



## Congenital Cardiology Solutions

### HOSPITAL COSTS FOR PEDIATRIC HEART SURGERY VARY WIDELY ACROSS INSTITUTIONS

Moderated Poster Contributions

Poster Sessions, Expo North

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**Background:** Prior studies of hospital costs for pediatric heart surgery relied on administrative data. Linkage with clinical data allows more detailed case ascertainment, risk adjustment, and assessment of complications and outcomes; and may improve our understanding of variation in resource utilization and mediating factors in this era of rising healthcare costs.

**Methods:** Clinical data from The Society of Thoracic Surgeons Database were linked to cost data from the Pediatric Health Information Systems Database (2006-10). Center variation in hospital costs, adjusted for patient characteristics, was assessed for 9 operations of varying complexity using Bayesian methods.

**Results:** 12,718 operations (27 centers) were included. Costs increased with case complexity (Table). Wide variation between hospitals in adjusted costs was observed across operations, and was greatest for Tetralogy of Fallot repair (9-fold variation). High volume centers had lower costs for the most complex procedures (arterial switch, truncus, Norwood). Hospitals with longer post-op length of stay (LOS) and higher complication rates had higher costs; these variables explained an average of 28% of the variation in cost (range 5-50%).

**Conclusions:** Hospital costs vary widely across institutions, and are related in part to differences in LOS and complication rates. Further study of the cost-outcome relationship is needed to develop strategies to reduce resource utilization while optimizing patient outcomes.

Table. Distribution of adjusted costs across hospitals

Operation	Total N	Hospital-Specific Adjusted Cost, per case (\$)				
		Median	Min	Max	Max/Min	p*
Atrial septal defect repair	1,581	34,866	14,548	116,744	8.0	<0.001
Ventricular septal defect repair	2,669	49,494	31,720	107,784	3.4	<0.0001
Tetralogy of Fallot repair**	1,560	64,933	22,722	215,642	9.5	<0.0001
Fontan	1,542	81,312	26,504	182,890	6.9	<0.0001
Glenn/Hemi-Fontan	1,692	71,029	23,949	203,033	8.5	<0.0001
Complete AV canal repair	1,150	88,718	38,286	216,082	5.6	<0.0001
Arterial switch	1,128	129,221	56,711	308,722	5.4	<0.0001
Truncus repair	226	211,299	193,462	234,686	1.2	0.17
Norwood	1,170	238,959	99,983	376,555	3.8	<0.0001

Adjusted costs calculated for each hospital; hospital-specific data on min, median, and max displayed

\*Bayesian probability; max vs. min

\*\*excludes those with pulmonary atresia or absent pulmonary valve