Supplementary Table 1: Characteristics of children at ESRD onset by BMI category

Characteristics at ESRD onset	Underweight (N=1294)	Normal BMI (N= 9596)	Obese (N=2282)
Median age (years) *[IQR]*	15.5 [11.5-17.5]	14.5 [10.5-17.5]	14.5 [10.5-17.5]
*Age category**			
2-5 years old	7 (86)	6 (587)	10 (229)
>5-13 years	25 (325)	31 (2,961)	25 (571)
>13 years	68 (883)	63 (6,048)	65 (1,482)
*Race**			
Caucasian	66 (855)	68 (6,558)	60 (1,372)
African American	22 (286)	22 (2,138)	31 (716)
Asian	8 (106)	6 (566)	5 (105)
Native American	0.8 (10)	2 (156)	2 (45)
Other	3 (37)	2 (178)	2 (44)
Male	56 (722)	55 (5,244)	55 (1,250)
*Cause of ESRD**			
Congenital/cystic/ hereditary diseases/pyelonephritis/ interstitial nephritis	44 (573)	39 (3,775)	31 (713)
Glomerulonephritis	21 (271)	26 (2,490)	25 (561)
Focal segmental glomerulosclerosis	12 (150)	14 (1,351)	21 (490)
Hypertension	4 (46)	4 (352)	7 (148)
GFR at ESRD onset[1] (mL/min/1.73 m^2) [IQR]	7.4 [5.5-10.1]	7.4 [5.4-9.9]	7.6 [5.6.-10.2]
*Medicaid**	46 (589)	46 (4,366)	49 (1,108)
*Median income by zip code[2]**	$48,768	$48,193	$45,732
*Height <5th percentile overall**	35 (449)	31 (2,963)	29 (656)
*Living donor source for transplant[3]**	48 (453)	47 (3527)	42 (673)

* Statistically significantly different by BMI category, p < 0.05
[1]Missing in N=2,304 due to missing serum creatinine values, especially in patients with preemptive transplantation
[2]Missing in N=408
[3]Missing in N=48

Supplementary Table 2: Cox model[1] for risk of death by BMI category in children in sensitivity analyses

	Underweight	Obese
Height-age BMI Model[2]	**Hazard ratio* (95% CI)**	
Unadjusted (N=13,172)	1.25 (1.05-1.49)	1.33 (1.19-1.49)
Adjusted model in primary analysis (N=13,172)	1.21 (1.01-1.45)	1.28 (1.14-1.43)
Model with additional adjustment for median income (N=12,764)	1.28 (1.07-1.53)	1.26 (1.12-1.41)
Adjusted for transplant as a time-dependent covariate (N=13,172)	1.19 (0.99-1.42)	1.18 (1.06-1.33)
WHO BMI Model[3]	**Hazard ratio* (95% CI)**	
Unadjusted (N=13,097)	1.43 (1.21-1.69)	1.34 (1.16-1.56)
Adjusted model in primary analysis (N=13,097)	1.44 (1.21-1.70)	1.28 (1.10-1.50)
Model with additional adjustment for median income (N=12,693)	1.54 (1.30-1.82)	1.26 (1.08-1.48)
Adjusted for transplant as a time-dependent covariate (N=13,097)	1.44 (1.21-1.73)	1.10 (0.97-1.25)

[1] All models were adjusted for sex, race, cause of ESRD, Medicaid status, and calendar year of ESRD onset, and stratified by age categories to protect against non-proportionality

[2] Normal BMI is reference category with underweight defined as <5th percentile and obese defined as ≥ 95th percentile using CDC sex-standardized BMI z-score standards based on height-age

[3] Normal BMI is reference category with underweight defined as BMI z-score < -2 and obese defined as BMI z-score >2 using WHO age- and sex-standardized BMI z-score standards and chronological age (N=75 further excluded due to implausible BMI z-scores <-6 or >6).

Supplementary Table 3: Regression models for transplant outcomes using height-age and WHO standardized BMI z-scores.

	Underweight	Obese
Outcome of Cox proportional hazards model using height-age standardized BMI[1]	**Hazard ratio* (95% CI)**	
Receipt of transplant at any time during follow-up (N=13,172)	0.90 (0.83-0.97)	0.88 (0.84-0.93)
Receipt of transplant at any time during follow-up with additional adjustment for median income (N=12,764)	0.89 (0.82-0.96)	0.88 (0.83-0.92)
Receipt of transplant if dialysis was initial treatment modality (N=11,168)	0.96 (0.88-1.04)	0.84 (0.80-0.89)
Outcome of Cox proportional hazards model using WHO standardized BMI[1]	**Hazard ratio* (95% CI)**	
Receipt of transplant at any time during follow-up (N=13,097)	0.82 (0.75-0.89)	0.89 (0.83-0.95)
Receipt of transplant at any time during follow-up with additional adjustment for median income (N=12,693)	0.81 (0.75-0.88)	0.89 (0.83-0.96)
Receipt of transplant if dialysis was initial treatment modality (N=11,101)	0.87 (0.80-0.95)	0.82 (0.76-0.89)
Outcome of logistic regression model using height-age standardized BMI[2]	**Odds ratio* (95% CI)**	
Preemptive transplant (N=13,172)	0.64 (0.51-0.80)	1.08 (0.94-1.23)
Living donor transplant within 18 months of ESRD onset (N=6,732)	0.98 (0.80-1.21)	0.87 (0.77-0.99)
Living donor transplant within 18 months of ESRD onset with additional adjustment for median income (N=6,521)	1.01 (0.81-1.24)	0.88 (0.77-1.01)
Living donor transplant within 12 months of ESRD onset (N=5,448)	1.05 (0.82-1.33)	0.91 (0.78-1.05)
Living donor transplant within 24 months after ESRD onset (N=7,582)	0.94 (0.77-1.14)	0.89 (0.79-1.00)
Outcome of logistic regression model using WHO standardized BMI[2]	**Odds ratio* (95% CI)**	
Preemptive transplant (N=13,097)	0.57 (0.45-0.72)	1.19 (1.00-1.43)
Living donor transplant within 18 months of ESRD onset (N=6,697)	1.07 (0.87-1.33)	0.79 (0.65-0.94)
Living donor transplant within 18 months of ESRD onset with additional adjustment for median income (N=6,492)	1.07 (0.85-1.33)	0.77 (0.64-0.93)
Living donor transplant within 12 months of ESRD onset (N=5,421)	1.17 (0.91-1.52)	0.81 (0.66-0.99)
Living donor transplant within 24 months after ESRD onset (N=7,544)	1.01 (0.82-1.23)	0.82 (0.69-0.97)

[1] Adjusted for sex, race, cause of ESRD, Medicaid status, and calendar year of ESRD onset and stratified by age categories
[2] Adjusted for age category at incident ESRD, sex, race, cause of ESRD, Medicaid status, calendar year of ESRD onset