



North West & North Wales
Paediatric Transport Service

Annual Report 2011 – 2012



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Foreword



Kate Parkins, Lead Consultant



Rachael Barber, Joint Lead



**Sarah Santo, Clinical Nurse Manager
Deputy Lead Clinician for the North West and North
Wales Paediatric Critical Care Network (PCCN)**

Welcome to our 2011-2012 Annual Report. This is NWTs' first Annual Report and covers the period of 1 April 2011- 31 March 2012. There were times during set-up when we were not sure we would make it this far, but with the help, hard work and encouragement of people from many different areas we successfully launched in November 2010. We owe a huge debt of gratitude to all involved.

Following on from the report by Eithne Polke in 2007, the leads for the Service were appointed in autumn 2009, and were joined in early 2010 by our Clinical Nurse Specialists. All were required to 'hit the ground running' to enable us to complete the many tasks involved in setting up a service. Our new Consultants, Registrars, Nurses and Administrators followed from autumn 2010, and they all adopted a 'can do attitude' and together we successfully completed our first winter.

We continue to have on-going support from management and the critical care clinical leads in both lead centres in region, and from North West Specialist commissioners, without whose wisdom, help and encouragement we would not have been able to establish NWTS on such a firm foundation.

We have had huge support from our regional colleagues via the Paediatric Critical Care Network, verbally and via email/letters which are all gratefully received and have helped boost our team morale when the 'going got tough'.

Working with clinical teams via the Paediatric Critical Care Network we have developed new regional guidelines, eg crashcall.net, and are involved in other projects with the aim of bringing a unified approach to patient management across region. We hope we can adopt new ideas and thinking to continue to deliver the best standard of care possible for all children requiring critical care across our region.

NWTS have also had support from families of critically ill children who have been involved with the development of our Parent Information Booklet, and have been busy fundraising. This has allowed us to invest in new equipment for patient management, and simulation mannequins for use in regional education and training.

Looking back at what we have achieved as a team in such a short time is both humbling and amazing. I have been able to witness at close hand the way our team has coped with many different challenges – from snow and ice during our first winter, loss of power and floods at NWTS base to name a few. The team have demonstrated how innovative they can be with each new challenge and we have been able to provide 24/7 cover throughout. At busy periods there have been 3 teams out at once to meet demand, which is a major achievement when NWTS are only officially funded for one. Hopefully this report will give you a flavour of some of the challenges met so far and those we hope to conquer in the years to come.

Thank you to everyone involved in the conception and birth of our new Service and I hope that you agree that NWTS is a beautiful baby and will help us to continue to meet our milestones in the future.

Executive Summary

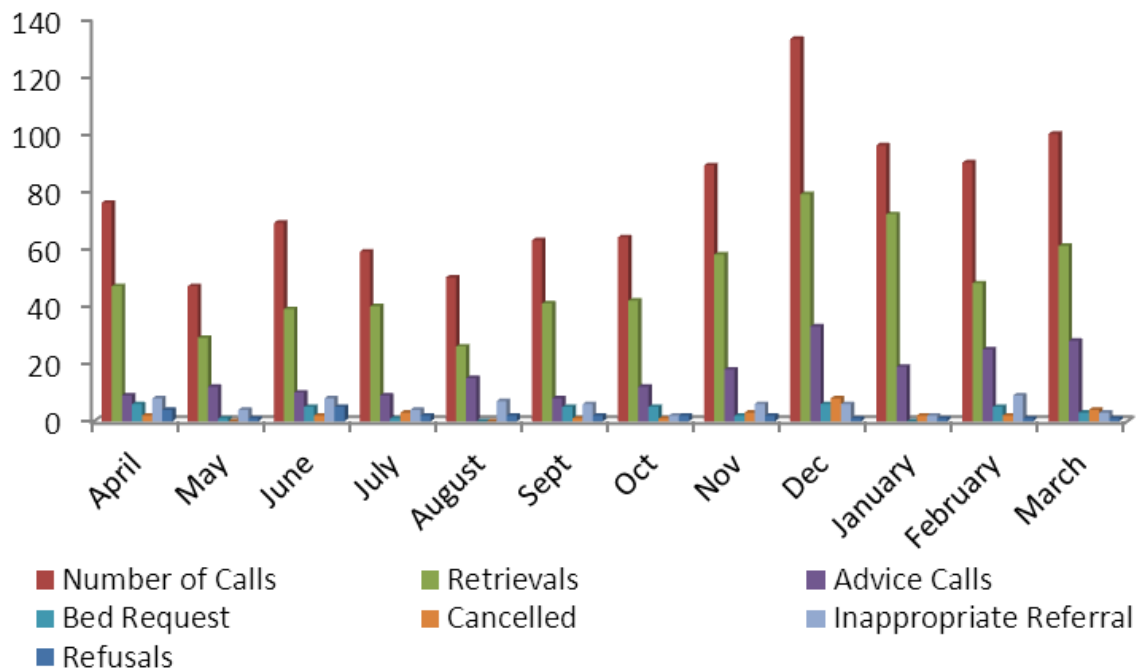
Highlights – 2011 / 2012

- The launch of the North West and North Wales Paediatric Transport Service (NWTS) in November 2010 in an off-site facility at Birchwood Park, Warrington
- During our first year the Service took 936 calls and performed 582 Retrievals.
- The rotation of Band 6 retrieval Nurses from each of the Lead Centre PICUs.
- The development of Regional Guidelines.
- The launch of a robust Outreach Education and Training Programme.



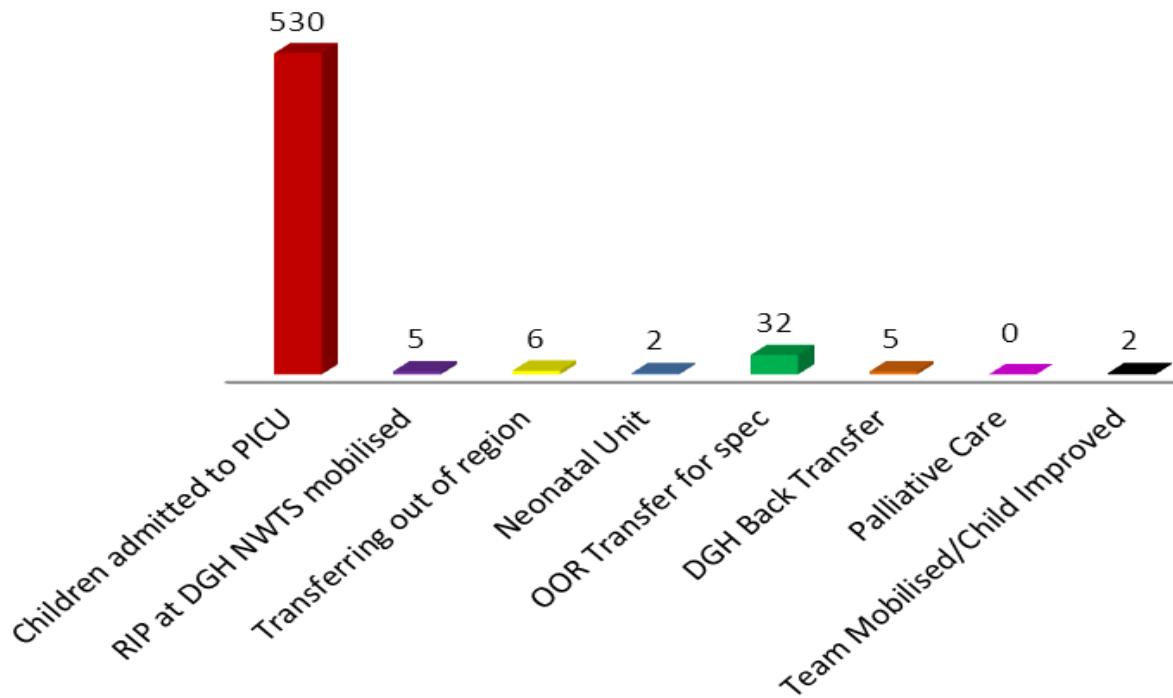
Summary of Activity 2011-2012

Referrals

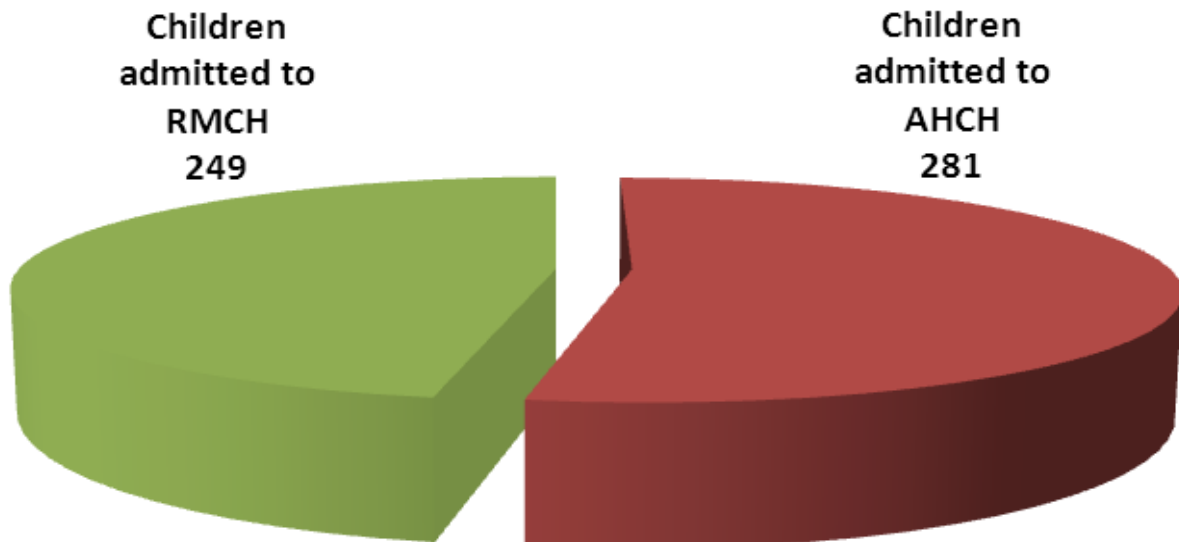


Referrals	936
Retrievals	582
Advice	198
Bed Request	39
Retrievals Cancelled as child improved or died	28
Inappropriate Referrals	65
Refusals	24

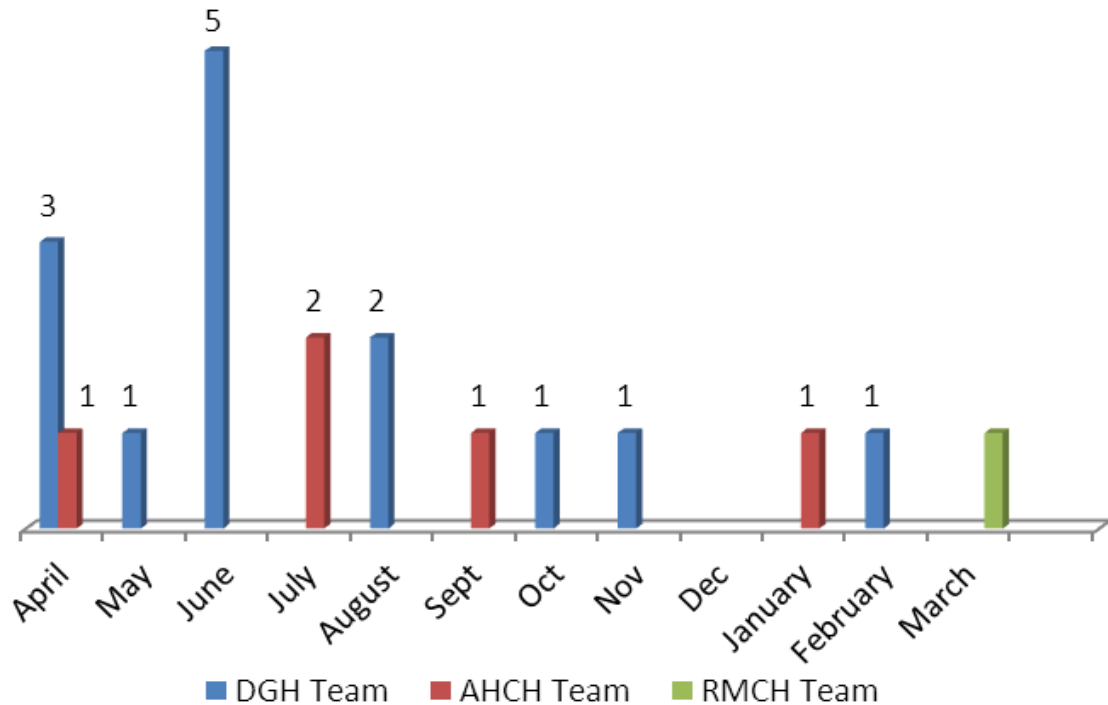
Destination of Children Retrieved



Destination – Regional Lead Centre PICU



NWTS Refusals



Mode of Transport

The predominant mode of transport for the children from the North West and North Wales region is by ambulance.

NWTS ambulance provision is undertaken by a private provider – Medical Services.

In the event that Medical Services are unable to provide a service or capacity is exceeded, then the default provider would be the North West Ambulance Service (NWAS).

NWTS also provides a retrieval service to the Isle of Man. Therefore, at times, the mode of transport would be a fixed-wing aircraft.

There is a need at times for a child to be transferred by a rotor-blade aircraft. In this instance NWTS would liaise with NWAS to determine which provider would be used.

- Total Referrals 12
- Total Transfers 10
- NWTS 7 + 1
- IoM Team 3
- Age Range 25/40 to 13 years

Interaction with Other Teams

Across the United Kingdom there are approximately 14 Paediatric Intensive Care Retrieval Services providing a service using different models.

All of these services are part of the Paediatric Intensive Care Society Acute Transport Group (PICS ATG). NWTS works very closely within this group looking at the following:

- PICS Standards
- Service Specification
- Winter Pressures
- Staffing
- Education
- Audit / Research
- Air Transport

NWTS has a good working relationship with its geographical neighbours. This is particularly pertinent during busy periods when the team will collaborate to source beds and to transfer patients.

NWTS team members are part of the Paediatric Critical Care Network. This is a professional advisory group with clinicians from each of the Lead Centre PICU's and the patch's District General Hospitals (DGH). PCCN was the driving force behind the development of NWTS.

The group looks at the development of Clinical Guidelines, the provision of PICU/HDU care in the North West and North Wales. The PCCN delivers an educational component to each of its meetings and provides an Annual Conference.

NWTS have developed a close working relationship with the 3 neonatal teams that provide a service in the North West. This involves liaising over specific cases. They also meet every 6 months to undertake case reviews, look at audit data and share experiences.

NWTS have representation on the following governance boards:

- Cardiac Network
- Trauma Network
- ECMO Board

Background

In July 1997 'A Bridge to the Future' document provided guidance on the provision of paediatric intensive care. It endorsed the proposal that paediatric intensive care should be centralised into lead centres. The provision of transport services for sick children was discussed and it was concluded that teams must include experienced staff with appropriate qualifications and training.

Report of the Chief Nursing Officer's Taskforce (1997) *A bridge to the Future: Nursing Standards, Education and Workforce Planning in Paediatric Intensive Care.* DoH. London

Historically, both regional Paediatric Intensive Care Units (RMCH and AHCH) have provided a retrieval service. A scoping exercise funded by the North West Specialist Commissioners detailed the limitations of this type of paediatric critical care transport. In 2009 funding was agreed to provide a stand-alone service for the North West and North Wales.

In 2010, the Paediatric Intensive Care Society (PICS) revised a Standards Document for Paediatric Intensive Care, including Standards of Practice for the Transportation of Sick Children. Section D (page 34-40), which details objectives and standards on structural arrangements, competences, facilities, equipment, policy, procedure and governance.

Paediatric Intensive Care Society (2010) *Standards for Care of Critically Ill Children.* Version 2. London

Mission Statement

The *North West and North Wales Paediatric Intensive Care Transport Service* aims to provide the highest quality paediatric intensive care for children and their families from the first point of contact to the final unit destination.

The Service:

- Provides easy access and service co-ordination for referring children's units
- Facilitates improvements in transport provision for critically ill children
- Co-ordinates all available regional resources to meet fluctuating demands
- Provides telephone advice and triaging facilities for all referrals
- Facilitates the delivery of the most appropriate care, in the most appropriate place, for any infant or child requiring Intensive Care in the North West / North Wales Region.
- Education and outreach for the District General Hospital
- Audit and research will form part of the service provision

The Guiding Principles are:

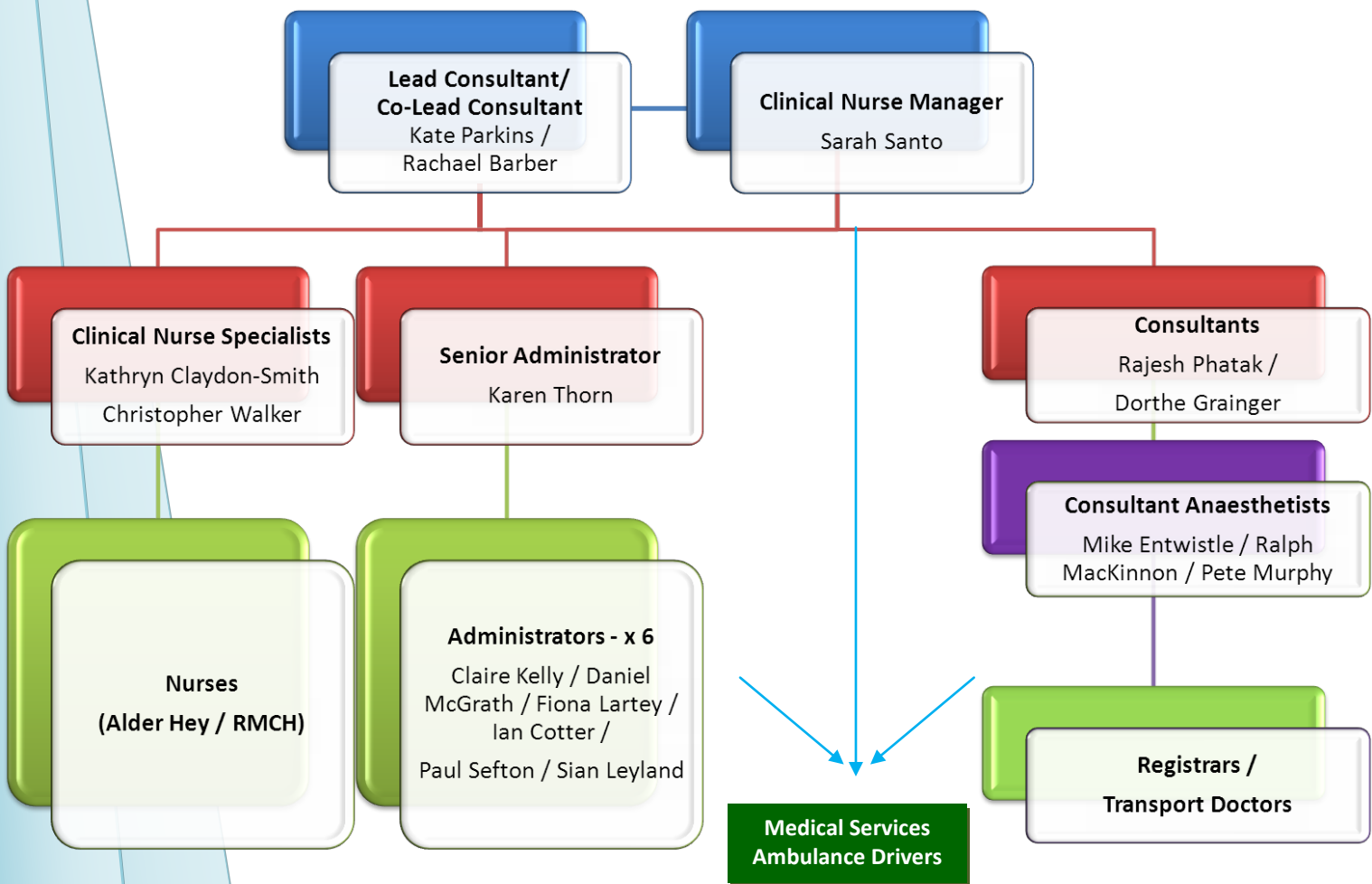
- A collaborative service
Close working with the 2 Paediatric Intensive Care units
- Rigorous audit with regular presentation and dissemination of information to the two provider units
- Close collaboration with the adjacent retrieval service

Service Standards

The following Core Standards apply:

- All infants and children requiring critical care will receive the appropriate treatment, in the right place, at the right time.
- The retrieval service will undertake to find an appropriate paediatric intensive care bed within the North West Region (or appropriate alternative) for those deemed to require intensive care.
- Any child within the North West Region PICU can usually expect the retrieval team to be mobilised within 1 hour from the decision to retrieve.
- When the teams are on retrieval, it will be necessary to prioritise referrals according to clinical needs.
- Early expert clinical advice and management by Consultants trained in Intensive Care is available to referring hospitals at all times.
- The Clinical team comprises of a Transport Doctor (with at least 6 months experience in the intensive care environment) and a Band 6 or above with relevant experience in PICU, with an appropriate ITU qualification. Both staff groups will be APLS accredited.
- Education and training of the retrieval staff is a fundamental part of the Service.
- Outreach education for referring units is provided.

Organisation Chart & Team Profile



Clinical Governance

Quality Improvement & Key Performance Indicators

Although NWTS is a new service we are keen to ensure we continue to audit our service delivery and have used the Paediatric Intensive Care Society (PICS UK) 2010 Standards as our benchmark.

Mobilisation and Stabilisation Times

Mobilisation times more than 30 minutes

April 2011 – March 2012

NWTS team out	47.1%
Awaiting ambulance	5.2%
Air transfer	2.6%
Awaiting consultant arrival	4.5%
Awaiting next shift	8.7%
Elective transfer	9.0%
Multiple referrals	7.1%
No justifiable reason	1.3%
Two teams out	4.5%
Miscellaneous	10%

One of the key problems identified before NWTS started was delayed mobilisation of a PIC unit-based team. Pre-NWTS audit data identified that at times the delay could be 1-2 hours. As part of our quality improvement we set 30 minutes as our mobilisation target. Over 12 months (April 2011-March 2012) NWTS were able to meet that target 73% of the time. Reasons for not achieving this target were mainly related to lack of capacity.

NWTS team were already out on retrieval for 47% of referrals, and for 4.5% retrievals there were 2 NWTS teams out.

Time to Reach Patient's 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). NWTS met this target for 99% of referrals accepted for transfer.

Numbers of Retrievals Done by NWTS

Pre-NWTS the number of retrievals done by district general teams was increasing, in 2005-2006 30% of retrievals to PIC were done by a DGH team, and in 2009-2010 40% were done by a DGH team. This was due to increasing difficulty of the 2 regional PICUs to mount a retrieval team; both units were under pressure from increasing numbers of admissions to PIC and also the level of experience in trainee medical staff meant it was less likely that appropriate levels of skill to undertake PIC retrieval were available on the units.

The Service Level Agreement between NWTS and the North West Specialist Commissioning Team states that NWTS should do a minimum 85% of retrievals to PIC from North West and North Wales region. During 2011-2012 NWTS achieved 96.7%. Of those not done by NWTS we were able to find another appropriate intensive care team to transfer the patient for 6 (1%) retrievals. Out of the rest, 14 (2.3%) transfers were done by DGH teams.

Out-of-Region Transfers – No PIC Bed in Region

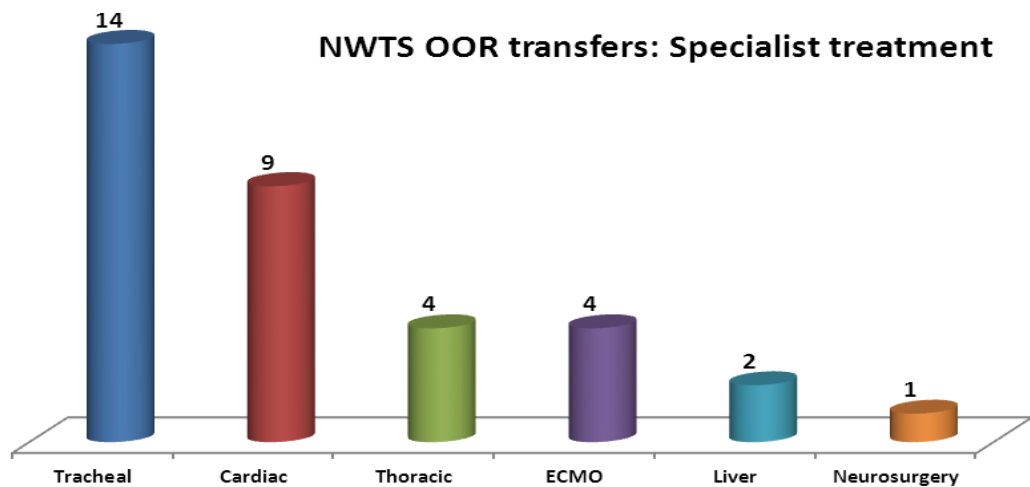
Prior to NWTS we were aware that up to 50-100 patients per year were transferred out of region (OOR) due to lack of availability of PIC bed, often by a local DGH team. This usually entailed multiple phone calls by the referring teams, and long delays before transfer.

The final destination for each patient referred is audited by NWTS and only 1 patient was transferred out of region when there were no PIC beds available in region, and this was done by NWTS team. The NWTS team were also able to help neighbouring PIC transport teams with transfers into PIC beds in NW region when they had no regional team available on 5 occasions. We also transferred one OOR patient into their own regional PICU. These patients

were transferred by NWTS at times of peak activity in our neighbouring PIC transport teams. The majority of transfers into region for a PIC bed are done by a local regional transport team eg patients from Yorkshire & Humber region will be transferred by Embrace. NWTS have a good working relationship with regional transport teams across the UK which will hopefully ensure we work together to prevent long delays before transfer into PIC bed.

Out-of-Region Transfers – Others

Some patients require transfer out of region for quaternary treatment eg cardiac or liver or lung transplant patients; tracheal or complex cardiac surgery or ECMO. Others are transferred out of region for a second opinion. This entails long-distance transfers and are often done on a semi-elective basis (unless an acute transfer for ECMO), and a second team is brought in specifically for these transfers to ensure that a NWTS team is always available for any other potential transfers in region. During 2011-2012, 34 patients were transferred out of region for specialist treatment not available locally.



NWTS Risk Management Group

The risk management group membership is made up of NWTS consultants, nurses, office manager, administrator and members of the Risk Management team at Central Manchester Universities Foundation Trust (CMFT). The clinical governance leads for NWTS are Sarah Santo (Clinical Nurse Manager) and Kate Parkins (Lead Consultant). The aim 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.

- Monitor and oversee all clinical activities
- Maintain processes for assuring quality of clinical care
- Provide up-to-date Guidelines on clinical practice and procedures
- Develop and monitor implementation of National Standards
- Proactively manage clinical risk assessment processes, including incident reporting
- Manage complaints, critical incidents and audit
- Ensure that NWTS Mortality and Morbidity meetings are held regularly
- Health & Safety Standards
- Use of Information Technology
- Education & Training Standards

Meetings:

- 4 monthly with the managers and clinical leads of the regional PIC provider units in order to present an audit of clinical activity and report back on critical incidents on retrieval
- Input into regional PIC Mortality Meetings (held at both regional centres)
- Monthly NWTS Morbidity & Mortality meetings (organised by Rajesh Phatak, NWTS Consultant)
- Daily review of referral/retrieval activity which includes review of NWTS documentation
- Annual review of service delivery – presented at the Paediatric Critical Care Network Meeting
- Outreach education packages available annually to the DGH in region which incorporate an element of discussion on difficult cases and service improvement.
- Regional Conferences which are usually themed and include difficult case discussions and scenarios or workshops

Adverse Event Reporting

The NWTS team records all adverse events, including near misses, during the course of a transfer. The events recorded are put into 6 different categories i.e. equipment, medicine/drug related, patient-related, communication, ambulance activity and other. Adverse event reporting is encouraged to facilitate an active approach to risk reduction. Each referral is reviewed during the

daily team meeting where clinical activity from the previous 24 hours and any adverse incidents are discussed.

In 2011/12, the majority of transports did not involve any adverse events (58.6%). In 41.4% of retrievals, teams documented and reported adverse events – the majority were minor or near miss and did not compromise patient safety.

NWTS have identified key contacts from the senior team for each referring hospital in region. If an incident has happened on a retrieval involving their hospital NWTS will contact the Paediatric Critical Care Network nominated paediatric, anaesthetic or A&E link consultant to discuss the incident, and highlight any concerns. Any member of the NWTS senior team is happy to be contacted regarding any adverse incident involving transfers, in particularly any problems relating to NWTS team. NWTS welcome any feedback from our referring teams.

Dorthe Grainger	Rajesh Phatak	Rachael Barber	Kate Parkins
Blackburn	Barrow	Bury	Leighton
Burnley	Lancaster	Oldham	Southport & Ormskirk
Preston	Bolton	N Manchester	Warrington
Wythenshawe	Wigan	Macclesfield	Hope
Trafford	Chester	Tameside	Stepping Hill
Arrowe	Aintree	Rochdale	Blackpool
Whiston	Royal Liverpool		Isle of Man
Wrexham	Bangor	Glan Clwyd	Aberystwyth

The Clinical Nurse Specialists for NWTS have divided the referring hospitals between them – Kathryn Claydon-Smith is the link for the hospitals highlighted in red and Chris Walker is the link for the hospitals highlighted in blue.

Future Targets

We are conscious that there are other areas we need to develop and audit, so plan to review the following which will also be included in next years' Annual Report:

- **Patients waiting for > 8 hours at DGH for NWTS team**
- **Positive Feedback:** We hope that the Consultant or Clinical Nurse Specialist at NWTS named above will contact referring teams to highlight good practice
- **Winter Pressures**

Research and Audit

Summary of Audit at NWTs

One of the fundamental aims of the NWTs Service has always been to generate good quality robust data that will inform and influence care for critically sick children in the region (North West and North Wales). All audits undertaken at NWTs have been registered with the CMFT Audit Department and access to the NWTs database has enabled completion and repetition of various audits.

All audit results have been fed back to the DGH teams via the NWTs outreach programme and various other forums including the North West Paediatric Critical Care Network. This has provided an excellent feedback mechanism to disseminate audit findings particularly relevant to the North West (eg congenital cardiac surgery). Some audit findings have highlighted the need for a change in practice (eg Management of Status Epilepticus) and the above 2 mechanisms have proved effective to a great extent in ensuring the lessons learnt are shared with wider clinical teams across the region.

Several of these audits have now been accepted for presentation at regional, national and international conferences and meetings. This has in turn provided excellent opportunities for trainees and staff alike to be able to discuss their findings from similar teams and units across the Country and the globe.

The following audits have now been completed by various members of the NWTs team. They have influenced practice in several areas not only in the tertiary children's hospitals, but also empowered decision-making process for critically sick children in the referring DGHs (this is by no means an exhaustive list but a mere template for reporting some of the work undertaken:

No	Undertaken by	Audit lead / Project Mentor	Title of audit	Key findings	Presented at
1.	Nayan Shetty	Nayan Shetty / Kate Parkins	Welsh PIC Transfers – Post NWTS	Better access to advice & improved response times post NWTS	Welsh Paediatric Society Meeting – May 2011 (RCPCH accredited)
2.	Lekha Shridhar	Nayan Shetty – Kate Parkins	Role of NIV for Mx of Bronchiolitis	Advice & Support from NWTS improves Success with Non-invasive CPAP	PICS Annual Conference, Cambridge 2011
3.	Jon Mcviety	Lara Jackman / Rachael Barber	Mx of status epilepticus in patients referred to NWTS for retrieval	11% of Patients Extubated in DGH – Majority of Rest Extubated within 6-12 hours of PIC Admission	RCPCH Annual Conference, Glasgow, 2012 Oral presentation
4.	Ben Lakin	Kate Parkins	PIC Transport Service: Benefits of 2 becoming one?	Advice Calls averting PIC Admissions (30% referrals); NWTS Consultants on 40% Transfers; More efficient, increasing Nos PIC vs DGH Transfers into PIC	Poster presentation at ESPNIC 2012, Istanbul
5.	Natalie Hill	Dorthe Grainger / Kate Parkins	The role of NWTS in Paediatric Trauma transfer Pre-trauma Network	4 hour target trauma transfers is challenging; Involvement of NWTS in complex trauma transfers improves outcome	PCC Network August 2012; Poster Presentation @ PICS Dublin 2012 & ESPNIC 2012
6.	Charlotte Goedwolk	Rajesh Phatak Rachael Barber	(Re-audit of No:2 above) Has the NWTS outreach programme influenced the Mx of status epilepticus in the DGHs in the North West?	38% of Patients extubated in DGH; Education has improved management and better use of PIC beds	Poster presentation at ESPNIC 2012, Istanbul and PICS, Dublin 2012
7.	Naga Kishore Puppala, Sara Ali, Krasi Atasanov	Rajesh Phatak / Kate Parkins	Regional Congenital Heart Networks – the role of the PICU transport teams in acutely sick cardiac children	Cardiac Networks can facilitate effective surgical bed management & guideline development	Accepted for Poster presentation at ESPNIC 2012, Istanbul and PICS, Dublin 2012
8.	Crawford Fulton	Rajesh Phatak / Rachael Barber	Pre – PICU Management of Acute Severe Asthma referred to NWTS for Retrieval	43% Asthma referrals managed with advice on optimising medical management only Only 22% of intubated patients received all 3 IV therapies pre - intubation Deaths in childhood asthma – all occurred pre-PIC intervention	Poster Presentation PICS Dublin 2012

9.	Mike Entwistle	Kate Parkins Rachael Barber	Managing ENT Emergencies that need Transfer to PICU – the extended transport team	NWTS advice & conference call with Paeds ENT improves management & outcomes. NWTS can organise Paeds ENT +/- Paeds Anaes as part of transport team for complex pts	Poster Presentation ESPNIC, Istanbul 2012
10.	Chris Walker and Sam Ellis	Kate Parkins / Rajesh Phatak	Surviving Sepsis – Do Teams Managing Children with Severe Sepsis follow Guidance	NWTS advice on Patient management improves early goal directed therapy (surviving sepsis)	Poster presentation at PICS, Dublin Sept 2012
11.	Sam Barlow	Kathryn Claydon-Smith/ Sarah Santo	Keeping the family together vs the worst journey of our lives: parents travelling with NWTS team	62% parents take up the offer to travel with NWTS team to PIC with their child No critical incidents have occurred due to parents travelling with their child Parental feedback very positive	Poster Presentation ESPNIC Istanbul 2012

In addition to the above, NWTS was one of the first regional PICU transport teams in the Country to go “live” with reporting and recording data to PIKANET online. This will prove to be an added bonus in years to come and will provide important validation of our locally administered NWTS database.

Needless to say, with all the above audits, the Admin Team at NWTS has provided invaluable support in gathering initial data extracted from the NWTS database and in some cases, subsequent analysis as well.

***Dr Rajesh Phatak and Dr Rachael Barber
Audit leads for NWTS***



Outreach Education and Training

The North West and North Wales Paediatric Transport Service (NWTS) is committed to supporting all hospitals in the North West and North Wales regions in caring for the critically ill or injured infant/child. By providing comprehensive outreach support and education, NWTS aims to support the hospitals in achieving some of the recommendations in the Tanner report 1¹.

Outreach Activity

NWTS launched as a Service in November 2010 and initial contact was made with the Lead Clinicians in Accident and Emergency, Anaesthetics, Paediatrics and Paediatric Nursing, detailing what the Service would offer as part of an Outreach Education Programme in its 1st year.

A specifically tailored half or full-day programme delivered at the District Hospitals was devised with the Clinical Leads. Varied educational formats were used including:

- PowerPoint-based Lectures
- Case Discussions/Presentations
- Small Group Workshops
- On-site Simulation Training

23 of the 31 hospitals covered by the Service (74%) have been visited and a half or full-day programme has been delivered. For the remaining 8 hospitals, two have subsequently re-located as part of the 'Making it Better' (MiB) Programme, and NWTS continues to work with the remaining hospitals to establish suitable time-frames for the team to visit and provide on-site education.

Regional Conferences

Over 2011-12 NWTS has organised two full-day conferences for region. The topics were chosen to expand on recurring educational themes requested by DGH staff. These were held at the Conference Centre on the Business Park where NWTS is based. Each day was well attended with over 50 staff from a mix of specialities and hospitals.

- 26th May 2011 – Mortality in Children, Supporting Families in the event of unexpected Death
- October 2011 – Infectious Diseases and Haematology/Transfusion

In addition, two half-day conferences aimed at Consultant and Staff Grade Anaesthetists, addressing some of the issues raised by the Tanner Report¹ were held in November 2011. These consisted of a mixture of simulation and small group workshops.

NWTS Involvement in Regional and University Educational Programmes

NWTS has been invited to contribute to other educational programmes.

- The Welsh Paediatric Society
- Welsh Anaesthetic Update Day
- The Paediatric Intensive Care Course (John Moore's University)
- MSc Course in Acute Paediatrics (John Moore's University)
- MSc Course in Ambulatory Paediatrics (John Moore's University)
- North West A & E Trainees Programme
- North West Paediatric Trainees Programme
- Neurosurgical Emergencies (Alder Hey Children's Hospital)

Future Developments

The North West and North Wales Paediatric Transport Service is committed to providing support and outreach to all of the region's hospitals caring for critically ill or injured infants and children. With restructuring of paediatric services in the North West this now numbers 30 hospitals.

Whilst continuing to provide bespoke teaching for hospitals in the region, the Service has plans to further develop the formats used to deliver effective outreach training:

- NWTS is developing an area on St Emlyn's, a Moodle-based platform to provide e-learning; modules which will be linked to the Regional Conferences, and in addition there will be forums for case-based discussions facilitated by the NWTS team
- Mobile high-fidelity simulation using the Gaumard Simulators is increasingly being delivered by NWTS in the clinical areas of the Region's hospitals
- Development of the NWTS website to provide clinical guidelines (working with the Paediatric Critical Care and other regional networks) and educational resources for the DGH staff

In-House Education and Training

Induction Programme

A comprehensive Induction Programme exists for all staff working for NWTs. This is delivered online via the St Emlyn's platform, with a final assessment to be passed at the end of the Programme in addition to "hand's on" training by the Clinical Nurse Specialists. The Induction Programme progress and completion is recorded in an individual's Log Book and is expected to be completed in the 1st week with the Service.

All staff are assigned a mentor/clinical supervisor who is responsible for overseeing the individual's induction and on-going development. As part of an introduction to the Service, clinical staff must undertake a minimum of 2 supervised retrievals before undertaking retrievals without direct supervision.

Mandatory and Statutory Training

Staff rotating to the Service undertake Mandatory and Statutory training as specified by their own Trust. Staff employed by NWTs undertake both mandatory and statutory training in accordance with CMFT. In addition, members of NWTs staff have been trained in a Fire Warden role and a member of staff is trained to deliver ANTT and manual handling training.

On-going Training and Education within the NWTs Team

This has included specific study days and sessions for the ambulance and administration staff in addition to clinical staff that allows professional development and expansion of their roles. Examples of this include Paediatric Life Support training for the Ambulance staff, allowing them to take specific roles in the event of cardiac arrest.

A structured programme of education has been established that focuses on three areas using pre-written scenarios. The sessions are delivered by the Clinical Nurse Specialists and NWTs Consultants:

- Skills training eg use of vacuum mattress in spinal injuries
- Telephone scenarios eg neurosurgical emergency
- Clinical simulated scenarios eg accidental extubation

E-learning

In addition to the Induction Programme, a Moodle-based teaching programme is being developed. This consists of scenario-based discussions led by NWTS consultants, discussion forums, journal club and access to clinical resources. Grid trainees are encouraged to submit clinical cases using the site.

Regional PICU teaching Programme

NWTS has been a key player in developing a Monthly Regional Paediatric Intensive Care Medicine Teaching Programme which commenced in February 2012. This is held jointly with the two Lead PICUs and provides a structured and comprehensive educational programme for the PIC trainees covering ICTPICM-related topics.

¹ DoH (2006). *The acutely or critically sick or injured child in the district general hospital: A team response*

Education and Training

Training Opportunities

All staff who rotate to the Service undertake supernumerary orientation/induction over a 3 day period. These days include orientation to the department, colleagues and an overview of NWTS day. All equipment is demonstrated and key learning points tested. There is a period of supervised retrievals which is tailored to the needs of the individual. NWTS also have an online Induction Programme to supplement the supernumerary days. Staff are encouraged to complete this, if possible, before their first shift. Staff are also required to keep a Log Book of all training and retrieval experiences, which is monitored by their educational supervisor.

A daily Team Meeting occurs at 10.00 am, facilitated by the NWTS Consultant, and all recent referrals are reviewed. This focussed session often leads to an educational element highlighted by reflecting upon the cases discussed.

The monthly Business Meeting is open to all team members and current and on-going strategic issues are discussed. Following this meeting the Team reviews the previous month's team activity, critical incidents and mortality. The trainees to the Service undertake case review for the Mortality meeting, supervised by one of the NWTS Consultants.

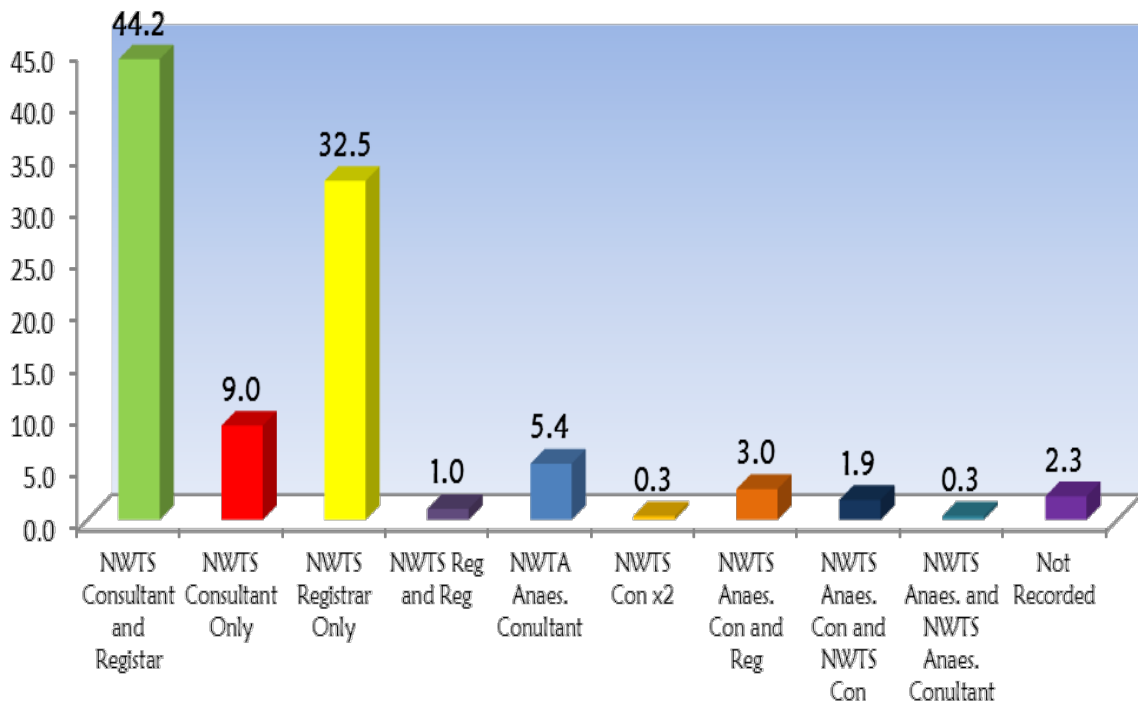
A planned programme of weekly simulation sessions are scheduled and the team undertakes them if no retrieval is taking place.

During 2011 joint (Alder Hey Children's and Royal Manchester Children's) focused PICU trainee training has been facilitated at NWTS. The programme includes presentations and workshops, led by a PICU Consultant, other specialist Consultants and also presentations from trainees themselves. They have been very well attended and have evaluated positively. These sessions have helped forge stronger links between the 2 tertiary units.

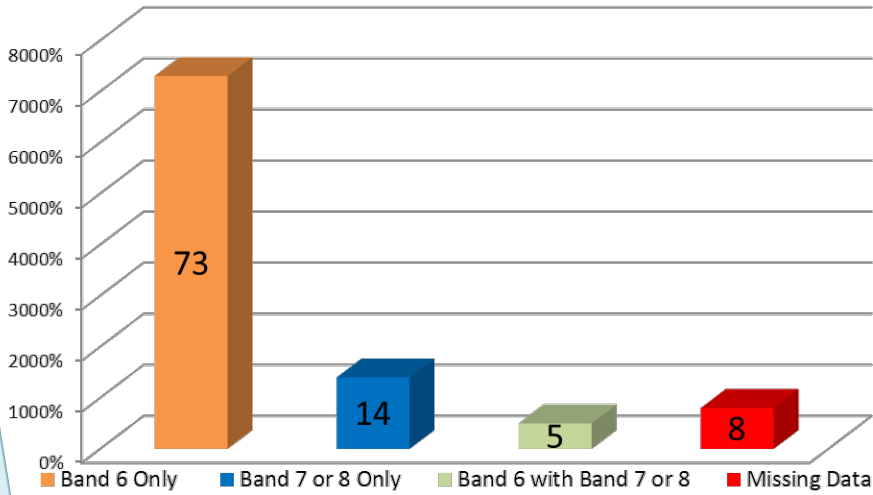
Nursing staff that rotate into the Service from each of the tertiary Paediatric Intensive Care Units attended an educational day during the summer 2011 and this included group work, discussion and annual updates on medical device competencies. Supervised retrievals were facilitated by the senior nursing team.

Ambulance team training on equipment, resuscitation and packaging of a patient have been provided by the Clinical Nurse Specialists.

NWTS is committed to providing Consultant-led retrievals as an essential way to ensure trainees receive the supervision and support they require. The high percentage of such retrievals is due to the fact that some trainees only come to the Service for a 6 week period and so may not always gain enough experience to go unsupervised. The graph below displays the medical team composition for retrievals April 2011 – March 2012.

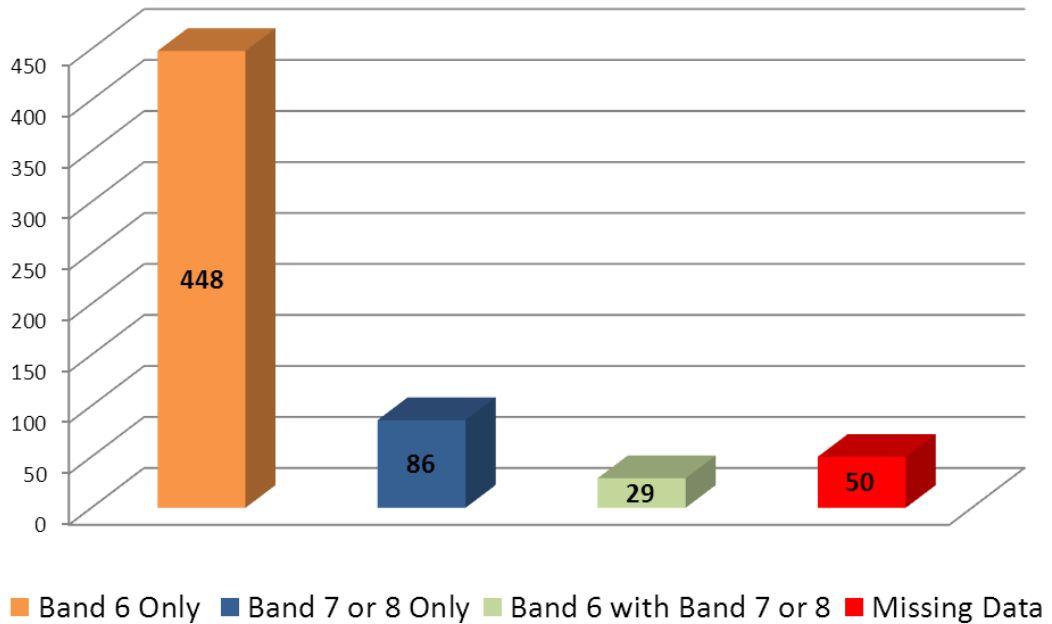


Total number of retrievals - 613



The rotational Band 6 Nurses annually receive a supervised retrieval facilitated by a member of the senior nursing team or a NWTs Consultant. These graphs display the **nursing** team composition for retrievals April 2011 – March 2012.

OR



Information Technology

Telecommunications

During the year we commissioned a sophisticated technology package to help improve the efficiency and effectiveness of our Service.

The Mitel Telephone Conferencing system has been implemented and has proved a valuable tool in helping address the administrative needs of our Service, ensuring the whole transport team receives the latest information relating to the child at the same time. This system allows everyone to discuss the child's condition and make judgements on treatment and course of action as a team. This results in the best possible outcome for our patients.

Website

We have launched a new public website, offering information on the Service offered by NWTs. We aim to develop this website in the future to offer more extensive information and a more user-friendly experience.

It is planned to deliver a re-vamped site by early 2013.

Re-development of NWTs Database

Plans to update and re-design, in-house, the Database are in place. This project should be completed during 2013.

Tele-medicine – 2013-2014

Tele-medicine is the use of technology to enable medical information to be transferred through the telephone, the Internet or other networks for the purpose of consulting or carrying out remote medical procedures or examinations.

This could simply be discussing a case over the telephone, or as complex as using satellite technology and video-conferencing equipment to conduct a real-time consultation between medical specialists anywhere in the world.

Looking to the future we'd like to develop tele-medicine links with each of the regional District General Hospitals to improve our ability to assess a child's condition at point of referral, and to improve ability to offer more direct and appropriate advice on their management.

In addition to this we would like to use the tele-medicine link to improve our ability to provide education and outreach. Using this link we would be able to run lunch-time meetings linking in 3 or 4 hospitals to discuss interesting cases and dilemma.

Parent and Public Involvement

Parents in Transport

Out of approximately 1.7 million children in the North West and North Wales, 600-700 children are transferred annually from 31 District General Hospitals to the two regional PICs at Alder Hey and RMCH.

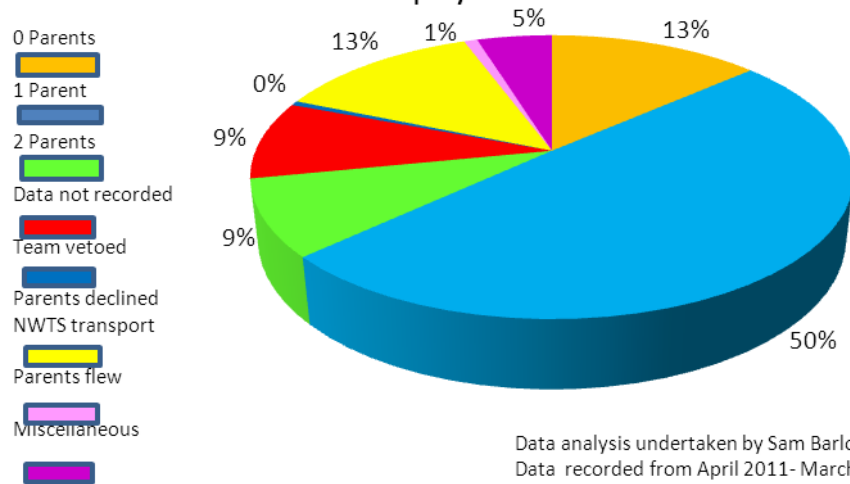
NWTS started in November 2010 as a single dedicated, regional transport service for critically ill/injured children and babies. PICS Standards 2010 state “wherever possible and appropriate, parents should be given the option to accompany their child during retrieval and transfer”.

Previously, prior to NWTS, the unit based PICs at Alder Hey and RMCH would use a “front line” ambulance usually supplied by NWAS, which unfortunately were unable to accommodate parents due to the restricted seats, which would mean separating anxious, scared parents from their critically ill child. This would thus increase parental stress by not being able to travel with their child.

The NWTS Service is supported by a team of ambulance staff who drive the dedicated NWTS ambulances. In the NWTS Service Level Agreement with Medical Services Limited, it states that the NWTS ambulances must have four seats to ensure a minimum of one parent can travel with their child.

The data from April 2011 to March 2012, regarding the number of NWTS transfers where a parent has been able to travel with their child is detailed below:

The number of NWTs transfers where a parent has been able to accompany their child.



'I would like to express my deep thanks and appreciation for the dynamism and the holistic support provided last night to our unit in transferring ventilated sick trisomy 21 infant with pulmonary hypertension, bronchiolitis and PDA.'

'I would like to thank you all so much for the care given to Ben. You all acted so professionally whilst showing compassion and understanding to what we, his parents, and family were going through.'

'Every member of the team was friendly and caring. Thank you for handing him over safely to the staff at Manchester, who cared for him wonderfully.'

'Our patient, who was extubated on Friday midnight' turned out to have tonsillitis, absolutely fine by early morning (Saturday) and went home on penicillin v.'

'I wanted to say very well done indeed to the team who came here yesterday (24 April) for a very sick girl with an ischaemic bowel. They were here for hours and really saved her life. If the team has done this and nothing else they have justified their existence'

'Lewis' Mum and Dad came to see him today, and I was able to speak to them. They would also like to thank you for everything you did, and appreciated how hard everyone had worked. It was the 'right thing' to have them in at the end.'

Public Involvement

Charitable funds have been raised by individuals and groups for specific equipment during the year and this has been beneficial to the Service.

Work in Progress for 2012/2013

Tablets

The Service has developed tablet computers for use clinically. Planned introduction is for February 2013. The tablet will be used initially as a reference tool containing approved guidelines. The use will then develop to include prescribing software by the summer of 2013.

HFOV

The Service has examined the feasibility of High Frequency Oscillation during transport. An audit has been completed to show a need exists and a prototype device is currently being looked at.

Co-ordination of National Flight Retrievals

The Service has worked closely with the National Paediatric Acute Transport Group and Charities to establish a sustainable system to use flight as a feasible option for retrievals. The Service plans to use helicopter transfers from March 2013.

¹ DoH (2006). *The acutely or critically sick or injured child in the district general hospital A team response*