated with oxygen therapy.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
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</thead>
<tbody>
<tr>
<td>The parents/carers and the child are aware of the risks involved in</td>
<td>Oxygen strongly supports combustion; it increases the speed at which things burn</td>
<td>Parents/carers are provided with oxygen safety information, both verbal and written. This includes the information in Appendix 3.</td>
</tr>
<tr>
<td>oxygen therapy.</td>
<td>once a fire starts.</td>
<td>Contact is made with the local fire safety officer to inform the service that oxygen is stored at the address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oxygen equipment is isolated from potential sources of combustion. All individuals in contact with the child are fully informed of the potential fire risk and how to avoid it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents/carers are advised that they or any visitors to the home should not smoke in the presence of oxygen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Advice is provided about the support available to parents/carers to stop smoking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents/carers inform their home insurance provider that there is oxygen in use in the home.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parents/carers know who to contact for support and advice. A sample contact sheet is shown in Appendix 4.</td>
</tr>
</tbody>
</table>

Key challenge:
- Ensuring that the child and those involved in the care of the child dependent on oxygen and living in the community understand the fire risks.
Section 4: Information for parents/carers

Key point:
1. Healthcare professionals have a responsibility to support parents/carers and the child to understand potential problems associated with the need for oxygen therapy.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents/carers are able to assess their child’s respiratory pattern,</td>
<td>Parents/carers are aware of early signs of hypoxia and respiratory difficulties in</td>
<td>Before discharge from hospital to the community, each child has a management plan identifying the amount of</td>
</tr>
<tr>
<td>recognise respiratory difficulties and take appropriate action.</td>
<td>order to reduce the risk of further deterioration in the child’s condition.</td>
<td>oxygen and the parameters of the flow rate which can be administered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is documented evidence that parents/carers have received guidance on:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• the child’s breathing pattern, ie awareness of rate and depth of breathing, noisy breathing, wheeze,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• the effectiveness of the child’s breathing ie awareness of chest movement and air entry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• the adequacy of the child’s breathing, ie awareness of heart rate, skin colour and mental status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• what to do if there is a change in the child’s breathing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic life support training is provided to parents/carers by the hospital resuscitation trainer or equivalent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>service prior to discharge. There is a system for ensuring this training is kept up to date.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The child’s ward nursing team ensures the child’s parents/carers are able to use the equipment such as</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oxygen saturation or apnoea monitors prior to discharge to the community setting.</td>
</tr>
</tbody>
</table>

Key challenge:
- Providing parents/carers with information to achieve the essential skills required to care for a child receiving home oxygen therapy.
Section 5: Provision of oxygen delivery equipment and supplies

Key points:
1. Oxygen suppliers have a contractual duty to ensure that those operating the equipment understand its safe use.
2. Refilling portable oxygen cylinders should not be undertaken since alternatives now exist.
3. The provision of oxygen delivery equipment is currently from Health Facilities Scotland.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>The child on oxygen therapy at home receives all necessary equipment and replacement supplies.</td>
<td>To maintain quality of life and ensure that the equipment is providing desired outcomes. It is recommended that portable equipment should be available for all children as part of the provision of home oxygen unless oxygen is required only at night.</td>
<td>Health Facilities Scotland monitors the quality of service provided by oxygen suppliers contracted to them. There is a local system for the provision and reordering of supplies such as cannulae, masks and oxygen tubing.</td>
</tr>
<tr>
<td>Parents/carers have support with equipment use from the oxygen supplier.</td>
<td>Parents/carers should be confident about using equipment and oxygen therapy outwith the home.</td>
<td>Parents/carers have information about who to contact for advice about equipment and equipment servicing.</td>
</tr>
</tbody>
</table>

Key challenge:
• Ensuring community staff have access to the appropriate information.
### Section 6: Oxygen therapy outside the home

**Key point:**

1. Parents/carers and the child are aware of the risks associated with travelling when on oxygen therapy.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
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<tbody>
<tr>
<td>A child requiring portable oxygen is provided with a system that best suits his or her needs, following a full assessment and consultation.</td>
<td>This enables the child to maintain mobility and independence, and promotes social inclusion.</td>
<td>When using cylinders outside the home, parents/carers are able to calculate the amount of oxygen in a cylinder and the length of time it should last. Parents/carers have a plan of action for what to do if oxygen is not available to the child.</td>
</tr>
<tr>
<td>Oxygen is transported safely when travelling outside the home.</td>
<td>Oxygen supports combustion; it increases the speed at which things burn once a fire starts. Oxygen is supplied in containers under pressure and it is vital to keep risks associated with travelling to a minimum.</td>
<td>Parents/carers observe the safety information outlined in Appendix 3. Parents/carers contact their local public transport company for advice in relation to travel with a child on home oxygen.</td>
</tr>
</tbody>
</table>
Home oxygen therapy for children being cared for in the community – March 2010

Section 7: Oxygen therapy at nursery or school

**Key points:**
1. Early discussion with Health Facilities Scotland will help with exploring the options available and planning.
2. The appropriate healthcare professional, eg school nurse(s) or community paediatrician, community children’s nurse or neonatal liaison nurse, is involved in discussion with the nursery or school, the parents/carers and the child regarding the child’s needs at nursery or school.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
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</thead>
<tbody>
<tr>
<td>The child receives oxygen therapy when at nursery or school, if required.</td>
<td>It is important to enable the child to take part in education and to minimise the disruption oxygen therapy can cause to the child’s lifestyle.</td>
<td>A multidisciplinary care co-ordination meeting, including education and healthcare professionals, identifies the appropriate support needed for the child whilst in nursery or school (including transport and out-of-school activities).</td>
</tr>
<tr>
<td>An appropriately trained individual should be present while the child is using oxygen, but this does not necessarily have to be a school nurse or healthcare professional.</td>
<td>This minimises risk and supports the child safely achieving full-time education.</td>
<td>There is evidence that staff at the nursery or school have access to training, advice and support.</td>
</tr>
</tbody>
</table>

**Key challenge:**
- Providing staff within the school or nursery community with the training and support to undertake the child’s care in school or nursery. This does not necessarily have to be the school nurse or a healthcare professional.
Section 8: Oxygen therapy on holiday

Key points:
1. It is the parents'/carers' responsibility to ensure that arrangements are in place for the child on home oxygen therapy going on holiday.
2. Arrangements for holidays take time and early planning by parents/carers is vital; Health Facilities Scotland recommends at least one month's notice.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Reason for statement</th>
<th>How to demonstrate statement is being achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any overnight stays or travel either within or outside Scotland is planned and the appropriate agencies alerted.</td>
<td>Service arrangements vary in different circumstances and in different countries and should be researched in advance. Planning is essential to minimise risk to the provision of the child's agreed care plan, and should support the child and family to enjoy the holiday.</td>
<td>The child carries a Transport Emergency Card (TREM card) when travelling outside the UK. A detailed hospital letter describing the child’s condition and current management is prepared prior to the holiday in case of admission to hospital or any other medical review. Instructions on holiday preparations from Health Facilities Scotland are shown in Appendix 7.</td>
</tr>
</tbody>
</table>

Key challenge:
- Ensuring parents/carers appreciate the need for advance planning since making holiday arrangements can be complex and time consuming.
Appendix 1: Suggestions for discharge checklist for children receiving home oxygen therapy

There are well-developed examples of discharge planning documentation in use throughout Scotland. The content of this discharge checklist represents the professional consensus of the working group and contains key elements from discharge planning documents used across Scotland.

**Initial decision-making**
- medical consultant makes clinical decision that child requires home oxygen therapy, in conjunction with the family and professionals involved with the child
- individual management plan provided based on the clinical needs of the child
- oxygen prescribed and oxygen delivery system decided upon
- referral to community children’s nurse/appropriate community professional
- information to child’s GP
- discharge planning meeting organised

**Arrangements for equipment**
- refer to Health Facilities Scotland
- organise supplies: nasal cannulae/masks; tape to secure nasal cannulae

**Safety arrangements**
- contact local Fire Service to inform the service that oxygen will be stored in the home
- demonstrate equipment and assess parents'/carers’ abilities. This should be done as much in advance of discharge as possible to allow the parents/carers to become familiar with the equipment.
- parents/carers should receive resuscitation training and regular updates
- parents/carers given oxygen safety information

**Arrangements with other agencies**
- advise parents of benefits available and refer to Social Work Department for further information (e.g., Disability Living Allowance)
- parents to inform home and car insurance companies (can claim back any increase in car insurance premium through Disability Living Allowance)
- arrangements made for child going to school (including transportation)
- parents/carers receive information on any local support group available
- parents/carers contact gas and electricity suppliers

The date and name of person organising discharge are documented in the case notes.
Appendix 2: Sample checklist for supporting parents/carers prior to discharge

Oxygen delivery device (select either face mask or cannula)

<table>
<thead>
<tr>
<th>Steps of procedures</th>
<th>Discuss procedures</th>
<th>Demonstrate procedures</th>
<th>Performed with supervision</th>
<th>Performed unsupervised</th>
<th>Confident to practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learner</td>
<td>Professional</td>
<td>Learner</td>
<td>Professional</td>
<td>Learner</td>
</tr>
<tr>
<td>1 Wash and dry hands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Learner</td>
</tr>
<tr>
<td>2 Collect and check equipment</td>
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<td></td>
</tr>
<tr>
<td>3 Explain the procedure and ensure correct position of the child</td>
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</tr>
<tr>
<td>4 Position and secure oxygen delivery device</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5 Administer oxygen as prescribed</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6 Identify potential problems and solutions</td>
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</tbody>
</table>

Professional signature ...............................................................  Designation .................................................................

Date ........................................................................................................
Appendix 3: Safety information for parents/carers of children receiving home oxygen therapy

This safety information is based on information provided by Health Facilities Scotland. It contains key elements from documents used across Scotland.

Environment
- do not smoke in the same room as the oxygen equipment
- do not use oxygen near a fire or naked flame
- do not hang clothes or dusters on oxygen cylinders or concentrator
- aerosol cylinders (e.g., furniture polish) should not be discharged near oxygen source
- do not let a concentration of oxygen build up in confined spaces and ensure good ventilation
- be aware that oxygen is heavier than air and any unused oxygen will pool in clothes

Handling the equipment
- wash hands before changing oxygen cylinder heads
- do not use grease or oil on any oxygen equipment
- do not allow children or untrained persons to operate oxygen equipment
- make sure that the cylinder valves are closed when not in use
- when the cylinder is empty, the valve must be closed and the plastic cap refitted to the valve outlet to prevent moisture entering the cylinder
- handle cylinders with care and ensure they are not knocked violently or allowed to fall over; a secure stand should be provided
- open cylinders gently to avoid a ‘rush of pressure’
- close cylinders without unnecessary force (excessive force will result in damage to both valve seats and spindles)
- close cylinder valves directly after use and ensure the pressure in the regulator is released
- arrange for all empty cylinders to be returned to the supplier

Storing the equipment
- do not store oxygen in same area as flammable liquids (e.g., paint, petrol, paraffin, turpentine)
- whenever practical, place cylinders near an exit so that they can be removed quickly in an emergency such as fire; they should not block the exit
- keep cylinders under cover, preferably inside and protected from extremes of heat or cold
- the storage area must be clean, dry and well-ventilated, away from direct sunlight, and away from highly flammable liquids, other combustible material and sources of heat and ignition
- cylinders should be kept free of rust or dirt, should not be repainted, have any markings obscured or any labels removed
- should a leakage of gas occur, it would usually be evident by a hissing sound. The supplier should be contacted as soon as possible.
Travelling with equipment

by car/taxi

- it is strongly advised that a no smoking rule is observed in any vehicle carrying oxygen
- check cylinders for leaks before a journey (ie check for obvious signs such as hissing)
- store cylinders out of direct sunlight and heat (see above)
- ensure cylinders are not able to move about freely as this could lead to cylinder damage, or act as a hazard to occupants of the car
- ensure the vehicle windows are partially open when oxygen is being transported
- inform the car insurance company of the need to carry oxygen

by bus/train

- local arrangements vary and parents/carers are advised to consult individual companies for advice regarding transport with oxygen delivering equipment
Appendix 4: Template for useful contact numbers for parents/carers

<table>
<thead>
<tr>
<th>Who can help? Useful numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Health</td>
</tr>
<tr>
<td>Community nurse</td>
</tr>
<tr>
<td>GP</td>
</tr>
<tr>
<td>Specialist nurse</td>
</tr>
<tr>
<td>Local hospital</td>
</tr>
<tr>
<td>Oxygen delivery</td>
</tr>
<tr>
<td>equipment or supply</td>
</tr>
<tr>
<td>Health Facilities</td>
</tr>
<tr>
<td>Scotland</td>
</tr>
<tr>
<td>Supplies - tubing,</td>
</tr>
<tr>
<td>masks etc</td>
</tr>
<tr>
<td>Safety</td>
</tr>
<tr>
<td>Fire or emergency</td>
</tr>
<tr>
<td>service</td>
</tr>
</tbody>
</table>

Please see the NHS Quality Improvement Scotland website (www.nhshealthquality.org) to download a Word version of this form to save and use electronically, or print to use by hand.
Appendix 5: Oxygen in school

Reproduced with permission from the Thomas Wolsey School Outreach Service, Ipswich, Suffolk, and from Ipswich Local Authority.*

Objective
To ensure that children who are prescribed oxygen therapy receive it safely in school
To ensure that fire and explosion risks are adequately controlled when oxygen is in use in school

Rationale
That children requiring oxygen therapy are able to attend school

Success criteria
Letter of confirmation of prescription for oxygen in school is received from the Paediatrician
There is a School Health Care Plan in place, detailing the specific medical guidelines on administering oxygen
Training is provided for staff who are identified through the Care Plan to administer oxygen therapy
The child is escorted to school by an appropriately trained person instructed in administering oxygen therapy
The Fire Service is alerted when oxygen is stored in a school
Schools follow guidelines from oxygen suppliers over the storage of cylinders
Schools notify their building insurance company that oxygen is stored on the premises
Schools review their Fire Risk Assessment to take into account the presence and use of oxygen around the school
Risk control measures are taken in the vicinity of the oxygen cylinder at all times – wherever this is within the school
Activities where fire risks would be generally increased by the presence of excess oxygen are highly controlled or not undertaken when oxygen is being supplied from a cylinder

*This could also refer to nursery schools
Appendix 6: A sample training record for person caring for a child receiving long-term oxygen therapy in a nursery or educational facility

Identified Staff Member ................................................................. Qualified Nurse .................................................................

I agree that I feel confident to carry out ..................................................................................................................................................

as demonstrated and through training on (date) ......................

Sign ........................................................................

Identified member of Education Staff

I agree that the above member of education staff has demonstrated the ability to .........................................................................................

on (date) .............................................................................................

Sign ................................................................................................ Assessor .............................................................................

Note: In addition to the above framework, some users of skill frameworks complete the process by asking the person who has been taught these skills to sign an agreement that not only are they able to demonstrate these as an indication of their ability but also that they feel confident to exercise these skills.

Please see the NHS Quality Improvement Scotland website (www.nhshealthquality.org) to download a Word version of this form to save and use electronically, or print to use by hand.

22
Patients who are going on holiday within Scotland and need a concentrator are permitted to take their existing concentrator with them if they can. If they do so, they should follow the same safety advice that is given to them for use at home. They should also notify Dolby Medical of their temporary location. If they need a secondary concentrator at their temporary address within Scotland, they can arrange this by requesting this in writing from Health Facilities Scotland (HFS). They should:
- Provide full address details of their temporary address
- Provide dates for which they require the concentrator
- Confirm that they have obtained permission of the owner of the temporary property to allow the use of the concentrator.
- Obtain permission from the owner to have the concentrator delivered up to 2 weeks before their arrival and have it collected after their departure
- Make a written request to HFS at least 4 weeks prior to their arrival.

Patients travelling within Scotland should continue to get their portable oxygen supplies through community pharmacy or through their normal supplier.

If patients are travelling to other parts of the UK outwith Scotland and only require a concentrator and already have one prescribed, they can arrange this by writing to HFS as above and we will make the necessary arrangements with the local supplier.

If they require a supply of portable oxygen whilst visiting other parts of the UK, then a Home Oxygen Order Form (HOOF) is required. This should be completed by their Consultant, Respiratory Nurse Specialist, GP or other Healthcare professional who is fully aware of their ambulatory oxygen requirements. The completed form should be sent to HFS who will make the necessary arrangements with the local supplier.

If patients require portable oxygen cylinders for their return journey, they should take a supply of portable cylinders with them as cylinders provided by the local supplier in England Wales and Northern Ireland need to be returned to the local supplier.

If patients are travelling outwith the UK, then it is their responsibility to make their own arrangements. For travel within The European Economic area, reciprocal arrangements are in place and UK resident patients should be able to access oxygen supplies on the same basis as local residents. Note that there may still be a charge. Generally patients will require
- A letter from their doctor outlining their medical condition which should be translated into the language of the country that they are visiting. (Note that translation services may incur a charge.)
- A copy of their European Health Insurance Card,
- A copy of their passport, and
- A covering letter requesting to be treated under the reciprocal arrangements.

Appendix 8: Post discharge checklist

This list was identified by the group reviewing the best practice statement as useful for an individual community children’s nurse or community team to check that essential arrangements and discussions have taken place.

Please see the NHS Quality Improvement Scotland website (www.nhshealthquality.org) to download a Word version of this form to save and use electronically, or print to use by hand.

<table>
<thead>
<tr>
<th>Checklist for initial visits after a child on home oxygen therapy is discharged from hospital.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child’s Name</strong>...........................................................................................................</td>
</tr>
<tr>
<td><strong>Date of birth</strong> ..................................................</td>
</tr>
<tr>
<td><strong>CCN/Team</strong> .................................................................</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The child has a prescription for home oxygen.</td>
</tr>
<tr>
<td>2</td>
<td>The child has a discharge plan or check list.</td>
</tr>
<tr>
<td>3</td>
<td>Before leaving hospital the child can be assured that his or her parents/carers:</td>
</tr>
<tr>
<td></td>
<td>• have all the equipment and replacement supplies necessary for the supply of home oxygen</td>
</tr>
<tr>
<td></td>
<td>• have had training in the technique and management of the supply of home oxygen and are</td>
</tr>
<tr>
<td></td>
<td>confident in using the equipment</td>
</tr>
<tr>
<td></td>
<td>• have had information on safety</td>
</tr>
<tr>
<td></td>
<td>• have learned how to observe the child’s breathing pattern and know how to interpret and act</td>
</tr>
<tr>
<td></td>
<td>on this information</td>
</tr>
<tr>
<td></td>
<td>• are able to use a monitor if it is required</td>
</tr>
<tr>
<td></td>
<td>• have had life support training and know how this can be kept up to date</td>
</tr>
<tr>
<td></td>
<td>• have a list of contact details and know who to contact for different sources of help</td>
</tr>
<tr>
<td></td>
<td>• know what to do if the oxygen supply is not available.</td>
</tr>
<tr>
<td></td>
<td>The local fire officer has been contacted to inform the fire service that oxygen will be stored in the home.</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>The parents/carers are aware of the systems that enable them to:</td>
</tr>
<tr>
<td></td>
<td>• order and reorder supplies, eg cannulae, tubing, etc</td>
</tr>
<tr>
<td></td>
<td>• have oxygen delivery equipment replaced, repaired and serviced.</td>
</tr>
<tr>
<td>6</td>
<td>When attending nursery, school or out-of-school activities the child requiring portable oxygen is assessed, consulted and:</td>
</tr>
<tr>
<td></td>
<td>• provided with an oxygen delivery system that best suits his or her needs</td>
</tr>
<tr>
<td></td>
<td>• given a School Health Care Plan</td>
</tr>
<tr>
<td></td>
<td>• given a risk assessment within the plan</td>
</tr>
<tr>
<td></td>
<td>• assured that an appropriately trained individual will be present when he or she is using oxygen.</td>
</tr>
<tr>
<td>7</td>
<td>When travelling outside the home, the child can be confident that those escorting him or her will transport the oxygen safely.</td>
</tr>
<tr>
<td></td>
<td>• The parents/carers have been given safety information (Appendix 3)</td>
</tr>
<tr>
<td></td>
<td>• The parents/carers have informed the car insurance company of the need to carry oxygen</td>
</tr>
<tr>
<td>8</td>
<td>The child can be assured that the parents/carers will plan holidays or overnight stays in advance and approach the relevant agencies in good time.</td>
</tr>
<tr>
<td></td>
<td>• The parents/carers know that HFS requires at least four weeks notice to make arrangements prior to going on holiday and that these arrangements are their responsibility to initiate before HFS is approached four weeks prior to departure.</td>
</tr>
<tr>
<td></td>
<td>• The parents/carers are aware of the importance of early contact with the community children’s nurse or relevant person in the community (eg complex respiratory nurse specialist).</td>
</tr>
</tbody>
</table>
References


8 Ibid

9 Ibid

10 Ibid


Further reading


NHS Quality Improvement Scotland secured membership to the Joanna Briggs Institute (JBI) in May 2007, and this gives all NHSScotland employees access to the evidence-based tools and resources on the JBI Clinical Online Network of Evidence for Care and Therapeutics (COnNECT). The JBI produced an evidence summary that was based on a structured literature search to answer the question ‘What is the best available evidence regarding home oxygen therapy in children with chronic hypoxaemia?’

In addition to findings on clinical issues relating to levels of oxygen saturation, humidification, and flow rates, the summary cited a study which evaluated the feasibility and safety of emergency department (ED) discharge on home oxygen therapy for children aged 2 to 24 months. The study found that 97% of children were treated successfully as outpatients with home oxygen. Satisfaction with home oxygen was high from the caregiver and the primary care provider. The author concluded that discharge from the ED on home oxygen after a period of observation was an option for patients (Bajaj et al, 2006).

Two key articles were identified by the evidence summary:


The JBI COnNECT resources can be accessed through the:

1. elibrary www.knowledge.scot.nhs.uk (using an Athens username and password), or

2. JBI website www.joannabriggs.edu.au - enter the JBI username and password for your NHS board (details can be obtained from the Directorate of Implementation and Improvement Support at NHS QIS).
Glossary

**AF cylinder**
Large size of oxygen cylinder (1,360 litre capacity).

**apnoea monitor**
A device that monitors breathing and sounds an alarm if no breathing is detected for more than a pre-set time.

**base unit**
Contains the liquid oxygen.

**cylinder valves**
Oxygen ‘on/off’ tap.

**delivery equipment**
This is the equipment through which the oxygen is given to the person. It could be from a condenser which draws oxygen from the atmosphere, or from cylinders of oxygen.

**discharge planning**
Discussion and action about going home from hospital.

**flow meter**
Measures rate of oxygen coming out of cylinder.

**hypoxia**
Abnormally low oxygen in the blood.

**liquid oxygen**
Oxygen gas compressed and cooled to a liquid.

**low flow gauge**
Lets out oxygen at a very slow rate.

**cylinder head**

**management plan**
Guidelines for child’s care at home.

**mode of delivery**
The way in which oxygen is delivered to the lungs i.e. by face mask, tracheostomy mask or nasal cannula.

**nasal cannulae**
Tubes to deliver oxygen via nose.

**oxygen concentrator**
Machine that takes oxygen from the air and concentrates it (make it denser).

**oxygen cylinder**
Container for holding oxygen.

**oxygen delivery system**
Method for getting oxygen to the patient.

**oxygen humidifier**
Device to add moisture to the oxygen.

**oxygen mask**
Covers nose and mouth to deliver oxygen.

**oxygen saturation**
Percentage of oxygen in blood.

**oxygen supplier**
Company who provides oxygen. Health Facilities Scotland is the supplier of oxygen for children in Scotland.

**oxygen tubing**
Plastic tubing delivering oxygen between delivery system and mask/nasal cannulae.

**parameter**
An upper and lower limit, in this case the maximum and minimum flow rates, prescribed for a particular patient receiving oxygen therapy.

**PD cylinder**
A small size of oxygen cylinder.
portable cylinder  
A small size of oxygen cylinder that is easier to transport than a regular cylinder.

respiratory pattern  
Breathing pattern, for example frequency and depth.

TREM card  
Transport Emergency Card (Road). Sign displayed in vehicle to highlight carrying of oxygen with advice on what to do in an emergency situation. It should be displayed only when the oxygen is actually being transported. It is mandatory to display a TREM card on mainland Europe when travelling with a child using home oxygen therapy equipment.

In the UK, the display of a TREM card is required only when a substantial amount of gas is being transported. The display of a TREM card is associated with vehicles designed to carry a high volume of gas and with a safety specification beyond that required of vehicles used for domestic purposes. Health Facilities Scotland does not recommend the display of a TREM card in a private vehicle carrying only limited amounts of oxygen for one individual.
Who was involved in developing the statement

The statement was originally developed in 2002, and subsequently reviewed and endorsed in 2006 when a quick reference guide was published. Members of the original group were reconvened to review the statement in August 2009 and a consultation draft was sent to leading respiratory and paediatric clinicians, the Scottish paediatric respiratory interest group and paediatric physiotherapy networks, the practice development nursing and children’s nurse networks, representatives of the Fire Service, and voluntary groups including CHAS, Asthma UK and the Cystic Fibrosis Trust.
You can look at this document on our website. It is also available, if you ask:

- in electronic format
- in audio format
- in Braille
- in large print
- in community languages

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