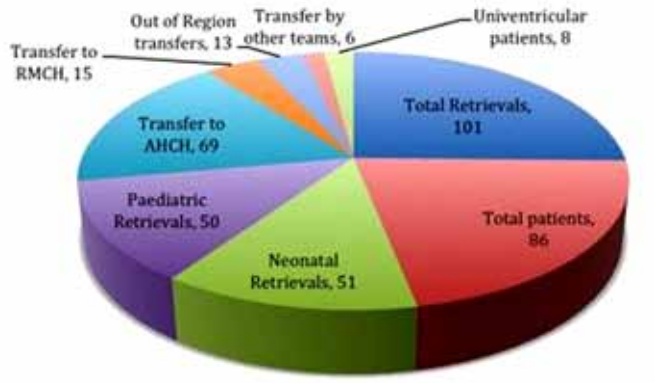
(NWTS) provides specialist retrieval service across the region. Patients are transferred to Alder Hey Children's hospital (AHCH), a cardiac surgical centre and Royal Manchester Children's hospital (RMCH) a cardiology centre. This review was undertaken to quantify current referral patterns and bed management.

Methods Retrospective review of NWTS retrieval of cardiac patients over the last 18 months.

Results



Abstract 968 Figure 1 Results

Abstract 968 Table 1 INTERVENTIONS

INTERVENTIONS	REFERRING HOSPITAL	NWTS
INTUBATION	57	9
DINOPROSTONE	29	2
INOTROPES	23	10
CENTRAL VENOUS ACCESS	26	16
INHALED NITRIC OXIDE	0	4

Median NWTS retrieval and stabilisation times were 238 and 118 minutes respectively. Only 4 neonates required an additional journey to a regional surgical centre. Total mortality (to discharge home) was 8/86 ~ 9.3%, 3 post-operative deaths and 5 offered palliative care (inoperable lesion/other anomalies).

Conclusion For children with congenital heart disease, a regional specialist paediatric retrieval team can optimise bed management, minimise out of region transfers and ensure that time-critical care is delivered locally, safely and effectively.

969 UNDER-REPORTED? A REVIEW OF UTILISATION OF THE PAEDIATRIC HIGH DEPENDENCY UNIT AT A DISTRICT GENERAL HOSPITAL

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Background and Aims The 'High Dependency Care for Children' (Department of Health, 2001) report stipulates HDU level of care for all in-patient paediatric units. While the importance of regular audit is undisputed, concerns have been raised regarding the accuracy of data available to the Greater Manchester Paediatric & Child Health Network (GMP&CHN) and the consequences for optimal service provision.

This study aims to review and compare the utilisation of the Paediatric HDU at our District General Hospital with data available to the regional network (GMP&CHN).

Methods Retrospective study of Paediatric HDU admissions between 02/09/2009 and 20/11/2011. Data was separated into 12 diagnostic categories and analysed for admission/readmission frequency and length of stay (defined as presence in HDU per calendar day) and compared with the respective figures of the GMP&CHN 2011 regional audit of Paediatric HDU.

Results 208 patients were admitted 245 times, of which 39 (18.75%) were readmissions. Mean length of stay per admission was 2.28 days (median: 2 days, range: 1–16 days). HDU occupancy rate over the study period (1,014 days) was 55.13% (559 days). For the period January–August 2011, GMP&CHN figures show 23 admissions, a 40.35% underestimation of the actual figure (57 admissions).

Conclusions Paediatric HDU activity at our DGH has been underreported. This may not be an uncommon phenomenon nationwide.

We call for further review of HDU activity at units both regionally and nationally with a move towards agreed standards for data dissemination and reporting as per the Paediatric Critical Care Minimum Data Set.

970 IMPROVING SPECIFICITY OF CLINICAL EVENT DETECTION IN THE NEONATAL INTENSIVE CARE UNIT (NICU)

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Background and Aims Continuous physiological parameter monitoring is routine in NICU. However, high false alarm rates exist that can lead to inappropriate responses from clinical staff.

At present, parameters are assessed independently to generate alarms. The positive predictive value can be increased in adult patients by combining the physiological parameters using statistical models[1].

We have developed a multi-parameter model, designed for sick newborn infants, which produces alarms based on an integrated assessment of patient physiology. We hypothesized that this model would have greater specificity than conventional single channel alerts.

Methods Continuous physiological data (heart rate, respiration rate, oxygen saturation, blood pressure and temperature) were collected from 6 preterm infants, median gestation 26.1 weeks (range 24.3–28.9). The median period of data collection was 16.5 days (range 10.9–23.2). A mathematical model was developed using Matlab, which 'learnt' 1 hour of normal data in order to subsequently identify abnormal events in the remaining dataset. Adverse clinical events were identified retrospectively from patient notes.

Results

Abstract 970 Table 1 Table comparing detection performance

	Sensitivity	Specificity	False positives per hour
Existing single-channel alert method	100%	0%	1.8
Proposed multi-parameter model	99%	17%	0.1

157 clinical events were obtained for analysis. The proposed model increases specificity of event detection, reduces false positives by a factor of 18 and maintains high sensitivity.

Conclusions This pilot study demonstrates that combining existing physiological data using a multi-parameter model improves the specificity of adverse event detection in the NICU.

[1]Tarassenko L et al. Br J Anaesth. 2006; **97**:64–8.

971 NEONATOLOGY-OSTEOPATHY (NE-O) STUDY: RCT ON THE EFFECT OF OSTEOPATHIC MANIPULATIVE TREATMENT ON LOS

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