SUPPLEMENTARY MATERIAL

Supplementary Table 1: Correlations between hospital characteristics

	β	r^2	p
Hospital propensity to pursue BAS vs. propensity for mechanical ventilation	0.05	0.01	0.56
Hospital propensity for BAS vs. propensity for PGE	-0.01	0.0004	0.90
Hospital propensity for BAS vs. average age at ASO	0.03	0.20	0.004
Hospital propensity for BAS vs. annual CT surgical volume (per 100 cases)	-0.02	0.05	0.18
Hospital propensity for mechanical ventilation vs. propensity for PGE	0.30	0.09	0.06
Hospital propensity for mechanical ventilation vs. average age at ASO	-0.007	0.004	0.69
Hospital propensity for mechanical ventilation vs. annual CT surgical volume (per 100 cases)	0.05	0.08	0.07
Hospital propensity for PGE vs. average age at ASO	-0.02	0.02	0.33
Hospital propensity for PGE vs. annual CT surgical volume (per 100 cases)	0.02	0.01	0.46
Hospital average age at ASO vs. annual CT surgical volume (per 100 cases)	-0.58	0.13	0.02

Abbreviations: ASO arterial switch operation, BAS balloon atrial septostomy, CT cardiothoracic, PGE prostaglandin

Supplementary Table 2: Multivariable model of preoperative factors associated with post-operative hospital length of stay

	Ratio (95% CI)	*p*
Age at ASO (per day)	1.01 (1.01 to 1.02)	<0.001
Genetic condition	2.14 (1.74 to 2.63)	<0.001
Prematurity	1.41 (1.27 to 1.56)	<0.001
Preoperative prostaglandin infusion	1.00 (0.94 to 1.07)	0.93
Preoperative inotrope infusion	1.12 (0.84 to 1.50)	0.43
Preoperative mechanical ventilation	1.16 (1.09 to 1.24)	<0.001
Balloon atrial septostomy	0.78 (0.74 to 0.82)	<0.001

Abbreviations: ASO arterial switch operation

Supplementary Table 3: Multivariable model for risk of death and hospital average age of ASO

	Odds ratio (95% CI)	p
Hospital average age of ASO	1.15 (1.02 to 1.29)	0.03
Age at ASO (per day)	1.01 (0.96 to 1.05)	0.81
Genetic condition	5.85 (2.20 to 15.55)	<0.001
Prematurity	2.92 (1.47 to 5.80)	0.002
Preoperative PGE infusion	0.76 (0.44 to 1.31)	0.33
Preoperative inotrope infusion	5.04 (1.05 to 24.13)	0.04
Preoperative mechanical ventilation	1.15 (0.66 to 2.03)	0.61
Preoperative balloon atrial septostomy	0.30 (0.16 to 0.54)	<0.001

Abbreviations: ASO arterial switch operation, CI confidence interval, PGE prostaglandin

Supplementary Table 4: Multivariable model for risk of death and hospital propensity for mechanical ventilation

	Odds ratio (95% CI)	*p*
Hospital propensity for mechanical ventilation	1.18 (0.35 to 4.00)	0.79
Age at ASO (per day)	1.02 (0.98 to 1.07)	0.31
Genetic condition	5.97 (2.29 to 15.58)	<0.001
Prematurity	2.84 (1.44 to 5.58)	0.002
Preoperative PGE infusion	0.73 (0.43 to 1.26)	0.26
Preoperative inotrope infusion	4.79 (1.00 to 22.97)	0.05
Preoperative mechanical ventilation	1.08 (0.58 to 2.02)	0.80
Preoperative balloon atrial septostomy	0.32 (0.17 to 0.59)	<0.001

Abbreviations: ASO arterial switch operation, CI confidence interval, PGE prostaglandin

Supplementary Table 5 Multivariable model for risk of death and hospital propensity for BAS

	Odds ratio (95% CI)	*p*
Hospital propensity for BAS	0.85 (0.11 to 6.81)	0.88
Age at ASO (per day)	1.02 (0.98 to 1.07)	0.31
Genetic condition	5.99 (2.30 to 15.62)	<0.001
Prematurity	2.83 (1.44 to 5.57)	0.003
Preoperative PGE infusion	0.74 (0.43 to 1.26)	0.27
Preoperative inotrope infusion	4.84 (1.00 to 23.37)	0.05
Preoperative mechanical ventilation	1.12 (0.64 to 1.97)	0.68
Preoperative balloon atrial septostomy	0.32 (0.17 to 0.60)	<0.001

Abbreviations: ASO arterial switch operation, BAS balloon atrial septostomy, CI confidence interval, PGE prostaglandin

Supplementary Table 6: Multivariable model for risk of death and hospital propensity for PGE

	Odds ratio (95% CI)	*p*
Hospital propensity for PGE	0.46 (0.14 to 1.53)	0.21
Age at ASO (per day)	1.02 (0.98 to 1.07)	0.38
Genetic condition	6.36 (2.44 to 16.58)	<0.001
Prematurity	2.85 (1.45 to 5.60)	0.002
Preoperative PGE infusion	0.88 (0.48 to 1.59)	0.66
Preoperative inotrope infusion	4.80 (0.98 to 23.49)	0.05
Preoperative mechanical ventilation	1.14 (0.65 to 2.00)	0.65
Preoperative balloon atrial septostomy	0.32 (0.17 to 0.59)	<0.001

Abbreviations: ASO arterial switch operation, CI confidence interval, PGE prostaglandin

Supplementary Table 7: Multivariable model for risk of death and hospital CT surgical volume

	Odds ratio (95% CI)	*p*
Annual CT surgical volume (per 100 cases)	0.83 (0.70 to 0.99)	0.04
Age at ASO (per day)	1.02 (0.97 to 1.06)	0.49
Genetic condition	5.56 (2.12 to 14.62)	<0.001
Prematurity	2.78 (1.41 to 5.48)	0.003
Preoperative PGE infusion	0.72 (0.42 to 1.24)	0.24
Preoperative inotrope infusion	4.38 (0.90 to 21.45)	0.07
Preoperative mechanical ventilation	1.23 (0.70 to 2.19)	0.47
Preoperative balloon atrial septostomy	0.30 (0.16 to 0.55)	<0.001

Abbreviations: ASO arterial switch operation, CI confidence interval, CT cardiothoracic, PGE prostaglandin

Supplementary Table 8: Multivariable model of preoperative and hospital factors associated with post-operative length of stay

	Ratio (95% CI)	*p*
Age at ASO (per day)	1.01 (1.00 to 1.02)	<0.001
Genetic condition	2.07 (1.68 to 2.54)	<0.001
Prematurity	1.27 (1.18 to 1.36)	<0.001
Preoperative prostaglandin infusion	1.01 (0.94 to 1.07)	0.86
Preoperative inotrope infusion	1.15 (0.86 to 1.54)	0.33
Preoperative mechanical ventilation	1.17 (1.10 to 1.25)	<0.001
Balloon atrial septostomy	0.79 (0.75 to 0.84)	<0.001
Hospital average age at ASO (per day)	1.05 (1.01 to 1.09)	0.02
Hospital propensity to pursue BAS	0.72 (0.39 to 1.34)	0.30
Hospital propensity for mechanical ventilation	1.04 (0.73 to 1.46)	0.84
Hospital propensity for prostaglandin	0.89 (0.64 to 1.24)	0.49
Hospital CT surgical volume (per 100 cases)	0.95 (0.90 to 1.00)	0.07

Abbreviations: ASO arterial switch operation, BAS balloon atrial septostomy, CI confidence interval, CT cardiothoracic, PGE prostaglandin

Supplementary Table 9: Results of multivariable models evaluating the association of prematurity and mortality, length of stay, and cost

	Mortality		Length of stay		Cost	
	Odds ratio (95% CI)	*p*	Ratio (95% CI)	*p*	Ratio (95% CI)	*p*
Gestational age						
>=37 weeks	1	n/a	1	n/a	1	n/a
35-36 weeks	2.26 (0.96 to 5.35)	0.06	1.24 (1.12 to 1.38)	<0.001	1.20 (1.08 to 1.33)	<0.001
31-35 weeks	2.86 (0.94 to 8.70)	0.06	1.48 (1.28 to 1.72)	<0.001	1.40 (1.21 to 1.62)	<0.001
<=30 weeks	21.08 (3.21 to 138.25)	0.001	1.30 (0.82 to 2..05)	0.27	1.22 (0.77 to 1.93)	0.39

Abbreviations: CI confidence interval