

**CHILDRENS' ACUTE TRANSPORT SERVICE
ANNUAL REPORT 2015-2016**



The Children's Acute Transport Service (CATS) is in its fifteenth 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.

OUR MISSION STATEMENT IS 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.*

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

In 2015/16, the CATS service handled 2423 calls and mobilised an expert team on 1245 patient transports.

This represents an average of 7 calls for assistance and 3 patient transports on every day of the year.



EXECUTIVE SUMMARY

Highlights

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 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 provide the ability to benchmark the CATS service against other Paediatric Critical Care (PCC) transport services in the UK.

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

This increase in referrals and transfer activity is about 10-15%.

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.

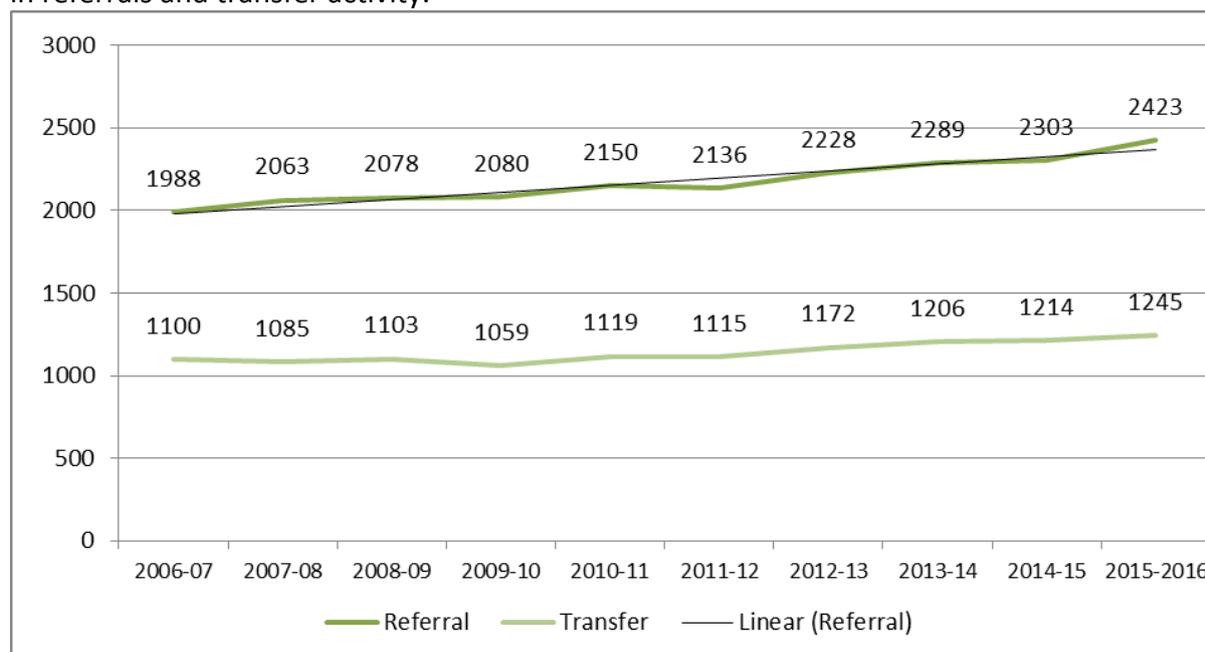
(Vertical axis = number of transports, Horizontal = financial year)

Some transport requests cannot be fulfilled – these are classified as refusals. Most refusals are not within CATS agreed scope of care (n=298).

In 2015- 2016 a total of 109 transports were refused because both CATS teams were already tasked. This compares to 67 last year. 40 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.

ACTIVITY HISTORY

Since the service was established there has been a year on year gradual increase in referrals and transfer activity.



DETAILED CLINICAL ACTIVITY

In 2015/16: REFERRALS: n= 2423

Referral outcome	Number (%)
CATS team mobilised	1245 (51%)
Advice/consultation only	603 (25%)
Refused - within scope of care	109 (4.5%)
Refused – outside scope of care (HDU transport etc.)	298 (12.5%)
Cancelled by referrer	115 (4.7%)
Other	37 (1.5%)
Death	16 (0.7%)

25% 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 or help identify those that require PICU care early on.

Of the 603 calls coded as advice on initial referral 169 of these calls turned out to require transfer into PICU.

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

Specialist transports n=1245

Destination hospital	Number (%)
Great Ormond Street Hospital	424 (34%)
St Mary's Hospital	208 (17%)
Royal Brompton Hospital	107 (8.6%)
Addenbrooke's Hospital	129 (10%)
Royal London Hospital PCCU	137 (11%)
South Thames PICUs	110 (9%)
Other units/improved	38/25 (5%)

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.

The CATS team was mobilised on 1245 occasions which is more than on any previous year. The outcome of all team mobilisations is illustrated below:

PCC transport outcome	Number (%)
Transferred	1215 (97.3%)
Patient improved – with the CATS team	11
Patient died – team on route	5
Patient died – with team at DGH	9
Retrieval cancelled	5

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	42	18	24
NTS	8	4	4
ANTS	13	6	7

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

Invasive ventilation rate	72%
Vasoactive agent use	29%
Inhaled NO	4%

QUALITY AND SAFETY AT CATS

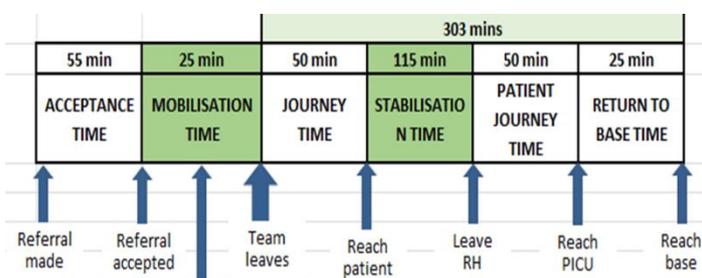
As part of our ongoing quality and safety program, a number of performance indicators are continuously audited at CATS.

Mobilisation times

Mobilisation time interval is defined as “The time from when the decision to retrieve is made to the team departing the CATS base”.

The CATS target time is 20 minutes. This data is reported monthly.

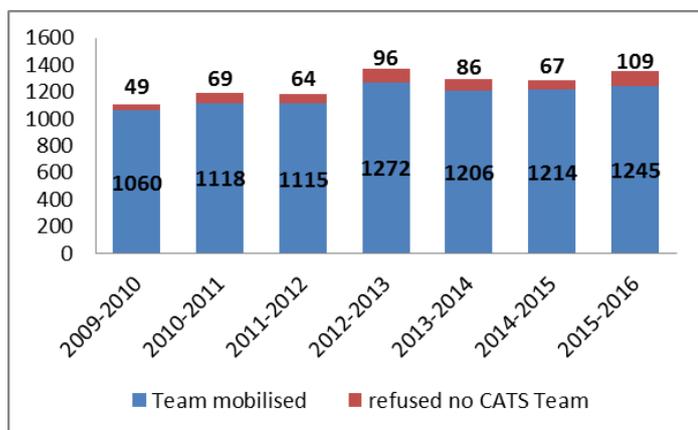
All mobilisation delays are recorded and reviewed at the monthly CATS mortality & morbidity meeting
On average we achieve our target 74% of the time.



CATS also measure the number of times we are unable to fulfill our PCC transfer activity due to lack of team availability. **In 15-16 we were unable offer a team in about 8% (109) of our overall activity.**

Refused No Team v Team Available

All children refused because of “no team available” are referred on to other services.



Out of Region Transfers are also reported via the commissioning team. In 2015-2016 there were **15 children from the London Region that required transfer out of region because of no PICU beds locally.**

Another quality indicator is the ability for the service to respond in a timely manner once the child has been accepted for PICU. The time to patient beside target is 3 hours from acceptance to PICU. *The Paediatric Intensive Care Society (PICS) Standards (2015) recommend that PCC transport teams should be able to achieve this QI in 95% of the cases accepted for PICU.*

On average CATS achieves this target in 85% of cases and in geographically isolated areas the target is 4 hours

Critical Incidents Reported Through PICANet

Incident type	Number (% of all transports)
Accidental extubation	3 (0.2%)
Intubation in transit	0 (0%)
Cardiac arrest	12 (0.8%)
Loss of medical gas supply	1 (<0.1%)
Loss of IV access	2 (0.2%)
Ventilator/Monitor failure	15 (1%)
Ambulance accident	5 (0.3%)

CATS report locally on drug prescribing errors as well as safeguarding concerns. It is a mandatory field on the CATS medical form and must be filled out for all transfers undertaken.

CATS EDUCATION AND TRAINING PROGRAMME

RESEARCH & AUDIT

CATS continue to participate in both research and audit activity

Interventional Trials

CATCH trial

Impregnated CVCs versus standard CVCs

Gilbert RE, Mok Q, Dwan K on behalf of the CATCH trial investigators.

Impregnated central venous catheters for prevention of bloodstream infection in children (the CATCH trial):

a randomised controlled trial. Lancet. 2016 Apr 23;387(10029):1732-42.

FiSH trial (pilot)

10 ml/kg bolus fluid versus 20 ml/kg bolus fluid in septic shock

FEVER trial (pilot)

Permissive target (39.5C) versus restrictive target (37.5C) in sepsis

Observational Studies

BASIC

Biomarkers to diagnose bacterial infection and risk

OSTRICH

IV salbutamol

pharmacodynamics/kinetics

DEPICT (under review)

National variations in access to retrieval teams and outcomes/patient experience

CATS Outreach Programme

-Consultant and ANP delivered

-~ 1200 attendees per year

-Locally provided to 44 hospitals

-CBD, simulation and debriefing

-Local team training

CATS Situation Critical

-Regional Study Day

-Multi-modal educational resource

-Lectures, workshops and simulated scenarios

CATS Stabilisation and Transport Simulation Course

-Full day, immersive team-based simulation course

-Principles of stabilisation

-Multiple clinical scenarios

Severe Hypoxia And Refractory PPHN Course

-Collaboration with NTS

-Multi-modal educational resource

-Lectures, workshops and simulated scenarios