LHM Healthcare

Quality Report

Whipps Cross Hospital
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This report describes our judgement of the quality of care at this location. It is based on a combination of what we found when we inspected and a review of all information available to CQC including information given to us from patients, the public and other organisations

Mental Health Act responsibilities and Mental Capacity Act and Deprivation of Liberty Safeguards

We include our assessment of the provider's compliance with the Mental Capacity Act and, where relevant, Mental Health Act in our overall inspection of the service.

We do not give a rating for Mental Capacity Act or Mental Health Act, however we do use our findings to determine the overall rating for the service.

Further information about findings in relation to the Mental Capacity Act and Mental Health Act can be found later in this report.

Summary of findings

Letter from the Chief Inspector of Hospitals

London Hyperbaric Medicine (LHM) Healthcare is operated by LHM Limited. The hyperbaric unit was located within the grounds of Whipps Cross University Hospital, Leytonstone, London. The service provided hyperbaric (high pressure) oxygen therapy for a number of conditions. .

We inspected this service using our comprehensive inspection methodology. We carried out our announced inspection on 26 September 2017.

To get to the heart of patients' experiences of care and treatment, we ask the same five questions of all services: are they safe, effective, caring, responsive to people's needs, and well-led?

Throughout the inspection, we took account of what people told us and how the provider understood and complied with the Mental Capacity Act 2005.

Services we do not rate

We regulate hyperbaric oxygen therapy services but we do not currently have a legal duty to **rate** them when they are provided as a single specialty service. We highlight good practice and issues that service providers need to improve and take regulatory action as necessary.

We found the following areas of good practice:

- Staff were aware of their responsibilities for reporting incidents. We saw that lessons from incidents were shared, and actions put in to place to reduce the risk of them happening again.
- Standards of cleanliness and hygiene were high throughout the unit. Infection control procedures were in place to prevent the spread of infection.
- The service was fully staffed. Staff had appropriate skills and experience to provide care and treatment to patients at their level of need.
- Patient audits for decompression illness and severe carbon monoxide poisoning had been implemented by the unit. The service followed up on patient progress after their treatment.
- Patients told us they felt fully informed about the treatment being offered. Appropriate processes were in place for obtaining consent.
- All patient feedback we received was positive. Patients told us that staff were professional and provided an excellent quality of care.
- The service responded rapidly to emergency patients, with the unit open and ready to treat within an hour.
- Staff tried to be flexible when scheduling appointments. Treatment was usually commenced promptly following initial assessment. Cancellations were infrequent, at which time treatments were quickly rescheduled.
- There was clear direction from the managing director and medical director. Managers were regularly visible at the unit, and advocated an ethos of open communication and feedback.
- We observed a staff team that worked well together. Staff turnover and sickness rates were low.

However, we also found the following issues that the service provider needs to improve:

- Mandatory training was out of date for a number of the medical staff.
- Not all staff were trained to level two for safeguarding children and adults.
- Medication that was close to its expiry date was not clearly marked and we found some medication that was out of date. Medication stocks were not checked in the absence of the senior hyperbaric nurse.
- Not all nursing, technical and administrative staff within the unit had received a regular appraisal.
- Whilst there were formal arrangements for the use of interpreting services through the host hospital, the unit often used friends or family to translate information.

Summary of findings

- There were limited arrangements for information to be provided in different languages other than English, or alternative formats such as braille or large print where required.
- Staff meetings were held at the unit, but not all staff members were able to attend. Staff told us a meeting that included all unit staff would help with sharing of ideas and good practice.

Following this inspection, we told the provider that it must take some actions to comply with the regulations and that it should make other improvements to help the service improve. We issued the provider with a Requirement Notice. Details are at the end of the report.

The service must:

- Take all reasonable steps to ensure doctors are up-to-date with mandatory training.
- Ensure appropriate staff are trained to a minimum level two for safeguarding children and adults.
- Ensure all nursing, technical and administrative staff receive timely and regular appraisals.

The service should:

- Put in place procedures so that medication close to expiry can be identified and appropriately disposed of.
- Use formal interpreting services for patients whose first language is not English.
- Ensure that all patient information can be accessed and that there are arrangements in place for information to be provided in different languages or alternative formats when required.
- Encourage all unit staff to attend team meetings, in person or by teleconference, so that best practice can be shared.

Amanda Stanford
Deputy Chief Inspector of Hospitals (London)

Summary of findings

Our judgements about each of the main services

Service	Rating	Summary of each main service
Hyperbaric Therapy Services		We regulate this service but we do not currently have a legal duty to rate it. We highlight good practice and issues that service providers need to improve and take regulatory action as necessary. The unit provided hyperbaric (high-pressure) oxygen therapy for a range of conditions. The service was provided in partnership with Whipps Cross University Hospital.

Summary of findings

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Background to LHM Healthcare

The LHM Hyperbaric Unit is based at Whipps Cross University Hospital, Leytonstone, London. The service has been provided by LHM Limited since 2001 on behalf of NHS England. Referrals are taken from London and the surrounding areas. It also accepts patient referrals from outside this area. The service is delivered in partnership with Whipps Cross University Hospital, and is integrated with the hospital's intensive care unit.

Hyperbaric oxygen treatment involves breathing pure oxygen at higher than atmospheric pressures in an enclosed chamber. The hyperbaric unit contained a category one multiplace hyperbaric chamber. The facility had a dedicated reception area, one changing room, two clinical examination rooms and a multi-purpose training room. Oxygen supplies were made directly to their own liquid oxygen tank.

A registered manager, Mr Philip Sayers, was in post when we inspected the hospital. Regulated activities provided by the service are treatment of disease, disorder or injury.

The unit provided hyperbaric (high-pressure) oxygen therapy for a range of conditions. This included emergency treatment for diving disorders and emergency treatment for patients with gas embolism, necrotising soft tissue infections and carbon monoxide poisoning. Elective hyperbaric treatments were also provided for patients with a range of conditions including osteoradionecrosis, radiation proctitis, problem wounds and diabetic foot ulcers. The service was available to NHS and private patients of all ages.

The service was previously inspected in February 2013 when it was found that staff were not supported to deliver care and treatment safely and to an appropriate standard in that some staff had not received appropriate supervision, appraisal and training. The provider was told to take action. A further inspection was carried out in October 2013 where we found that the provider had taken steps to support staff and was meeting the appropriate standard. During this inspection we found that the improvements had not been sustained, as some staff had not received appropriate training and up-to-date appraisals.

Our inspection team

Our inspection team was led by:

Inspection Manager - Max Geraghty, CQC

The team included CQC inspectors, supported by a specialist advisor with experience in hyperbaric services.

The inspection team was overseen by Nicola Wise Head of Hospital Inspection.

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How we carried out this inspection

We reviewed a wide range of documents and data we requested from the provider. This included policies, minutes of meetings, staff records and results of surveys and audits. We placed comment boxes at the unit prior to our inspection which enabled staff and patients to provide us with their views. We carried out an announced inspection on 26 September 2017.

We observed how care was delivered within the hyperbaric unit and reviewed patients' clinical records.

We interviewed the managing director and medical director, and spoke with a range of staff including a doctor, nurses, hyperbaric supervisors and administrators. We spoke with two patients and reviewed 15 comment cards.

We would like to thank all staff and patients for sharing their views and experience of the quality of the care they received at LHM Hyperbaric Unit.

Summary of this inspection

Information about LHM Healthcare

The service is available 24 hours a day, 365 days a year.

At the time of our inspection, the service had a multiplace hyperbaric chamber that could accommodate nine patients and a chamber attendant. It is a 'Category 1' facility, which means that it can cater for the most seriously ill patients who might need advanced life support.

Activity

In the 12 months prior to inspection there were 59 emergency admissions, with these patients receiving a total of 109 treatment sessions. In addition, there were 42 non-emergency patients who attended for a total of 1028 treatment sessions.

The management structure of the unit consisted of the managing director (also the registered manager), general manager, medical director, deputy medical director and senior hyperbaric nurse. At the time of our inspection the service also employed 10 hyperbaric doctors, 12 hyperbaric nurses and three supervising chamber attendants.

Track record on safety

In the 12 months prior to inspection the service reported:

No patient deaths;

No significant or critical events;

No incidence of a healthcare acquired infection

1 complaint (withdrawn)

Services offered at the unit

The most common elective procedures were for the treatment of osteoradionecrosis, radiation proctitis, problem wounds and soft tissue radiation damage.

Summary of this inspection

The five questions we ask about services and what we found

We always ask the following five questions of services.

Are services safe?

We found the following areas of good practice:

Staff were aware of their responsibilities for reporting incidents. We saw that lessons from incidents were shared, and actions put in to place to reduce the risk of them happening again.

Standards of cleanliness and hygiene were high throughout the unit. Infection control procedures were in place to prevent the spread of infection.

Equipment was checked and serviced regularly. Attention was paid to chamber safety rules. Fire safety equipment was in place and maintained.

Staff assessed, and took in to account, risks to individual patients.

The service was fully staffed. Staff had appropriate skills and experience to provide care and treatment to patients at their level of need.

However, we also found the following issues that the service provider needs to improve:

Mandatory training was out of date for a number of the medical staff.

Not all appropriate staff were trained to level two safeguarding children and adults.

Medication that was close to its expiry date was not clearly marked and we found some medication that was out of date. Medication stocks were not checked in the absence of the senior hyperbaric nurse.

Are services effective?

We found the following areas of good practice:

Assessments and treatment were provided in line with best practice. Managers and staff attended international conferences to keep up-to-date with the latest developments within hyperbaric medicine.

The service submitted quality dashboard data to NHS England on a quarterly basis. This enabled commissioners to understand the quality and outcomes of the service and treatment provided.

Patient audits for decompression illness and severe carbon monoxide poisoning had been implemented by the unit. The service followed up on patient progress after their treatment.

Summary of this inspection

Patients told us they felt fully informed about the treatment being offered. Appropriate processes were in place for obtaining consent.

Induction programmes were undertaken by new staff. Staff were given regular training to ensure they had the appropriate skills for working within the hyperbaric unit.

However, we also found the following issues that the service provider needs to improve:

Not all nursing, technical and administrative staff within the unit had received a regular appraisal.

Are services caring?

We found the following areas of good practice:

All patient feedback we received was positive. Patients told us that staff were professional and provided an excellent quality of care.

The provision of person centred care was a priority for all staff we spoke with. We observed that staff built up good relationships with patients, which enabled them to address individual concerns.

Patients told us they felt involved in their care and treatment, and were able to ask questions whenever necessary.

Are services responsive?

We found the following areas of good practice:

The service responded rapidly to emergency patients, with the unit open and ready to treat within an hour. Policies had been developed, in collaboration with the host hospital, for the management of critically ill patients.

The individual needs of each patient were assessed by the service, and appropriate support put in to place where necessary.

Staff tried to be flexible when scheduling appointments. Treatment was usually commenced promptly following initial assessment. Cancellations were infrequent, at which time treatments were quickly rescheduled.

The service held a complaints policy, though formal complaints were rare.

However, we also found the following issues that the service provider needs to improve:

Where a patient's first language was not English, staff told us the patient would normally bring a friend or relative with them to translate information which is not considered best practice.

Summary of this inspection

Information available at the clinic was only provided in English, and there were limited arrangements for providing alternative formats such as braille or large print.

Are services well-led?

We found the following areas of good practice:

Managers were driven to offer treatment to critically ill patients, 24 hours a day, seven days a week. At the time of this inspection we were told they, and their second unit, were the only hyperbaric oxygen therapy facilities to provide such a service within London and the East of England.

There was clear direction from the managing director and medical director, both of whom were long standing experts in the field of hyperbaric medicine.

Managers were regularly visible at the unit, and advocated an ethos of open communication and feedback.

We observed a staff team that worked well together. Staff turnover and sickness rates were low.

Clinical governance meetings were held every three months where incidents and clinical concerns were discussed. Changes to policies or procedures were agreed and implemented.

However, we also found the following issues that the service provider needs to improve:

Staff meetings were held at the unit, but not all staff members were able to attend. Staff told us a meeting that included all unit staff would help with sharing of ideas and good practice.

Hyperbaric Therapy Services

Safe	
Effective	
Caring	
Responsive	
Well-led	

Are hyperbaric therapy services safe?

Incidents

- London Hyperbaric Medicine Healthcare reported no significant or critical events in the twelve months prior to inspection.
- The service had an up-to-date incident reporting policy, which explained the different incident categories, how staff should report them and the reporting timeframes. Staff we spoke with were aware of their responsibilities for reporting incidents.
- Staff recorded information about incidents on the host hospital's electronic incident reporting system with the support of the patient administrator. The service kept a hard copy for future reference.
- The registered manager or a staff member appointed by them, investigated incidents.
- Managers discussed incidents during clinical governance meetings. We saw minutes of the clinical governance meeting in May 2017 where managers discussed an incident regarding a member of staff who had experienced ear barotrauma (a condition causing discomfort to the ears following pressure changes) after compression. A specialist in the ENT (ears, nose and throat) department had examined the staff member at the time and confirmed there was no permanent injury to the ears. Managers agreed to purchase a new otoscope (a medical device used to examine ears) so that the hyperbaric doctor could quickly diagnose barotrauma in the future.
- Staff discussed incidents and lessons learnt during unit meetings, and minutes were sent out following the meetings. However, some staff said they did not always hear feedback regarding incidents that involved both the host hospital and the hyperbaric unit.
- We reviewed four incidents that the service had logged. We found that staff took appropriate actions to prevent further reoccurrence of incidents. For example, we saw one incident where another hospital had transferred a patient with an infection to the hyperbaric unit. On their admission, staff found by looking on the electronic system, that the patient's infection was resistant to specific antibiotics. Staff recorded their findings on the datix system, and escalated the incident to the host trust's infection control team. The service held a meeting with the infection control team and put procedures in place to ensure the unit were informed of patients who had infections in the future.
- Staff had a good understanding of the duty of candour, which was included in their mandatory training. The duty of candour regulation requires providers of health services to be open and transparent when things go wrong. This includes some specific requirements, such as providing truthful information and an apology.
- The service completed an audit of all incidents between 2014 and 2017, which found that staff reported all incidents appropriately and there were no outstanding incidents to be investigated.

Cleanliness, infection control and hygiene.

- The service reported zero incidence of a healthcare acquired infection in the twelve months prior to our inspection. One patient with methicillin resistant staphylococcus aureus (MRSA), which had been acquired elsewhere, had been treated in the unit according to infection control protocols.
- The hyperbaric unit and chamber looked visibly clean. Patients told us they thought the area was clean and tidy.
- Staff followed infection control protocols in line with the host hospital's infection control policy and the units annual infection control plan.
- An external agency provided a cleaner from Monday to Friday to carry out cleaning, washing, dusting and vacuuming of the hyperbaric unit and equipment. The

agency provided training for the cleaner. We saw a copy of the cleaning schedule that outlined duties for the cleaner to complete on a weekly, monthly and three monthly basis. Staff using the hyperbaric unit at weekends were responsible for leaving it clean.

- A deep clean of the unit was performed every three months that included high cleaning, trolleys and wheels. Every six months the deep clean included a strip, clean and resealing of the floors. We saw signed certificates for the last two deep cleans that had taken place.
- Cleaning of the chamber was the responsibility of the nurse on duty of each shift, who cleaned the chamber, hoods and masks. Staff cleaned the chamber seats, surfaces and floors with disinfectant wipes after every treatment and on a weekly basis. Disinfectant wipes were used to clean the hoods and masks. Patient breathing hoses were changed very week.
- We saw that staff cleaned equipment within the hyperbaric unit on a regular basis. Up-to-date 'I am clean stickers' were seen on several items of equipment.
- The host trust completed infection control audits and spot checks with any actions required brought to the attention of the senior hyperbaric nurse. We saw the latest annual audit, which took place in March 2016, where it was evident that the hyperbaric unit had completed actions identified at the time. Staff told us about changes they had made to their practice as a result of the audit including the introduction of procedures for cleaning reusable patient equipment including masks and hoods.
- The service had close links with the infection control department in the host hospital, with immediate access to advice from colleagues regarding any infection control concerns. For example, where patients screened positive for anti-biotic resistant organisms, staff sought advice from the infection control department on how to manage these cases.
- We saw that personal protection equipment was available throughout the unit for staff to wear.

Environment and equipment

- The hyperbaric unit was tidy, bright and well organised. The reception area, toilets and changing cubicles were all in close proximity to the chamber.
- The unit had direct ambulance access where required. However, most patients were admitted to the unit through the host hospital's accident and emergency and intensive care units (ICU) that were located close by and accessed via the main hospital corridor.
- The chamber provided adequate access for an intensive care trolley so staff could transfer patients seamlessly between the intensive care unit (ICU) and the hyperbaric unit when treatment was required.
- The service held a detailed inspection and maintenance log. This specified the frequency and timeframe for checks on for example, compressors, regulators and valves and medical devices. We saw that maintenance checks were mostly kept up-to-date.
- The unit had close links to the medical engineering department within the host hospital that regularly tested the systems. Technicians carried out maintenance and servicing of the equipment in accordance with the host hospital guidelines and manufacturer's specification.
- A resuscitation area was located within the unit next to the chamber. Equipment including a drip stand and infuser, electrocardiogram (ECG) machine, defibrillator and oxygen were found within the area, all of which had been tested and were in date. The resuscitation trolley held equipment and medicines, including paediatric emergency medicines, which were in date. We saw that staff checked the resuscitation trolley daily Monday to Friday and sealed it shut after each test.
- We saw that staff had placed posters around the resuscitation area displaying guidance for adult and paediatric life support to act as a prompt in emergencies.
- Staff were able to monitor transcutaneous oxygen levels (measuring the oxygen level of the tissue under the skin) to ensure the correct amount of hyperbaric oxygen was being delivered within the chamber. Staff recorded transcutaneous oxygen measurements for each treatment undertaken within the chamber. If oxygen levels reached 23% an alarm was triggered so that staff could ensure oxygen levels were not raised any further which might pose a risk.
- Hyperbaric doctors gave patients a chamber safety brief during their assessment. This included fire and oxygen safety, individual safety and other points for consideration. Patients were required to sign the form to indicate they had read and accepted the briefing.

- Safety rules were in place for items which could not be taken in to the chamber due to their flammability. Staff informed patients about prohibited items during their assessment and before their treatments. A list of banned items was placed by the entrance door of the chamber as a reminder to patients. Patients and staff within the chamber were required to wear 100% cotton clothing to reduce the incidence of a fire.
- Throughout the hyperbaric unit we saw fire equipment was in place with visible instructions to follow in case of a fire. An external company maintained the fire equipment, and we saw that the equipment was being serviced regularly.
- The chamber itself contained a high-pressure foam fire extinguisher and a further extinguisher kept within a store cupboard. The service had a fire suppressor system that staff tested twice a year. Managers ran fire safety drills twice a year, with fire simulation training in between.
- Staff checked the oxygen tanks and cylinders every morning. We observed good knowledge and safety practice during the checks. We saw a completion certificate following examination of the vacuum insulated cryogenic storage vessel and safety relief valves. Adequate warning signage was in place in and around the storage unit.
- The service leased the oxygen and heliox cylinders from an external company. Cylinders were changed every three years to maintain safety and we saw that all cylinders were in date.
- Staff told us that managers were quick to respond to requests for new equipment whenever necessary, such as recently approved syringe drivers. The unit had upgraded its ventilator the year before so that staff could provide better care to critically ill patients within the chamber. All anaesthetists had received training on using the ventilators. The ventilators were similar in design to those used in the host hospital so that staff were familiar with their operation.
- The service had trained all doctors in the use of ultrasound equipment within the chamber. This was used to check for conditions such as pneumothorax (a collapsed lung) when a patient became unstable during decompression.
- Standard operating procedures were comprehensive, easily accessible and updated regularly in line with recommendations made for the unit in the British Hyperbaric Association Development Plan 2014 to 2017.

Medicines

- The service did not keep controlled drugs within the hyperbaric unit. These were normally administered within ICU and brought to the hyperbaric unit as a continuous infusion with the patient for each treatment. Staff recorded the administration of drugs on the hospital chart that accompanied the patient within the chamber and kept with the patient's notes. If additional medicines were required during the patient's treatment on the hyperbaric unit, the doctor would liaise with the intensive care unit. Staff took unused drugs back with the patient to ICU.
- The service kept medicines securely within a locked cabinet within the unit. Staff kept the key in a key cupboard that had a combination lock. A list of medicines kept within the cabinet was displayed on the door.
- The senior hyperbaric nurse checked the medicines on a monthly basis and ordered new stocks when required. We were told that when she was absent this task normally waited until her return.
- We checked ten medicines within the cabinet, two of which had expired. Two of the medicines were due to expire the same month in which the inspection took place. However, there was no clear indication that the medication was due to expire soon so there was a risk that staff might administer the medicine after its expiry date. We raised the concerns with the senior hyperbaric nurse who disposed of the expired medication, and agreed to put in place a new system so that staff could easily identify medication close to expiry.
- Medicines we checked within the fridge were all in date. The medicine fridge temperature was in the correct range. Staff checked the temperatures on a daily basis. Data was recorded on a monthly basis and kept for auditing purposes.
- Staff were aware of the procedure if they found the fridge temperature to be out of range. A user manual was available for staff to check when there were concerns. We saw that on one occasion a member of staff found that the fridge temperature was too low. On further investigation, staff detected a fault with the fridge and it was replaced.
- Staff recorded patient allergies on the hospital electronic system accessed by the unit. Doctors also

checked allergy status during patient assessments and recorded them on the patient file. If a patient was referred through accident and emergency, the patient would wear a band to highlight their allergy status.
- The unit had several ways of delivering oxygen during treatment: through a facemask, through a hood flushed with 100% oxygen or through tracheostomy. The method chosen would depend upon the needs of the patient.
- A third party supplied liquid oxygen to the facility. We viewed documentation, which demonstrated that liquid oxygen received at the unit had been analysed, and satisfied the guaranteed purity specifications.
- Staff said that they had good access to the pharmacy at the host hospital and they were always available to answer any questions staff might have.

Records

- Patient records were set up on the hospital electronic system. If patients arrived at the unit from accident and emergency, or intensive care, staff transferred their records with them. This meant doctors had access to diagnostic and other medical tests performed.
- The unit held their own clinical notes for patients undergoing treatment. The service kept current records in a locked cabinet within close proximity of the chamber.
- We reviewed four patient records and found they were legible and comprehensive. The records contained an individual patient treatment log detailing date, time, operator and comments.
- All notes contained assessment findings, including details of medical history, consent forms, risk assessments, a signed and dated chamber safety briefing and relevant test results. Staff had recorded medication and allergies within the notes.
- Doctors updated the patient clinical notes after each treatment. This included any medical incidents that had occurred or any pain relief provided.
- Staff kept a separate chamber log for each treatment undertaken within the hyperbaric unit. This detailed the patients attending and their treatments, all staff that were present including the duty doctor, treatment delivered, confirmation that staff had completed daily checks of the chamber, and details of any pressure or gas changes that occurred during the treatment.
- There had been a previous audit of doctor's record keeping in 2015. Managers told us that the audit raised concerns over the legibility of doctor's handwriting. This had been discussed with doctors at the time with an action agreed for legibility to be improved. Since that time the electronic system at the hospital had been introduced and an electronic record of all handovers within the unit were made which meant that records were easier to read.

Safeguarding

- The service had a policy for safeguarding adults, children and vulnerable people that staff used in conjunction with the host hospital's safeguarding policies and procedures. The policy outlined duties and responsibilities in relation to reporting abuse.
- The senior hyperbaric nurse was the lead for safeguarding adults and children within the unit. Contact details were available for a safeguarding lead within the host trust should staff require further advice or support.
- Staff we spoke with were aware of how to escalate any safeguarding incidents. Staff raised concerns with the duty doctor or senior hyperbaric nurse in the first instance.
- Not all staff had received level two training for safeguarding children or adults. Staff received safeguarding training online. Eight of eleven (73%) doctors had completed their safeguarding adults and children training to level one, six doctors (55%) had completed safeguarding adults and children training to level two. Hyperbaric supervisors were trained to safeguarding level one and nurses trained to level two for both children and adults. We saw that all training was up-to-date apart from one exception where training had recently expired.. The intercollegiate document for the safeguarding of children and young people sets out that all non-clinical and clinical staff who have any contact with children should be trained to a minimum of children's safeguarding level two.
- Staff were able to tell us about a safeguarding incident which had been raised due to concerns over a patient who expressed suicidal intentions. Staff had initially highlighted concerns during communication with the patient within the chamber. The safeguarding alert was completed and police and a psychiatrist were involved.

Hyperbaric Therapy Services

Mandatory training

- The patient administrator monitored mandatory training using a spreadsheet that showed when training was due and highlighted expired training. An email reminder was sent to staff when training was overdue and required completing.
- The unit had a comprehensive annual training package in place for nurses and hyperbaric supervisors, which included modules in patient collapse, Intensive Care Unit (ICU) set up and emergency abort procedures. In 2016, all staff had completed their training and were now working towards completing their modules by March 2018.
- All the doctors had completed training in equality and diversity and health and safety, and nine of the 11 doctors (82%) had completed training in dementia awareness and privacy and dignity. However, we found not all of the doctor's mandatory training was up to date. The service provided data that showed four of 11 (36%) doctors had completed training in resuscitation and blood transfusion, five (45%) had completed practical fire safety and moving and handling care of the back training and three (27%) had completed annual infection control training. In addition, Only two of ten doctors (20%) had up to date training in medicines management, and medical gas and suction safety, and three of ten doctors (30%) had completed recognising the deteriorating patient training.
- Staff accessed mandatory training through an e-learning system provided by the host trust. In recent months, the trust had changed the training system and staff explained that there had been difficulties with accessing mandatory training. Staff had found that the new online system was time consuming and whilst staff had completed training for 2016, it was taking longer to undertake training for the current year. Doctors normally undertook training within their own trust, and several trusts offered opportunities for day release although this sometimes coincided with annual leave or emergency cover. Many training modules were offered two or three times a year providing staff with opportunity to catch up. Doctors provided the certificate to the unit to demonstrate when training had been completed. Staff told us that it could take time before training certificates were presented and therefore a delay in the training spreadsheet being kept up-to-date. Managers have told us that they will now ensure staff have protected time to catch up with missed training and improve record keeping of training completion.

Assessing and responding to patient risk

- All elective patients underwent an in-depth screening process during the initial assessment and again before treatment. Staff identified high-risk patients and determined whether the treatment was suitable for them. Doctors undertook assessments with patients following every ten treatments.
- We saw that staff completed mobility and handling, and pressure ulcer assessments during the patient's initial appointment. Where there were concerns, for example with a patient that had difficulty mobilising, the service put a plan of support in place. Staff recorded risk assessments on the patient record.
- Staff regularly checked patients undergoing longer-term use of the chamber. After twenty sessions of hyperbaric treatment, there was possibility that a patient's vision could deteriorate. Regular eye tests were undertaken, and where staff identified deterioration, the patient was informed. Whilst the side effect was normally reversible, staff advised against certain tasks including driving in the interim.
- Staff continually monitored patients whilst they were using the chamber to check if they were having any side effects such as barotrauma or problems breathing within a confined space. Where patients were having difficulties then staff provided advice, for example, supporting patients so that they could equalise their ears appropriately.
- When hyperbaric treatments were taking place, the chamber operator used closed circuit television (CCTV) to view the inside of the chamber. The operator had constant communication with the chamber attendant and patients on the inside through use of a microphone. A battery telephone was available in case the microphone failed. This enabled staff to be aware of any patient's needs that might arise such as pain or discomfort.
- If patients became unwell during an appointment at the unit, the doctor would assess them and, when deemed necessary, transfer them to the accident and emergency

department at the host trust. Under these circumstances, the doctor postponed the hyperbaric treatment until a time when they deemed the patient was well enough to enter the chamber.
- Several staff were immediately available should a patient's condition deteriorate. During treatment, a doctor was always present within the unit in case a patient became unwell. A chamber attendant was inside the chamber with a chamber operator and hyperbaric supervisor outside of the chamber. The senior hyperbaric nurse and patient administrator were also normally available should any concerns around a patient's condition arise.
- The service treated high-risk patients with a hyperbaric physician/anaesthetist and an intensive care unit (ICU) nurse inside the chamber and a hyperbaric physician and ICU nurse outside along with a chamber operator.
- During emergency treatments, staff used bluetooth headphones and microphones that enabled them to communicate with the patient whilst remaining hands-free to undertake tasks as necessary.
- The unit had a rota for emergencies occurring out of hours. During an emergency the service would be staffed and running within an hour of receiving the referral. Staff told us that often the unit was ready in less time, though commencement of treatment was often dependant on how soon the patient could be transferred to the unit.
- A secondary chamber was ready for doctors to access should a patient deteriorate. The doctor was able to monitor the patient's condition and communicate with the chamber attendant via the secondary chamber telephone. If it were necessary then the chamber could be depressurised in 90 seconds and the doctor could enter the chamber to attend to the patient.
- Where a distant hospital was referring a critically ill patient, staff weighed up the risks and benefits of transferring the patient and treating them within the chamber. The medical director, duty hyperbaric doctor and referring consultant would decide on the best course of action in such an event.

Nurse staffing

- At the time of our inspection, the service employed 12 hyperbaric nurses, three supervising chamber operators and two chamber attendants. There were no vacancies.
- During elective treatments, four members of staff were required to be present for safe operation in line with industry guidelines. This included a hyperbaric physician, hyperbaric supervisor, chamber operator and chamber attendant. Staffing numbers would rise to five or six when ICU referred an emergency patient.
- A nurse undertook the chamber attendant role who accompanied patients inside the chamber at all times during their treatment.
- Nurse staffing rotas were completed a month in advance. Managers finalised a rota after staff provided their availability for that period. If a member of staff was absent then the remaining pool of staff nurse were contacted to find someone to cover the shift. The service did not use bank and agency staff.
- We viewed the staff rota and saw that an appropriate staff mix was scheduled for each day, and that on call staff had been organised.
- Some patients who had been subject to carbon monoxide poisoning could become disorientated during treatment. If patients presented with confusion or challenging behaviour then two members of staff would occupy the chamber during treatments to ensure a calm atmosphere for all patients. If any concerns arose then treatment would stop. Staff had access to security within the host trust if the need presented.

Medical Staffing

- At the time of our inspection there were 10 doctors working under practising privileges at the unit. Doctors working within the unit were required to provide paperwork confirming their General Medical Council (GMC) registration, medical insurance and disclosure and barring service application. Once all documentation was in place doctors were registered with the host trust for an honorary contract.
- In line with British Hyperbaric Association guidelines, the service required a hyperbaric physician to be within the unit at all times during hyperbaric treatment. When a non-anaesthetist consultant was present for elective sessions, a named consultant anaesthetist was available within sixty minutes.
- The unit's medical director had direct access to medical advice from other senior consultants and could also contact international experts where required. Either the medical director or their deputy was available on call at any time to other clinicians working in the unit. Where needed, staff from the provider's East of England hyperbaric unit could provide further back up.

Hyperbaric Therapy Services

- The hyperbaric unit was open 24 hours a day seven days a week. Managers finalised rotas for physicians three months in advance to ensure all staff were aware of their shifts. A consultant was always present to admit any emergency cases from ICU, and shifts were never left without cover. Rotas we viewed showed continuous cover throughout the week.
- The service did not use bank or agency medical staff, as it was necessary for staff to have the appropriate training when using the hyperbaric chamber. If staff were unable to cover their shift a call was made to all consultants to find out who was available. Staff told us that there were no difficulties covering shifts.
- Staff held handovers every morning to discuss patients with scheduled elective treatments that day. The handovers were attended by the duty doctor, hyperbaric supervisor, chamber attendant, nurse and patient administrator manager. Where emergency patients were brought in to the unit later in the day, handovers were held at 5pm to provide information to staff undertaking the night shift.
- We saw completed handover sheets that detailed the patient's condition, medication they were taking and any information of note during the treatment for each day or for staff to follow up. We saw that staff noted any symptoms patients experienced in their ears and where necessary, followed up with the ears, nose and throat department.

Major incident and awareness

- The unit kept a comprehensive fire safety folder that staff could give to the fire service in an emergency to ensure they were aware of any associated risks. It contained information about the chamber, oxygen stores and a list of hazards.
- There was a back-up generator and medical gases in case of power failure within the hyperbaric unit. The service had recently replaced back up air compressors.
- In cases of system failure, it was necessary to abort all treatments and depressurise the chamber, apart from treatments used for life threatening conditions such as gas embolism, which would need to be continued manually.
- Managers told us there was a contingency plan, so that if an incident occurred that meant the chamber could no longer be used, a replacement chamber was available and could be ready to use within a matter of days.
- The Hazardous Area Response Teams (HART) had approached the service for guidance in responding to mass carbon monoxide poisoning incidents. Managers had provided advice regarding immediate treatment of patients with cyanide poisoning.

Are hyperbaric therapy services effective?
(for example, treatment is effective)

Evidence based care and treatment

- The hyperbaric unit provided evidence based care and treatment. All treatments were in line with the British Hyperbaric Association's guidance and codes of practice, and underpinned by national diving guidelines.
- The British Hyperbaric Association had reviewed the service and a development plan put in to place between 2014 and 2017. The plan identified areas to be developed and demonstrated when goals had been achieved. For example, increasing the unit's access to more intensive care beds had been identified as a need that had been achieved through liaison with another acute hospital.
- The medical director monitored international developments within hyperbaric oxygen therapy and shared new guidelines and research evidence with the team to ensure effective working. Staff at the service were always striving to improve their practice and share new guidelines with colleagues. A doctor we spoke with had been asked by the medical director to translate an article published in Poland, which provided guidance on hyperbaric oxygen therapy, and distribute it to colleagues.
- Elective patients underwent a full assessment before treatment commenced. Staff explained that part of providing effective care was ensuring that the patient's condition would respond positively to hyperbaric oxygen therapy. Guidelines on what conditions were treatable, and any contraindications, were provided by the European Committee for Hyperbaric Medicine. If there were any questions regarding what could be treated then doctors would raise these with the medical director.
- Staff monitored therapeutic oxygen levels regularly throughout treatments using transcutaneous oximetry

(TCOM) to ensure patients were receiving the correct amount of hyperbaric oxygen. Chamber attendants ensured that masks and hoods were correctly fitted and patient posture enhanced best oxygen uptake.
- Patients were required to give up smoking before treatment commenced. The service advised patients that they take no more than two days gap between treatments for best results.
- In the twelve months prior to inspection, the service treated ten children between the age of three and 17 years. Children treated at the unit were overseen by a paediatric consultant, and were often treated alongside other family members.
- Critically ill patients who were ventilated were accompanied in the chamber by a trained anaesthetist in line with guidelines set out by the Royal College of Anaesthetists. An on call list was in place for emergencies occurring out of hours.
- Managers encouraged staff to attend other hyperbaric facilities and international conferences to ensure that they kept up-to-date with the latest developments and to benchmark the effectiveness of their unit. These activities were funded by the service and staff given dedicated time to attend.

Pain relief

- Patients referred to the unit by the host hospital's intensive care unit (ICU) would normally have anaesthetic and analgesia in place. Elective patients brought in their own pain relief medication that was kept in their locker during treatment. If a patient required medication, staff could pass it through the air lock of the chamber.
- Patients we spoke with did not require any pain relief during their treatment. However, we were told that staff provided advice on how to equalise the ears, for example by swallowing, to avoid pain during pressure changes within the chamber. When a patient indicated they were having problems with their ears, staff halted pressurisation of the chamber to check whether the patient was well enough to continue with treatment.

Nutrition and hydration

- Staff took two litre bottles of water in to the chamber to help keep patients hydrated during treatments. Patients were able to take in food and hot drinks to keep them refreshed if they so wished. Staff could pass in additional refreshments in to the chamber through the air lock during treatments if required.

Patient outcomes

- The service submitted a performance monitoring spreadsheet to NHS England on a monthly basis. This included location data, NHS number, patient's condition and a number of other indicators including clinical commissioning group.
- The service submitted quality dashboard data to NHS England on a quarterly basis. This enabled commissioners to understand the quality and outcomes of the service and treatment provided. Data submitted included percentage of elective patients for whom the wound had significantly improved, time between referral and treatment date, percentage of patients who reported feeling safe and secure during treatment, and the percentage of patients who reported having refractive changes.
- Significant findings in the quality dashboard from 2015/16 and 2016/17 were that there were no exposures associated to avoidable illness, injury, or significant adverse events as a result of hyperbaric oxygen therapy. In addition, no patients reported refractive changes, and all patients reported feeling safe and secure during treatment.
- Commissioners had approached the service to develop new outcome measure procedures for the possible adoption by NHS England. Patient audits for decompression illness and severe carbon monoxide poisoning had been implemented by the unit, with the expansion to other conditions treated at the centre.
- The service followed up patients with decompression illness at four weeks and then six months. Staff gave a 'fit to dive' certificate or offered further treatment. Patients with carbon monoxide poisoning were followed up after six weeks. The unit undertook patient reported outcomes as part of the auditing process. Doctors telephoned patients to ask them specific questions regarding outcomes three months following treatment. For 21 patients referred to the unit for decompression illness between April 2016 and March 2017, 100% had been able to resume work following treatment, 16.7%

reported still experiencing symptoms they had during their decompression illness, 100% reported having no other physical difficulties and 8.3% reported noticing side effects from the hyperbaric treatment.
- The service created a commissioning for quality and innovation (CQUIN) report, which collected, and evaluated data from their patient satisfaction surveys, quality dashboard, patient reported outcomes, decompression illness and carbon monoxide audits and performance monitoring spreadsheets.
- Managers told us that they were the only hyperbaric provider required to complete patient reported outcomes currently. There was no national data available for the unit to compare themselves.

Competent staff

- The medical director and all the other hyperbaric physicians were consultant level anaesthetists or critical care consultants, trained to the required standard in hyperbaric medicine. We saw the induction programme undertaken by each newly appointed doctor which covered all aspects of the hyperbaric process and training expectations within the induction period.
- Hyperbaric supervisors were required to undertake a chamber operator/attendant course in hyperbaric medicine, which included an induction by the registered manager (an experienced supervisor and operator) and other supervisors at the unit. A comprehensive induction and competency list was in place for all supervisors to complete to demonstrate they had the correct qualifications, experiences, skills and knowledge to fulfil the role. The registered manager signed off the competencies once they were completed.
- Regular training was given to staff in the form of online, classroom based and simulation training to keep skills up-to-date.
- Nursing staff worked through a training matrix over six to ten months when starting work within the hyperbaric unit. The senior hyperbaric nurse or hyperbaric supervisor signed off the training matrix once completed. If staff had not practised within the unit for several months then they were required to complete this training again upon their return. The hyperbaric supervisor monitored the nurse's attendance at the unit and reported any concerns back to the medical director.
- Nursing staff normally completed their revalidation within the trust they worked. We saw that all but one of the nursing staff had completed their revalidation.
- All staff were required to maintain their skills by attending in house refresher training. The unit held twice yearly practical training sessions which included manual handling, use of ultrasound, advanced life support, basic life support and fire suppression. The training was provided for staff in both the London hyperbaric unit and those in their sister location in the East of England. The deputy medical director organised training for ICU staff on a regular basis so they were familiar with the chamber, equipment and procedures used within the hyperbaric unit.
- The medical director was responsible for monitoring and appraising all physicians appointed to work at the unit. All doctors working within the unit were registered with the general medical council; all had received an appraisal and completed revalidation.
- Disclosure and barring checks were up-to-date for all staff working within the unit.
- Hyperbaric supervisors received supervision from the registered manager on a quarterly basis. The senior hyperbaric nurse appraised and supervised all nursing staff.
- Two of the staff members we spoke with said they did not always receive regular formal supervision. We were told that managers were usually available to speak to or give advice. These were informal discussions where decisions and actions were not recorded. Staff said that managers had an 'open door' policy.
- During our previous inspection in February 2013 we found that nursing staff had not all received an annual appraisal. The provider was told to take action and when we inspected in October 2013 we found the service had taken steps to ensure all staff were appraised appropriately. During this inspection we found that not all nursing, technical and administrative staff had received an appraisal in the last year. Data received from the unit showed that seven (39%) of 18 staff had received appraisals. Three appraisals had been arranged at the time of our inspection and the remaining eight appraisals were still to be undertaken. Two of the staff appraisals were more than 18 months overdue.
- Managers told us that having daily contact with staff, assessment was a continuous process, where concerns and opportunities for development were discussed as they arose. Staff we spoke with felt it would be helpful to

have formal feedback and recognition regarding their work. Since our inspection the service have told us they have taken action to ensure all staff appraisals are up-to-date.

- Debriefs were held with staff following any difficult or complex treatments. Staff told us that emergency cases were the most challenging, but often the most rewarding cases when there was a positive outcome following treatment. Staff had case discussions after all emergency admissions so that they were able to consider what had gone well, and what improvements could be made.
- Managers encouraged staff to continue developing their own knowledge within hyperbaric medicine. For example, some staff we spoke with were due to attend the British Hyperbaric Association conference. Doctors were encouraged to give lectures and presentations at other teaching hospitals within London to raise awareness around hyperbaric medicine.

Multidisciplinary working

- Being on the same location site, staff within the unit had access to all of the departments within the host hospital. This had been stipulated within the service level agreement. A doctor we spoke with told us that having the many disciplines of the hospital nearby, which staff could easily access if the need arose, was of great benefit to the hyperbaric unit.
- Staff regularly worked alongside other departments within the host hospital. For example, there was partnership working with the tissue viability nurse who undertook specialised scans on wounds when patients were referred to the unit. Staff often referred patients experiencing pain in their ears during treatment to the ear, nose and throat department for further examination.
- There was good co-operation between the intensive care unit (ICU) and hyperbaric unit. The deputy medical director had regular liaison with the ICU and several of the ICU nursing staff worked on the hyperbaric unit.
- If patients with mental health or suicidal intentions were admitted on to the unit, a psychiatrist took lead responsibility for their care. Staff on the unit would liaise with the psychiatric department before, during and after any hyperbaric treatment.
- When a critically ill patient was referred to the service, a decision would have to be made as to whether treating them within the hyperbaric unit was the safest course of action for them. This was a multidisciplinary decision made between the medical director, duty hyperbaric doctor and ICU consultant who would consider all the risks and benefits before deciding the best action to take in the interests of the patient.

Access to information

- The unit had adopted several of the host trust's policies, and adapted them to their service where necessary. The policies were available on the intranet so that all staff could access them.
- All the necessary records were available to enable the appropriate care and treatment. Electronic patient records were accessed through secure staff log in. The service kept paper records for hyperbaric treatment within the unit.
- Hospital staff would normally refer patients via the accident and emergency department, so diagnostic investigations had usually taken place and were available on the electronic system. Where diagnostic tests had not been carried out staff could request them through the host hospital.
- On the completion of treatment for elective patients, the service sent a discharge letter to the referring consultant and copied to the patient's GP. Staff also sent discharge letters to the GP for emergency patients. We saw a discharge letter sent to a GP which explained circumstances regarding patient referral, symptoms presented, treatment undertaken and results of treatment which had led to a full patient recovery. The service provided advice for the patient not to fly for a week and not to dive until after their follow up appointment with the physician.

Seven day services

- The unit was available 24 hours a day, seven days a week for emergency patients. Normal opening times were between 8.30 am and 5 pm Monday to Friday. Treatments for elective patients normally took place in the morning. The unit stayed open in the afternoon for any incoming emergency patients and initial assessments. Emergency admissions could be made out of hours during the night and at the weekend. An on call rota was in operation so that the unit could be running within an hour.

- Staff told us that diagnostic tests such as computerised tomography (CT) and magnetic resonance imaging (MRI) scans were normally available through the host hospital 24 hours a day.

Consent, Mental Capacity Act and Dols

- The duty hyperbaric doctor obtained consent in accordance with the host trust's policy on Informed Consent. Staff used a hyperbaric specific consent form that included risks and potential side effects, consent for clinical photography, video/audio recording/filming of all treatments and patients and obtaining of GP medical records.
- Elective patients attended for an initial assessment where staff provided a consent form for them to sign. Information was given about the nature, purpose and potential effects of the treatment. A doctor told us that the benefits and risks, and the probabilities of these occurring, were contained within the consent form. This made it clear and consistent, and ensured that staff did not miss any information out when explaining it to the patient.
- In the clinical records we reviewed we saw that consent forms were completed, dated and signed appropriately.
- The patients we spoke with told us that the doctors had fully explained the treatment to them so they were able to make an informed decision about consent.
- When staff had a concern about a patient not having capacity to give consent, then further guidance was sought from the medical director or their deputy.
- Both the duty hyperbaric doctor and intensive care consultant assessed patients who were unable to give consent because they were unconscious. A consent form would be completed if hyperbaric treatment were considered to be in the best interests of the patient. Staff told us that under these circumstances they preferred to have a discussion with family members prior to treatment, but this was not always possible if the patient had been referred from some distance and where treatment was urgently required. A full explanation was always given to family members as soon as this was possible.

Are hyperbaric therapy services caring?

Compassionate care

- Patients told us staff were extremely professional and provided an excellent quality of care.
- We received 15 completed comment cards from patients who had received treatment at the hyperbaric unit. All remarks were positive. There were no negative comments or remarks left on how the service might improve.
- There were two patients receiving elective treatment on the day of our inspection. Both patients told us that the staff were helpful and courteous, and they felt very satisfied with the service.
- Patients told us that staff were kind, respectful and compassionate. Comments that had been left by patients included "All the staff were welcoming, caring and helpful. Any problems were dealt with rapidly and efficiently", "the staff were very respectable, kind and patient" and "I was at all times treated with care and dignity at the hyperbaric unit".
- The provision of person centred care was a priority for all staff we spoke with. Staff wanted to ensure that each patient using the service felt their individual needs were listened to and respected.
- Staff talked about being proud of the relationship they had with the patients. As several patients attended the unit every week day staff built up a good rapport with them. This led to an open and transparent relationship and staff felt that by getting to know the patient they were able to pick up any signs of anxiety or concern. Staff said that patients had told them they appreciated this supportive relationship.
- Between 1st April 2016 and 31st March 2017, the service received 67 patient satisfaction surveys, which was a response rate of 55%. Of those respondents 100% rated the service at least nine out of 10, and 100% said they would recommend the service to friends.
- We saw a large number of thank you cards received by the service, demonstrating patient's appreciation of the care staff had provided.

Understanding and involvement of patients and those close to them

- Patients that we spoke with, and those who left comments, said that they felt involved with their care and treatment. Patients told us "The staff are excellent and keep you informed all the way through", "my

concerns were always listened to and addressed" and "staff constantly checking that I was happy, comfortable and safe. Very quick to respond if I felt unwell or nervous".

- Patients felt that communication within the unit was good. Staff were available every weekday before and after treatment should a patient have any concerns or questions. Staff formally reviewed patients following every ten sessions, though patients told us they could speak to staff at any time if they had any issues to raise.
- Staff undertook thorough initial assessments at the unit. Patients said that staff explained the risks and benefits of treatment in a way that could be understood, and answered any questions they might have.
- Staff told us they listened to patient's concerns and put plans in place to support them. For example, we were told about one patient who was required to put their legs up whilst in the chamber. Staff organised the seating in order to meet the patient's needs, without posing a trip hazards to other patients being treated. Staff involved patients so that they understood the situation.
- One patient told us that staff had discussed with them the best time for treatment to take place. The unit postponed the patient's treatment until they had recovered from a fall that had occurred prior to their assessment. Staff kept them informed and agreed a plan of action.
- Patients commented that they felt safe when receiving treatment within the chamber. Patients we spoke with told us staff explained the chamber rules clearly. Patients felt staff were competent and had the appropriate skills to deliver the treatment.

Emotional support

- Staff showed empathy and supportive attitudes towards patients. When attending the unit for the first time, staff put patients at ease by enabling them to enter the chamber and try on the oxygen masks prior to their first treatment.
- Staff referred patients to the appropriate department should there be any concerns regarding their mental health. A psychiatrist provided advice for all patients with mental health conditions or suicidal intentions before, during and after treatment.
- One patient told us that although they had found the treatment at the hyperbaric unit challenging, all staff had done what they could to make them feel comfortable and re-assured.

Are syperbaric therapy services responsive to people's needs?
(for example, to feedback?)

Service planning and delivery to meet the needs of people

- The hyperbaric unit contained a British Hyperbaric Association class 1 chamber that accommodated nine patients and a chamber attendant. The facility was available to treat sick divers, the elderly and critically ill patients. The service accepted referrals from the surrounding area, but could take referrals from across the UK if necessary.
- The unit provided hyperbaric oxygen therapy to the following patient groups: emergency cases of diving disorders requiring compression, emergency cases of diving disorders not requiring compression, other emergency cases including gas embolism, necrotising soft tissue and carbon monoxide poisoning; and elective patients.
- Elective patients received treatments between Monday and Friday 9.30 am - 11.30 am. The service could arrange afternoon treatments to suit flexibility at times when there were no emergency admissions.
- Emergency and critically ill patients could be admitted to the unit 24 hours a day all year round. Emergency cases were normally admitted through the hospital accident and emergency (A&E) or intensive care unit (ICU). Managers had developed policies for the admission and management of critically ill and ventilated patients in collaboration with the senior ICU and critical care consultants at the host hospital. This enabled clear guidance of the protocols between staff working within the hospital and the hyperbaric unit.
- Within the reception, there was a waiting area with sufficient seats and a coffee machine for patients to make a drink.
- The service had links with the local ambulance service so that staff could arrange for patients to be transferred between home and the hyperbaric unit.

Hyperbaric Therapy Services

Meeting people's individual needs

- Although space was limited within the unit, the service was accessible. The unit had level access throughout.
- A separate area was provided for patients to get changed. Although male and females used the same area to change, curtains were used to provide privacy. If patients preferred additional privacy, a disabled toilet was available for them to use.
- Lockers were available to store personal items in, and patients took the locker key in to the chamber with them.
- Staff assessed patient's mobility and ability to move in and out of the chamber comfortably and safely, and where necessary, put appropriate support in place. For example, if patients were unsteady walking, then they could access the chamber via a ramp and with use of a wheelchair.
- A bed was used to transfer critically ill patients requiring treatment. A set of chairs were taken out of the chamber to allow space for the bed.
- Staff told us how they addressed individual's anxieties. Patients receiving elective procedures had the opportunity of walking around the chamber and trying on the face mask or hood prior to their first treatment. This helped to reduce any concerns or fears a patient may have leading up to their procedure. It also allowed patients with claustrophobia to try out the confined space within the chamber enabling them to make an informed choice as to whether they wanted to go ahead with the treatment. Doctors offered sedation to patients to alleviate symptoms where it was deemed necessary.
- Parents were able to accompany children within the chamber.
- Where a patient's first language was not English, staff told us the patient would normally bring a friend or relative with them to translate information, which is not considered best practice. The unit had access to an interpreting telephone system through the accident and emergency department at the host hospital. Patients could also access the multilingual health advocacy and interpreting service through the host trust.
- Staff supplied patients with an information leaflet at the pre-assessment stage. Information was only available in English. Staff told us that they had never had the need to give information in other formats such as braille or large print, and these were not available. Staff could arrange for information and safety briefings to be given verbally where necessary.
- Standard elective treatment times usually lasted 90 minutes. Staff enabled patients to have a break half way through at which time the oxygen was switched to air, and patients were able to take off their oxygen masks or hood tents.
- Whenever needed, staff could pass items through an airlock in to the chamber. Because the atmosphere within the chamber could become dry, staff often passed ice cubes through to patients to help keep them hydrated.
- Toilet facilities were available within a second chamber for patients' use during treatment. Portholes were covered to maintain patient dignity.
- There had been no patients treated recently who had a learning disability or who were living with dementia. We were told that the doctors would consider these patients for treatment in the same way that all patients were. Staff said that under these circumstances they would always show understanding and try to be clear with any information provided. If patients appeared confused then staff would advise them to bring a companion and any concerns would be raised with the duty doctor.
- Patient gender differences were taken in to account when delivering treatment. For example, if a lone female were to be treated alongside several males, then the service would ensure an additional female nurse was in attendance within the chamber. Alternatively, a separate treatment session would be offered to the female patient.
- We saw that signs were visible within the unit advising patients that they could request a chaperone. The service had an up-to-date privacy and dignity policy that highlighted that offering patients a chaperone was best practice.

Access and flow

- Managers told us that the chamber could be fully staffed and ready to use with short notice, especially in the case of emergency admissions where the service could be up and running within an hour.
- Staff assessed and treated emergency patients at the unit on the same day as referral. On the day of our inspection, a patient who had symptoms following a

dive injury had telephoned the unit in the morning. Staff asked the patient to attend the unit the same day. When they arrived, staff assessed the patient and delivered hyperbaric oxygen therapy.

- Patients were referred to the service by their consultant. The duty doctor was responsible for checking the referral and requesting more information where required. For example, if the patient had a lung condition that may affect their treatment at the unit, further clarification would be sought.
- Staff sent patients an initial appointment, along with a patient guide and directions to the hyperbaric unit. A direct telephone number for the clinic was provided in case patients had any questions.
- The information guide provided advice to patients regarding the nature of hyperbaric oxygen therapy, the type of chamber used, staffing arrangements, possible side effects, items that could not be taken in to the chamber and an explanation of ear clearing.
- Doctors saw elective patients for initial assessment as quickly as possible following referral. Patients told us it did not take long to get their first appointment.
- Between 1st April 2016 and 31st March 2017, the average time between assessment and start of treatment was 11.5 days. Normally patients would commence treatment straight after their assessment. However, there were sometimes delays that were outside of the unit's control. For example, further clinical investigations may be required, patients may choose to have treatment at a later date, and hyperbaric oxygen therapy for radiation bone damage could not be started before the referring surgeon had planned the patient's surgery.
- Once patients had commenced their treatment, they would normally attend every day between Monday and Friday. The service recommended that gaps in treatment did not exceed two days to ensure the best outcomes. Staff informed patients of the commitment required before commencing treatment. If necessary, staff at the unit could postpone elective treatment if the patient was unable to commit at that particular time to the number and regularity of the treatments required.
- Elective patients usually received treatment in the morning. However, when necessary, staff postponed the treatment to prioritise an emergency case.
- When scheduling appointments the service took in to account distances travelled by each patient and individual circumstances. Wherever possible, staff tried to be flexible with appointments. Staff informed us of one situation where a patient had travelled some distance and was staying in a hotel. Staff enabled her to have two treatments in the same day (rather than one) to reduce her hotel costs.
- Critically ill patients were initially admitted to the intensive care unit (ICU) using long-standing protocols developed between them and the hyperbaric unit. When a patient arrived from the intensive care ward, staff returned them there following their treatment. The unit had regular contact with the ICU to ensure a bed was available for their patients. When ICU beds were not available, patients would be transferred to the ICU at the hospital where their second hyperbaric chamber was based. The medical director also had a service level agreement to transfer patients to another local hospital should it be necessary.
- When patients were transferred from another hospital, the service arranged for them to be transferred back there following treatment. Staff assessed this on an individual basis, and in each case, an anaesthetist from their unit or from the transferring hospital would stay with the patient during the transfer. The unit had good links with the special ambulance transfer service for occasions that this occurred.
- Elective hyperbaric treatments were only cancelled when an emergency case was brought in to the unit. This had happened on two occasions in the 12 months prior to our inspection. Under these circumstances, staff would try to alert patients of the cancellation before they had left home to attend their appointment. Such treatments were normally commenced later that day or postponed to the following day.
- In order to free up trained hyperbaric staff from the hospital's intensive care unit, the provider had arrangements in place with an approved nursing agency, to replace any member of staff who may be called upon to undertake hyperbaric duties.

Learning from complaints and concerns

- The hyperbaric unit had a complaints policy that outlined how patients could make a complaint, who it could be made to and timeframes for responding to complaints. The complaints procedure was printed on the patient information booklet and available on their website.
- The service had received one verbal complaint in the twelve months prior to our inspection that had subsequently been withdrawn.

- Patients were encouraged to speak to staff regarding any concerns as soon as possible so that a resolution could be found quickly. Patients could complain directly to the hospital's patient advice liaison service if they preferred.
- On receiving a complaint, the registered manager would meet with the medical director to discuss the matter and agree a plan of action. A full investigation would be undertaken. Correspondence would be sent to the complainant with an explanation of the investigation outcomes. Managers discussed complaints at the clinical governance meeting.

Are hyperbaric therapy services well-led?

Leadership and culture

- There was clear leadership and staff were aware of their reporting responsibilities. The general manager, patient administrator and hyperbaric supervisors reported to the managing director. Nursing staff were supervised by the senior hyperbaric nurse, who in turn reported to the medical director. The service was accountable to the host trust's medical director and chief executive.
- Both the managing director and medical director were long standing experts in the field of hyperbaric medicine and its provision. The medical director told us that when required he would provide hands on support within the hyperbaric chamber.
- Staff told us that managers were always available to discuss any issues around the day-to-day running of the service. The medical director was consulted whenever an emergency patient came in to the unit so that a treatment plan could be agreed. In his absence staff consulted with the deputy medical director.
- Managers attended the British Hyperbaric Association conference and international meetings to keep abreast of new guidelines and share practice with other professionals.
- Staff said that managers were regularly visible within the unit. Managers told us they made a point of talking with staff whenever they were there. They advocated an ethos of open communication and feedback, and felt that staff knew they could raise issues with them at any time.
- Managers told us that they had few performance issues to deal with, but when these did arise, they would tackle them sooner than later. We were told about a doctor previously working at the unit who had struggled with the appraisal system, but with support and encouragement from the managers, had come to engage positively with the process.
- The service actively promoted staff wellbeing. Managers arranged medicals for staff working within the chamber to ensure they were fit and well to do so. We saw that nearly all staff had received their medicals, and the two outstanding had been arranged.
- We observed a team that worked well together and staff said that there was good team spirit. We were told that one member of staff had prepared food for all staff on the unit when they were aware it would be a busy day with lots of patients.
- A number of staff had worked within the service for several years. Staff we spoke with felt they had good job satisfaction. It was for this reason that many of the staff continued with their employment at the unit. Data from the service indicated that staff turnover and sickness was very low.
- We saw a nurturing and supportive staff team. One member of staff we spoke with who had recently returned to work within the unit said that staff were always available and willing to answer questions.

Vision and strategy for the service

- The unit's mission was to provide safe high quality medical care, treatment and training in a timely, cost effective and efficient manner by a highly motivated team of enthusiastic dedicated professionals working together in a pleasant environment for the benefit of the patients.
- The managers were extremely proud to be able to provide an emergency hyperbaric service 24 hours a day for seven days a week.
- Provision of safe, quality care and treatment was a shared priority for all staff we spoke with at the unit.

Governance, Risk Management and Quality Measurement

- The registered manager was responsible to the host trust's chief executive through their operation manager. The registered manager monitored the quality of the equipment and its maintenance.
- Clinical responsibility was carried by the medical director who was accountable to the host trust's medical director. The medical director was the

responsible officer within the company and for ensuring all doctors were appropriately appraised and had their revalidation completed. These were all up-to-date at the time of our inspection.

- The medical director worked as a consultant for the NHS trust where their second hyperbaric unit in the East of England was located. He normally attended the London hyperbaric unit once a week. The medical director rotated his day of attendance to enable him to speak to a different member of the doctor's team on each occasion. During his visits, the medical director participated in the handover, discussed clinical matters, undertook auditing and provided training. Where emergencies occurred he would often support colleagues within the chamber.
- The registered manager and medical director met on a weekly basis to discuss matters within the unit including service reviews, staffing and appraisals. When issues were pertinent, minutes were taken outlining any actions.
- Clinical governance meetings were held every three months within the unit. The meetings were attended by the medical director, registered manager, general manager, duty doctor, a hyperbaric supervisor and nurse. During the meetings, staff discussed any incidents or clinical issues that had arisen during the treatment of patients. Policies and standard operating procedures were reviewed and revised as necessary.
- We saw minutes from the clinical governance meeting in May and July 2017 where managers discussed incidents and recorded actions.
- Clinical governance meetings were sometimes combined with a training session, or an opportunity for a doctor to present a case where they had provided treatment. This would enable discussion around any issues that may have arisen and sharing of learning.
- A risk management policy was in place that required risks to be assessed according to likelihood and impact and then ranked as red, amber or green. We saw that this approach was taken for each hazard identified within the service's risk assessments.
- The service had a risk register which at the time of inspection had been reviewed in May 2017. The register listed each hazard, the severity and likelihood of the risk, the strategy and related risk assessment. The document did not include specific actions being taken to mitigate the risks and how often each hazard was being reviewed.
- The unit held a record of risk assessments including chamber operations, fire and infection control, which were reviewed between one and three years. All risk assessments and operating procedures were kept orderly within a folder, with a copy kept on the intranet so that all members of staff could access them. Each risk assessment contained the relevant hazard, likelihood and impact, residual risk and control measures in place to mitigate the risk. We noted that all the risk assessments had been routinely reviewed prior to our inspection.
- In addition to the routine review of risk assessments, the hyperbaric supervisor and senior hyperbaric nurse undertook a regular walk around the clinic to check if there were any problems with equipment or other concerns that needed reporting. Where appropriate the associated risk assessment was updated.
- The service kept detailed instructions for all emergency and standard procedures undertaken within the unit, including what a member of staff should do if a cardiac arrest should occur within the chamber.
- The unit adopted many of the host hospital trust's policies, but had adapted them so they were in line with their own service. The registered manager had reviewed and signed off all current polices.
- Performance monitoring data was submitted to NHS England on a monthly basis with a quality dashboard provided quarterly.
  - The host trust completed infection control audits for the service. We saw that the most recent infection control audit took place in March 2016, and that the service had taken actions following the recommendations raised. To ensure all infection control procedures were kept current and in line with local policy, the service could consider approaching the trust for more regular audits to be completed.
- The service performed audits on patients receiving treatment for decompression illness and carbon monoxide poisoning as well as patient reported outcomes. This helped to demonstrate the effectiveness of the treatment within the hyperbaric unit.
- The medical director was a member of the clinical referencing group, and chair of the Hyperbaric Association. He was involved with developing the policy for hyperbaric medicine.
- Within the external review of the British Hyperbaric Association in 2014, it was recommended that the

standard operating procedures were reorganised. The service had addressed this with a review of all procedures, and regular discussion at the clinical governance meetings in line with good practice.

Public and staff engagement

- Staff meetings were held every six weeks, unless an emergency case was admitted on the day the meeting was planned. We saw minutes of the meeting in May 2017 where staff held discussions around training, staffing and housekeeping issues. Some staff commented that it would be helpful to have more notice when meetings were due to take place so that more members of the team could arrange to attend.
- Staff worked on different days, had different shifts, and did not always get to see other colleagues for some time. Staff told us it would be beneficial if a meeting for all unit staff could be arranged to help share ideas and good practice. In particular, staff said it would be helpful to learn more about the patient outcomes within the service. Managers were aware of the practical difficulties for staff to physically attend meetings and had recently introduced teleconferencing so that staff could remotely log in to meeting events.
- The unit worked in co-operation with the intensive care unit at the hospital when admitting patients. Some staff commented that communication and education with the intensive care unit (ICU) could be improved, as there were still a number of staff within the host hospital that lacked awareness regarding the hyperbaric facility.
- Some staff said that that whilst they felt their work was valued by seniors within the service, it would be helpful to have more formalised feedback and recognition from managers of the work they completed.
- Trips out and social gatherings in the summer and at Christmas were arranged for staff. This helped with team bonding and close-knit working.
- Managers arranged for staff to visit dive exhibitions in London and Birmingham to increase their knowledge.
- The service had a website that provided information to the public about the treatments delivered at the unit. Patients could contact the unit and leave feedback via the website.
- Staff provided patients with a satisfaction survey form prior to their last treatment session. Data from the completed forms was collected and evaluated as part of the quality dashboard.
- Doctors followed up patients by telephone three months following their last treatment at the unit to obtain information regarding patient outcomes and any comments in respect of the quality of the service.
- Data from patient satisfaction forms and patient outcome measure were audited internally and sent to NHS England as part of the commissioning for quality and innovation (CQUIN) report.
- Managers discussed patient feedback at the clinical governance meetings where any changes to practice were agreed. For example, as a result of patient concerns about contacting patient transport services over the weekends, the duty supervisors now requested an emergency telephone number for the vehicle driver and company undertaking the transport. This had resulted in reducing waiting times for patients.

Innovation, improvement and sustainability

- By having a trained anaesthetist, available 24 hours every day of the year, the service was able to provide continuous treatment to the most critically ill patients. At the time of this inspection we were told they and their second unit were the only hyperbaric oxygen therapy facilities within the London and East of England areas providing a continuous critical care service.
- The medical director continually scanned international developments within hyperbaric medicine, and introduced relevant new guidelines to the team to ensure they were keeping in line with evidence based practice.
- The medical director was part of the clinical reference group for hyperbaric oxygen therapy, supporting commissioners in developing clinical guidelines for the service.
- The provider was working with NHS England to develop outcome measurement tools as part of a commissioning for quality and innovation programme to help evaluate the effectiveness of the treatment.
- There was a clear commitment to invest in the best equipment to ensure patients received high quality treatment.
- The unit offered training courses to both the medical and diving community. These included training in chamber operator and attendant, transcutaneous oxygen (both courses accredited by the National Board of Diving and Hyperbaric Medical Technologists), combustion induced toxic injuries and the certified

hyperbaric technologist and certified hyperbaric registered nurse internship and exam. This helped to educate professionals and raise their awareness in general procedures and responding to emergencies.

- The registered manager had spent time in training the general manager in management and technical skills so that she could continue to run the service in his absence. The medical director was confident that his deputy would manage to fulfil his role were he to be absent.
- The service had previously been involved in a research study with patients who had radiation injury to the bowel. The service was in the developmental stages of two new studies along with a London university, exploring patient outcomes for patients with diabetic leg ulcer, and barotrauma injury in unconscious patients.

Outstanding practice and areas for improvement

Areas for improvement

Action the provider MUST take to improve

- Take all reasonable steps to ensure doctors are up-to-date with mandatory training..
- Ensure appropriate staff are trained to a minimum level two for safeguarding children and adults.
- Ensure all nursing, technical and administrative staff receive timely and regular appraisals.

Action the provider SHOULD take to improve

- Put in place procedures so that medication close to expiry can be identified and appropriately disposed of.
- Use formal interpreting services for patients whose first language is not English.
- Ensure that all patient information can be accessed and that there are arrangements in place for information to be provided in different languages or alternative formats when required.
- Encourage all unit staff to attend team meetings, in person or by teleconference, so that best practice can be shared.

This section is primarily information for the provider

Requirement notices

Action we have told the provider to take

The table below shows the legal requirements that were not being met. The provider must send CQC a report that says what action they are going to take to meet these requirements.

Regulated activity	Regulation
Treatment of disease, disorder or injury	Regulation 18 HSCA (RA) Regulations 2014 Staffing We found not all of the doctor's mandatory training was up to date. The service provided data that showed four of 11 (36%) doctors had completed training in resuscitation and blood transfusion, five (45%) had completed practical fire safety and moving and handling care of the back training and three (27%) had completed annual infection control training. In addition, only two of ten doctors (20%) had up to date training in medicines management and medical gas and suction safety, and three of ten doctors (30%) had completed recognising the deteriorating patient. Not all staff had received level two training for safeguarding children or adults. Staff received safeguarding training online. Eight of eleven (73%) doctors had completed their safeguarding adults and children training to level one, six doctors (55%) had completed safeguarding adults and children training to level two. Hyperbaric supervisors were trained to safeguarding level one and nurses trained to level two for both children and adults. We saw that all training was up-to-date apart from one exception where training had recently expired.. The intercollegiate document for the safeguarding of children and young people sets out that all non-clinical and clinical staff who have any contact with children should be trained to a minimum of children's safeguarding level two. Not all nursing, technical and administrative staff had received an appraisal in the last year. Data received from the unit showed that seven (39%) of 18 staff had received appraisals. Three appraisals had been arranged at the time of our inspection and the remaining eight appraisals were still to be undertaken. Two of the staff appraisals were more than 18 months overdue. This is a breach of Regulation 18 (2)(a)

This section is primarily information for the provider

Enforcement actions

Action we have told the provider to take

The table below shows the legal requirements that were not being met. The provider must send CQC a report that says what action they are going to take to meet these requirements.