

SUPPLEMENTARY DATA

Supplemental Table 1 – Characteristics of patients with adequate identifiers for linkage to NDI/UNOS and those with inadequate identifiers

	Submitted to NDI with complete identifiers	Inadequate identifiers for linkage	p-value
	N = 619 (%)	N = 123 (%)	
Age ≤7 days at initial surgery	512 (82)	90 (73)	0.03
Weight <2.5 kg at initial surgery	117 (19)	21 (17)	0.73
Male	345 (56)	57 (46)	0.07
Initial surgery			
Shunt only	247 (40)	54 (44)	0.11
Shunt + RV Decompression	273 (44)	43 (35)	
RV Decompression	96 (15)	26 (21)	
Definitive repair			
1V	96 (16)	12 (10)	0.02
1.5 V	39 (6)	2 (2)	
2V	225 (36)	43 (35)	
None	259(42)	66 (53)	
In-hospital death	162 (26)	45 (40)	0.03

Supplemental Table 2. Comparison of original results to inverse probability weighted (IPW) estimates to assess potential selection bias from the exclusion of patients without full identifiers available for linkage with outcome data

	Original estimate	IPW estimate
Cumulative survival after neonatal intervention	% (CI %)	% (CI %)
1 year	68.5 (64.7 – 72.2)	66.7 (62.8 – 70.3)
5 year	65.1 (61.2 – 68.7)	63.4 (59.4 – 67.0)
20 year	62.1 (58.0 – 65.8)	60.5 (56.4 – 64.2)
20-year survival after discharge from definitive repair	% (CI %)	% (CI %)
Single ventricle	97.6 (90.6– 99.4)	97.6 (90.6 – 99.4)
One-and-a-half ventricle	90.9 (74.4 – 97.0)	90.8 (74.3 – 96.9)
Two-ventricle	98.0 (94.7 – 99.2)	97.9 (94.5 – 99.2)

IPW = inverse probability weighting

Supplemental Table 3 - Risk factors for in-hospital death at initial intervention for PA/IVS, sensitivity analysis of birth year as spline vs. original era

	Adjusted Original		Adjusted with birth year as spline	
	OR	95% CI	OR	95% CI
Initial intervention				
Shunt only	0.51	0.23 – 1.11	0.53	0.24 – 1.20
Shunt + RV decompression	0.53	0.27 – 1.05	0.59	0.29 – 1.20
RV decompression	ref		ref	
Coronary anatomy				
RV to coronary fistulas	1.30	0.70 – 2.43	1.38	0.73 – 2.60
Atresia of ≥ 1 ostia	-	-	-	-
No abnormalities	ref		ref	
Missing				
Age at initial treatment				
≤ 7 days	0.70	0.38 – 1.27	0.66	0.36 – 1.23
> 7 days	ref		ref	
Weight at initial treatment				
< 2.5 kg	1.35	0.73 – 2.49	1.25	0.67 – 2.33
≥ 2.5 kg	ref		ref	
Missing				
Birth era				
1982 - 1992	2.83	1.51 - 5.32	-	-
1993 – 1997	1.47	0.74 – 2.92	-	-
1998 – 2003	ref		-	
Sex				
Male	1.09	0.67 - 1.80	1.04	0.63 - 1.72
Female	ref		ref	
Chromosomal abnormality				
Yes	3.95	1.15 - 13.55	4.32	1.24 – 15.04
No	ref		ref	

Supplemental Table 4 - In-hospital neonatal mortality by mode of intervention and birth era

	Era 1		Era 2		Era 3		p-value*
	Total (n= 202)	Death/ Transplant	Total (n= 206)	Death/ Transplant	Total (n= 211)	Death/ Transplant	
Shunt							
Surgical	71	13 (18.3%)	84	28 (33.3%)	92	21 (21.5%)	0.6306
Shunt + RV Decompression							
Total	89	22 (24.7%)	93	10 (10.8%)	91	9 (9.9%)	0.0062
Both surgical	87	22 (25.6%)	82	9 (11.0%)	59	6 (10.2%)	0.0108
Cath RV Decompression + surgical shunt	2	0 (0%)	10	1 (10.0%)	32	3 (9.4%)	0.8009
Cath RV Decompression + Cath shunt (PDA stent)	0	-	1	0 (0.0%)	0	-	-
RV Decompression							
Total	42	13 (31.0%)	29	7 (24.1%)	25	3 (12.0%)	0.0966
Surgical	39	13 (33.3%)	27	7 (25.9%)	13	2 (15.4%)	0.2215
Cath	3	0 (0%)	2	0 (0%)	12	1 (8.3%)	-
Primary Transplant	0	-	0	-	2	2 (100%)	-
Primary Glenn	0	-	0	-	1	0 (0%)	-

*Test of trend in neonatal mortality across birth eras within each mode of intervention

Supplemental Methods:

Inverse probability weighting was calculated using logistic regression to estimate the probability of having adequate identifiers. The model included sex, birth era, chromosomal abnormality, surgery weight < 2.5 kg, surgery age < 8 days, neonatal intervention, definitive surgical path, and coronary status. The probabilities were applied as weights to patients with full identifiers so that the weighted sample would have the same distribution of characteristics as the full original eligible cohort (those with and without full identifiers).