

SCHEDULE 2 – THE SERVICES

A. Service Specifications

Service Specification No:	170084S
Service	Hyperbaric Oxygen Therapy Services (All Ages)
Commissioner Lead	<i>For local completion</i>
Provider Lead	<i>For local completion</i>

1. Scope
<p>1.1 Prescribed Specialised Service</p> <p>This service specification covers the provision of hyperbaric oxygen treatment services (adults and children).</p> <p>1.2 Description</p> <p>Hyperbaric oxygen treatment services include hyperbaric oxygen treatment services provided by Specialist Hyperbaric Oxygen Treatment Centres for specified conditions. This applies to provision in adults and children.</p> <p>1.3 How the Service is Differentiated from Services Falling within the Responsibilities of Other Commissioners</p> <p><u>What NHS England commissions:</u></p> <p>NHS England commissions hyperbaric oxygen treatment services from Specialist Hyperbaric Oxygen Treatment Centres (registered as Hyperbaric Chamber Services with the Care Quality Commission) for specified conditions.</p> <p><u>What Clinical Commissioning Groups (CCGs) commission:</u></p> <p>CCGs do not commission any elements of this service.</p> <p><u>How the activity for this service is identified:</u></p> <p>This service includes specified activity at specified centres.</p>

2. Care Pathway and Clinical Dependencies

2.1 Care Pathway

- Hyperbaric centres are classified depending on the availability of medical facilities, suitability for different types of patients and whether they use mono-place or multi-place chambers. There are both mono-place and multi-place chambers available across the UK.
- Mono-place chambers are less costly and some are portable. They provide treatment for a single unaccompanied patient. They do not, however, allow access to the patient for assessment or intervention without cessation of treatment and de-pressurisation. As a result, they are inappropriate for some patients such as those receiving initial treatment for decompression injury.
- Multi-place chambers allow an attendant or other health professional to deliver care directly to patients and to deal with emergencies immediately without interrupting hyperbaric treatment. In some circumstances, multiple patients may be treated simultaneously.
- The service centres are not equitably distributed on a geographical basis, and they provide different services as defined by the Cox Report.

Cox Report categories:

- Category 1: facilities should be capable of receiving patients in any diagnostic category who may require Advanced Life Support either immediately or during Hyperbaric Oxygen Therapy (HBOT).
- Category 2: facilities should be capable of receiving patients in any diagnostic category who are judged by the referring medical practitioner not to be likely to require Advanced Life Support during HBOT.
- Category 3: facilities should be capable of receiving emergency referrals of divers and compressed air tunnel workers. These facilities should also be capable of providing elective treatment of residual symptoms of decompression illness. Patients may be accepted, in the name of the Medical Director (whose role is defined in paragraph 24 of the Cox Report, 1994), even when no Hyperbaric Duty Doctor is available at the time of referral provided, if in the view of the referring clinician, the patient's condition demands immediate action. This does not obviate the need for discussion with the Hyperbaric Duty Doctor who should attend the patient as soon as is practicable.
- Category 4: facilities should be capable of receiving elective and emergency referrals of patients in any diagnostic category who are judged by the referring medical practitioner, on the advice of the Hyperbaric Duty Doctor, not to be likely to require access during HBOT. Normally mono-place chambers are not suitable for the immediate treatment of acute decompression illness.

NHS England commissions care from Cox Category 1 and Category 2 facilities.

Referral

Access to treatment with Hyperbaric Oxygen Therapy will be in line with the Hyperbaric Oxygen Therapy Clinical Commissioning Policies published by NHS England Specialised Services.

NHS England commissions HBOT services from providers whose centres:

- are registered as Hyperbaric Chamber Services with the Care Quality Commission;
- undergo peer review by the appraisal team used by the British Hyperbaric Association every 5 years.

Patients may be referred to the appropriate Cox Category of facility by the following:

- HM Coast Guard
- British Hyperbaric Association advice line
- An ambulance service
- An emergency department
- A registered medical practitioner
- A patient directly accessing / self referring to a provider.

All referrals must be discussed and agreed with an appropriately trained UK General Medical Council (GMC) registered medical practitioner working for the hyperbaric treatment service before the patient is accepted for hyperbaric treatment. For problems arising from reduction in ambient pressure such as decompression illness, the medical practitioner must be trained to Level IIa / 2D (or equivalent) as described in European Committee on Hyperbaric Medicine / European Diving Technology Committee Educational and Training Standards for Physicians in Diving and Hyperbaric Medicine September 2011 [http://www.edtc.org/ECHM-EDTC%20Educational%20and%20Training%20Standards%20\(2011\)\[1\].pdf](http://www.edtc.org/ECHM-EDTC%20Educational%20and%20Training%20Standards%20(2011)[1].pdf)

If there is an NHS England clinical commissioning policy published for routine commissioning of treatment relating to any condition other than decompression illness or gas embolism, then it should be noted that the medical practitioner must be trained to Level IIb / 2H (or equivalent).

Each provider must, therefore, provide a direct line of communication with the medical practitioner trained to the level described above, during the hours of operation that it has agreed with the commissioning authority.

Emergency cases will be transferred to the closest facility appropriate to their clinical requirements which, in some cases, will not be the facility closest to their location if it does not have the appropriate Cox Category. In order to avoid unnecessary delays, referring agencies will be made aware in writing of the categorisation of chambers in their areas of responsibility.

Transfer to a hyperbaric facility is typically by road or air ambulance, by coastguard helicopter or by private vehicle. First aid for decompression illness is continuous high fraction inspired oxygen (even if the patient is not hypoxic) and this should be taken into account when planning the ambulance or helicopter transfer.

Assessment

On arrival at the hyperbaric facility, and prior to treatment, the attending hyperbaric medical practitioner will assess the patient to determine whether hyperbaric oxygen therapy is required. In some circumstances, the hyperbaric medical practitioner will attend the patient before arrival at the hyperbaric unit, for example in the Emergency Department, in order to ensure that all necessary non-hyperbaric interventions and investigations are complete prior to transfer or to avoid an unnecessary transfer altogether. If hyperbaric oxygen therapy is not required the patient will be discharged or referred to appropriate medical care

As soon as it is established that hyperbaric oxygen therapy is required, that there is no contra-indication to the treatment and that all reasonably foreseeable medical requirements can be provided in the local chamber, the patient will be treated. Although hyperbaric oxygen therapy is generally a safe treatment, the treatment must be conducted under the supervision of a medical practitioner on site. If the medical practitioner at the point of delivery of care is not trained to Level IIa / 2D, Level IIb / 2H (or equivalents), they must be supervised, to a level commensurate with their competence for independent practice, by a medical practitioner trained to Level IIa / 2D, Level IIb / 2H (or equivalent) as described above. This condition applies to every stage of the patient's care.

The Medical Director responsible for the HBOT service must be trained at least to Level 3 (or equivalent.)

The medical practitioner also needs to assess the patient at the end of treatment and to arrange appropriate care needed by the patient, for instance if hospital admission is required.

If the patient is more seriously ill than originally anticipated and medical requirements will exceed care available locally, transfer to a higher level hyperbaric facility will be necessary prior to treatment.

Treatment

Patients typically inhale oxygen or other therapeutic gas mixture via a hood or a mask in a multi-place chamber. Hyperbaric chamber pressures do not normally exceed 3 atmospheres absolute (ATA) when 100% oxygen is delivered to the patient(s). This will be different if mixed gas is used.

Standard treatment for decompression illness takes approximately 5 hours but many patients require longer treatment depending on severity of injury and response to treatment.

Emergency patients with decompression injuries must receive their initial treatment in a multi-place chamber with at least two compartments and a man-lock facility to enable proper ongoing care, assessment and intervention as necessary. Changes in gait and balance will need to be tested in order to assess response to treatment in many cases, so the treating compartment must offer a minimum headroom of 180 centimetres (in accordance with European harmonised standard in BSEN 14931:2006 *Pressure Vessels for Human Occupancy (PVHO) - Multi-place chamber systems for hyperbaric therapy - Performance, safety requirements and testing*) but ideally should be able to offer a headroom of the 95th centile of standing height plus a minimum of 5 cm, giving a total of 193.1 cm.

For other conditions, an individual treatment session usually lasts up to 2 hours, although the total number of sessions required is highly variable.

Depending on clinical condition and response to hyperbaric treatment, which must be assessed by a medical practitioner with Level IIa / 2D experience at the end of their hyperbaric treatment, a patient will be discharged from the hyperbaric facility, and this may include for further care, observation and follow up as appropriate.

The patient might require further treatments in a hyperbaric facility, either as a readmission from the supporting hospital or as an outpatient. This requirement must be assessed by a medical practitioner with Level IIa / 2D experience. A transfer to another hyperbaric facility might be required in which case (with the consent of the patient, if reasonably possible) full clinical details will be passed to the receiving facility.

Discharge, continuing care and rehabilitation

Patients will be assessed at appropriate intervals (such as in between HBOT sessions and after the final HBOT treatment) to establish whether they are fit to be discharged home or if they require hospital admission or other care. A discharge letter will be provided to the patient's GP, with copies to the patient and (if appropriate) referring specialist. The letter will recommend any further health care measures that might be necessary such as outpatient appointments, onward referral for further investigation, specialist opinion or input from other services such as physiotherapy. Specific discharge advice will be provided, tailored to and to guide the individual patient. This may include recommendations regarding a period of abstinence from diving, safety to return to activities such as driving or flying or other relevant advice. Appropriate follow-up will also be defined.

Follow-up

It is the responsibility of the discharging hyperbaric facility to offer diving casualties follow-up appointments to give advice on any measures necessary to minimise the risk of recurrence, to

establish fitness to dive and to advise the patient's general practitioner of the appropriate investigations and / or specialist referrals required in more complex cases. Review for conditions other than decompression illness would usually be undertaken by the referring specialist who is overseeing the primary treatment.

Access to treatment will be in line with clinical commissioning policies published by NHS England.

2.2 Interdependence with Other Services

HBOT providers will maintain close liaison with other HBOT providers and with many other services such as coastguard, fire service and ambulance service.

Co-located services - to be provided on the same site

- Cox Category 1 providers must be able to administer critical care immediately available on site for critically-ill patients.

Interdependent services - required during the spell of care, but not necessarily co-located

Each provider will have a formal agreement, including transfer and treatment protocols, with identified local hospitals describing how the organisations will co-operate in providing any additional treatment and other aspects of management for patients requiring HBOT. The identified hospital must have support services appropriate to the category of chamber. For instance a Category 1 chamber would be expected to have a working relationship with a Level 3 critical care unit and a Type 1 Emergency Department, either in the host hospital or in a hospital nearby.

There is a requirement for medical equipment that is manufactured, modified or otherwise found suitable and appropriately maintained for use in the pressurised environment of a hyperbaric chamber.

Some specific examples of other services that can contribute to the care of a hyperbaric patient are given below.

Urgent requirements prior to treatment:

- Subject to the advice of the responsible hyperbaric medical practitioner, many patients require evaluation of general medical status and co-morbidities, investigation and stabilisation in a local emergency department or an in-patient setting.
- ENT assessment and myringotomy or insertion of grommets in patients who cannot ventilate their middle ears (sometimes in between or after HBOT).
- ENT assessment of patients with clinical features that cannot be distinguished between inner ear barotrauma or audio-vestibular decompression illness (sometimes in between or after HBOT)

All children and young people who use services must have defined pathways into children's, adolescents and young people's services and must be:

- Fully informed of their care, treatment and support.
- Able to take part in decision making to the fullest extent that is possible.
- Asked if they agree for their parents or guardians to be involved in decisions they need to make. (Outcome 41 Essential Standards of Quality and Safety, Care Quality Commission, London 2010).

Immediately after, or in between, hyperbaric treatments:

- Acute medical, surgical or other specialty inpatient admission.
- Critical care admission for patients who remain critically ill.
- Access appropriate children's service for patients 17 years and below.

Related services - that might be required during stages of the patient's care:

A wide range of clinical services might be needed after treatment, sometimes prior to discharge home. These might include: respiratory, cardiothoracic, cardiology (including cardiologists with a special interest in diving-related disease medicine), neurology, neurophysiology, neuro-rehabilitation, psychiatry, and others. The HBOT provider must ensure that appropriate follow up and monitoring arrangements are put in place. The General Practitioner will play a pivotal role in organising and co-ordinating many of these services, especially if the patient lives a significant distance from the HBOT facility.

2.3 Staff, Skillsets and Training

The service operates under the clinical responsibility of a suitably qualified and experienced fully registered medical practitioner; the Medical Director of the HBOT unit as defined by the Cox Report. The Medical Director is trained to Level 3 (or equivalent).

Staff will include the following:

- Medical Director - the appointed medical practitioner responsible for all functions developed in the hyperbaric centre including i) direction of clinical activities of the facility; ii) production of assessment and treatment protocols; iii) appointment and/or delegation of clinical staff; iv) supervision of all clinical staff; v) general medico-legal responsibility for the facility; vi) safe custody and confidentiality of all clinical records; vii) the work of other medical staff if unsupported.
- Hyperbaric physicians – medical practitioners responsible for the clinical activity related to hyperbaric treatments. The Medical Director can act as one of the hyperbaric physicians.
- Attendants – persons responsible for direct care of the patient inside the multi-place chamber, within the limitation of their qualification.
- Operators – persons responsible for the safe operation of the chamber system according to the operating procedures.
- Supervisors – persons responsible for all safety during the hyperbaric session.
- Some units will have additional staff such as registered nurses.

The responsibilities plus initial and continuation training of hyperbaric physicians, attendants, operators and supervisors are defined in the publications 'Educational and Training Standards for Physicians in Diving and Hyperbaric Medicine', 'A European code of good practice for hyperbaric oxygen therapy' and 'Education of nurses, operators and technicians in hyperbaric facilities in Europe. Resources manual: a document of EBAss / ECHM.'

Minimum training standards are necessary in order to ensure optimal care and patient safety. For instance, to remain competent, each hyperbaric chamber attendant is required to attend no less than 10 hyperbaric treatments a year inside the chamber with patients. Hyperbaric chamber operators, in order to work autonomously, are required to carry out no less than 10 hyperbaric treatments a year with patients.

The minimum team during a hyperbaric session for multi-place chambers is one hyperbaric physician, one attendant and one operator.

Actual team sizes will depend on risk assessments and will consider the multi-role abilities of the available staff. Special consideration should be made for the possibility of the need to give immediate assistance.

A supervisor must be appointed. Some facilities, depending on the code of practice being followed, require a supervisor to be present in person during every hyperbaric exposure.

The location of the individual members of the minimum team is the responsibility of either the duty physician or duty supervisor, however the whole nominated team should remain in the facility and immediately available.

Training programmes will deliver the necessary level of competence to all medical, nursing and other professional staff.

3. Population Covered and Population Needs

3.1 Population Covered By This Specification

The service outlined in this specification is for patients ordinarily resident in England; or otherwise the commissioning responsibility of the NHS in England (as defined in Who Pays?: Establishing the responsible commissioner and other Department of Health guidance relating to patients entitled to NHS care or exempt from charges).

The patients who are eligible for treatment and who may therefore require access to this service are defined in the HBOT clinical commissioning policies published by NHS England.

3.2 Population Needs

The term decompression illness includes decompression sickness and arterial gas embolism. The majority of cases of decompression illness arise from diving and other activities that involve exposure to raised environmental pressure followed by a return to normal atmospheric pressure. Between 200 and 300 cases present in England each year. A few cases arise solely from exposure to low pressure such as in an unpressurised aircraft.

The geographical distribution of cases of decompression illness is determined by level of diving activity, and is concentrated around coastal areas, inland expanses of water and the locations of residence of the divers. Airports provide a significant minority of patients usually returning from a diving trip.

A small number of cases of gas embolism arise from inadvertent introduction of gas into a patient's circulation during a medical procedure.

3.3 Expected Significant Future Demographic Changes

No significant future demographic changes are expected other than those resulting directly from the increasing numbers and average age of the national population. Cases to date have typically been otherwise healthy individuals in the age range between late adolescence and late middle age with a preponderance of males. The range of medical problems considered compatible with diving is gradually broadening. An increasing proportion of the diving population is in the seventh or eighth decade of life. The proportion of female divers is growing. These factors mean that the age / gender profile, and the likelihood of significant pre-existing co-morbidities, within the population presenting with decompression illness will change in future.

3.4 Evidence Base

This specification has been developed following the evidence reviews that informed the published policies for treatment with hyperbaric oxygen. The summary of these evidence reviews can be found within the relevant published policy.

4. Outcomes and Applicable Quality Standards

4.1 Quality Statement – Aim of Service

The service is registered as a Hyperbaric Chamber Service with the Care Quality Commission.

The service comprises the activity of a small number of discrete units which provide Hyperbaric Oxygen Therapy (HBOT) across England. For this document, HBOT is defined as delivery of oxygen inside a treatment chamber at a partial pressure greater than 100 Kilopascal (kPa). It is typically administered at a partial pressure substantially higher than 100 kPa and seldom at less than 220 kPa.

Core objectives are:

- to integrate with other hyperbaric units and medical emergency services for the benefit of the patient.
- to provide staff who are suitably qualified and experienced to advise on hyperbaric medicine issues and to care for patients during HBOT as per European Committee on Hyperbaric Medicine / European Diving Technology Committee Educational and Training Standards for Physicians in Diving and Hyperbaric Medicine September 2011 and Education of nurses, operators and technicians in hyperbaric facilities in Europe. Resources manual: a document of EBAss / ECHM. Version 2008
- to provide treatment in a safe environment that satisfies NHS and all other relevant standards and legislation.
- to provide all necessary supportive treatment appropriate to the patient's condition during hyperbaric treatment.
- to provide a service from which patients can reasonably expect:
 - To have prompt 24 hour access to emergency HBOT for appropriate medical conditions through relevant referral channels.
 - To receive HBOT administered by appropriately trained personnel in facilities that are well maintained, comply with all relevant regulations and follow best practice.
 - To receive care suited to their medical condition.
 - To receive care that is integrated with care from other sources including their general practitioner (GP), referring specialist and other healthcare professionals.
 - To be treated with respect and dignity with their own wishes being considered where possible and reasonable.
- to engage in relevant research and development and actively engage in national audit and data collection.

HBOT is targeted at a range of conditions and patient groups limited by the commissioning policy to those that most closely align with the principles of evidence based medicine.

NHS Outcomes Framework Domains

Domain 1	Preventing people from dying prematurely	√
Domain 2	Enhancing quality of life for people with long-term conditions	
Domain 3	Helping people to recover from episodes of ill-health or following injury	√
Domain 4	Ensuring people have a positive experience of care	√
Domain 5	Treating and caring for people in safe environment and protecting them from avoidable harm	√

4.2 Indicators Include:

Number	Indicator	Data Source	Outcome Framework Domain	CQC Key question
Clinical Outcomes				
102	Improvement in Patient Quality of Life self-assessment.	SSQD	3, 4	effective, caring
103	Percentage of divers returning to pre-morbid functional state following treatment.	SSQD	3, 4	effective, caring
104	Mean time lag from referral date to HBOT treatment date.	SSQD	4	responsive
105	The percentage of exposures associated with adverse events thought by anyone in the team to be significant in the care of patients or the conduct of the hyperbaric unit.	SSQD	1, 3, 4	safe, effective, caring
106	Mortality within 30 days of treatment.	SSQD	1	safe, effective, caring

107	Percentage of exposures associated with avoidable illness or injury attributable to HBO.	SSQD	1, 5	safe, effective, caring
108	Percentage of patients who develop refractive changes as a result of treatment.	SSQD	4, 5	effective, caring
109	Proportion of HBOT typical complications recorded.	SSQD	5	safe, effective, caring
Patient Experience				
201	Percentage of patients who reported that quality of information provided was adequate.	SSQD	4	caring, effective
202	Percentage of patients who reported that they felt safe and secure during treatment.	0	4	caring, effective
203	Percentage of patients who reported that information and support provided for decision making was adequate.	SSQD	4	caring, effective
204	Percentage of patients who reported that they felt their treatment and support was provided in a way that ensures their human rights and diversity are respected.	SSQD	4	caring, effective
205	Percentage of patients who returned a completed patient feedback form.	SSQD	4	caring, effective
Structure and Process				
301	The service reports to the BHA annually.	Self declaration	5	safe, effective
302	All hyperbaric staff are to be educated and trained for their respective role and where required are able to work independently.	Self declaration	5	safe, effective
303	There is equipment and an infrastructure in place that satisfies the requirements of the Cox Report for Category 1 or 2 facilities.	Self declaration	1, 4, 5	safe, effective, caring, responsive

304	The service has a formal agreement in place with a named local hospital, describing how the two organisations will co-operate in the treatment of patients requiring HBOT.	Self declaration	3, 5	safe, effective, caring, responsive
305	There is a written policy detailing that sedated, ventilated patients are overseen by trained anaesthetic / intensive care staff in or next to the chamber, as appropriate.	Self declaration	1, 3, 4, 5	safe, effective, caring, responsive
306	There are guidelines in place as detailed within the service specification itself and other applicable Service Standards listed in the service specification	Self declaration	1, 3, 5	safe, effective, caring, responsive
307	The HBOT team participates in local and national audits reviewing results accordingly.	Self declaration	1, 5	safe, effective, caring
308	The HBOT service submits patient data at least monthly to the NHS England Hyperbaric Oxygen Therapy database as per the service specification.	Self declaration	1, 5	safe, effective, caring
309	The HBOT service recruits patients to clinical trials and other well designed studies, reviewing recruitment at least annually.	Self declaration	1, 5	safe, effective, caring

Detailed definitions of indicators, setting out how they will be measured, are included in schedule 6.

4.3 Commissioned providers are required to participate in annual quality assurance and collect and submit data to support the assessment of compliance with the service specification as set out in Schedule 4A-C

HBOT providers will submit the agreed data set to the NHS England Hyperbaric Oxygen Therapy database. This will include:

- Annual summary of:
 - number of Permanent Staff (Doctors, Registrar/Resident Doctor, Nurses, Technicians, Secretary, Other); Casual Staff (Doctors, Nurses, Technicians, Other)

- number of own staff trained in last 12 months. (Doctors, Nurses, Technicians, Other)
- number of outside staff trained in last 12 months. (Doctors, Nurses, Technicians, Other)
- Monthly summary of:
 - side effects in staff (DCI, Ear Barotrauma, Sinus Barotrauma, Dental Barotrauma, Other)
 - training exposures for individual staff

4.4 Applicable CQUIN goals are set out in Schedule 4D

5. Applicable Service Standards

5.1 Applicable Obligatory National Standards

The provider must comply with the following core standards: Acts / Regulations:

- Health and Safety at Work etc Act 1974
- The Diving at Work Regulations 1997 (when applicable)
- Health and Social Care Act 2008
- Care Quality Commission (Regulated Activities) Regulations 2010
- Health and Social Care Act 2008 (Regulated Activities) Regulations 2010.

5.2 Other Applicable National Standards to be met by Commissioned Providers

The provider must take account of the following professional guidance:

- A Code of Good Working Practice for the Operation and Staffing of Hyperbaric Chambers for Therapeutic Purposes. Published by the Faculty of Occupational Medicine. (The Cox Report.) May 1994, ISBN 1 8732409 9 6
- British Hyperbaric Association Guide to Fire Safety Standards for Hyperbaric Treatment Centres. ISBN 0 9527623 1 5
- British Hyperbaric Association Guide to Electrical Standards for Hyperbaric Treatment Centres. ISBN 0 9527623 0 7
- The Training and Education of Hyperbaric Unit Personnel. Report of a Working Party of the British Hyperbaric Association
- The British Hyperbaric Association. Health & Safety for Therapeutic Hyperbaric Facilities. A Code of Practice. ISBN 0 9527623 2 3
- Educational and Training Standards for Physicians in Diving and Hyperbaric Medicine. Written by Joint Educational Subcommittee of the European Committee for Hyperbaric Medicine (ECHM) and the European Diving Technical Committee (EDTC). Approved by ECHM and EDTC on August/September 2011
- Education of nurses, operators and technicians in hyperbaric facilities in Europe. Resources manual: a document of EBAss/ECHM. Version 2008
- A European Code of Good Practice for Hyperbaric Oxygen Therapy. May 2004

The provider should comply with the following National Standards when applicable:

- BS EN 14931:2006. Pressure vessels for human occupancy (PVHO). Multi-place pressure chambers for hyperbaric therapy. Performance, safety requirements and testing.
- BS EN 16081:2011. Hyperbaric chambers. Specific requirements for fire extinguishing systems. Performance, installation and testing.

The provider should take account of the following document:

- Professional Guidance: Clinical Standards for Treatment of Decompression Illness. J. A. S. Ross. Engineering and Health in Compressed Air Work, pp 105-109. ISBN: 978-0-7277-3254-5.

5.3 Other Applicable Local Standards

Not applicable.

6. Designated Providers

Hyperbaric Treatment & Training Services Ltd, Wirral

North England Medical & Hyperbaric Services Ltd, Hull

The Midlands Diving Chamber, Rugby

Diving Disease Research Centre – DDRC Healthcare Plymouth

Hyperbaric Medicine Unit, Chichester

The Diver Clinic (Atlantic Enterprise UK Ltd), Poole

London Hyperbaric Medicine, (LHM Healthcare), London and East of England

7. Abbreviation and Acronyms Explained

The following abbreviations and acronyms have been used in this document:

ATA - atmospheres absolute - a unit of pressure. 1 ATA is the pressure in the atmosphere at sea level.

BS EN – United Kingdom version in English of a European harmonised standard.

CCG – Clinical Commissioning Group

CQC - Care Quality Commission

CQUIN – Commissioning for Quality and Innovation

CT imaging - Computerised Tomography imaging: A medical investigation which make pictures of the body in cross-section usually with x-rays.

DCI – Decompression illness

EBAss - European Baromedical Association for Nurses, Operators and Technicians

ECHM - European Committee for Hyperbaric Medicine

EDTC - European Diving Technical Committee

HBOT - Hyperbaric Oxygen Therapy

kPa – Kilopascal - a unit of pressure. Atmospheric pressure at sea level is approximately 101 kPa.

Level IIa / 2D – Level of training for a Diving medicine physician who is competent to perform the initial and all other assessments of working and recreational divers or compressed air workers; can manage diving accidents and advise diving contractors and others on diving medicine and physiology (with the back-up of a hyperbaric expert or consultant); and should have knowledge in relevant aspects of occupational health. (He or she does not need to be a certified specialist in occupational medicine to be in accordance with the standards).

Level IIb / 2H – Level of training for a Hyperbaric oxygen physician who is responsible for HBO sessions at the treatment site (with backup of a hyperbaric expert or consultant); should have appropriate experience in anaesthesia and intensive care in order to manage the HBO patients (he or she does not need to be certified specialist in anaesthesia to be in accordance with the standards); competent to assess and manage clinical patients for HBO treatment.

MRI – Magnetic Resonance Imaging – a medical investigation which uses powerful magnets to make pictures of the body.

NICE - National Institute for Health and Clinical Excellence

PFO - patent foramen ovale. A foramen ovale is a hole found in the hearts of normal babies before they are born. It usually closes after birth but, if it does not, it is called a patent foramen ovale. Large PFOs allow bubbles to pass from the right side of the heart to the left side and increase the risk of decompression illness.

PVHO - Pressure vessels for human occupancy

Type 1 Emergency Department - Emergency departments that provide a consultant led 24 hour service with full resuscitation facilities and designated accommodation for the reception of accident and emergency patients.

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Change form for published Specifications and Products developed by Clinical Reference Group (CRGs)

Product name: Hyperbaric Oxygen Therapy Services (all ages)

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Description of changes required

Describe what was stated in original document	Describe new text in the document	Section/Paragraph to which changes apply	Describe why document change required	Changes made by	Date change made
This information wasn't included in the original document because it was published prior to the completion of procurement and the awarding of contracts	A list of providers commissioned by NHS England to deliver the service has been added to section 6	Section 6	The names of the providers commissioned by NHS England to deliver the service needed to be added to the service specification now that contracts have been awarded.	Helen Morrison	