

Children's Acute Transport Service CATS



Picture reproduced with kind permission of the parents of Master James Brennan

Annual Report 2014/15

The Children's Acute Transport Service (CATS) is in its fourteenth year of providing dedicated specialist paediatric intensive care transport services for the North Thames, Hertfordshire, Bedfordshire, Essex as well as Norfolk, Suffolk and Cambridge Regions.

In 2014/15, the CATS service handled 2303 clinical calls and mobilised an expert team on 1214 patient transports.

This represents an average of 6 calls for assistance and 3 patient transports on every day of the year.

Highlights

The Commissioners supported the funding of a third "twilight" emergency team over the winter surge period (November to January) which had a positive impact on service delivery.

CATS continued to offer an outreach simulation programme for referring hospitals, as well as a variety of one day study days.

CATS engaged in joint aeromedical crew resource management training between CATS and CEGA, involving simulation, emergency scenarios and aircraft environment.

CATS engaged in joint Children's Air Ambulance Partner Team Training with STRS, Embrace, NEWTS and WATCH transport teams.

CATS engaged in joint Survival Training with an external provider



The CATS service submits data to the Paediatric Intensive Care Audit Network (PICANet), the national audit of paediatric intensive care activity. Reports from PICANet will provide the ability to benchmark the CATS service against other PCC transport services in the UK.

CATS staff published several peer-reviewed research articles and presented at various national and international conferences.



Single point of contact

CATS provide a single point of contact for advice, bed finding, and a paediatric intensive care retrieval team for critically ill children

0800 085 0003

EXECUTIVE SUMMARY

In 2014/15

REFERRALS: n= 2303

Referral outcome	Number (%)
CATS team mobilised	1214 (53%)
Advice/consultation only	555 (24.3%)
Refused - within scope of care	67 (5.5%)
Refused – outside scope of care (HDU transport etc.)	261(21.5%)
Cancelled by referrer	132 (5.7%)
Bed finding request	43 (1.9%)
Courtesy call	19 (0.8%)

More than 24% of referrals are resolved with advice/consultation without the need for patient transport.

Advice calls are an important part of CATS activity because early discussion may, in some cases, avert the need for PICU admission.

Referrers have repeatedly highlighted this aspect of CATS activity as an important role of the service.

Specialist transports n=1214

Destination hospital	Number (%)
Great Ormond Street Hospital	488 (40.2%)
St Mary's Hospital	218 (18.0%)
Royal Brompton Hospital	134 (11.0%)
Addenbrooke's Hospital	123 (10.1%)
Royal London Hospital PCCU	100 (8.2%)
South Thames PICUs	65 (5.4%)
Other units	47 (3.9%)

77.4% of the patients were transported to PICUs in North Thames (Great Ormond Street Hospital, St Mary's Hospital, Royal Brompton Hospital and the Royal London Hospital), while 10.1% of patients were transported to Addenbrooke's Hospital in Cambridge.

CATS also undertook transports for some supra-regional services such as burns (5 children to St Andrews Burns Centre, Chelmsford) and extra-corporeal membrane oxygenation (5 children to ECMO centres other than Great Ormond Street Hospital).

CATS provides the highest quality paediatric intensive care for patients and their families from the point of referral to the handover of care at the receiving paediatric intensive care unit

BACKGROUND

The Children's Acute Transport Service is a specialised service designed to make intensive care rapidly available to critically ill children in North Thames and East Anglia.

Most hospitals do not have a Paediatric Intensive Care Unit (PICU) - paediatric intensive care is only provided in a small number of specialist units. However, most critically ill children initially present to hospitals without a PICU. The Children's Acute Transport Service (CATS) facilitates the safe and speedy transfer of these children to a PICU.

CATS deploy a specialist paediatric intensive care team to assist in the treatment and transport of critically ill children. We offer telephone consultation, liaison with sub-specialists and skilled inter-hospital transport within one service.

Members of the CATS team have led the development of national standards for paediatric intensive care transport within the UK via the Paediatric Intensive Care Society Acute Transport Group (PICS- ATG).

MISSION STATEMENT

The Children's Acute Transport Service aims to provide the highest quality paediatric intensive care for patients and their families from the point of referral to the handover of care at the receiving paediatric intensive care unit.

- *Single regional focus for provision of paediatric critical care for patients presenting as an emergency*
- *Provides 24 hour, 365 day, Consultant led telephone advice and a triaging facility for all referrals*
- *Committed to improving and developing the provision of critical care and critical care transport for all patients within its scope of care.*

SERVICE STANDARDS

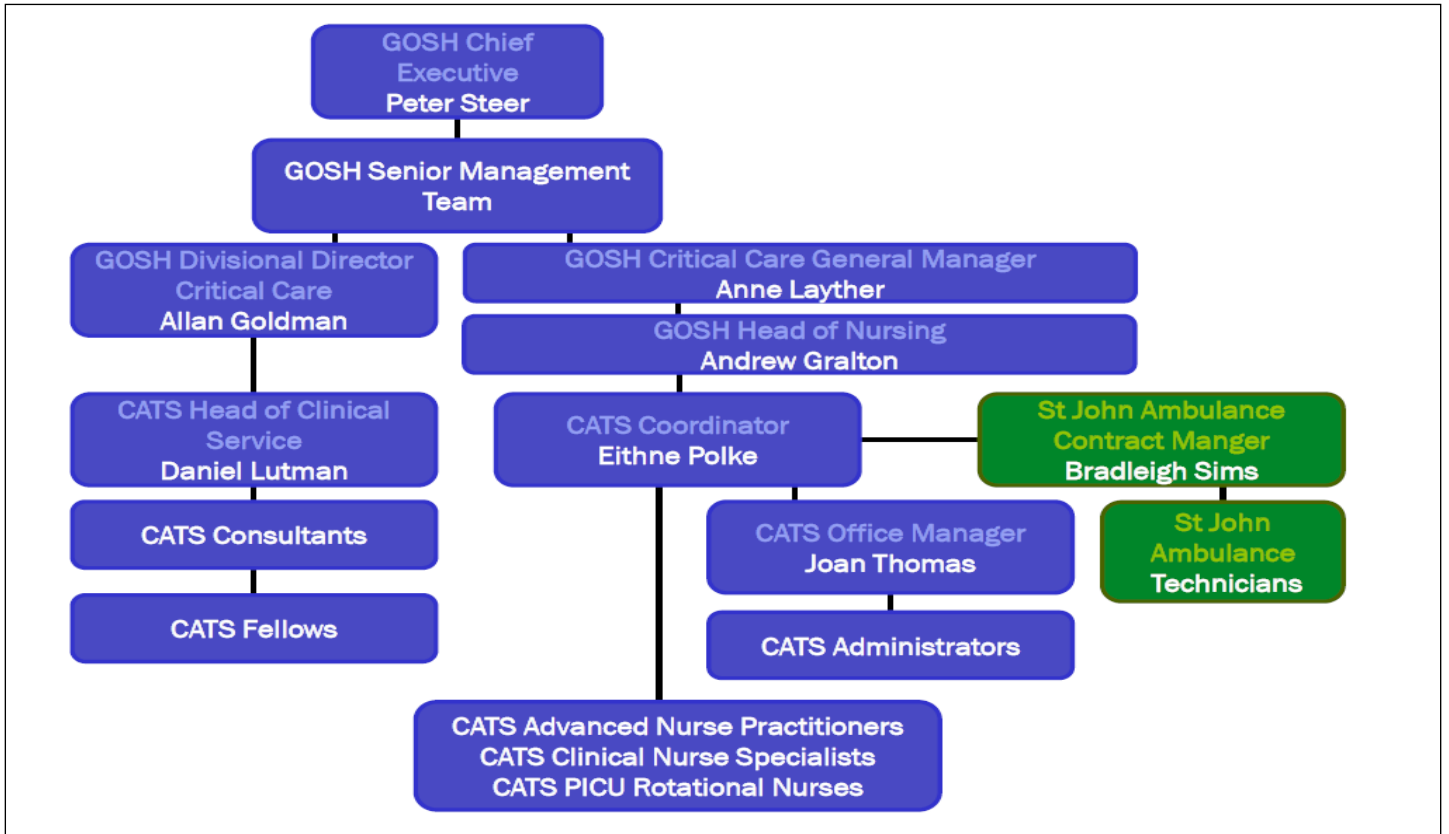
A complete copy can be found on the CATS website: www.cats.nhs.uk

The following core standards apply:

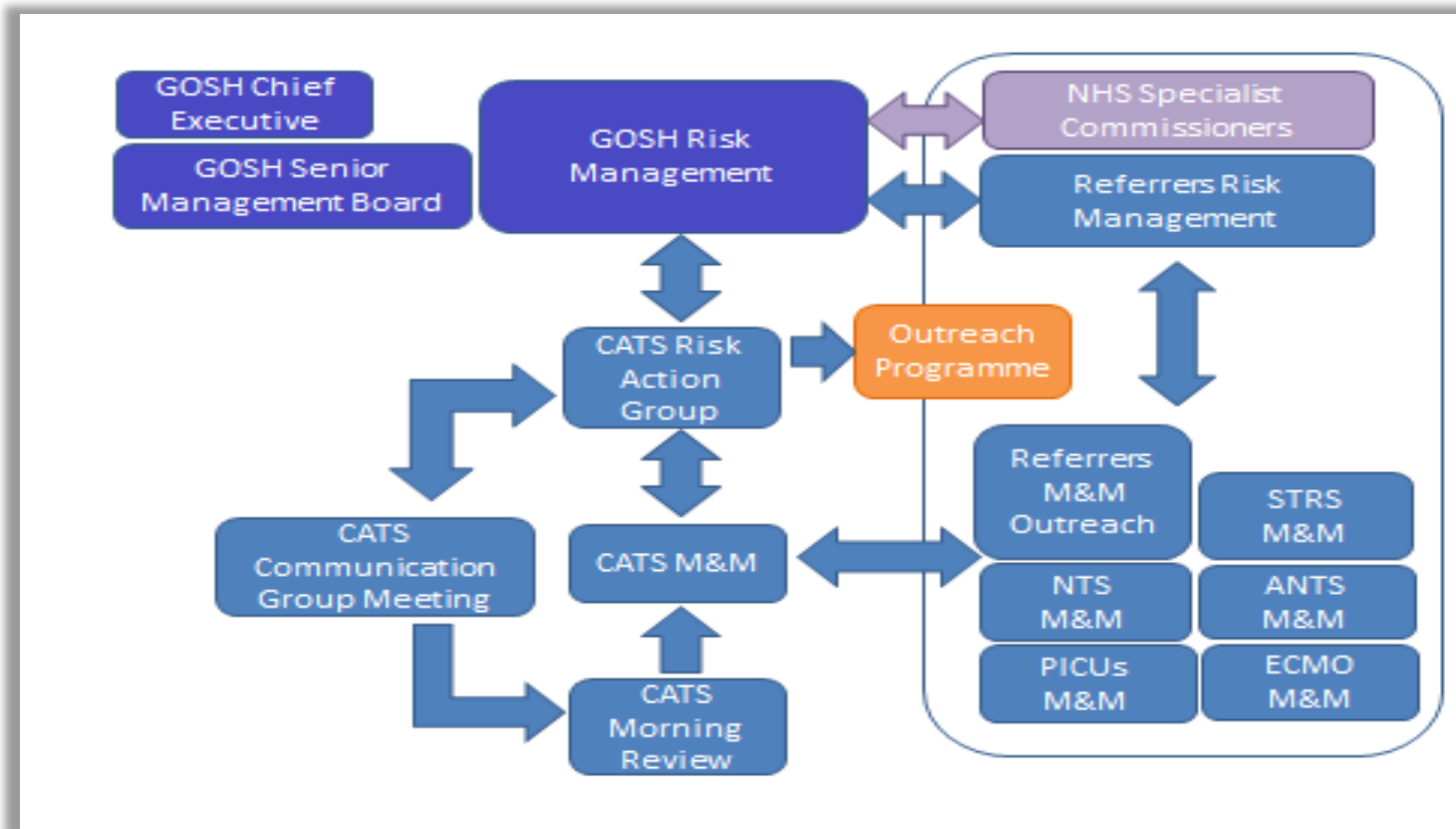
1. The CATS service will meet the Standards for the 'Retrieval and Transfer of the Most Critically Ill Children' identified by the Paediatric Intensive Care Society 4th edition of the document 'Standards for the Care of Critically Ill Children' 2010.
2. Any child within North Thames within CATS scope of care can expect the PCC transport team to be mobilised within 20 minutes from decision to transfer the child.
3. Any child within East Anglia requiring paediatric intensive care can usually expect the PCC transport team to be mobilised within 1 hour from decision to transfer, depending on transport mode.
4. When the capacity of the CATS service is exceeded, referrals will be prioritised according to clinical need.
5. Early expert advice on clinical management by Consultants trained in Paediatric Intensive Care is available to referring hospitals at all times.
6. Education and training of staff in all aspects of specialist dedicated PCC transport is a fundamental part of the service.
7. An Outreach Program will be offered by CATS to referring institutions.
8. Written protocols and guidelines are available online for external referrers for the management of the most frequently encountered clinical conditions.
9. Rigorous audit is undertaken and presented to both East Anglia and North Thames provider units on a regular basis not exceeding yearly.
10. At times of paediatric intensive care bed shortage, all patients within CATS scope of care will be transported to the nearest appropriate paediatric intensive care bed unless the risk of doing so is deemed greater than providing care at the referring institution.

CATS Organisation Structure

The CATS service is part of the management structure at Great Ormond Street Hospital for Children NHS Foundation Trust



CATS Safety management Structure

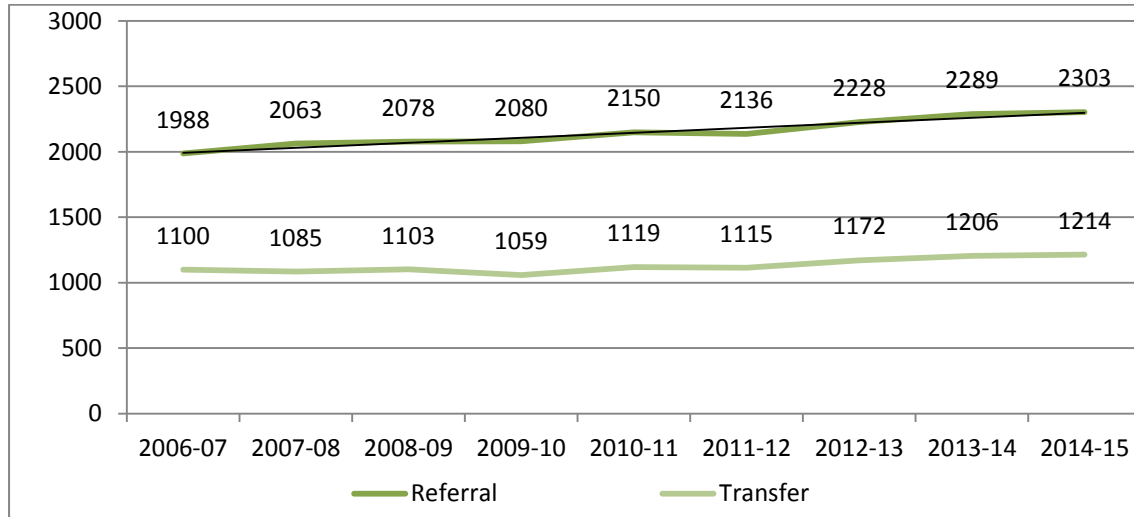


CATS CLINICAL ACTIVITY Referrals

Since 2005 there has been a gradual increase in referrals.

In the graph below referrals are plotted in dark green, transports in light green. More transports were delivered by the teams this year than in any other. There has been an overall increase in referrals of 10-15% during the last 10 years.

(Vertical axis = number of transports, Horizontal = financial year)

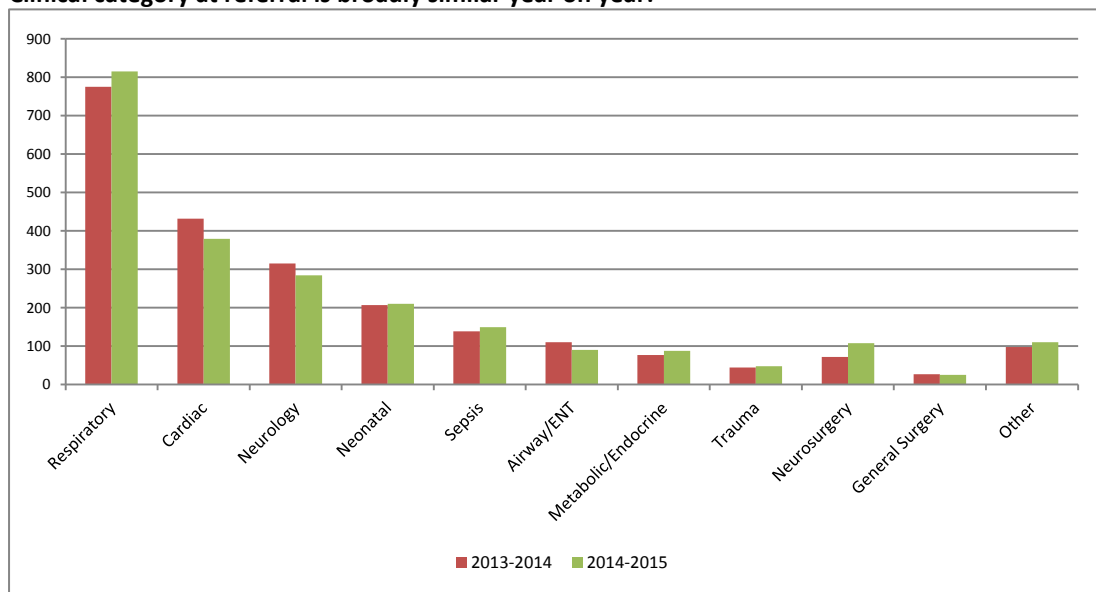


Some transport requests cannot be fulfilled – these are classified as refusals. Most refusals are not within CATS agreed scope of care (n=261).

In 2014- 2015 a total of 67 transports were refused because both CATS teams were already tasked in comparison to 86 last year. Analysis may indicate that this was as a result of the ‘Twilight Team’.

30 other referrals were refused because they fell into the category of “time critical transfers” (Surgical abdomen/neurosurgical emergency) that could not wait for a specialist transport team.

Clinical category at referral is broadly similar year on year:



(Vertical axis = number of referrals, Horizontal axis = Diagnostic category)

DETAILED CLINICAL ACTIVITY

PCC Transport

The CATS team was mobilised on 1214 occasions which is more than on any previous year. The outcome of all team mobilisations is illustrated below:

PCC transport outcome	Number (%)
Transferred	1181 (97.3%)
Patient improved – with the CATS team	10
Patient died – team on route	4
Patient died – with team at DGH	7
Retrieval cancelled	12

The majority of children were transferred to one of the 4 PICU providers in North Thames (77.4%).

North Thames PICU's	Number
Great Ormond Street Hospital	488
St Mary's Hospital	218
Royal Brompton Hospital	134
Royal London Hospital	100
Evelina Children's Hospital	33
King's College Hospital	17
St George's Hospital	15
Destinations outside London	Number
Addenbrookes Hospital	123
St Andrews's Burns Centre	5
ECMO centre (non-GOSH)	5
John Radcliffe Oxford	1
Southampton	3
Other	72

The CATS team continues to work in close co-operation with the other regional transport services such as the London Neonatal Transport Service (NTS), the South Thames Retrieval Service (STRS) and the Anglia Neonatal Transport Service (ANTS). During busy periods, these teams cross-cover to utilise existing PICU/NICU beds efficiently.

The team interactions and their outcome are depicted below:

Referral from	Requests	Accepted	Refused
STRS	50	12	38
NTS	32	16	16
ANTS	12	2	10
SORT	12	4	8

Patient acuity of CATS transfers was high – the majority of patients were invasively ventilated, and a significant number needed inotrope support and inhaled nitric oxide during transport.

Invasive ventilation rate	75%
Vasoactive agent use	29.8%
Inhaled NO	3.4%
Median PIM-2 score	6.4%

Transport Mode (Road or Aeromedical)

The majority of transfers were undertaken by road, using dedicated CATS ambulances (97%). 25 transfers were performed using helicopters or fixed-wing aircraft (3%).

Team Composition

Team composition in the majority of transfers was PICU Fellow + PICU Nurse.

An Advanced Nurse Practitioner led 4% of the PICU transfers and a CATS Consultant joined the team to provide additional support or expertise on 10% of all PCC transports.

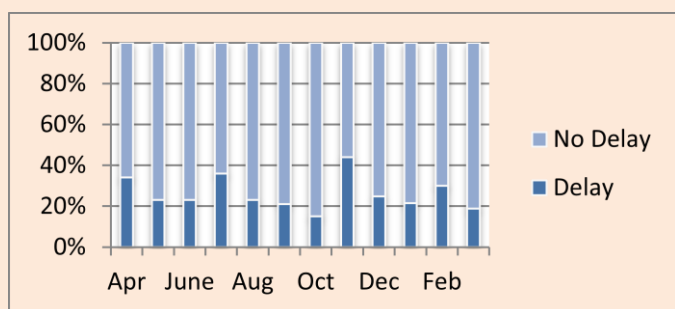
QUALITY AND SAFETY Performance indicators

As part of our ongoing quality and safety program, a number of performance indicators are continuously audited at CATS.

Mobilisation and stabilisation times

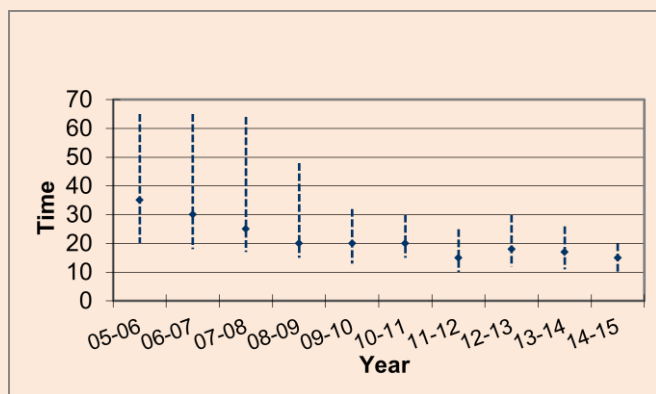
One of the service standards, and an accurate indicator of the agility of the service, is the time taken to mobilise a team once the decision to accept the patient has been made. As part of our quality improvement programme, the CATS team aims to mobilise a team within 20 minutes of acceptance.

On Average we achieve our target 74% of the time.



Achieving and maintaining this target of 20 minutes is one of a number of quality improvement processes within the service.

Mobilisation time since 2005:



The CATS team aims to provide intensive care at the referring institution – this often necessitates a period of stabilisation and assessment of stability by our intensive care team before transfer.

Time	Median (min)	IQR (min)
Mobilisation time	15	10-20
Stabilisation time	111	75-150
Total transfer time	283	220-365

Time to reach patient bedside

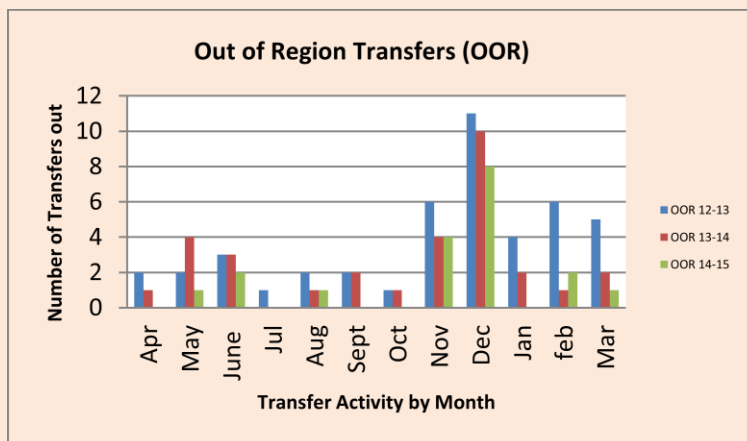
One of the PICS standards states that the retrieval team should reach the critically ill child within 3 hours of referral acceptance (4 hours for geographically isolated regions) 95% of the time. On average CATS met this target in 83% of cases

Out of region transfers

CATS continues to monitor the flow of patients from North Thames and reports directly to the commissioner for PIC services on a monthly basis. Majority of out of region transfers occur in the winter surge period. Last year we saw a significant reduction in out of region transfers to other PICUs from **45 in 2012 to 19 in 2014-15**.

The graph below:

Shows number of transports out of London (vertical axis) by calendar month (horizontal axis).



Blue line is for 2012-2013, orange 2013-2014 and the green 2014-2015.

Waiting for the CATS team > 8 hours

Some children were cared for by the District General Hospital for >8 hours. This related to a lack of PICU capacity. These children were managed locally in collaboration with the CATS team, and once a bed became available, were transferred in to PICU.

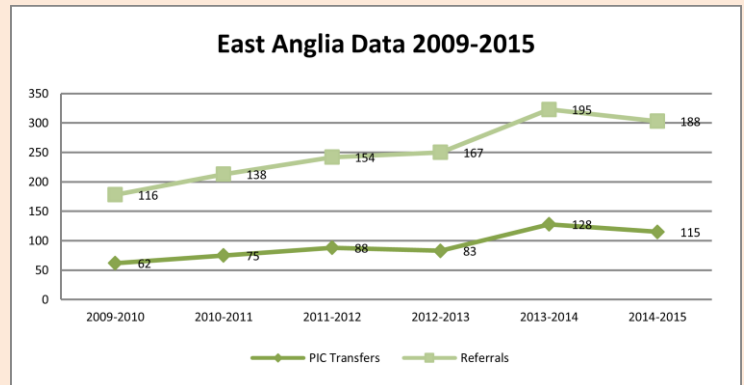
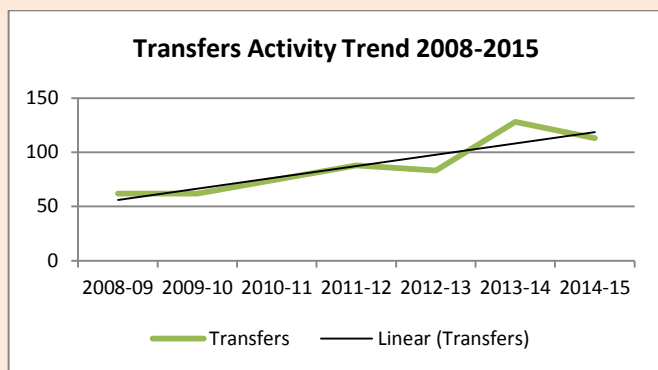
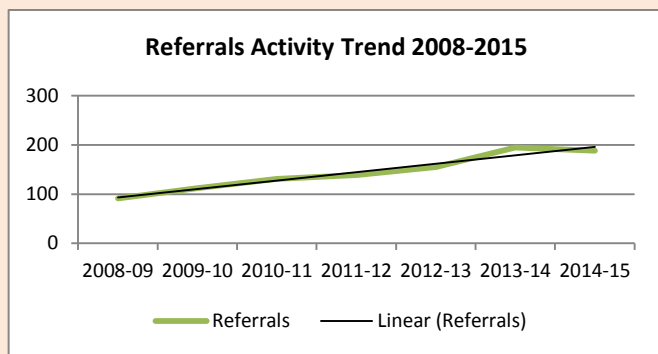
In 2013- 2014 there were **27** children who waited more than 8 hours for a PIC transport team. In 2014-2015 there were **18** children who waited more than 8 hours for a PIC transport team.

The additional 'twilight team' had the most impact in helping to reduce the wait for an available team showing a 33% reduction in the number of children waiting to be transferred to PICU.

East of England Activity Trend 2008-2015

CATS facilitates PCC transfer for the East Anglia Region and has been undertaking this activity since 2008.

Over the last 7 years there has been a significant rise in referral and PCC transfer activity



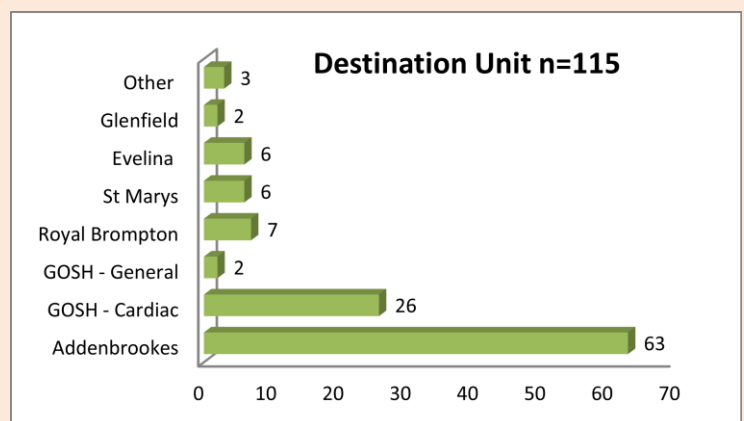
Of the 188 referrals from NSC there were 115 PCC Critical Care Transports.

The majority of transfers from the East Anglia region are into Addenbrookes PICU. Mainly children with cardiac diagnosis were transferred into the paediatric cardiac centres in London (GOSH/Evelina/RBH).

Children whose destination unit is "General PICU" are only ever transferred into London because there are no PICU beds in Addenbrookes PICU.

This number is small (n=8)

Other units relates to Broomfield Burns Centre/Norwich NICU.



Quality Initiative: CATS Third Team Analysis

Recent work undertaken by CATS and shared with the commissioners, clearly demonstrated that there is a winter surge period (November to January).

The challenge that exists within the surge period is our ability to respond to the increase in activity whilst maintaining service standards.

There are three quality markers from a service delivery perspective that are impacted on significantly during the surge period.

Mobilisation Target. The mobilisation target is 20 minutes from clinical decision that a child requires a PIC transfer.

Refusals of potential referrals that are within our scope of care (require PIC transport)

Greater than three hour wait for an intensive care transport team.

CATS put in a bid to the commissioners to fund a third team over the winter surge period and the commissioners agreed to fund this initiative.

We undertook an analysis of the impact of the third team on our quality markers:

From the 1st November – 31st January 2015, CATS piloted a third team “twilight” cover. This excluded the Christmas/New year period when there was no third team allocated over this time.

1st Nov - 31st January	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
All Referrals	685	716	689	682	726	734
All Demand for Transport	338	375	379	372	400	415
Team Mobilised	320	348	349	336	366	390
Refusals	18	27	30	36	34	25
All Demand Emergency Transport	338	374	378	371	396	412
All Mobilised Emergency Transport	320	347	348	335	362	387
Proportion of refusals	5.30%	7.20%	7.90%	9.70%	8.50%	6.00%

This winter saw the highest demand for transfers to date within our region and on analysis the lowest proportion of refusals.

We reviewed our activity over the last 6 years and when comparing the winter period of 2014-15 to the 2009-2010 winter period it is important to recognise that even though the refusal rates are similar the demand in 2009-10 was almost 20% lower than that in 2014-15.

Impact on waiting time over this time period:

(Waiting time is time from acceptance to team activation).

The table below shows the comparison between this winter (2014/15) and the previous 5 winters in terms of the average waiting time.

Time period	Average Waiting time in minutes (mobilisation)
All 2009/10 - 2013/14	77
All 2014/2015	64
Third team shifts (time window) 2009/10 - 2013/14	90
Third team shifts 2014/2015	46

It is clear that the third team had a major impact on the time to acceptance to activation of the team, almost **halving it** when comparing like for like shifts over the previous 5 years with a **p-value difference of 0.001 (highly statistically significant difference)**.

Time to bedside over 6 hours

In the data analysis the proportion of retrievals with a greater than 6 hours to bedside wait is significantly lower for shifts with three teams in 2014/15 compared to similar shifts in previous years.

Time period	Number of Transfers	Time to bedside > 6 hours	Proportion with time to bedside over 6 hours
All 2009/10 - 2013/14	1647	137	8.30%
All 2014/15	376	25	6.70%
Third team shifts (time window) 2009/10 - 2013/14	274	27	9.90%
Third team shifts 2014/15	63	1	1.60%

The third team certainly impacted on activity, CATS undertook an additional 31 transfers over the winter surge period in comparison to last year. The impact on the time from acceptance to team activation was statistically significant (p-value 0.001) as well as reduction in the number of children that had to wait > than 6 hours for a PIC transfer team (time to bedside) 9.9% versus 1.6% of children.

CLINICAL GOVERNANCE

Risk Management and Adverse Event Reporting

CATS Risk Action Group (RAG)

The Group’s aim is to ensure consistency in the quality and access to the service across the region and continue to work in partnership across the multi-disciplinary paediatric critical care teams, specialised commissioners, St John’s Ambulance Service and, where possible, with patients and their careers in planning the future of CATS. The scope of the group is to provide a forum, which promotes care to the highest standard through open dialogue, teamwork and knowledge where lessons are learned and risk is minimised and where change is continuous and rapid.

The RAG membership is made up of CATS consultants, nurses, office manager, Transport manager, PICU consultants from across North Thames units, a Consultant Paediatrician from a district general hospital and members of the Risk Management team at GOSH.

Mortality & Morbidity Meetings

Separate 6 month Morbidity & Mortality meetings (or as required) with the 4 PICUs across the region as well as super specialist services such as ECMO & Liver

Monthly (3rd Wednesday of every month) CATS Morbidity & Mortality meetings

Outreach education packages available bi-annually to the DGH which incorporates discussion on difficult cases and service improvement.

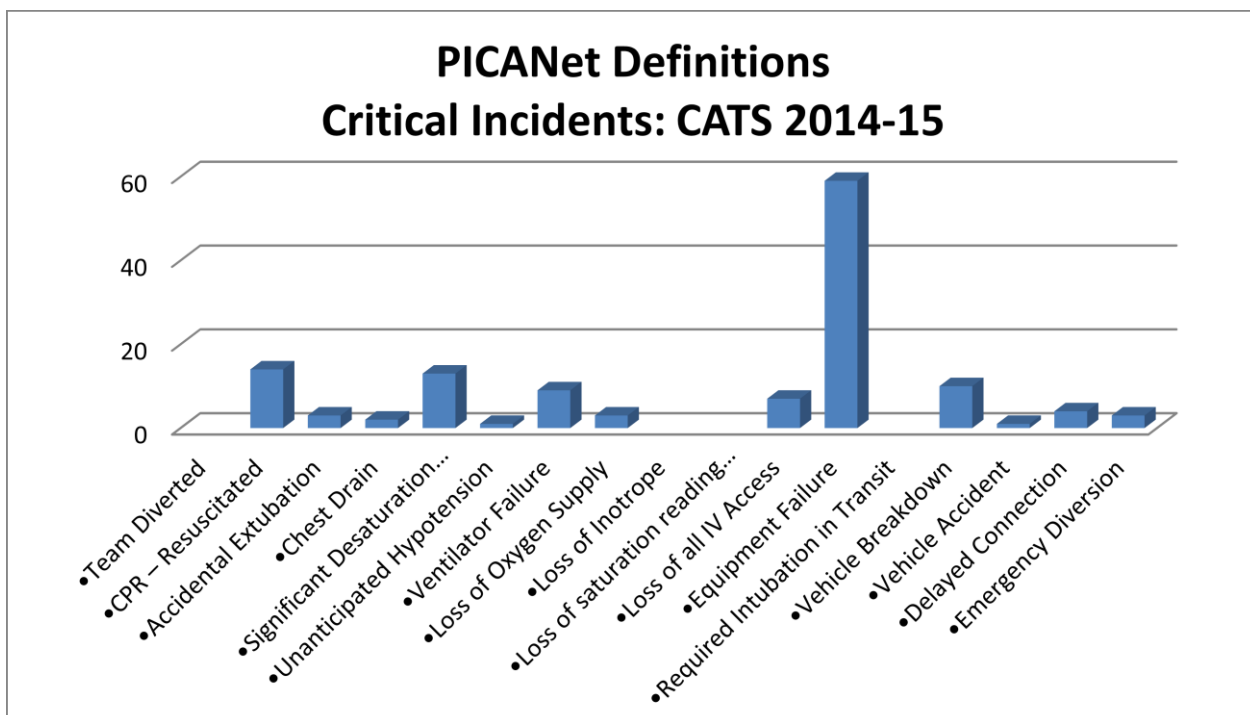
Extraordinary meetings can be called by any of the users/co-opted members.

Morning Debrief

We undertake a daily review of referral/PCC transfer activity. It is one of the key forums when it comes to managing risk in the transport environment. It allows for daily discussion of the previous 24 hours work and incorporates not just the clinical component of our work but also the operational aspects of service delivery. This means that we can instigate change rapidly.

Adverse Event Reporting

The CATS team records adverse events and near misses during the course of the transfer relating to ambulance, equipment, and patient-related activity. Adverse event reporting is encouraged to facilitate an active approach to risk reduction. Each adverse event is analysed during the daily team meeting where clinical activity from the previous 24 hours is discussed.



Education and Training Programme at CATS

There continues to be a comprehensive in-service education program at CATS, which includes:

- **Staff mandatory update days:** In 2014/15, 3 sessions were held, where all staff members working for the service attend. The focus of these days had changed considerably with us now focusing on CRM/Human factors type training
- **Fellows Induction:** 10 one-day new SIM training local induction programs were run over the past year.
- **Nurses induction:** 2 one-day sessions attended by all new starters to CATS, who then go on to work in a supervised capacity on PIC Transport.
- **SIM Training:** CATS ANP & Consultant team facilitated on a number of simulation training sessions
- **APLS / EPLS Courses:** CATS Core Nursing Team facilitated on 3 courses over the last year.
- **Ambulance Technician update days:** Annually
- **Survival Training:** a new initiative in partnership with Survival Wisdom to build resilience within the CATS Core Team working in difficult situations.
- **Rotary & Fixed Wing SIM Training:** in collaboration with our flight providers

SURVIVAL TRAINING

Training and education has primarily focused on clinical emergencies to ensure staff are prepared for almost any clinical scenario that could occur. Patient and staff safety is high priority; however, aside from standard safety measures and written protocols, practical training has not focused on staff preparedness for a non-clinical emergency such as an ambulance crash or emergency landing.

In a unique collaboration with Survival Wisdom¹ (a company owned by ex-military personnel), a two day course was designed to provide the core team with the resilience to deal with challenges they may experience on retrieval.



- **Core Curriculum Teaching Days:** Undertaken at GOSH, this complements the modular teaching for the
- ICTPICM syllabus.
- **Mortality & Morbidity:** A monthly M&M is undertaken at CATS on the third Wednesday of every month.
- **Daily Morning Review/Teaching:** Every morning CATS reviews its previous 24 hours work with a focus on encouraging clinical problem based discussions.
- **Weekly Teaching:** A timetable is in place for all staff to participate in presenting an interesting paper, review a guideline, or present an interesting case in which they have participated in the retrieval process.
- **Supervised PIC Transport:** Nursing and medical staff formed part of the PIC Transport team to be trained on a number of occasions.
- **Observer shifts:** Observers from referring institutions (PICU outreach facilitators, registrars, and consultants) accompanied the team on a number of retrievals, spending anything from a day to a week observing the whole referral/Transfer process.



The course introduced principles of survival psychology, risk analysis, provided strategies to enhance situational awareness, safety and security in the UK and during foreign travel. Practical scenarios included: ambulance crash requiring evacuation from vehicle, arriving at the scene of an accident, HazMat training, and open water survival.

The team benefitted from some novel techniques and concepts taught and from analysis by experts from a different discipline.

FURTHER CATS INTERPROFESSIONAL TRAINING

All staff, both clinical and non-clinical, will now receive training in basic survival concepts on an initial and recurrent basis. Staff employed longer term will receive more advanced practical and theoretical training.

Outreach Education and Training Programme



CATS play a pivotal role in helping referring hospitals to manage the critically ill patient and stabilise them while waiting for the transport team. This is done through regular outreach visits to facilitate case discussions as well as lectures, workshops and tutorials. In addition, the CATS website serves as a single point of high quality information including guidelines, prescriptions for drug infusions and parent information.

In 2014/15, 24 outreach sessions were organised with the DGH teams, covering over 24 of the main referrers to the service which included mobile insitue simulation, day courses and teleconferencing.

Clinical Network

Outreach activity is integral to the development and maintenance of the clinical network. The CATS teams have made themselves known to key members of staff in the hospitals that use the service.

They are therefore easily accessible on an informal basis to bring up issues regarding the service, ask clinical questions and receive immediate feedback on children that have been retrieved.

Outreach sessions allow full engagement between CATS and all those who look after seriously ill children, in order to fulfil some of the recommendations made in the Tanner report (2006). The service has made a huge effort in contacting colleagues in anaesthetics, adult ICU and accident and emergency; however, due to time constraints, it is not always possible to facilitate bi-annual sessions for all the District General Hospitals.

Network links can be contacted via CATS: 020 74305850



CATS Courses

Situation Critical is our one day inter professional course run twice a year. It focuses on the recognition and stabilization of the acutely unwell or injured child.

SHARP is our **S**evere Neonatal **H**ypoxaemia and **R**efractory PPHN course run twice a year in partnership with the Neonatal Transport Service (NTS). This course is aimed at candidates who are involved in the management of severe PPHN with clinical experts sharing their knowledge and presenting strategies to optimise patient outcome

Please contact your network lead for more details on: 02074305850

Or for further course information please visit the CATS website www.cats.nhs.uk

Research & Audit

RESEARCH AND AUDIT

Research and audit are important ongoing activities at CATS. Trainees have excellent opportunities to participate in research and audit while working on the clinical service.

Research Themes

There are several ongoing studies led by CATS investigators.

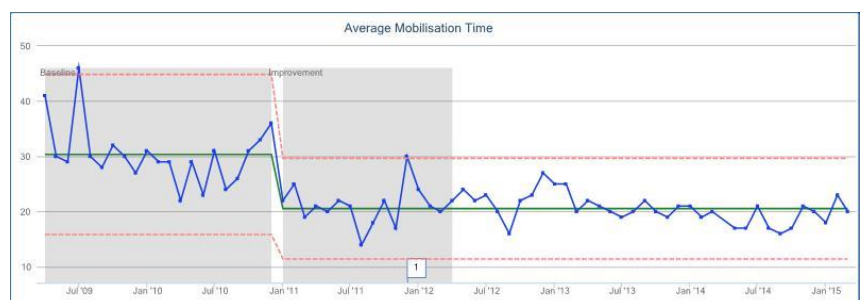
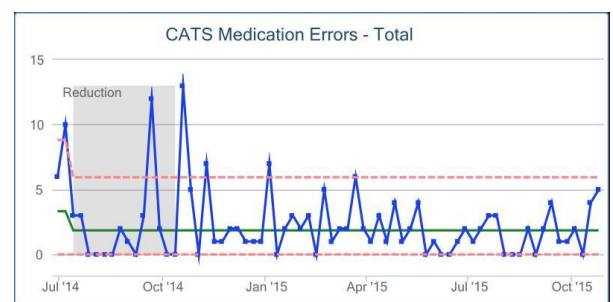
1. *Biomarkers in early critical illness (Biomarkers of Acute Serious Illness in Children – BASIC)*
2. *Long term outcomes of retrieved PICU admissions (BASIC Follow up study)*
3. *Use of high flow nasal cannula therapy in critically ill children (FIRST-ABC Feasibility Trial)*
4. *Pharmacokinetics of intravenous salbutamol in acute severe asthma (OSTRICH study)*
5. *Comparison of outcomes for teenagers treated in adult versus paediatric intensive care units (PACT study)*
6. *Development of a winter surge prediction model using operational modeling*

List of run/control audits:

- Drug Prescribing errors
- Use of exemptions (lights & sirens) during retrieval
- Adverse events occurring on transfer
- Neurosurgical emergency transfers audit
- Emergency Intubation Audit
- Mobilisation times
- Medical documentation audit
- Flight Transfers
- Child Protection Paperwork audit

PUBLICATIONS IN 2014/15

- 1) A randomized trial of hyperglycemic control in pediatric intensive care. Macrae D, Grieve R, Allen E, Sadique Z, Morris K, Pappachan J, Parslow R, Tasker RC, Elbourne D; CHIP Investigators. *N Engl J Med.* 2014 Jan 9;370(2):107-18.
- 2) Harron K, Mok Q, Parslow R, Muller-Pebody B, Gilbert R, Ramnarayan P. Risk of bloodstream infection in children admitted to paediatric intensive care units in England and Wales following emergency inter-hospital transfer. *Intensive Care Med.* 2014 Dec;40(12):1916-23.
- 3) Cvetkovic M, Lutman D, Ramnarayan P, Pathan N, Inwald DP, Peters MJ. Timing of death in children referred for intensive care with severe sepsis: implications for interventional studies. *Pediatr Crit Care Med.* 2015 Jun;16(5):410-7.



Information Technology

Several service improvement projects are ongoing at CATS that relate to the use of information technology.

CATS WEBSITE

The CATS website (www.cats.nhs.uk) is a vital source of information for the referring hospital. The website contains links to all CATS Guidelines, Operational Guidelines and a new electronic drug infusion calculator.

PICU ELECTRONIC INFORMATION SYSTEM

CATS are part of the GOSH PICU Information System procurement process. Implementation of this system at CATS will allow the team to record data electronically on retrieval, just as on a PICU, giving the team the ability to store vital patient data in real time, and query PCC transport information in the future for education, training, audit and clinical governance purposes.

PICANET RETRIEVAL DATASET

CATS staff have been instrumental in the development of the PICANet national audit dataset for retrievals. CATS submitted data to PICANet in 2013/14. Submitted data can be used to benchmark CATS against other UK PCC Transport Services.

VIDEOCONFERENCING

Videoconferencing has become an integral part of the CATS workflow.

Short notice debriefs can be arranged for referring hospital and CATS teams to discuss challenging or complex cases and is used very successfully by a number of hospitals who refer into the service.

Please contact your network lead for more details on: 02074305850

Continuing Professional Development and External Work

Mark Clement (CATS Advanced Nurse Practitioner) is an elected committee member of Royal College of Nursing's Critical Care and Inflight Nursing Forum and member of PICS ATG.

Daniel Lutman (CATS Consultant and Head of Clinical Services) has completed a PG Diploma AeroRT with Distinction, Otago NZ. He is also a member of the PICS Acute Transport Group (ATG) aero-medical working group. He is a CAMTS site surveyor. He is a member of Healthy London Partnership & Clinical Leadership Group at NHS England London Region.

Richard Paget (CATS Consultant) is Lead for the CATS Simulation Programme.

Eithne Polke (CATS Coordinator) is the elected chair of the PICS ATG within the role sits on a number of projects in an advisory capacity, Invited member East Midlands PIC Transport Review Project.

P Ramnarayan (CATS Consultant) is a lead for the Transport at PICS Study Group and the lead for the Informatics Group of PICS. He is an elected Medical Member of PICS council and represents the Acute Transport Group on the PICANet Clinical Advisory Group. Ram has recently completed a Harvard Medical School Research Training Program Graduate with Distinction.

Lynn Shields (CATS Advanced Nurse Practitioner) PG Cert in Clinical Education (KSS Deanery) is now Course Director for MSc Children's Advanced Nurse Practitioner as well as maintaining her role on CATS

Elise Randle & Linda Chigaru joined the CATS consultant team in September 2014.

Children's Acute Transport Service

Great Ormond Street NHS Foundation Trust

London, WC1N 3JH

020 74305850

www.cats.nhs.uk

Cover picture is of Master James Brennan