Embrace
Yorkshire & Humber Infant & Children's Transport Service

Sheffield Children's NHS
NHS Foundation Trust

Embrace Annual Report

2018 - 2019

camts
Commission on Accreditation of Medical Transport Systems

Contents

1. Foreword

2018/19 was a difficult year for Embrace with the sudden and sad loss of our lead nurse, Suzanne Palmer in July 2018.

Suzanne started her nursing career with training in Edinburgh followed by paediatric training at the Royal Hospital for Sick Children in Glasgow from 2003. She started work at Embrace in 2009 as a senior transport nurse and in 2015 became Lead Nurse. Her background with a PhD in biomedical sciences led to her being focused in driving service developments at Embrace. Her calm and approachable style of management resulted in very successful leadership and a cohesive team. She had time for everyone and is very greatly missed by all members of the team.

Throughout the year we continued to work with our partners, IAS Medical, Air Alliance, Yorkshire Ambulance Service and The Children's Air Ambulance. These partnerships are a key element of our ability to provide the highest level of care to the babies, children and families of Yorkshire & the Humber.

Jo Whiston, previously a Clinical Nurse Educator at Embrace, was appointed as Lead Nurse in 2018. We wish Jo every success in the years to come at Embrace.

Cath Harrison, Lead Consultant (Neonates)

Steve Hancock, Lead Consultant (Paediatrics)

Remembering Suzanne

2. Highlights 2018/2019

- Embrace received 3397 referrals and activated teams for 2139 transfers of infants and children across Yorkshire, the Humber and beyond
- Embrace completed 46 air missions
- Fully accredited by the Commission on Accreditation of Medical Transport Systems (camts.org and camtsglobal.org) for critical care transport by ground, rotary wing and fixed wing
- Accredited partnerships with Yorkshire Ambulance Service NHS Trust, IAS Medical, Air Alliance and The Children's Air Ambulance
- Key performance reporting to PICANet, Neonatal Transport Group and the Ground and Air Medical qUality Transport (GAMUT) database
- Introduction of Datix incident reporting and risk management software
- National Peer Review of the service by NHS England
- Introduction of new transport specific uniforms
- Commissioning of three new road ambulances

3. Embrace service

Embrace Yorkshire & Humber Infant & Children's Transport Service has been operational since 6th December 2009. The service meets the standards set by the UK Paediatric Intensive Care Society[1], the National Institute for Health and Clinical Excellence Specialist Neonatal Care Quality Standard[2] and the Commission on Accreditation of Medical Transport Systems[3] for the provision of specialist transport services by ground and air.

The host organisation for Embrace is Sheffield Children's NHS Foundation Trust - one of only four independent children's Trusts in the UK.

Mission statement

Embrace aims to provide the highest quality paediatric and neonatal care for infants, children and their families from the first point of contact to arrival at the destination unit.

It is the mission of Embrace to provide:

- A single point of telephone contact for referring clinicians
- Access to immediate specialist clinical advice
- Triage to an appropriate level of transport provision and dispatch of transport teams within a clinically appropriate time window
- Identification of a suitable cot or bed so that the most appropriate care is provided in the most appropriate location for any infant or child requiring specialist care in the Yorkshire & Humber region
- Logistical support for high risk obstetric transfers by locating a suitable maternal bed and neonatal cot

[1] PICS Quality Standards for the Care of Critically Ill Children 5th Edition. Paediatric Intensive Care Society; 2016

[2] Specialist Neonatal Care Quality Standard. National Institute for Health and Clinical Excellence; 2010

[3] Commission on Accreditation of Medical Transport Systems standards 10th Ed camts.org and camtsglobal.org

To achieve this Embrace will:

- Maintain appropriate communication between all parties to ensure the efficient and effective continuity of patient care
- Ensure every transfer is carried out in a way that maximises patient safety, comfort and dignity and minimises patient pain, discomfort, or distress and that of parents/guardians

Background to Embrace

Embrace provides specialised transport for all newborn infants and critically ill children from Yorkshire and the Humber who need moving between hospitals. The aim is to provide this service at the right time while providing the same high standards of care that they would receive in a specialist hospital. The vision was for a service separate from the receiving and referring hospital, enabling the team to be available on demand for the transfer of a critically ill infant or child. The service was founded on co-operation and collaboration between all parts of the Yorkshire & Humber NHS and this spirit has been fundamental to the continued success and growth of the service.

Embrace is part of the Surgery & Critical Care Division at Sheffield Children's NHS Foundation Trust which includes Paediatric Intensive Care, High Dependency Care, Neonatal Surgical Unit, Anaesthesia, Surgery, Theatres and the Pain Service. Working within a Division that specialises on the delivery of critical care to patients has allowed Embrace to develop strong clinical governance structures focussing on safety and quality.

Who we serve?

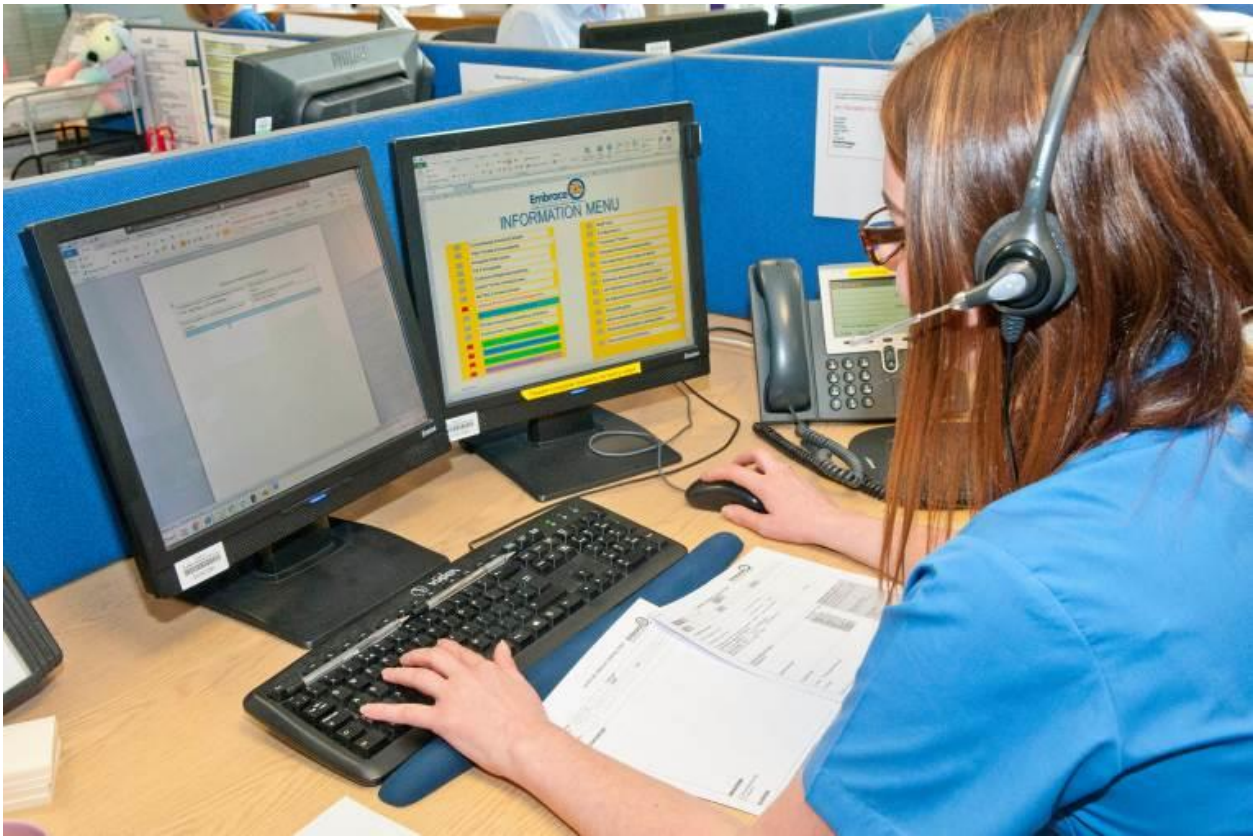
Embrace serves the children of Yorkshire and the Humber region which covers an area of 15,400 square kilometres, has a population of 5.3 million, of which 17% are aged under 16 years, and an annual live birth rate of approximately 75,000. The community includes large urban settlements such as Hull, Leeds and Sheffield as well as rural areas such as the East Riding of Yorkshire and North Yorkshire. We transfer newborn infants and critically ill children to and from the hospitals operated by the acute NHS Trusts in the region:

- Airedale NHS Foundation Trust
- Barnsley Hospital NHS Foundation Trust
- Bradford Teaching Hospitals NHS Foundation Trust
- Calderdale and Huddersfield NHS Foundation Trust
- Chesterfield Royal Hospital NHS Foundation Trust
- Doncaster and Bassetlaw Hospitals NHS Foundation Trust
- Harrogate and District NHS Foundation Trust
- Hull and East Yorkshire Hospitals NHS Trust
- Leeds Teaching Hospitals NHS Trust
- The Mid Yorkshire Hospitals NHS Trust
- Northern Lincolnshire and Goole Hospitals NHS Foundation Trust
- Rotherham NHS Foundation Trust
- Sheffield Children's NHS Foundation Trust
- Sheffield Teaching Hospitals NHS Foundation Trust
- York Teaching Hospitals NHS Foundation Trust

What is the role of Embrace?

Most infants and children can be cared for close to home in their local hospitals, however there are some for whom this is not possible. Embrace provides a single point of contact by which clinicians caring for these infants and children can access regional services, get advice and arrange transfers.

A single phone number puts the clinician through to a call handler who takes some basic information before bringing in one of our specialist transport consultants. As more details are obtained a picture of the infant or child is put together. Other specialists, such as neonatologist, cardiologists or intensive care physicians, can be 'conferenced' into the call by the call handler as required. Together these clinicians can make a plan for the care of the infant or child. All calls are recorded and these recordings form part of the clinical records.



When a plan involves moving the infant or child to more specialist care, the transport consultant and nurse co-ordinator decide upon the makeup of the transport team to provide the best possible care during the journey. This will depend on the level of critical care that the infant or child requires. The sickest children would have a team consisting of a transport consultant, middle grade doctor or Advanced Nurse Practitioner working with a transport nurse and ambulance driver; a more routine transfer may involve a transport nurse and a driver.

On arrival at the referring hospital the Embrace team take a handover from the referring team before assessing the child. The child can be moved onto the transport equipment once the team are satisfied that the patient is stable. The journey can then begin. Wherever possible, Embrace encourages a parent to accompany their child during the journey. On arrival at the destination hospital the child is handed over to the receiving team and moved from the transport trolley into an appropriate bed or cot for their ongoing care. Once the transfer has been completed the Embrace team will liaise with the base to determine the next task to be completed.

Air transport is provided in collaboration with specialist partners, by either fixed wing or rotary wing.

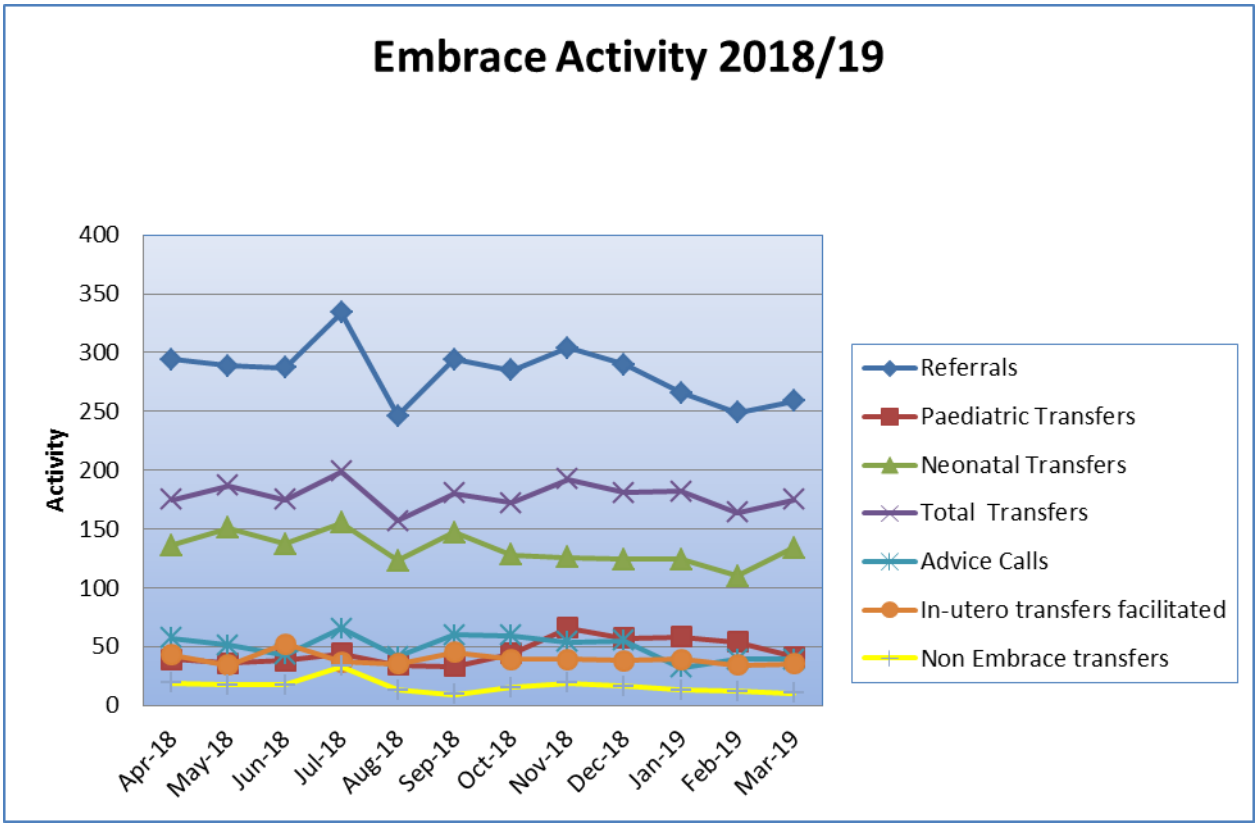
Regular feedback from the referring and receiving hospital teams as well as parents has enabled Embrace to be responsive to the needs of those it serves and to modify our service.

Activity 2018/2019

During the report period Embrace took 3397 referrals which resulted in 2139 neonatal/paediatric transfers. 470 of the referrals related to in-utero transfer requests.

The following graphs and tables show this activity in greater detail.

Consolidated activity	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**	**Aug-18**	**Sep-18**	**Oct-18**	**Nov-18**	**Dec-18**	**Jan-19**	**Feb-19**	**Mar-19**
Referrals	294	289	287	334	246	294	285	304	290	266	249	259
Paediatric Transfers	39	36	38	44	34	33	44	66	57	58	54	41
Neonatal Transfers	136	151	137	155	123	147	128	126	124	124	110	134
Total Transfers	**175**	**187**	**175**	**199**	**157**	**180**	**172**	**192**	**181**	**182**	**164**	**175**
Advice Calls	57	51	43	65	41	60	59	54	55	32	39	39
In-utero referrals facilitated	43	34	52	37	35	45	39	39	38	39	34	35
Non Embrace transfers	19	17	17	33	13	9	15	19	16	13	12	10



The following table shows the break down between neonatal and paediatric work compared between 2017/18 and 2018/19, with further break down between in utero and advice calls. Part of Embrace's role is to provide an in-utero bed finding service and facilitate obstetrician to obstetrician discussions. Embrace work closely with the Neonatal Operational Delivery Network and the regional Maternity Strategic Clinical Network to ensure effective use of all the available cots in the region.

Embrace activity comparison	**Total**
Total referrals 2017/18	3342
Total referrals 2018/19	3397
Embrace paediatric transfers 2017/18	486
Embrace paediatric transfers 2018/19	544
Embrace neonatal transfers 2017/18	1502
Embrace neonatal transfers 2018/19	1595
Embrace total transfers 2017/18	1988
Embrace total transfers 2018/19	2139
No transfer/advice 2017/18	600
No transfer/advice 2018/19	595
In utero referrals facilitated 2017/18	535
In utero referrals facilitated 2018/19	470
Other transfers 2017/18	188
Other transfers 2018/19	193

4. Embrace road transport service

Embrace have worked in partnership with Yorkshire Ambulance Service NHS Trust (YAS) since the start of the service in 2009. Our team of 14 YAS drivers is a vital part of the team and provides professional driving skills, including transfer under blue light exemptions, as well as assistance with preparing equipment, moving and handling and support of parents.

YAS provide 4 specialist mobile intensive care ambulances and one rapid response vehicle under the terms of the service level agreement. During 2018/19 we took ownership of 3 new ambulances with a plan to replace our 4th ambulance in 2020/21 financial year.

Charitable funds allowed us to decorate the interior of the vehicles to make them more child-friendly for our patients and families.

Embrace are able to track all vehicles independently from YAS using the Ingenium Dynamics system supplied by FMG a local company in Huddersfield. Ingenium Dynamics is a driver behaviour based telematics system designed to reduce the frequency of motor incidents significantly through improving driver behaviour. The system was designed and created by incident management specialist FMG, who has supplied 5 Ingenium Dynamics devices to Embrace free of charge. This is part of FMG's ongoing pledge to support local charities and one example of their commitment to preventing vehicle incidents from occurring in the first place, rather than managing them when they do.

Ingenium Dynamics enables Embrace to track our ambulances and monitor the ways in which our vehicles are being driven. An on-board device in every vehicle captures and interprets information relating to vehicle location, journey times, speed, acceleration, braking and cornering. Our drivers are encouraged to take responsibility for their own driving style and have access to online training modules to address any specific issues highlighted through the system, such as speeding or harsh braking.

Below is an Ingenium Dynamics data snapshot from February 2018 for illustration; it allows us to review correct driving style, monthly mileage and monthly journeys. On average Embrace travels 54,000 miles a year by road.

5. Embrace aeromedical service

The philosophy behind Embrace's aeromedical service is to ensure that our patients have access to the best form of transport depending on clinical condition, distance, weather and logistics. This will often be a road ambulance, but may be a fixed wing aircraft or helicopter.

Working with our partners we are able to provide a comprehensive NHS service and have developed the capability to transfer ventilated patients by fixed wing aircraft (IAS Medical[4] and Air Alliance[5]) and by helicopter (The Children's Air Ambulance[6]). The important relationship with our local HEMS service (Yorkshire Air Ambulance[7]) continued, allowing us to get specialist teams and equipment out to the patient's bedside at our more distant hospitals. We also have a partnership with a government search and rescue contractor (Bristow[8]). When working with TCAA, IAS and Air Alliance we are fully accredited by the Commission on Accreditation of Medical Transport Systems.

[4] iasmedical.com

[5] air-alliance.de

[6] thechildrensairambulance.org.ok

[7] yorkshireairambulance.org.uk

[8] bristow.com/

Aeromedical Report 2018

Embrace
Yorkshire & Humber Infant & Children's Transport Service

31,000 patient-kilometres travelled

5 partners …

TCCA (The Children's Air Ambulance), Charitable provider, Augusta Westland AW109 or AW169 helicopter

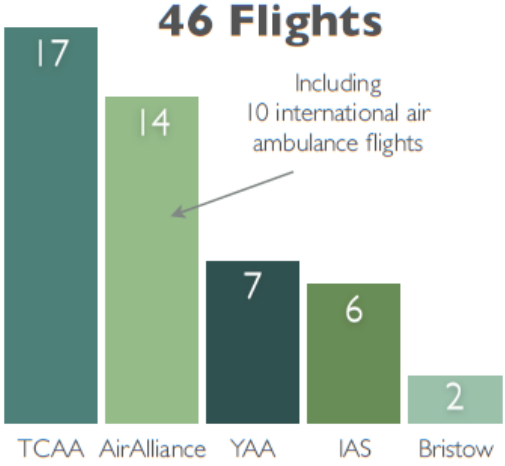
YAA (Yorkshire Air Ambulance), Charitable provider, Airbus H145 helicopter

Air Alliance *Commercial air ambulance company, Lear 35 or Challenger fixed-wing aircraft*

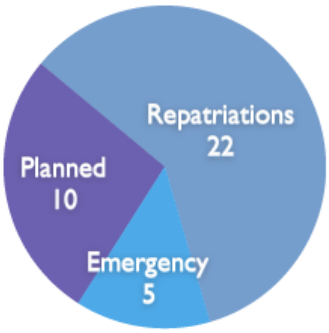
IAS Medical Commercial air ambulance company, King Air 200 fixed-wing aircraft

Bristow Government search and rescue contractor, Sikorsky S-92 helicopter

46 Flights



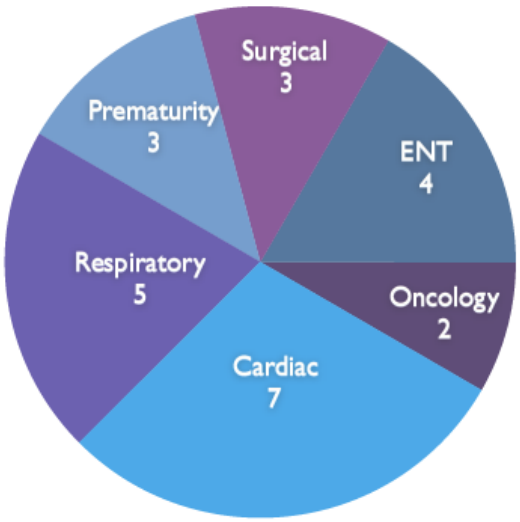
Patient Moves

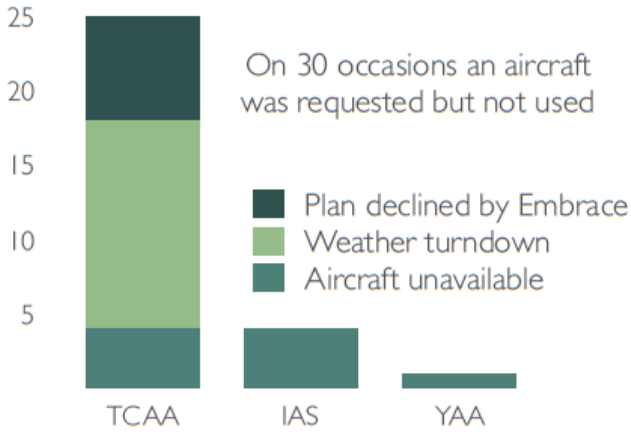


Team Moves

Clinical Categories

(excluding repatriations)





On 30 occasions an aircraft was requested but not used

- Plan declined by Embrace
- Weather turndown
- Aircraft unavailable

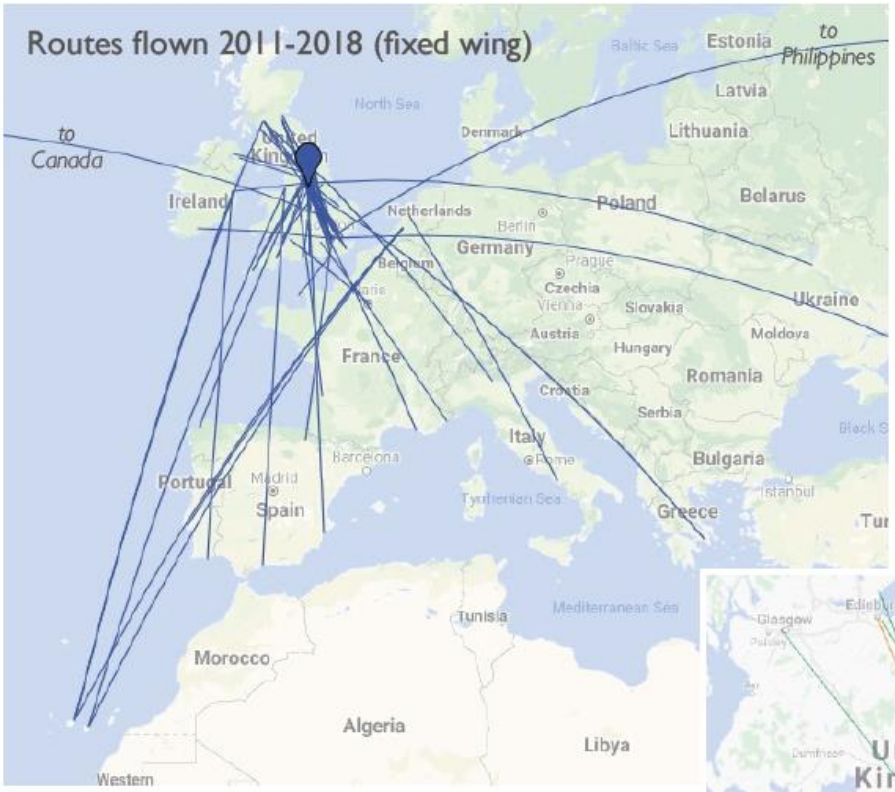
*An analysis of YAA team moves for 2018 showed a 44% reduction in Decision-Response Time for flying when compared to matched road journeys, and an average time saving of just under an hour.

Bristow | Maritime and Coastguard Agency

the children's AIR AMBULANCE

YORKSHIRE AIR AMBULANCE

IAS Medical | Air Alliance



Embrace

Yorkshire & Humber Infant & Children's Transport Service

Training and Education in 2018:

- 5 in-house air updates with simulation
- 4 TCAA helicopter simulation days in Doncaster
- SAR Humberside base visit
- Air Alliance fixed wing training in Birmingham

Incidents Related to Flights in 2018:

Category		Description
Equipment	4	Babypod clip missing; Incompatible vent mount; Wrong O2 cylinder in aircraft x2
Ground Transport	4	Problem with local ambulance arrangements x2; Poorly equipped local ambulance x2
Communications	3	Wrong info sent to air provider x2; Wrong risk calculated
Manual Processes	2	Staff member injured whilst loading aircraft; Patient loaded in the wrong orientation
Clinical	1	Significant desaturation whilst in aircraft on ground

Accreditation:

Embrace is fully accredited for ground, rotary-wing and fixed-wing transport with CAMTS, the Commission on Accreditation of Medical Transport Systems, a non-profit agency dedicated to evaluating medical transport services against industry established safety criteria. Embrace is the only service in the UK and one of only seven services outside the USA to be accredited. Additionally, Embrace are the first service to be awarded CAMTS EU accreditation.

camts

Commission on Accreditation of Medical Transport Systems

Quality Improvement:

Embrace has submitted four complete years of data to GAMUT. The Ground Air Medical Transport Quality Improvement Collaborative uses the GAMUT database as a free resource for transport teams to track, report, analyse and compare their performance on transport-specific quality metrics.

GAMUT™

Ground & Air Medical Quality in Transport

6. Feedback

Since Embrace was first established we have invited feedback from stakeholders including patients, parents and referring/receiving hospital staff. There are feedback forms on our website which can be completed and emailed directly to the service.
Since January 2018, Embrace have been participating in the national DEPICT study; a three year study looking differences in access to Emergency Paediatric Intensive Care and care during Transport including parental experience.

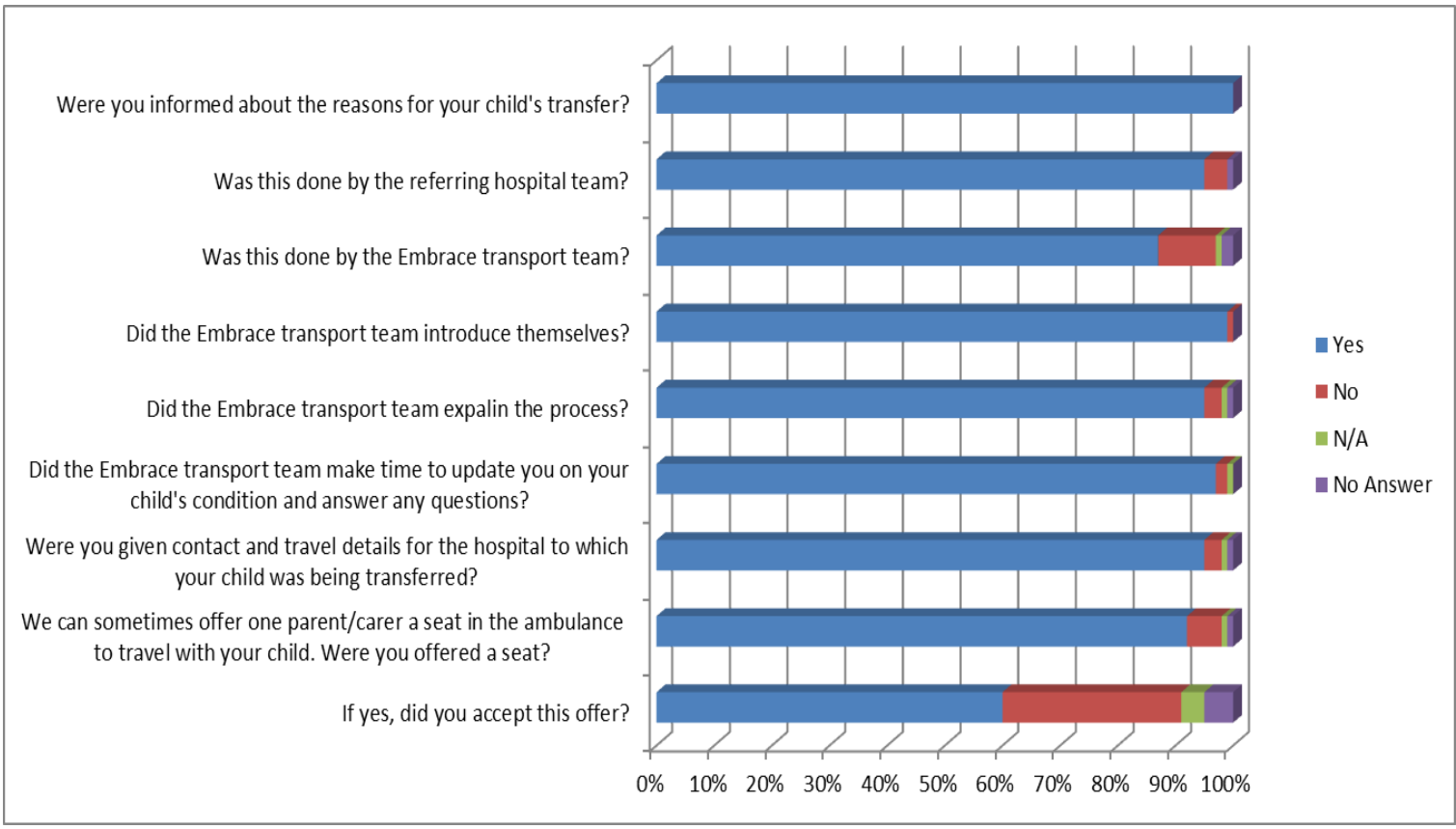
Embracing parents

Embrace aims to offer one parent the opportunity to travel with their baby/child. Parent's views of the service are collected throughout the year using an anonymous feedback form. Parents are also able to email their feedback regarding their experience.

The table below show the results from our parental feedback work.

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Referrals	**285**	**286**	**285**	**334**	**242**	**293**	**284**	**300**	**288**	**262**	**248**	**254**
Paediatric Transfers	38	35	38	45	31	33	45	63	57	55	53	41
Neonatal Transfers	129	157	136	151	124	147	127	126	123	124	111	131
Total Transfers	**167**	**186**	**174**	**196**	**155**	**180**	**172**	**189**	**180**	**179**	**164**	**172**
Forms Distributed	97	102	90	114	114	109	102	186	105	89	103	114
Forms Returned	16	10	14	6	9	13	8	10	6	13	8	12
Distribution Rate	58%	55%	52%	58%	74%	61%	59%	98%	58%	50%	63%	66%
Response Rate (from issued forms)	16%	10%	16%	5%	8%	12%	8%	5%	6%	15%	8%	11%
Overall Response Rate	10%	5%	8%	3%	6%	7%	5%	5%	3%	7%	5%	7%

Parent feedback responses



You said, we did

Communication difficulties between patients, families and healthcare staff can result in complaints, criticism and dissatisfaction with the service that has been provided. Therefore, following on from feedback received, Embrace has ensured the following actions have been completed.

- Interpersonal skills on informing parents critical news is being worked on and improved. Team members are aware of their own practice.
- Team members now have more of an awareness of situations when handover details could be overheard.

Embrace has developed its aeromedical transport capability and as a consequence there is greater interaction with other service providers. We therefore need to ensure that Embrace's core values of family centred care are maintained.

- Parent leaflets are now available for both fixed wing and rotary air transfers
- As team members gain competence and confidence in air transport, there is now discussion on a case by case basis as to the appropriateness of taking a family member on the flight

The population of Yorkshire & Humber is culturally diverse and some families cannot speak or understand English so additional leaflets in Urdu, Bengali, Polish and Slovak have been produced.

What the parents say about Embrace

"Thank you for keeping in contact throughout, looking after our little girl and a thoughtful xmas present as well."

"Great service and a really caring attitude. Please pass on my thanks to the team who attended. Thank you to all."

"The team were very friendly and talked you through everything that was happening and put you at ease throughout the journey. Our son was very comfortable and safe and didn't panic at all due to the lovely friendly team. For this we all thank you."

"Our first Embrace team supported my husband and I in the transfer of our son. The team were the most amazing team and we are so grateful for everything they did. The nurse and medic are angels, we could not thank them enough for all they did for us and our son. Fantastic practitioners, very competent and so compassionate which comes from being just wonderful people. The second team were equally as amazing. Thank you Embrace."

"A fantastic service and I cannot thank them enough for their care and professionalism throughout the transfer."

"Carry on doing an amazing job. Thank you for everything that you do!"

"My husband could of travelled with our daughter but we knew she was in safe hands so he stayed with me. The service was fabulous at such a traumatic time, the fact that they brought our daughter to us just before they transferred her was a nice touch considering the circumstances."

"The Embrace Team were fantastic offering answers to all our questions and just the right level of support."

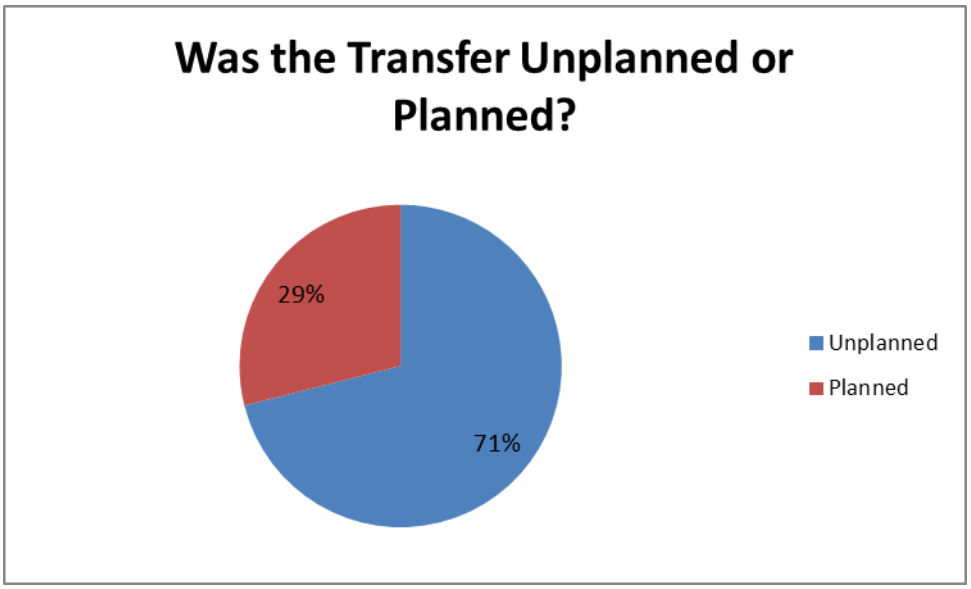
Sharing of feedback

Parent feedback is reported quarterly to the Embrace Reference Group. In addition, the feedback and learning points are shared with Embrace staff and link nurses from across Yorkshire & Humber. Embrace have established links with the Patient Advice and Liaison Service (PALS) at SC(NHS)FT for parents who may wish for Embrace to provide a formal response.

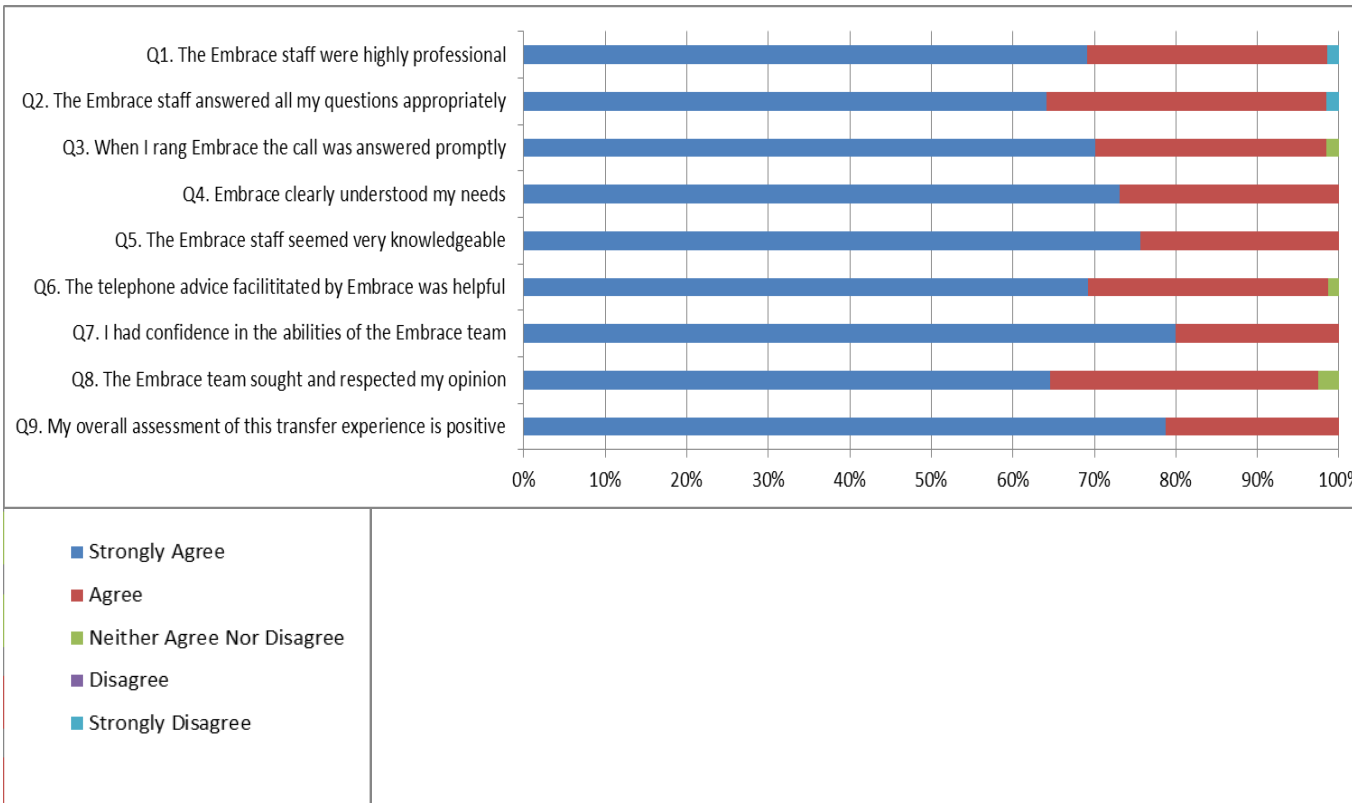
Referring and receiving unit feedback

Feedback forms are available online, but once a year Embrace aims to produce a snapshot survey by distributing paper copies to referring and receiving unit teams. Forms were distributed over the two month period November-December 2018. The results are presented below.

<u>Referring unit feedback to Embrace</u> (n=81) 4 more than 2017
Respondent's professional group:
HCA: 0
Nurse: 23
Specialist Trainee/ANP: 15
Consultant/Associate Specialist: 20
Unknown: 23

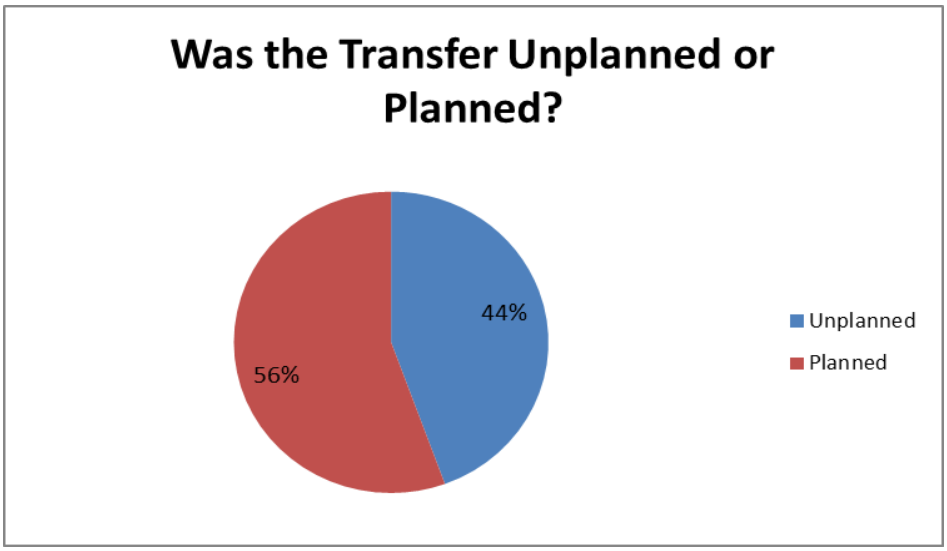


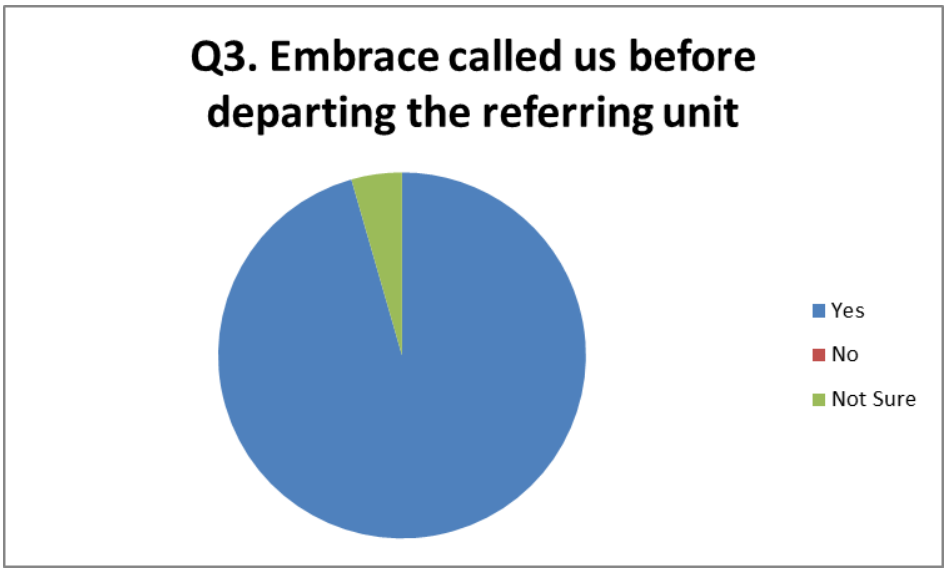
Feedback about the Embrace service is extremely positive. We have met our aim of receiving more feedback concerning the referral process, with a vast increase in the number of questionnaires completed by the referring member of staff. The elimination of blank questionnaires being returned reflects a successful change to the physical presentation of the questionnaire and envelope.

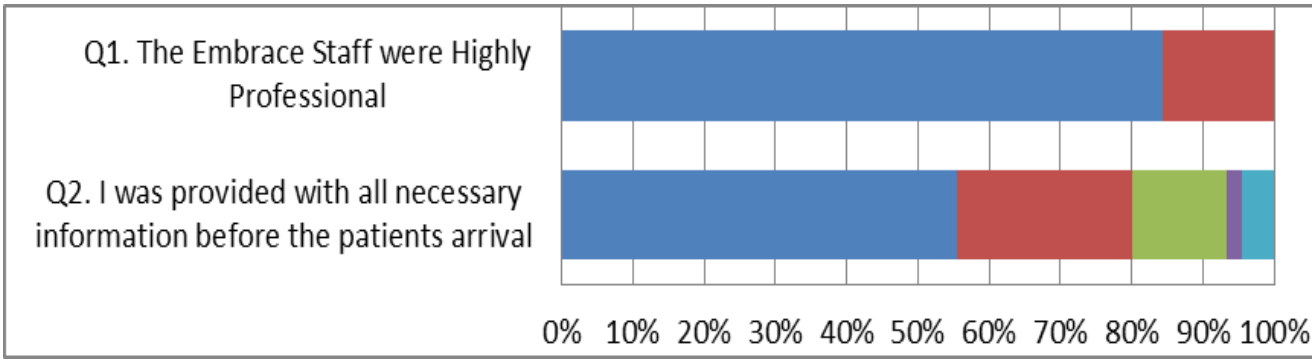


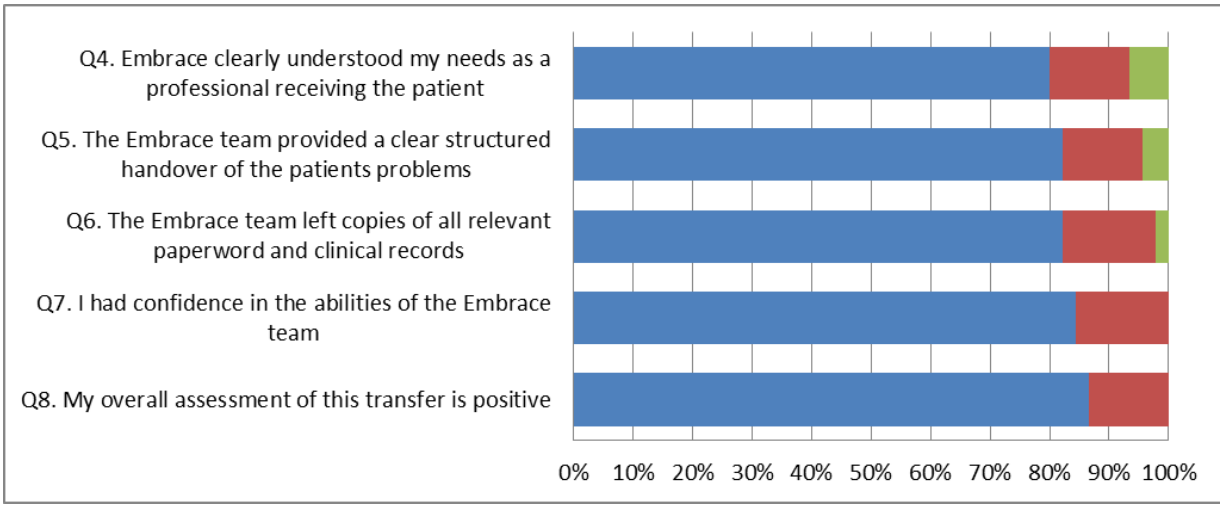
<u>Receiving unit feedback to Embrace</u> (n=45) 2 fewer than last year

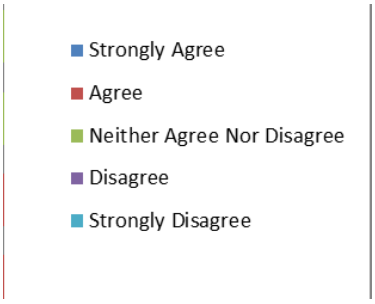
Respondent's professional group:
HCA: 0
Nurse: 24
Specialist Trainee/ANP: 7
Consultant/Associate Specialist: 0
Unknown: 14




Q3. Embrace called us before departing the referring unit
Yes
No
Not Sure


Q1. The Embrace Staff were Highly Professional
Q2. I was provided with all necessary information before the patients arrival
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%


Q4. Embrace clearly understood my needs as a professional receiving the patient
Q5. The Embrace team provided a clear structured handover of the patients problems
Q6. The Embrace team left copies of all relevant paperword and clinical records
Q7. I had confidence in the abilities of the Embrace team
Q8. My overall assessment of this transfer is positive
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%


Strongly Agree
Agree
Neither Agree Nor Disagree
Disagree
Strongly Disagree

7. Clinical governance and quality improvement

Embrace has a robust clinical governance structure focussed on safety and quality. We are accredited for critical care transport by ground, fixed wing and rotary wing from the Commission on Accreditation of Medical Transport Systems (camts.org and camtsglobal.org). In 2018 we integrated the SC(NHS)FT new Datix web-based incident reporting and risk management software into our safety management system.

Utilisation review

All referrals and transfers are reviewed the day after by a consultant to identify any issues that needs urgent action or clarification. Safety reports are completed and a trigger list flags up cases for more detailed analysis in a multi-professional forum.

Safety review meetings

Incident reports can be filled in by any member of the team and an open, just culture is promoted. All reports are initially reviewed by the Lead Nurse, acting as the Safety Officer and an appropriate action plan made. There is follow-up on the results of actions for all events at the monthly Safety Review Meeting to ensure loop closure is achieved. A summary is presented at the monthly Quality Improvement Meetings.

The reports are also reviewed weekly by the SC(NHS)FT incident grading group. Any re-grading, clarifications and further action points are communicated back to Embrace. Embrace is represented at the monthly Divisional Clinical Quality Meeting.

Quality improvement meetings

Monthly meetings chaired by the governance lead occur with representation from every staff group (medical, nursing, call handling and drivers). The meeting covers quality improvement, audit, service evaluation, guideline development, risk management, safety and equipment.

Our service partners also attend Embrace Quality Improvement Meetings on a rotational basis.

Quality improvement data

Embrace continues to submit data to three benchmarking organisations to help drive quality improvement. Links to the reports from these organisations can be found at embrace.sch.nhs.uk

a) Paediatric Intensive Care Audit Network (PICANet)

Every PICU and paediatric transport team in the UK and Eire submit quality data to this national organisation which publishes an annual report.

b) Neonatal Transport Group (NTG)

The UK Neonatal Transport Group collates data from every neonatal transport team in the UK over a 6 month period January to June every year. The annual returns are presented to allow comparison data and benchmarking relating to activity, key performance indicators and service provision.

c) Ground and Air Medical qUality Transport (GAMUT)

GAMUT is a US based database which tracks, reports and analyses performance on key transport specific quality metrics allowing comparison with other teams. Metrics apply to adult, paediatric and neonatal transport. It is hosted by Cincinnati Children's Hospital with support from the Air Medical Physicians Association (AMPA) and the American Academy of Pediatrics Section on Transport Medicine. Embrace began submitting data in January 2015, the first transport service in Europe to do so.

Peer review

Embrace paediatric critical care transport systems were peer reviewed by the NHS England Quality Surveillance Team in April 2018. The report is available at embrace.sch.nhs.uk

Regional meetings

There is Embrace representation by a member of the consultant team at regional clinical expert groups and strategy group meetings. These include trauma, surgery, anaesthesia, paediatrics, critical care, neonatology and maternity services.

Embrace sit on the Neonatal ODN and Paediatric Critical Care ODN executive boards, as well as being represented at clinical forums.

Audit

All staff groups are encouraged to be involved in audit projects. Most Specialist Trainees carry out an audit project in their 6 month placement supervised by a consultant. Projects are registered through the Clinical Governance Department at SC(NHS)FT.

The majority of audits have resulted in changes to our practice and have been presented at local, regional and international meetings.

Completed & presented audit and service evaluation projects 2018/2019

Level 1 Rolling projects

PICANet
R Trent, F Rajah

GAMUT
S Hancock, F Brearley, N Evans, L Jordan, F Rajah

Level 2 Trust/commissioned projects

Parental views of transport service
L Kay, J Hervo

Questionnaire for referring and receiving hospitals
J Sharpe

Level 3 National Accreditation projects

National Neonatal Transport Group (NTG) annual data return
C Harrison, S Hancock, F Rajah, R Trent

GAMUT Waveform Capnography QI Collaborative
F Rajah, S Hancock, F Brearley, N Evans

Level 4 Clinician and Divisional Interest

Is Embrace meeting your needs?" questionnaire for referring and receiving hospitals
J Sharpe, C Duggan

Achieving Therapeutic Hypothermia in Transport within Target Range
N Evans, R Thomspon, J Redhead, C Harrison

Neonates Referred to Embrace Transport Service for Planned Repatriation to Local Hospitals
A Bean, C Harrison

Evaluation of the Use of Antenatal Magnesium Sulphate Prior to In-Utero Transfer
A Shaw, H Talbot

Neonatal Temperatures Post Peripheral Cannula Insertion for Repatriation with Embrace Transport Service
J Redhead, R Thompson

Cardiopulmonary Resuscitation (CPR): An Audit of Embrace Transfers
M Winton, F Rajah

"Just to let you know…."
A Talbot, F Rajah

Acute call activation
N Wilby, A Talbot, B Manzoor

Evaluation of HDU transfers
R Schoner

Audit of Thermoregulation using the Babypod II and Cosytherm Mattress
M Pearsall

Shift overrun monitoring
K Fletcher, R Kent

Retrospective audit of the use and transport of blood and blood products during patient transfers
C McNeilly

Stabilisation - what takes the time?
A Bean, E Abou-Ebid, S Hancock

Unplanned extubations
C Beaves, S Hancock

Mortality meetings

Embrace have monthly internal mortality review meetings. We also attend mortality & morbidity meetings in hospitals around our region when Embrace has been involved in the care of the infant or child. These are invaluable in developing relationships between Embrace and referring and receiving units and help to encourage a learning environment. Embrace also sit on regional ODN mortality review panels.

Guidelines

Guideline development is managed through a quarterly Guideline Group meeting. All guidelines are reviewed annually in-house, and 3 yearly through the SC(NHS)FT Quality and Audit department. Completed guidelines and standard operating procedures are ratified through the SC(NHS)FT Clinical Effectiveness and Audit Committee. Guidelines are available on SC(NHS)FT intranet and relevant guidelines are also available publicly on the Embrace website embrace.sch.nhs.uk

Research

Embrace promotes a research culture and have encouraged the multi-professional team to collaborate on projects. A number of papers have been presented and published during 2018/2019.

International research projects

PRIME -NIHR Global Health Research Group on PReterm bIrth prevention and manageMEnt)
UK Neonatologist: C Harrison

National research projects

DEPICT – Differences in access to Emergency Paediatric Intensive Care and care during Transport depict-study.org.uk
Principle Investigator for Embrace: F Rajah

PTSD, Moral Distress and Burnout in PICU Staff
Principle investigator for Embrace: S Hancock

Local research projects

MSc project: Identifying challenges around limitation of treatment agreement (LOTA) decisions among paediatric professionals in the Yorkshire and Humber region.
M Ali (supervisor F Rajah)

MSc project: Comparing Paediatric early warning scores with PIM2 scoring for PICU transport referrals.
S Arghode (supervisor F Rajah)

Nitric on the Move
K Spinks, F Rajah, S Courtney, C Mclean

Publications

Cath Harrison

Medical Insight: Neonatal patient transport
AirMed and Rescue, March 2019
Brathwaite I, Harrison C

Family Integrated Care- whats all the fuss about?
Arch Dis Child Fetal Neonatal Ed. 2019;104(2):F118-F119
Young A, McKechnie L, Harrison CM

In a Resource-Limited Setting, Is Oral Ibuprofen Effective for Closure of a Patent Ductus Arteriosus in a Preterm Neonate?
J Trop Pediatr. 2018;64(5):409-417
Cartledge PT, Umuhoza C, Harrison CM

Five-country manikin study found that neonatologists preferred using the LISAcath rather than the Angiocath for less invasive surfactant administration
Acta Paediatr.2018 May;107(5):780-783
Fabbri L, Klebermass-Schrehof K, Aguar M, Harrison C, Gulczynska E, Santoro D, Di Castri M, Rigo V

Safety of meningococcal group B vaccination in hospitalised premature infants.
National Neonatal Audit Network-
Arch Dis Child Fetal Neonatal Ed. 2019;104**:**F171-F175
Kent A, Beebeejaun K, Braccio S, Kadambari S, Clarke P, Heath PT, Ladhani S; Harrison C- collaborating author

Fatemah Rajah

High-flow nasal oxygen therapy in bronchiolitis
Emergency Medicine Journal 2019;36:248-249
T Jaconelli, F Rajah

Ian Braithwaite

Medical Insight: Neonatal patient transport
AirMed and Rescue, March 2019
Brathwaite I, Harrison C

Oral presentations

Royal Aeronautical Society International Aeromedical Transport Conference, London, April 2018

Small people can be transport patients too
I Braithwaite

UK National Prehospital and Critical Care Transfer Conference, Glasgow, April 2018

CAMTS, what is it good for?
I Braithwaite

RCN Critical Care & Flight Nursing Forum, London, October 2018

Experiences of complex paediatric retrievals.
I Braithwaite

European Academy of Paediatric Societies Congress, Paris, November 2018

Convulsive Status Epilepticus
S Davies, F Rajah

Poster presentations

Neonatal ODN conference, Wetherby, April 2018

Wellbeing and Resilience
Rose Kent, Jen Mason

WFPICCS Singapore, June 2018

Cardiopulmonary resuscitation during the care of the Embrace Transport Service
M Winton, F Rajah, L Jordan

NTG conference Liverpool, November 2018

Maintaining Quality Improvement and Implementing a Safety Huddle into a Neonatal and Paediatric Transport Service
J Redhead, J Whiston

Have Blood, Will Travel: Specialised Blood Transport Boxes in Neonatal Transport
C McNeilly, E Leaney, A Baxter, H Talbot

Druggling at Embrace
R Thompson, T Carolan, K Fletcher, K Spinks

Evaluation of the Use of Antenatal Magnesium Sulphate Prior to In-Utero Transfer
A Shaw, H Talbot

Using the RCPCH e portfolio to support the development of trainee Advanced Nurse Practitioners at a combined infant and Children's Transport Service
J Chubb, L Whiteman

Stabilisation - what takes the time?
A Bean, E Abou-Ebid, S Hancock

Lectures, presentations, academic and community engagement

Cath Harrison

Session chair
REaSoN conference, July 2018

Neonatal training pathway
How to develop a special interest
Perinatal Trainee Day, Royal College of Paediatrics, London, October 2018

Early stabilisation and non invasive respiratory support
Bukavu and Goma Hospitals, Democratic Republic of Congo, March 2019

Accreditation and quality in transport
Neonatal UK Transport forum, Nottingham, March 2019

Fatemah Rajah

Palliative Care Network: Embrace and Palliative Care
December 2018

Embrace and ENT, Leeds
November 2018

Ray Trent

Community engagement, Embrace introduction
21/06/2018 Forge Valley School, Sheffield

13/07/2018 Dearne Advanced Learning Centre, Barnsley
27/09/2018 Penistone Grammar School, Barnsley
09/10/2018 Tickhill Mothers Union, Doncaster
18/10/2019 Doncaster College
06/11/2018 Doncaster College
20/11/2018 Outwood Academy (Carlton), Barnsley
07/12/2018 Barnsley College
13/12/2018 Barnsley College
15/12/2018 Outwood Academy (Shafton), Barnsley
26/02/2019 Trinity Academy (Thorne), Doncaster
04/03/2019 Outwood Academy (Carlton), Barnsley
06/03/2019 SCH - National Apprentice Week

International and national committees and working groups

Suzanne Palmer and Jo Whiston

UK Neonatal Transport Group

PICS Nurse Manager's Group

PICS Acute Transport Group

Steve Hancock

PICS Acute Transport Group

ALSG NAPSTaR course working group member

Board member, Air Medical Physicians Association (AMPA)

Board member (AMPA representative), Commission on Accreditation of Medical Transport Systems - Global

NHS England paediatric transport services peer reviewer

Cath Harrison

Chair of UK Neonatology College Specialty Advisor Committee for RCPCH

UK Neonatal Transport Group Chair

UK NTG Air Chair

Member of RCPCH Invited Review Panels for UK

Lead Neonatologist for Birthlink charity

Management Board Member for LTHT charity, OptIn

NLS Course Director – Rotherham, Leeds, Gibraltar

CESR advisor for GMC

Editorial Board, Infant Journal
Scientific Committee member REaSOn
MBRRACE panel member

Fatemah Rajah
Embrace PICANet representative
CAMTS Global site surveyor
Yorkshire and Humber Congenital Heart Disease Network
NHS England paediatric transport services peer reviewer

Jessica Oldfield
Training Program Director Paediatrics South (Diploma Course Support)
Module Organiser Communication & Management Skills, PGDip Child Health

Hazel Talbot
Joint Guideline and Education Lead, Yorkshire & Humber Neonatal Operational Delivery Network

Ian Braithwaite
Chair The Children's Air Ambulance Equipment User Group
NHS England paediatric transport service peer reviewer


EXIT
EXIT

8. Education and training

The on-going education and development of all team members remains a priority for Embrace. To achieve this goal the education team have developed an education plan reflecting SC(NHS)FT, PICS, NTG and CAMTS guidance to achieve local national and international standards.

This has been a year of change for the education team. Ian Braithwaite and Claire McLean continued in the role. Jo Whiston moved from the education team to being interim lead nurse in May.

The education plan has been delivered at both a trust level in mandatory training sessions and by the Embrace education team.

In-house education

A continued focus for the education team has been to maintain the requirements to achieve CAMTS re-accreditation. Clinical procedures highlighting high risk, low frequency events remain a key part of the education plan to maintain high standards of knowledge and skills throughout the Embrace team.

The Crisis Resource Management (CRM) courses have been utilised to reinforce key standard operating procedures and develop team situational awareness and communication.

Our competency document has been revised and updated to incorporate both neonatal and paediatric national standards. Rotating Specialist Trainees all completed the new competency document, attended the SC(NHS)FT induction for medical staff as well as a two week induction programme at Embrace combining theoretical knowledge and practical skills and scenarios training and testing. Our quarterly Procedures, Equipment, and Skills Training continues to drive our team forwards.

Outreach education

Members of the Embrace team from all disciplines have delivered regional outreach education in the form of talks, small group teaching, in situ simulation and OSCE's covering the Embrace process, reviewing data and clinical cases. We have had an increasing number of observers visit and accompany the transport team from nursing specialities, anaesthesia, emergency medicine, neonatal and paediatric backgrounds.

Members of the Embrace team also provide their time and expertise to teach on accredited life support and resuscitation courses regionally, nationally and internationally, as well as specialist airway courses.

- European Paediatric Life Support (EPLS)
- Advanced Paediatric Life Support (APLS)
- Neonatal Life Support (NLS)
- Advanced Trauma Life Support (ATLS)
- Paediatric and Infant Critical Care Transport (PICCTS)
- Sheffield Children's Advanced Trauma (CAT)
- Generic Instructor Course (GIC)
- Advanced Resuscitation of the Newborn Infant (ARNI)
- Leeds Neonatal Airway course
- GOSH Neonatal Airway course

Embrace continues to work closely with the Neonatal and Paediatric Operational Delivery Networks to assist with the delivery of regional training relating to transport.

Link nurse days

We held two link nurse days over the year providing a platform for education and discussion for all nurses involved with resuscitation, stabilisation and transfer of neonates and children. These were well attended and are an ideal way to share information and learn. The days also provide a forum for clinical governance issues to be discussed and allow direct feedback to Embrace to help develop our service.

9. Charity

Embrace hold regular Charity meetings to discuss donations and the use of funds to improve the service and safety of our patients. We now write to people who have made contributions to thank them and inform them of what their generous donations have funded.

Many of the people who have donated to Embrace over the years have had family members transferred by the teams, and as a way of saying thank you, have raised fantastic sums.

10. Embrace in the news

12 September 2018
Doncaster Today
Lifesaving children's air ambulance set to be based in Doncaster
Children's lives could be saved as a youngsters' air ambulance is set to be based permanently at Doncaster airport

14 September 2018
Doncaster Free Press
Children's Air Ambulance unveiled at its new home at Doncaster airport, as crew reveals landing area near Doncaster Royal Infirmary
It will work closely with Embrace, a specialist, round-the-clock transport service for critically ill infants and children in Yorkshire and the Humber

7 January 2019
Colostomy UK
Babies with a stoma: Harry's Story
Harry was born in York Hospital, on 6th February 2018, following an otherwise healthy pregnancy. We were overjoyed to welcome him as our second child, but within 48 hours, we knew something wasn't quite right.

14 January 2019
The Star
Grateful Sheffield dad completes skydive for ambulance service which save his 13 week premature son's life
The father of a baby boy who was born 13 weeks premature has raised £2,000 for the ambulance service his son relied on in the weeks and months after his birth by jumping out of a plane at 15,000 feet.

22 January 2019
Barnsley Chronicle
Grateful dad reaches for sky to say thanks
A GRATEFUL Barnsley dad has skydived from 15,000ft reaching speeds of 120 mph for a charity in recognition of the lifesaving treatment it provided for his son.

15 April 2019
AirMed and Rescue Magazine
Neonatal patient transport
Ian Braithwaite and Dr Cath Harrison, both members of The Yorkshire and Humber Infant and Children's Transport Service (Embrace), discuss the requirements of neonatal air transportation, outlining some of the conditions and factors which affect the systems already in place

11. Work in progress for 2019/2020

A number of projects are underway at Embrace for the year 2019/2020:

- 10 year review of neonatal and paediatric transport services in Yorkshire & Humber
- Securing access to a flight incubator for UK transfers
- Optional appraisal for new trolleys and incubators
- Application for re-accreditation by Commission on Accreditation of Medical Transport Systems Global camtsglobal.org
- Development of a post-CCT transport fellowship programme
- Quality Improvement projects to improve activation and stabilisation times

12. Appendices

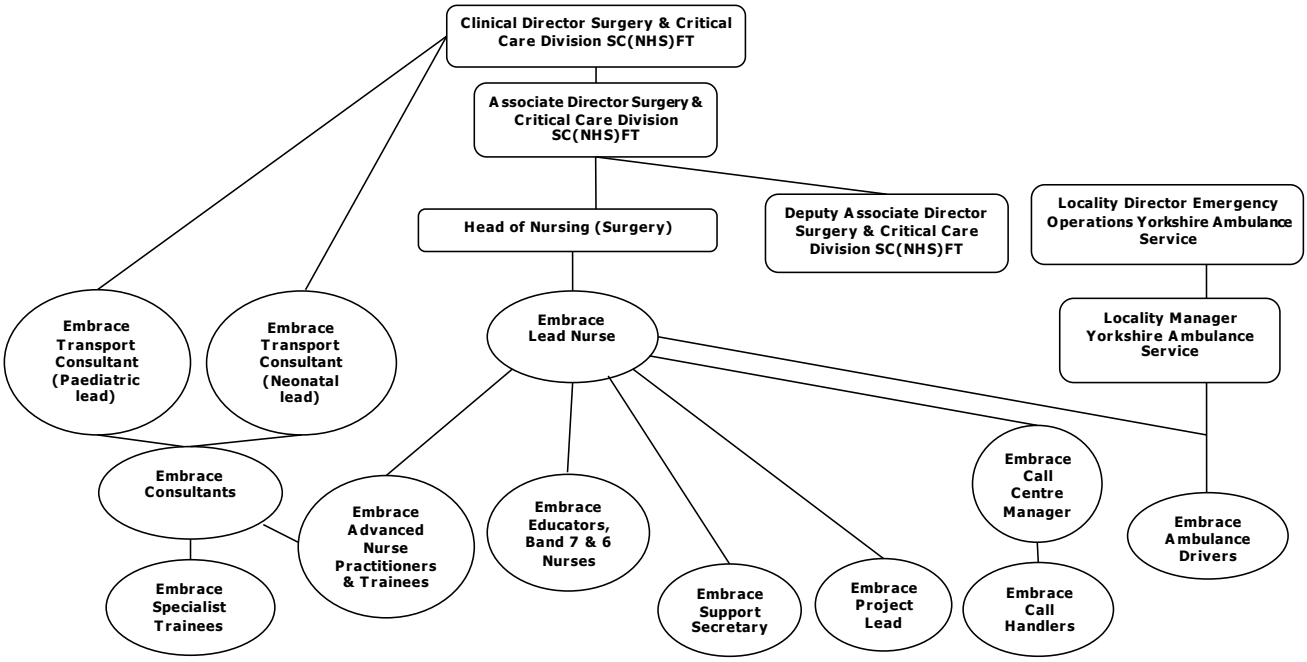
Appendix 1

Embrace aeromedical utilisation data 2018/19

2018 - 2019	Neonatal Team	Neonatal Patient	Paediatric Team	Paediatric Patient	Totals
	3	**25**	**4**	**18**	*50*
Type					
Repatriation		18		6	**24**
Planned		3		8	**11**
Emergency	3	5	4	3	**15**
					50
Acuity					
Low dependancy		15		8	**23**
High dependancy		3		6	**9**
Intensive Care	3	7	4	4	**18**
					50
Reason					
Cardiac		2		9	**11**
ENT/Airway					**0**
Haem/Onc		2			**2**
Neurology					**0**
Post Treatment Return		21		6	**27**
Prematurity	3	1			**4**
Respiratory		1	4		**5**
Sepsis					**0**
Surgical		1			**1**
					50
Mode					
Rotary	3	13	4	11	**31**
Fixed Wing		12		7	**19**
					50
Operator					
YAA	3		4		**7**
Bristow		1		1	**2**
TCAA		12		10	**22**
IAS		3			**3**
Air Alliance		9		7	**16**
					50

Appendix 2

Embrace organisational chart and team profile



Associate Clinical Director Surgery & Critical Care Division SC(NHS)FT – Mr Hesham Zaki

Associate Director Surgery & Critical Care Division SC(NHS)FT – Jim Butler/Lauren Hicks

Embrace Lead Nurse – Suzanne Palmer/Jo Whiston

Embrace Lead Consultant (Neonates) – Dr Cath Harrison

Embrace Lead Consultant (Paediatrics) – Dr Steve Hancock

Locality Manager YAS – Matthew Lomas

Appendix 3

Embrace staff profile

The Embrace team that delivers this front line service consists of:-

- Consultants from specialist backgrounds in Paediatric and Neonatal Critical Care who are skilled and experienced in managing the medical care of very sick infants and children

- Specialist Trainee doctors who rotate from the regional paediatric rota; these doctors bring with them general paediatric experience and they leave with enhanced skills in triage, leadership, stabilisation and transfer to take back to the regional hospitals

- Advanced Nurse Practitioners with backgrounds in Paediatric and Neonatal Critical Care who are experienced in managing the medical care of very sick infants and children

- Nursing staff who have come from both neonatal and paediatric critical care backgrounds so have vast skills and experience in caring for critically ill babies & children

- Call handlers and a call centre manager to ensure that the telecommunications system runs smoothly; the call handlers provide a professional and reassuring first point of contact

- Yorkshire Ambulance Service (YAS) drivers; Embrace is an integrated team and the drivers play a key part ensuring the transfers are safe and efficient

Appendix 4

Embrace staff list 2018/19

Consultants

Dr Steve Hancock	Dr Cath Harrison	Dr Jessica Oldfield
Dr Fatemah Rajah	Dr Hazel Talbot	Dr Dan Gilpin
Dr Chris Vas	Dr Louise Jordan	Dr Mo Gnanalingham

Specialist trainees

Dr Bilal Manzoor	Dr Aimie Woodhead	Dr Yousef Gargani
Dr Any Chamberlain	Dr Becu Schoner	Dr Amy Talbot
Dr Julian Howes	Dr Muhammed Ali	Dr Andrew Fester
Dr Laura Dalton	Dr Neme Leton	Dr Victoria Dachtler
Dr Simon Davies	Dr Sandeep Budhiraja	Dr Khurram Mustafa
Dr Swaroop Arghode	Dr Brian Wilkinson	Dr Soma Sengupta
Dr Mohammed Abdel-Reheim		

Lead nurse

Suzanne Palmer	Jo Whiston

Clinical nurse educators

Ian Braithwaite	Claire McLean

Advanced nurse practitioners

Karen Spinks	Jan Hervo	Rose Kent
Nia Evans	Sally Courtney	Helen Doyle
Lydia Whiteman (trainee)	Jo Chubb (trainee)	

Senior transport nurses

Jo Sharpe	Tracey Carolan	Ann Jackson
Karen Fletcher	Hayley Smith	

Transport nurses

Alison Clay	Emma Gilpin	Jennifer Dive
Charmaine Hamer	Natalie Webb	Natalie Wilby
Francois Brearley	Louise Kay	Chloe Fisher
Catherine McNeilly	Rebecca Russell-Ward	Victoria Webb
Rebecca Thompson	Justine Redhead	Caroline Duggan

Call centre manager

Ray Trent

Call handlers

Audrey Pike	Jesssica Butler	Jessica Medlam
Stacey Harwood	Sheila Holland	Deborah Newbould
Louise Roper	Amy Stephenson	Lindsey Lynthall
Jessica Green		

Administrative support

Lisa Cooke	Louise Pymer

YAS drivers

Steve Howarth	Steve Holmes	Sally Mitchell
Steve O'Marr	Paul Summerscales	Paul Vickers
Lisa Walledge	Sally Levitt	Dan Douglas
Pete Fox	Lee Boyes	Julie Coddington
Fiona Thornton	Richard Eaton	

Appendix 5

Embrace Transport Service Work Programme 2018/19

Category	Objective/Action	Responsibility/ Involvement	Timescale	Date completed/Comments
Service improvement & development	EMAP – Improving resources and information available for patients with complex transfer needs. Developing education and training on domiciliary ventilators	JO, RT, JR	March 2019	Complete development of resources to support transfer of patients with complex needs including user guides for commonly used domiciliary ventilators March 2019 – user guides now available, EMAP resource file in use and regularly updated.
	New transport specific uniforms to be introduced	SH, JO, JW, CH	April 2018	Option appraisal completed. Jackets and trousers ordered and in manufacture by StephanH. Polo tops to be ordered. June 2018 Uniforms delivered and in use October 2018 – quality issue identified with reflective stripes. Agreement for repair with StephanH March 2019 – repairs still ongoing

	Vehicles 1) New ambulances to be designed and built 2) New Contract to be signed	SH, HT SH, CH, SM, LH	August 2018	Final design to be agreed and build slots identified. Negotiations with YAS on new contract. June 2018 – 3 new vehicles delivered and in use March 2019 – YAS contract still to have final sign off
	Review of current premises and assessment of need for internal modifications or move to new premises	CH, SH, JW, RT, SM	December 2018	Highlighted in CAMTS report Activity and staffing numbers reviewed. Break clause in lease in 2019, risk assessment completed by SCH and Embrace April 19th - Serious patient safety concern raised by NHSE peer review team relating to lack of facilities for cleaning dirty equipment December 2018 – Business case submitted to NHSE for additional funding to facilitate expansion of current premises March 2019 – Additional funding secured. Negotiations ongoing with landlord.
	5 year plan developed:	CH, SH, JW, RT	December 2018	Links in with need for larger premises

	1) Development of extended call handling capability for neighbouring region 2) Development as 1 of 3 national neonatal air transport teams, providing increased availability and equity of access to air transport for England	CH, IB		March 2019 – not currently on agenda Review of national service specification changes and impact on transport activity and staffing March 2019 – focus is currently on NTG and includes communication with national commissioning. National service specifications for Neonatal and Paediatric transport to be reviewed by CRGs in 2019/20
	Development of new database to replace Access database	RT, FR, SH, SM	March 2019	Complete development work with Medicus (Mela Solutions), assess if fit for purpose, potential re-tender March 2019 – Medicus system assessed – not sufficient progress to continue.
	Review of cleaning contract	RT, SM, JW	Sept 2018	Assessment of current cleaning contract in terms of quality and value for money. Potential re-tender March 2019 – re-tender of contract in progress with 4 interested companies
Education	TCAA project- training and education process for new aircraft	Educators	May 2018	New aircraft online May 2018 flying from Doncaster April 26th – TCAA now

				operational July 2018 March 2018 – new aircraft fully operational. Initial training complete and on-going training in progress
	Outreach- time critical training programme	Educators, SH	March 2019	Establish programme with 2 courses per year March 2019 – date for a course in Hull September 2019 agreed with ODN.
	Conduct a training needs analysis, review & development of Education Plan	Educators	June 2018	Reconfiguration of education team completed February 2018. Dec 2019 Education plan updated for 2019, further recruitment planned for Education post
	Developing Band 7 role and responsibilities, new Band 7 education days	Educators and Band 7s	June 2018	Coaching and peer support session booked, draft programme in development, including Network developments March 2019 – each Band 7 nurse is spending 3 months shadowing Lead Nurse as part of developing leadership roles
Peer review & accreditation	CAMTS progress report addressing areas of concern	SH, CH, JW, LP	April 2018	Draft completed April 26th – CAMTS board decision – on-going accreditation
	Respond to National Peer Review findings	SH, CH, JW, LP	August	Review site visit April 18th

			2018	March 2019 – Peer review action plan fully completed except for finalising plans for expanding premises and provision of DCC PAs in PICU for lead consultant
Audit	Submit data to UK Neonatal Transport Group for national benchmarking Review and action areas highlighted by NTG comparison with other transport teams	FR, RT, SH, CH CH	September 2018 December 2018	Data collection Jan – July 2018. Data quality check in progress. September 2018 – data submitted December 2018 – actions agreed and QI groups identified
	Submission and review of PICAnet data	FR, RT, SH	March 2019	Monthly data quality check by SH March 2019 – all data up to date, audit from PICANet shows high quality data submission
	Submission and review of GAMUT data Review and action areas highlighted by GAMUT comparison with other transport teams	SH, FR, LJ, FB, NE, CH	February 2019	Submission of data monthly (within 60 days) allowing tracking of performance March 2019 – 2018 report received, actions agreed and fed into QI groups Monthly review of GAMUT data planned in QI meeting
Research	Recruitment to DEPICT study	FR	March 2019	Local principle investigator in national multi-centre study March 2019 – data collection completed, awaiting initial results

	Involvement in research project : PTSD, Moral Distress and Burnout in PICU Staff	SH	March 2019	Local principle investigator in national multi-centre study October 2018 – results of Embrace data received and circulated. Time Out facilitator training completed for core group
Patient and carer feedback	Increase response rate for parent feedback (note, paediatric carer feedback currently suspended as part of DEPICT study)	LK	March 2019	QR code linking to website feedback form added to patient information leaflets March 2019 – QR code in use, low response rates have not significantly improved. Improved parent packs approved by charity. These will include information on feedback mechanisms.

LH – Lauren Hicks
SM – Sam Maher
SH – Steve Hancock
CH – Cath Harrison
JW – Jo Whiston
RT – Ray Trent
IB – Ian Braithwaite
LJ – Louise Jordan
FB – Francois Brearley
NE – Nia Evans
JR – Justine Redhead
LK – Louise Kay