

East of England Hyperbaric Quality Report

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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

Summary of findings

Letter from the Chief Inspector of Hospitals

East of England Hyperbaric is operated by London Hyperbaric Medicine (LHM) Healthcare Ltd. The service provides hyperbaric oxygen (HBO) therapy for up to seven patients per session in a multiplace hyperbaric chamber.

The service provides HBO services for adults and children from the East Anglia region and across the country.

We inspected this service using our comprehensive inspection methodology. We carried out the announced part of the inspection on 22 August 2019 along with an unannounced visit to the unit on 5 September 2019.

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? Where we have a legal duty to do so we rate services' performance against each key question as outstanding, good, requires improvement or inadequate.

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:

- Patient feedback about the service was consistently positive.
- Staff spoke positively about the culture of the service.
- Staff completed thorough risk assessments for each patient using the service.
- Equipment records, and policies were detailed and up to date.

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

- Staff could not easily access the resuscitation equipment trolley.
- There were no historic records of resuscitation equipment checks as staff completed these on laminated sheets which they wiped clean at the end of each month.
- The risk register did not identify risks to the service and had not been recently reviewed and updated.
- There was little evidence of sharing of learning from incidents.

Following this inspection, we told the provider that it should make improvements, even though a regulation had not been breached, to help the service improve. Details are at the end of the report.

Heidi Smoult

Deputy Chief Inspector of Hospitals

Summary of findings

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East of England Hyperbaric

Services we looked at

Hyperbaric oxygen therapy

Summary of this inspection

Background to East of England Hyperbaric

East of England Hyperbaric is operated by London Hyperbaric Medicine London Hyperbaric Medicine (LHM) Healthcare Ltd. The service opened in 2008. It is a privately-operated unit based within an NHS trust in Gorleston-on-Sea, Norfolk. Referrals are taken from across the region and nationally. The service is delivered in partnership with the host NHS trust. It is integrated with the hospital's critical care and emergency medicine department under the clinical leadership of NHS consultants based at the hospital. The unit provides emergency services for deep sea divers with disorders requiring compression and emergency treatment for

patients with carbon monoxide poisoning, gas embolism and necrotizing soft tissue infections. Non-emergency treatment is available for a range of conditions including complications resulting from the use of radiation in cancer treatment, osteomyelitis, problem wounds that are not healing, and diabetic foot ulcers.

The service has had a registered manager in post since 2008 and is registered for the regulated activity of treatment of disease, disorder or injury. The service was last inspected in September 2015 and was meeting all standards.

Our inspection team

The team that inspected the service comprised a CQC lead inspector and a specialist advisor with expertise in respiratory medicine. The inspection team was overseen by Fiona Allinson, Head of Hospital Inspection.

Information about East of England Hyperbaric

The service has one unit and is registered to provide the following regulated activity of treatment of disease, disorder or injury (TDDI).

The service is available 24 hours a day, 365 days per year. Hyperbaric oxygen therapy (HBO) involves breathing pure oxygen at higher than atmospheric pressures in an enclosed chamber. At the time of our inspection, the service had an eight-person 'walk-in' hyperbaric chamber (seven patients and one chamber attendant). This was installed in 2008. It is a 'Category 1' facility, which means that it can provide care for the most seriously ill patients who might need advanced life support.

The management structure of the unit consisted of the managing director, a general manager, a medical director, and a nurse manager. Eleven other doctors and 18 hyperbaric nurses were employed on a part-time basis, supported by three technical staff.

During our inspection, we visited the plant room, the gas storage area and the hyperbaric chamber. We spoke with

nine members of staff including in-chamber attendants, the general manager, the medical director, operating technicians and supervisors, hyperbaric physicians and the managing director. We spoke with three patients. During our inspection, we reviewed two sets of patient records.

There were no special reviews or investigations of the service ongoing by the CQC at any time during the 12 months before this inspection. This was the service's second inspection since registration with CQC, which found that the service was meeting all standards of quality and safety it was inspected against.

Activity

- In the reporting period July 2018 to June 2019 there were 553 episodes of care recorded at the service. Treatment plans for patients receiving elective hyperbaric therapy usually involved minimum of 30 sessions inside the chamber.

Summary of this inspection

- In the reporting period July 2018 to June 2019 the service treated 32 patients, 17 of these patients were elective (53%), seven were emergency diving disorders (22%), and eight were other emergencies requiring compression (25%).

Track record on safety. In the reporting period July 2018 to June 2019 there were:

- Zero never events
- Zero clinical incidents
- Zero serious injuries
- Zero incidences of hospital acquired Methicillin-resistant Staphylococcus aureus (MRSA)

- Zero incidences of hospital acquired Methicillin-sensitive staphylococcus aureus (MSSA)
- Zero incidences of hospital acquired Clostridium difficile (c.diff)
- Zero incidences of hospital acquired E-Coli
- Zero complaints.

Services provided at the hospital under service level agreement:

- Clinical and or non-clinical waste removal
- Interpreting services
- Grounds Maintenance
- Maintenance of medical equipment

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 do not currently have a legal duty to rate hyperbaric oxygen therapy services where the service is provided as an independent healthcare single speciality service.

We found the following areas of good practice:

- The service provided mandatory training in specialist skills to all staff and made sure everyone completed it.
- Staff understood how to protect patients from abuse. Staff had training on how to recognise and report abuse, and they knew how to apply it.
- The service controlled infection risk well. Staff used control measures to protect patients, themselves and others from infection. They kept equipment and the premises visibly clean.
- The design, maintenance and use of facilities, premises and equipment kept people safe. Staff managed clinical waste well.
- Staff completed and updated risk assessments for each patient and removed or minimised risks.
- The service had enough staff with the right qualifications, skills, training and experience to keep patients safe from avoidable harm and to provide the right care and treatment.
- Staff kept detailed records of patients' care and treatment. Records were clear, up-to-date, stored securely and easily available to all staff providing care.
- The service managed patient safety incidents well. Staff recognised and reported incidents and near misses.

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

- Staff did not have immediate access to resuscitation equipment.
- We were not assured managers shared lessons learned from safety incidents with the whole team and the wider service.

Are services effective?

We do not currently have a legal duty to rate hyperbaric oxygen therapy services where the service is provided as an independent healthcare single speciality service.

We found the following areas of good practice:

- The service provided care and treatment based on national guidance and evidence-based practice.
- Staff gave patients enough food and drink to meet their needs.

Summary of this inspection

- Staff assessed and monitored patients regularly to see if they were in pain and gave pain relief in a timely way.
- Staff monitored the effectiveness of care and treatment. They used the findings to make improvements and achieved good outcomes for patients.
- The service made sure staff were competent for their roles. Managers appraised staff's work performance and provided support and development opportunities.
- Doctors, nurses and other healthcare professionals worked together as a team to benefit patients. They supported each other to provide good care.
- Staff supported patients to make informed decisions about their care and treatment. They followed national guidance to gain patients' consent. They knew how to support patients who lacked capacity to make their own decisions or were experiencing mental ill health.

Are services caring?

We do not currently have a legal duty to rate hyperbaric oxygen therapy services where the service is provided as an independent healthcare single speciality service.

We found the following areas of good practice:

- Staff treated patients with compassion and kindness, respected their privacy and dignity, and took account of their individual needs.
- Staff provided emotional support to patients to minimise their distress.
- Staff supported and involved patients to understand their condition and make decisions about their care and treatment.

Are services responsive?

We do not currently have a legal duty to rate hyperbaric oxygen therapy services where the service is provided as an independent healthcare single speciality service.

We found the following areas of good practice:

- The service planned and provided care in a way that met the needs of local people and the communities served. It also worked with others in the wider system to plan care.
- The service was inclusive and took account of patients' individual needs and preferences. Staff made reasonable adjustments to help patients access services.

Summary of this inspection

- People could access the service when they needed it and received the right care promptly. Waiting times from referral to treatment and arrangements to admit, treat and discharge patients were in line with national standards.
- It was easy for people to give feedback and raise concerns about care received. The service treated concerns and complaints seriously, investigated them and shared lessons learned with all staff.

Are services well-led?

We do not currently have a legal duty to rate hyperbaric oxygen therapy services where the service is provided as an independent healthcare single speciality service.

We found the following areas of good practice:

- Leaders had the integrity, skills and abilities to run the service. They understood and managed the priorities and issues the service faced. They were visible and approachable in the service for patients and staff. They supported staff to develop their skills.
- The service had a vision for what it wanted to achieve.
- Staff felt respected, supported and valued. The service promoted opportunities for career development. The service had an open culture where patients and staff could raise concerns without fear.
- Leaders operated effective governance processes, throughout the service. Staff at all levels had regular opportunities to meet, discuss and learn from the performance of the service.
- Leaders used governance systems to manage performance effectively.
- Leaders and staff actively and openly engaged with patients and staff to plan, improve and manage services for patients.

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

- The service did not have a formal strategy to turn the vision into action.
- Staff could not describe the provider's vision for the service.
- The service level risk register had only recently been implemented and was not embedded.

Detailed findings from this inspection

Hyperbaric oxygen therapy

Safe

Effective

Caring

Responsive

Well-led

Are hyperbaric oxygen therapy services safe?

We regulate this service, but we do not 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.

Mandatory training

- **The service provided mandatory training in key skills to all staff and made sure everyone completed it.**
- **Managers monitored mandatory training and alerted staff when they needed to update their training.** All staff completed the host trust's mandatory training courses. Records showed all staff were 100% compliant with mandatory training.
- **The mandatory training was comprehensive and met the needs of patients and staff.** Staff received training in basic life support (BLS), manual handling, medical gases and infection prevention and control and recognising and responding to patients with learning disabilities, autism and dementia. BLS training was appropriate for in-chamber attendants as these staff only provided care for elective patients who were generally well. Those patients who were critically ill were cared for in the chamber by consultants in anaesthesia or emergency medicine who were also hyperbaric physicians.

Safeguarding

- **Staff understood how to protect patients from abuse and the service worked well with other**

agencies to do so. Staff had training on how to recognise and report abuse, and they knew how to apply it. All staff were 100% compliant with safeguarding adults level two training.

- **Staff knew how to make a safeguarding referral and who to inform if they had concerns.** Two staff described how they would raise a safeguarding concern through the host trust's safeguarding service.
- All staff who treated patients aged under 18 years were trained to level 3 in safeguarding children.

Cleanliness, infection control and hygiene

- **The service controlled infection risk well. Staff used equipment and control measures to protect patients, themselves and others from infection. They kept equipment and the premises visibly clean.**
- The provider confirmed there had been no cases of healthcare acquired infections during the previous 12 months.
- Cleaning records we reviewed evidenced staff completed a weekly deep clean of the unit, hyperbaric chamber and equipment.
- Staff cleaned equipment after patient contact and labelled equipment to show when it was last cleaned. Staff had changed disposable curtains in line with local policy and dated them to evidence they had been changed.
- Staff followed infection control principles including the use of personal protective equipment and had arms bare below the elbow in line with guidance from the Department of Health.

Environment and equipment

Hyperbaric oxygen therapy

- The design, maintenance and use of facilities, premises and equipment kept people safe. Staff were trained to use them. Staff managed clinical waste well**
 - The service was provided from one room. The hyperbaric chamber was located in the centre of the room with the control panel to the rear, an office area to one side and a staff area to the other. Disposable curtains were used to screen off a changing area for patients attending for treatment. The plant room and medical gases were located outside the building but were secure and easily accessible to staff.
 - The hyperbaric chamber was a multi place therapy chamber capable of accommodating seven walk in patients and one staff member (attendant) or one patient on a trolley with attendants.
 - Access to the unit was through double doors directly off the main host trust corridor. The door had a key code access panel, but this was not in use. The general manager and the managing director told us the unit was always locked when staff were not present. When patients are in the unit the door is not locked to allow the resuscitation team easy access as well as security in case of arrest or aggressive patients. There was clear indication outside the door to knock and wait to be allowed in.
- Staff carried out daily safety checks of specialist equipment.** Records of equipment checks for the chamber were up to date and detailed. Staff stored these records both as paper in folders and electronically.
 - The service had a detailed planned and preventative maintenance schedule covering, for example, regulators and valves, compressors and medical devices. This specified the frequency with which checks needed to be carried out and all the checks were up to date.
 - Work undertaken, parts used and (if relevant) the date on which further inspection was due was recorded on a maintenance log. Maintenance and servicing was carried out by the host trust's technicians in accordance with hospital guidance and manufacturers' specifications.
- There was firefighting equipment in the chamber and also an automated fire suppressant (misting) system. This was in line with guidance from the British Hyperbaric Association (BHA).
- Staff carried out thorough and detailed monitoring of equipment. For example, to check that equipment was working effectively, staff monitored oxygen delivery daily and weekly using transcutaneous oximetry measurement (a way of measuring oxygen levels under the skin). This ensured that patients received the correct dose of hyperbaric oxygen.
- The service had backups of power and medical gasses in the event of system failure. This would allow sufficient time for the chamber to return to atmospheric pressure. A safety mechanism on the control panel meant that the pressure in the chamber would start reducing automatically in the event of problems outside of the chamber. Staff could complete treatments manually in the event of computer failure.
- All equipment for use in the chamber was certified for use under pressure. The British Hyperbaric Association (BHA) had carried out an appraisal in 2019 and found equipment related to the functioning of and the chamber itself to be properly maintained and in good condition.
- The service had enough suitable equipment to help them to safely care for patients.** The service was a category one chamber and as such had access to clinical equipment available for use both inside and outside the chamber. This included blood pressure equipment, stethoscope, thermometer, intravenous infusions and equipment to treat an emergency pneumothorax (collapsed lung). This was in line with BHA requirements. A category one chamber is capable of receiving and treating the most critically ill patients.
- The service had monitoring equipment available for use both inside and outside the chamber, including electrocardiogram (ECG), pulse oximetry, and blood pressure equipment. The service also provided transcutaneous oxygen monitoring. This was in line with BHA requirements. Transcutaneous oxygen

Hyperbaric oxygen therapy

monitoring is a way of monitoring blood gases through a sensor applied to the body, usually a finger. Transcutaneous oxygen monitoring is used to reflect the adequacy of the treatment.

- The service shared a resuscitation equipment trolley, for use both inside and outside the chamber, with a neighbouring department. The equipment was capable of providing for advanced life support, including defibrillator, ventilator, intravenous infusion equipment, suction, airway establishment and maintenance, and relevant drugs. During our inspection staff were unable to locate the trolley quickly as staff in the neighbouring department had moved it without alerting the provider in line with their protocol. At our follow up unannounced inspection the resuscitation equipment trolley was where staff expected it to be. The provider advised us that an order had been placed to buy their own defibrillator and we saw an invoice confirming this. We were therefore assured that staff would have immediate access to a defibrillator should they need one in future.
- The service had a trolley for the emergency transfer of patients to intensive care if this was required.
- **Staff carried out daily and weekly checks of the intensive therapy trolley.** The trolley contained equipment and medications which could be required by the overseeing physician during the treatment of a ventilated patient. We were not able to see records for checks completed during the months prior to our inspection as staff completed these on laminated sheets which they wiped clean at the end of each month. We raised this as a concern during our inspection. At our unannounced follow up inspection we saw staff had implemented a new process where they scanned laminated records and stored them electronically.
- **Staff disposed of clinical waste safely.** We observed good waste segregation throughout our inspection. Staff had labelled sharp disposal bins correctly and these were not overfilled.

Assessing and responding to patient risk

- **Staff completed and updated risk assessments for each patient and removed or minimised risks. Staff identified and quickly acted upon patients at risk of deterioration.**
- **Staff completed risk assessments for each patient at assessment prior to admission, updated them when necessary and used recognised tools.**
- The in-chamber attendant accompanied patients in the chamber throughout their treatment and the chamber operator monitored patients through a chamber window and through closed circuit television (CCTV) from outside the chamber. This provided an additional observation to monitor how individual patients were coping with their treatment.
- Patients from critical care were always accompanied by an experienced intensive care nurse and a trained anaesthetist inside the chamber and a second doctor would sometimes be in attendance in the unit.
- The hyperbaric physician on duty in the unit was always ready to enter the chamber to provide medical care in any emergency situation and staff would alert the host trust's cardiac arrest team if a patient was taken seriously ill during a treatment.
- Staff provided all patients who were identified as being at risk of developing pressure ulcers with chamber safe pressure relieving cushions.
- The responsible hyperbaric consultant completed risk assessments with patients during their pre-assessment. Risk assessments included information about chamber safety, contra indications such as claustrophobia and inner ear issues, side effects of treatment and fire and oxygen safety. The patient records we reviewed showed consultants had completed risk assessments appropriately. Staff told us that the consultant would identify any patients who required any adjustments at the risk assessment stage. For example, those patients living with dementia or who had a learning disability.
- The responsible hyperbaric consultant completed pre-hyperbaric medical assessments with patients during their pre-assessment. These included hearing and vision tests. Patient records we reviewed showed consultants had completed health assessments appropriately.

Hyperbaric oxygen therapy

- The supervising hyperbaric physician assessed each patient as they left the chamber to ensure they were well and had no hearing or visual disturbances. The referring consultant carried out formal patient health reviews following every tenth treatment.
- The chamber operator, supervisor, in-chamber attendant and the responsible hyperbaric physician in the unit held team briefings daily prior to starting treatments. This enabled the team to discuss any equipment or patient concerns.
- The service had contingency plans in the event of a power failure, failure of essential services or other technical emergency and staff were trained in using them. For example, operating the chamber manually if the computer failed.
- There were no staff vacancies. During the 12 months prior to our inspection, staff turnover was low, there had been no sickness and arrangements were in place to recruit additional nurses to train in hyperbaric therapy. The service did not use bank or agency staff.
- As a precaution, staff could only perform the in-chamber attendant role once in a twenty-four-hour period. They received a short medical from the attending hyperbaric physician at the end of each session to ensure they had no ill effects from the treatment. To enable more than one treatment session to be provided per day, all in-chamber attendants were also trained in the role of chamber operator.

Nurse staffing

- **The service had enough nursing and support staff with the right qualifications, skills, training and experience to keep patients safe from avoidable harm and to provide the right care and treatment. Managers regularly reviewed and adjusted staffing levels and skill mix.**
- The nurse manager prepared the monthly rota for nursing staff, in-chamber attendants and chamber operators, three months in advance. This ensured the service could provide a twenty-four-hour service seven days per week. The service had 22 nurses available to them on zero hours contracts.
- Staff used a social media group to keep in touch with each other and swap shifts if required.
- Four experienced staff were always present in the unit during each session. This was in line with the BHA standard. Each shift was always staffed by one hyperbaric physician, one supervisor, one in-chamber attendant and one chamber operator. The number of staff on all shifts matched the planned numbers.
- The in-chamber attendant role was covered by a registered nurse (RN), paramedic or operating department assistant who were experienced and trained in this specialty. The in-chamber attendant accompanied patients in the chamber at all times during their treatment.

Medical staffing

- **The service had enough medical staff with the right qualifications, skills, training and experience to keep patients safe from avoidable harm and to provide the right care and treatment. Managers regularly reviewed and adjusted staffing levels and skill mix.**
- The rota for hyperbaric physicians, who were all trained anaesthetists, was prepared three months in advance to ensure critical care cover 24 hours a day, seven days a week.
- **The service had enough medical staff to keep patients safe.** Hyperbaric physicians were drawn from a pool of 11 host trust consultant anaesthetists or critical care consultants who had all received additional training in hyperbaric therapy and held part time contracts with the provider.
- The medical director for the service had direct access to medical advice from other senior consultants at the hospital and could also contact international experts where required.
- **The service always had a consultant on call during evenings and weekends.** The medical director or their deputy was available, on call, at any time to other clinicians working in the unit.

Records

Hyperbaric oxygen therapy

- Staff kept detailed records of patients' care and treatment. Records were clear, up-to-date, stored securely and easily available to all staff providing care.**

- Patient notes were comprehensive, and all appropriate staff could access them easily.**

Nursing staff kept paper records which were detailed and legible. Staff signed and dated entries in the records.

- Records were stored securely.** Nursing staff stored patient records in a locked filing cabinet.

- On the completion of treatment of elective patients, a discharge letter was sent to the referring consultant and copied to the patient's GP.

- The chamber operator kept records of each chamber session including times, pressures and names of all other people present. This data was recorded in a separate chamber treatment log and not included in the patient's hospital record.

- The chamber operator kept records of the chamber's use including who was in the chamber, at what pressure, for how long, and details of any adverse incidents.

Medicines

- The service used systems and processes to safely prescribe, administer, record and store medicines.**

- The hyperbaric unit had two cardiac arrest packs and a hypoglycaemia box which contained a number of glucose products which could be used to treat a patient who was suffering from low sugar. A drug cupboard contained nasal drops to help patients clear their ears and paracetamol. We saw that all medicines had been checked and were in date.

- Staff kept midazolam in a secure controlled drugs (CD) cupboard which was double locked. Only medical staff could prescribe and administer this drug. Two staff completed CD reconciliation daily. Records in the CD log book confirmed this.

- During pre-assessment, the referring consultant recorded patients' allergies clearly in each patient record. This was evident in the patient records we reviewed.
- The service stored medical gases outside the unit in secure, clearly labelled compounds and in line with national guidance. Empty gas (oxygen) canisters were stored separately from full ones.

Incidents

- The service managed patient safety incidents well. Staff recognised and reported incidents and near misses. Managers investigated incidents when things went wrong, However, there was little evidence of sharing the learning from incidents.**

- The service had no never events or serious incidents in the 12 months prior to our inspection. Never events are serious patient safety incidents that should not happen if healthcare providers follow national guidance on how to prevent them. Each never event type has the potential to cause serious patient harm or death but neither need have happened for an incident to be a never event.

- The provider printed out the electronic incidents and kept a paper log of incidents which staff had reported relating to the unit. All the incidents had been reviewed and signed by the managing director. One incident related to a carbon dioxide line becoming trapped (4 February 2019). Three of the four in-chamber attendants we spoke with were not aware of the incident having occurred and could not describe an incident which had been reported. We were therefore not assured there was sharing of learning from incidents.

- Staff knew what incidents to report and how to report them.** All the staff we spoke with could describe the electronic incident reporting process and this was the same as the host trust used.

- Staff understood the duty of candour (DoC). They were open and transparent and gave patients and families a full explanation if and when things went wrong.** Staff were familiar with the DoC but had not had to use it. Duty of candour is a regulatory duty that relates to openness and transparency and

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requires providers of health and social care services to notify patients (or other relevant persons) of certain ‘notifiable safety incidents’ and provide reasonable support to that person, under Regulation 20 of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014.

Major incident training

- Staff had received fire training and were aware of contingency plans in the event of power failure or other technical emergencies.
- The unit was connected to the back-up generator for the host trust and all the equipment inside the chamber had back-up power supplies.
- The chamber operating system was computer driven but staff could operate the chamber manually in the event of computer malfunction or failure.
- The service had a system where if a gas cylinder ran out during a treatment it would automatically switch to a new gas cylinder to allow the treatment to be completed.
- Records showed, and external provider had serviced and tested the fire suppression system in January 2109.

Are hyperbaric oxygen therapy services effective?

(for example, treatment is effective)

Evidence-based care and treatment

- **The service provided care and treatment based on national guidance and evidence-based practice. Managers checked to make sure staff followed guidance. Staff protected the rights of patients subject to the Mental Health Act 1983.**
- Evidence based care and treatment was provided. All treatments were in line with recognised British Hyperbaric Association (BHA) guidance and was underpinned by recognised international diving guidance.

- **Staff followed up-to-date policies to plan and deliver high quality care according to best practice and national guidance.** Policies were held in electronic form.
- The service had procedures in place to manage clinical complications such as pneumothorax. These procedures were based on best practice and National Institute for Health and Care Excellence (NICE) guidance.
- The treatment of any children using the service was overseen by a paediatric consultant.
- The provider could accommodate ventilated patients on a continuous basis limited only by the capacity of the host hospital’s critical care unit.
- Ventilated and sedated ventilated patients would be overseen inside the chamber by a trained anaesthetist and a critical care nurse. The physician of the day, who was also a trained anaesthetist, would be supporting from outside the chamber but inside the unit and would enter the chamber if required.

Nutrition and hydration

- Staff provided drinks and snacks for patients during scheduled breaks in their treatment regime.

Pain relief

- **Staff assessed and monitored patients regularly to see if they were in pain and gave pain relief in a timely way. They supported those unable to communicate using suitable assessment tools and gave additional pain relief to ease pain.**
- **Staff prescribed, administered and recorded pain relief accurately.** Staff were able to offer patients paracetamol if required and appropriate.
- If patients complained of earache while they were in the chamber, chamber operating staff would reduce the pressure while the in-chamber attendant supported the patient to equalise. Equalising is a process by which the air pressure in the ear space is adjusted to match the external air pressure. Commonly known as your ears “popping”.

Patient outcomes

Hyperbaric oxygen therapy

- Staff monitored the effectiveness of care and treatment. They used the findings to make improvements and achieved good outcomes for patients.**
- Hyperbaric oxygen therapy progress was monitored at regular intervals throughout the treatment regime. In-chamber attendants ensured that masks and hoods were correctly fitted, and the patient's posture enhanced best oxygen intake. Patients were required to give up smoking before treatment and the service would not allow gaps of more than two days between treatments for best results.
- Consultants overseeing patient care took photographs of any wounds, for example diabetic foot ulcers, at regular intervals to ensure healing was occurring and evidence treatment was working. Consultants used the photographs to help determine how long the treatment regime needed to continue. Consultants carried out formal treatment reviews after every tenth treatment.
- The service collected elective patient reported outcomes by telephoning patients a few weeks after they had been discharged from the service. The service was in the process of setting up a new data collection register as an evaluation tool.
- There were currently no benchmarking schemes available for the provider to take part in. The managing director completed an annual quality of audits report where they compared the performance of the service the previous year with the recent 12 months. The Managing director also compared the performance of the service with that of its sister service to monitor service quality and performance.

Competent staff

- The service made sure staff were competent for their roles. Managers appraised staff's work performance and held supervision meetings with them to provide support and development.**
- Staff were experienced, qualified and had the right skills and knowledge to meet the needs of patients.
- Managers gave all new staff a full induction tailored to their role before they started work and staff confirmed

they had completed two sessions supernumerary as an in-chamber attendant and two sessions as a chamber operator before the lead nurse signed them off as competent.

- All in-chamber attendants and chamber operators completed a four-day training course over two consecutive weekends. The course was theory and practical and covered in-chamber attendant duties, risk assessment and emergencies among other topics. Successful trainees were awarded a certificate of training. Data provided by the provider showed 100% of staff held this certificate. We selected four staff competency files at random and all four contained the certificate of completion of the course.
- The provider held four training days or evenings per year for all staff. These included scenario training and updates around safety and governance. We observed the register of attendance and saw training event were well attended.
- The quarterly audit report 2018/2019, recorded all supervisors and non-clinical staff, along with all nursing staff had received their annual performance review.

Multidisciplinary working

- Doctors, nurses and other healthcare professionals worked together as a team to benefit patients. They supported each other to provide good care.**
- Staff held a daily team brief at the start of each day. Topics covered included patient treatment regimes so far, the condition the patient was being treated for, any previous concerns and any equipment concerns. Staff held the meeting once patients were seated in the chamber, this ensured patient confidentiality.
- Patients had their care pathways reviewed by the relevant consultants after every tenth treatment.
- Patients told us they felt there was a good handover between the hyperbaric physicians of the day because each hyperbaric physician overseeing the unit knew their case even if they had not been the referring consultant.

Seven-day services

Hyperbaric oxygen therapy

- The service did not provide routine seven-day service. Elective treatments were completed between 9.00am and 12.00 midday Monday to Friday. The service was available to provide emergency treatments 24 hours a day every day of the year through on call.

Health promotion

- Staff gave patients practical support and advice to lead healthier lives.**
- Staff assessed each patient's health when admitted and provided support for any individual needs to live a healthier lifestyle.** Any patients who were smokers had to stop smoking before they were able to begin their treatment unless it was clear that harm would be caused by delaying treatment.

Consent and Mental Capacity Act

- Staff supported patients to make informed decisions about their care and treatment. They followed national guidance to gain patients' consent.**
- The service had a consent policy based on the host trust's consent policy. The policy was in date and had recently been reviewed.
- Staff gained consent from patients for their care and treatment in line with legislation and guidance.** Patients consented to treatment during their pre-assessment with their consultant.
- Staff clearly recorded consent in the patients' records.** In all the patient records we reviewed we saw completed consent forms, signed and dated by the patient and the consultant obtaining consent. If the consultant deemed the patient lacked capacity to give informed consent, then the patient was not offered hyperbaric therapy.
- Staff made sure patients consented to treatment based on all the information available.** All the patients we spoke with confirmed that the treatment had been fully explained to them so that they were able to give their informed consent. Patients signed a document called side effects of hyperbaric oxygen therapy. This detailed potential side effects, risks and possible outcomes of the treatment.

- Patients signed a chamber safety briefing document prior to their first treatment.** This document informed them about fire safety, personal safety and potential side effects, risks and possible outcomes of being in the chamber.
- Nursing staff completed training on the Mental Capacity Act and Deprivation of Liberty Safeguards.** Records of staff training confirmed all staff had received training as part of the host trust's mandatory training programme.

Are hyperbaric oxygen therapy services caring?

Compassionate care

- Staff treated patients with compassion and kindness, respected their privacy and dignity, and took account of their individual needs.**
- The provider had a privacy and dignity policy which set out acceptable standards of staff behaviour. The policy was in date for review and referenced the Human Rights Act (1998), the government's dignity in care initiatives, essence of Care and the Care Quality Commissions standards. Staff worked in line with the policy.
- There were three patients receiving treatment in the unit at the time of our inspection. We observed staff had developed a professional but friendly rapport with the patients and knew their preferences while receiving treatment, for example, whether by hood or mask and what they preferred to drink.
- Staff showed patients into curtained off cubicles for them to get changed in private and pointed out lockers for them to use for their belongings. Patients changed from their own clothes into hospital attire and removed their shoes before entering the chamber in line with chamber safety guidance.
- Staff were discreet and responsive when caring for patients. Staff took time to interact with patients and those close to them in a respectful and considerate way.

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- We spoke with three patients who told us staff treated them well and with kindness. Thank you cards displayed in the unit from previous patients commented staff were caring, supportive and kind.

Emotional support

- **Staff provided emotional support to patients, families and carers to minimise their distress. They understood patients' personal, cultural and religious needs.**
- **Staff gave patients and those close to them help, emotional support and advice when they needed it.** Thank you cards displayed in the unit from previous patients commented "staff made me feel relaxed and reassured".
- **Staff supported patients who became distressed in an open environment and helped them maintain their privacy and dignity.** One patient told us how they had found adjusting to the treatment difficult at first, but that staff had been patient and helped them to get comfortable and relax.

Understanding and involvement of patients and those close to them

- **Staff supported and involved patients, families and carers to understand their condition and make decisions about their care and treatment.**
- **Staff made sure patients and those close to them understood their care and treatment.** All the patients we spoke with told us they had been given enough information about their treatment.
- **Staff supported patients to make informed decisions about their care.** Patients told us the consultant had provided detailed information about possible advantages and disadvantages of the treatment during their pre-assessment consultation. We saw consent forms clearly described possible side effects as well as positive outcomes. Patients told us they had been given time to ask questions. This enabled patients to make informed decisions.
- **A high proportion of patients gave positive feedback about the service in the Friends and Family Test survey.** The provider carried out their own specific patient satisfaction survey. Data showed,

from April 2018 to March 2019, 58% of patients returned the survey and 100% would recommend the service. All the patients we spoke with told us they would recommend the service.

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

Service delivery to meet the needs of local people

- **The service planned and provided care in a way that met the needs of local people and the communities served. It also worked with others in the wider system and local organisations to plan care.**
- The unit was a category one facility. This meant it could provide treatment to the most seriously ill patients and took referrals from across the country.
- The service provided treatment to three groups of patients:
 1. Elective patients who attended the unit for 30 to 40 treatment sessions.
 2. Those admitted as emergency referrals but conscious and not critically ill.
 3. Critically ill patients and those whose condition was unstable, making them at risk of deteriorating and becoming critically ill.
- The service had an informal agreement with the nearest hyperbaric unit in the East of England and the providers other unit in London, to transfer patients between the units if either unit was unable to treat them. For example, if equipment had broken down.
- **Facilities and premises were appropriate for the services being delivered.** The British Hyperbaric Association (BHA) had carried out an appraisal in 2019 and determined that although the facility was small staff used the available space appropriately.

Meeting people's individual needs

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- The service was inclusive and took account of patients' individual needs and preferences. Staff made reasonable adjustments to help patients access services. They coordinated care with other services and providers.**
- The service had not treated any patients who needed translation services, but staff were aware that they could use an interpretation service through the hospital switchboard and that this would be identified during the patient's pre-assessment.
- The service had not treated any patients who had additional learning needs or who were living with dementia, but staff told us they would be considered for treatment in the same way as other patients whilst allowing for the restrictions of a very small treatment area and any concerns this might cause the patients. This was assessed at the pre-assessment appointment with the consultant.
- The chamber was fully accessible by ramp for patients who had reduced mobility, used a wheelchair or were on a trolley. One row of seats could be removed from the chamber, so a trolley or bed could be accommodated. The service was also able to provide a chamber safe wheelchair for patients to use.
- Staff offered patients cotton dressing gowns or a blanket to use inside the chamber if they felt too cold. Staff gave patients a pillow if they required this to help them be more comfortable.
- Staff made every effort to make the chamber comfortable for patients. Patients could bring their own music to play through speakers inside the chamber or listen to the radio.
- The chamber operator adjusted the air conditioning in the unit to keep patients comfortable.

Access and flow

- People could access the service when they needed it and received the right care promptly. Waiting times from referral to treatment and arrangements to admit, treat and discharge patients were short.**
- The service offered a 24-hour, seven day a week service for emergency patients. Staff could be called in and the unit opened within an hour.

- Non-emergency patients were seen Monday to Friday during normal working hours.
- Three patients told us they had attended for their pre-assessment and started their treatment within one week. There was no waiting list to access the service.
- The service did not cancel any treatments sessions during the 12 months prior to our inspection.
- Toilet facilities, with appropriate privacy, were provided inside the hyperbaric chamber. Air conditioning was also provided within the chamber.

Learning from complaints and concerns

- It was easy for people to give feedback and raise concerns about care received**
- The service reported there had been no complaints raised in the 12 months prior to our inspection.
- The patients we spoke with knew how to complain or raise concerns about the service.
- Information booklets given to patients at the beginning of their treatment detailed how patients could raise a complaint.

Are hyperbaric oxygen therapy services well-led?

Leadership

- The managing director, the general manager and the medical director had the integrity, skills and abilities to run the service. They were visible and approachable in the service for patients and staff. They supported staff to develop their skills and take on more senior roles.**
- The service was operated under the clinical supervision of the medical director who was a consultant anaesthetist trained to level three in hyperbaric medicine.
- The service was led by a triumvirate of the managing director (who was also the registered manager), the general manager and the medical director supported by a nurse manager and technical supervisor.

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- The managing director and the general manager attended the unit on a regular basis, at least once a week, but were always contactable by telephone.
- Four members of staff we spoke with told us all the managerial team were visible, approachable and responsive to any concerns they raised. Staff spoke highly of them.

Vision and strategy

- **The managing director had a vision for the service. The vision focused on sustainability of services. However, staff were not aware of it.**
- The provider had a vision to provide a high quality, patient orientated, and consultant led service 24 hours a day and every day of the year and to set the quality benchmark for other providers. Staff we spoke with did not know the provider's vision.
- The provider did not have a formal documented strategy but planned to increase the number of conditions the service was commissioned for through data collection to demonstrate the effectiveness of the treatment.

Culture

- **Staff felt respected, supported and valued.**
- There was a high level of trust and respect between members of the team. This had resulted in effective and supportive team working.
- There was an open and honest culture with staff ready to ask for and receive assistance when needed.
- There was a strong emphasis on the safety and well-being of staff and staff well-being was actively promoted, with an awareness of the risks involved, for example for staff who accompanied patients in the chamber. All staff exposed to altered pressure in the course of their work were required to have medical checks before taking up their duties and these checks were repeated at regular intervals.

Governance

- **Leaders operated effective governance processes, throughout the service. Staff at all levels were clear about their roles and accountabilities and had regular opportunities to meet, discuss and learn from the performance of the service**
 - The provider held management meetings quarterly. These were attended by the general manager, the managing director and the clinical lead. Meeting minutes dated 5 January 2019 and 12 June 2019 demonstrated the provider gave adequate consideration to quality and sustainability.
 - The managing director also attended the supervisors meeting. Minutes of the supervisors meeting dated October 2018 showed staffing and safety was discussed among other things. All actions identified had owners assigned to them.
 - The provider held quarterly clinical governance meetings. These were chaired by the managing director, the supervisor and the medical lead and all staff were invited to attend. Minutes of the meetings dated February and June 2019 evidenced discussion around safety and audit outcomes, incidents and complaints. However, the meetings were not well attended by in-chamber attendants.
 - Staff at all levels were clear about their roles and what they are accountable for, and to whom.
- ## Managing risks, issues and performance
- **Service leaders used systems to manage performance effectively. However, we were not assured they identified relevant risks and issues and identified actions to reduce their impact.**
 - At the time of our inspection, the arrangements for identifying, recording and managing risks and issues to the service and their mitigating actions were not robust. The provider could not demonstrate they had given due consideration to risks which may impact on the service being provided. For example, staffing shortage or equipment failure. None of the meeting minutes we reviewed evidenced discussion of risks to the service. We raised this as a concern at the time of inspection.
 - At our follow up inspection, the provider was able to show us a risk register which gave consideration to

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service risks such as operational, clinical equipment and information governance risks. Risks were graded, had named owners and mitigating actions documented. The provider told us the risk register would be discussed and reviewed at the quarterly staff training and governance meetings.

- The provider had a risk record of all risk assessments completed in relation to risks to patients using the service. Risks were graded and reviewed by the supervisor on a two-yearly basis or sooner if there was a need identified.
- The provider had a process of reviewing service performance on an annual basis. The quality and audit report 2018 to 2019 demonstrated the provider had processes to manage current and future performance of the service.
- The provider had an audit schedule and carried out annual audits of incidents and complaints, patient satisfaction, caseloads, equipment, staffing and governance in order to monitor service performance. Meeting minutes dated 5 January 2019 and 12 June 2019 demonstrated the provider gave adequate consideration to quality and improvement.
- An external review by the British Hyperbaric Association (2019) had identified a need to install warning signage in the plant room and on the roof where gases were discharged. The service had addressed this issue in a timely way in order to ensure on going compliance. This demonstrated the service was responsive to feedback.

Managing information

- The service collected reliable data and analysed it. Managers could find the data they needed, in easily accessible formats, to understand performance, make decisions and improvements. The information systems were integrated and secure.**
- Staff had access to the relevant information. Provider policies were in the process of being stored electronically and staff stored patient records in paper format in a filing cabinet.

- Quality and sustainability of the service was discussed by managers and supervisors at quarterly meetings and shared at governance meetings which were open to all staff.
- The provider collected service performance data in order to monitor and improve the services provided. For example, patient outcome data.

Engagement

- Leaders and staff actively and openly engaged with patients and external organisations to plan and manage services.**
- Staff telephoned all elective patients six to 18 weeks post completion of treatment to ask for their feedback on the service and the outcome of their treatment.
- The service had a feedback box at the entrance to the unit in order to collect anonymous patient feedback.
- Staff told us they raised suggestions of service improvement verbally at daily team briefing or by email or telephone to the relevant lead.
- The service did not carry out a staff survey.

Learning, continuous improvement and innovation

- All staff were committed to continually learning and improving services. Leaders encouraged innovation and participation in research.**
- The medical director was the chairman of the British Hyperbaric Association and also provided representation at the hyperbaric clinical reference group.
- Managers told us they encouraged staff to attend conferences and staff confirmed this was the case.
- The provider informed us that the medical director's role included monitoring international developments and, when necessary, introducing new guidance and research evidence to the team to ensure the effectiveness of the service.

Outstanding practice and areas for improvement

Areas for improvement

Action the provider **SHOULD** take to improve

- The service should continue to review service risks regularly.
- The service should ensure staff can access a defibrillator easily.

- The service should continue to scan equipment checks and store them electronically.
- The service should improve the sharing of learning from incidents process.
- The service should develop a strategy for the service and share this with staff.