

Appendix Table 1. Mixed Effects Linear Regression Results for Primary Outcome: Nadir Hct during CPB

	<i>Beta Estimate w/ 95% Confidence Interval</i>	<i>P-Value</i>
Fixed Effects		
(Intercept)	26.38 (NA)	NA
del Nido vs. Four to One	-0.05 (-0.36 – 0.26)	0.763
Microplegia vs. Four to One	0.54 (0.15 – 0.92)	0.009
Age	-0.13 (-0.20 – -0.05)	0.002
Height	0.1 (-0.64 – 0.83)	0.795
Weight	0.02 (-1.48 – 1.53)	0.976
Female Gender	-0.94 (-1.80 – -0.08)	0.038
First Hct in O.R.	2.6 (2.51 – 2.68)	<.001
Diabetic	-0.25 (-0.43 – -0.08)	0.008
Nadler Estimated Blood Volume	0.95 (-1.14 – 3.04)	0.379
Body Surface Area	0.14 (-0.76 – 1.03)	0.769
Non-Elective Procedure	-0.4 (-0.67 – -0.14)	0.004
Reoperation	-0.35 (-0.60 – -0.09)	0.011
Isolated AV Replace vs. AV+MV Repair/Replace	-0.12 (-0.42 – 0.17)	0.42
Isolated MV Replace vs. AV+MV Repair/Replace	-0.14 (-0.46 – 0.17)	0.373
MV Repair vs. AV+MV Repair/Replace	0 (-0.32 – 0.32)	1
Minimally Invasive Procedure	0.4 (-0.32 – 1.13)	0.285
Cross Clamp Time	-0.23 (-0.33 – -0.13)	<.001
Procedure Duration	-0.15 (-0.23 – -0.06)	0.002
Net CPB Circuit Priming Volume	-0.14 (-0.23 – -0.04)	0.006
Urine Output on CPB	0.03 (-0.06 – 0.12)	0.526
Volume of Ultrafiltrate Removed	0.48 (0.38 – 0.58)	<.001
Number of RBC Units Transfused Intraoperatively	-0.3 (-0.36 – -0.23)	<.001
Autologous Blood Harvest Volume	-0.4 (-0.49 – -0.30)	<.001
Intraoperative Anesthesia Volume	-0.25 (-0.34 – -0.15)	<.001
Intraoperative Asanguinous Volume (Perfusionist)	-0.44 (-0.53 – -0.35)	<.001
Random Effects		
	σ^2	6.262
Between-Groups Variances	τ_{00} , Clinician	0.525
	τ_{00} , Surgeon	0.011
	τ_{00} , Hospital	1.386
	τ_{00} , Procedure Year	0.019
Number of Observations per Random Effect	N Clinician	438
	N Surgeon	367
	N Hospital	173
	N Procedure Year	2
Intra-Class Correlation Coefficient	ICC Clinician	0.064
	ICC Surgeon	0.001
	ICC Hospital	0.169
	ICC Procedure Year	0.002
	Observations	5303
	R-Squared / Omega-Squared	.718 / .717

Beta estimates reported pertain to a one-standard-deviation increase in the variable in question, from the variable's mean.

Appendix Table 2. Mixed Effects Poisson Regression Results for Secondary Outcome: Number of Units RBC Transfused Intraoperatively

	<i>Incidence Rate Ratio w/ 95% CI</i>	<i>P-Value</i>
Fixed Effects		
(Intercept)	0.07 (NA)	NA
del Nido vs. Four to One	1.01 (0.82 – 1.24)	0.938
Microplegia vs. Four to One	1.09 (0.85 – 1.42)	0.492
Age	1.1 (1.05 – 1.16)	<.001
Height	0.55 (0.33 – 0.91)	0.02
Weight	0.34 (0.12 – 1.00)	0.05
Female Gender	1.92 (1.02 – 3.63)	0.044
First Hct in O.R.	0.69 (0.64 – 0.74)	<.001
Diabetic	1.03 (0.92 – 1.16)	0.587
Nadler Estimated Blood Volume	4.95 (1.11 – 22.02)	0.036
Body Surface Area	0.59 (0.32 – 1.11)	0.1
Non-Elective Procedure	1.06 (0.91 – 1.23)	0.443
Reoperation	1.4 (1.22 – 1.61)	<.001
Isolated AV Replace vs. AV + MV Repair/Replace	0.93 (0.79 – 1.10)	0.389
Isolated MV Replace vs. AV + MV Repair/Replace	0.91 (0.77 – 1.08)	0.286
MV Repair vs. AV + MV Repair/Replace	0.74 (0.61 – 0.90)	0.003
Minimally Invasive Procedure	1.24 (0.86 – 1.79)	0.255
Cross Clamp Time	1.32 (1.25 – 1.39)	<.001
Procedure Duration	1.07 (1.04 – 1.11)	<.001
Net CPB Circuit Priming Volume	1.01 (0.96 – 1.06)	0.719
Urine Output on CPB	0.92 (0.87 – 0.96)	<.001
Volume of Ultrafiltrate Removed	1.06 (1.00 – 1.11)	0.038
Lowest Hct on CPB	0.34 (0.31 – 0.37)	<.001
Autologous Blood Harvest Volume	0.76 (0.69 – 0.84)	<.001
Intraoperative Anesthesia Volume	1.17 (1.11 – 1.23)	<.001
Intraoperative Asanguinous Volume (Perfusionist)	1.15 (1.11 – 1.20)	<.001
Random Effects		
Between-Groups Variances	τ_{00} , Clinician	0.277
	τ_{00} , Surgeon	0.3
	τ_{00} , Hospital ID	0.314
	τ_{00} , Procedure Year	0
Number of Observations per Random Effect	N Clinician	438
	N Surgeon	367
	N Hospital ID	173
	N Procedure Year	2
Intra-Class Correlation Coefficient	ICC Clinician	0.147
	ICC Surgeon	0.159
	ICC Hospital ID	0.166
	ICC Procedure Year	0
Observations	5303	
Deviance	2849.441	

Incidence rate ratios reported pertain to a one-standard-

deviation increase in the variable in question, from the variable's mean.