SUPPLEMENTAL APPENDIX

Table S1: Unadjusted and adjusted mortality hazard ratios for mortality by method of analysis (complete-case vs. missing data imputed)

	ADPKD	IgAN	MN	FSGS	MPGN	Vasculitis	LN	DN
Model 1								
Complete case	1.63 (1.55-1.71)	1.0 (referent)	2.65 (2.49-2.81)	2.14 (2.04-2.25)	2.48 (2.32-2.65)	4.32 (4.09-4.57)	2.17 (2.06-2.29)	5.60 (5.35-5.86)
8 Imputed data sets	1.59 (1.53-1.66)	1.0 (referent)	2.59 (2.46-2.72)	2.03 (1.95-2.12)	2.37 (2.25-2.51)	4.15 (3.96-4.35)	2.12 (2.03-2.21)	5.48 (5.28-5.68)
15 imputed data sets	1.59 (1.53-1.66)	1.0 (referent)	2.59 (2.46-2.72)	2.03 (1.95-2.12)	2.37 (2.25-2.51)	4.15 (3.96-4.35)	2.12 (2.03-2.21)	5.48 (5.28-5.68)
Model 2								
Complete case	1.10 (1.05-1.16)	1.0 (referent)	1.71 (1.61-1.82)	1.76 (1.67-1.84)	1.95 (1.83-2.08)	2.31 (2.18-2.45)	2.72 (2.58-2.87)	3.35 (3.20-3.50)
8 Imputed data sets	1.08 (1.04-1.12)	1.0 (referent)	1.69 (1.61-1.78)	1.69 (1.63-1.76)	1.87 (1.77-1.97)	2.23 (2.13-2.33)	2.72 (2.61-2.85)	3.29 (3.17-3.41)
15 imputed data sets	1.08 (1.04-1.12)	1.0 (referent)	1.69 (1.61-1.78)	1.69 (1.63-1.76)	1.87 (1.77-1.97)	2.23 (2.13-2.33)	2.72 (2.61-2.85)	3.29 (3.17-3.41)
Model 3								
Complete case	1.24 (1.18-1.30)	1.0 (referent)	1.40 (1.32-1.49)	1.64 (1.56-1.72)	1.63 (1.52-1.74)	1.99 (1.88-2.11)	2.26 (2.15-2.39)	2.59 (2.47-2.71)
8 Imputed data sets	1.22 (1.17-1.27)	1.0 (referent)	1.40 (1.33-1.47)	1.58 (1.52-1.65)	1.56 (1.48-1.65)	1.96 (1.87-2.06)	2.27 (2.17-2.38)	2.24 (2.15-2.32)
15 imputed data sets	1.22 (1.17-1.27)	1.0 (referent)	1.40 (1.33-1.47)	1.58 (1.52-1.65)	1.56 (1.48-1.65)	1.96 (1.87-2.06)	2.27 (2.17-2.38)	2.24 (2.15-2.32)
Model 4								
Complete case	1.22 (1.17-1.28)	1.0 (referent)	1.21 (1.14-1.28)	1.39 (1.33-1.46)	1.41 (1.33-1.50)	1.50 (1.42-1.58)	1.71 (1.63-1.80)	1.99 (1.90-2.08)
8 Imputed data sets	1.23 (1.18-1.27)	1.0 (referent)	1.23 (1.17-1.29)	1.37 (1.32-1.42)	1.38 (1.31-1.45)	1.51 (1.45-1.58)	1.75 (1.68-1.83)	1.73 (1.67-1.79)
15 imputed data sets	1.22 (1.18-1.27)	1.0 (referent)	1.23 (1.17-1.29)	1.37 (1.32-1.42)	1.38 (1.31-1.45)	1.51 (1.45-1.58)	1.75 (1.68-1.83)	1.73 (1.67-1.79)

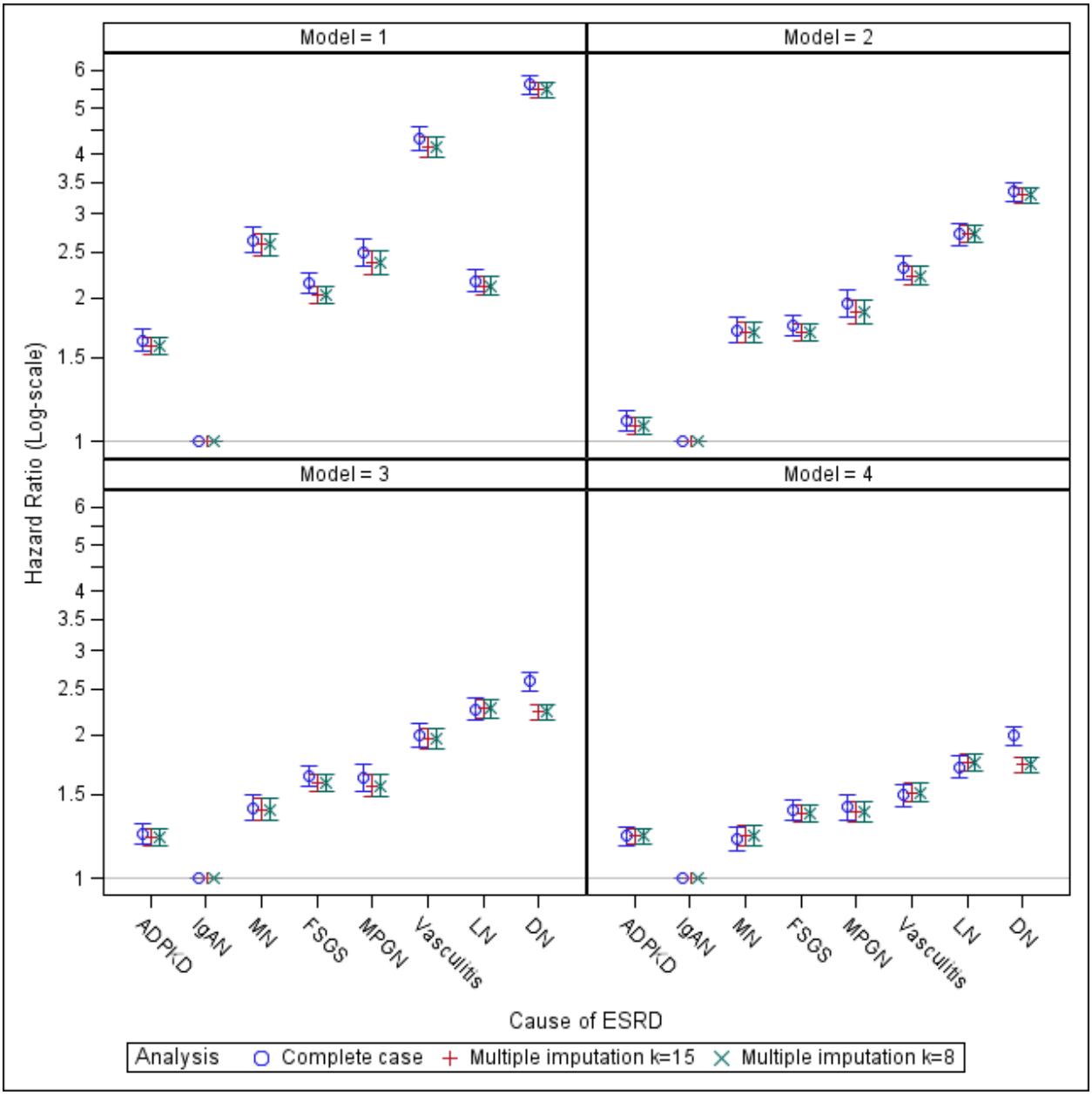
Table S1 Legend: All values are HR (95% CI). **Model 1: unadjusted; model 2: demographic adjusted; model 3: demographic and comorbidity adjusted; model 4: demographic, comorbidity and ESRD therapy modality adjusted.** Complete case analysis includes only patients with complete information (n=575,032). Multiple imputation analysis uses the entire patient sample (n=840,574) and imputes missing data using a joint modeling approach, generating k datasets that are analyzed separately. Results are then combined. The final log HR equals the mean of the individual log HRs for each dataset. Standard error (SE) is computed taking into account uncertainty deriving from both the sampled values and the imputation process. ADPKD, autosomal dominant polycystic kidney disease; IgAN, IgA nephropathy; MN, membranous nephropathy; FSGS, focal segmental glomerulosclerosis; MPGN, membranoproliferative GN; LN, lupus nephritis, DN; diabetes related ESRD.

Table S2: Cause-specific mortality

Cause of Death	ADPKD	IgAN	MN	FSGS	MPGN	Vasculitis	LN	DN
Total deaths, n	12,053	2,839	3,382	13,721	2,405	4,686	6,741	485,481
Cardiovascular, n (%)	5,158 (42.8)	1,099 (38.7)	1,465 (43.3)	6,123 (44.6)	907 (37.7)	1,604 (34.2)	2,835 (42.1)	238,820 (49.2)
Infection-related, n (%)	1,182 (9.8)	282 (9.9)	306 (9.1)	1,357 (9.9)	254 (10.6)	543 (11.6)	942 (14.0)	53,888 (11.1)
Malignancy-related, n (%)	754 (6.3)	171 (6.0)	221 (6.5)	654 (4.8)	145 (6.0)	197 (4.2)	154 (2.3)	11,575 (2.4)
Other, n (%)	3,012 (25.0)	775 (27.3)	828 (24.5)	3,377 (24.6)	677 (28.2)	1,355 (28.9)	1,540 (22.9)	99,470 (20.5)
Missing, n (%)	1,947 (16.2)	512 (18.0)	562 (16.6)	2,210 (16.1)	422 (17.6)	987 (21.1)	1,270 (18.8)	81,728 (16.8)

ADPKD, autosomal dominant polycystic kidney disease; IgAN, IgA nephropathy; MN, membranous nephropathy; FSGS, focal segmental glomerulosclerosis; MPGN, membranoproliferative GN; LN, lupus nephritis; DN, diabetes related ESRD.

Figure S1: Unadjusted and adjusted mortality hazard ratios by method of analysis stratified by model



Model 1: unadjusted; model 2: demographic adjusted; model 3: demographic and comorbidity adjusted; model 4: demographic, comorbidity and ESRD therapy modality adjusted. Complete case analysis includes only patients with complete information (n=575,032). Multiple imputation analysis uses the entire patient sample (n=840,574) and imputes missing data using a joint modeling approach, generating k datasets that are analyzed separately. Results are then combined. The final log HR equals the mean of the individual log HRs for each dataset. Standard error (SE) is computed taking into account uncertainty deriving from both the sampled values and the imputation process. ADPKD, autosomal dominant polycystic kidney disease; IgAN, IgA nephropathy; MN, membranous nephropathy; FSGS, focal segmental glomerulosclerosis; MPGN, membranoproliferative GN; LN, lupus nephritis; DN, diabetes related ESRD.

Cause of ESRD diagnostic codes:

- Focal and segmental glomerulosclerosis (FSGS): 582.1
- IgA nephropathy (IgAN): 583.81
- Membranous nephropathy (MN): 583.1
- Membranoproliferative glomerulonephritis (MPGN): 583.21, 583.22
- Lupus nephritis: 710.0
- Vasculitis: 446.4, 446.20
- Diabetes mellitus (DM): 250.40, 250.41
- Autosomal-dominant polycystic kidney disease (ADPKD): 753.13

ESRD therapy modality categories:

- Hemodialysis: home, dialysis facility, long-term care facility hemodialysis
- Peritoneal dialysis: continuous ambulatory and continuous cycling peritoneal dialysis
- Kidney transplantation: deceased donor and living donor kidney transplantation, including combined organ transplantations. Incident (baseline) ESRD modality defined as pre-emptive kidney transplant when transplant date and date of ESRD therapy initiation coincide.

Cause of death categories:

- **Cardiac:** Myocardial infarction, acute (23); Pericarditis, incl. Cardiac tamponade (25); Atherosclerotic heart disease (26); Cardiomyopathy (27); Cardiac arrhythmia (28); Cardiac arrest, cause unknown (29); Valvular heart disease (30); Pulmonary edema due to exogenous fluid (31); Congestive Heart Failure (32).
- **Vascular:** Pulmonary embolus (35); Cerebrovascular accident including intracranial hemorrhage (36); Ischemic brain damage/Anoxic encephalopathy (37); Hemorrhage from transplant site (38); Hemorrhage from vascular access (39); Hemorrhage from dialysis circuit (40); Hemorrhage from ruptured vascular aneurysm (41); Hemorrhage from surgery (not 38, 39, or 41) (42); Other hemorrhage (not 38-42, 72) (43); Mesenteric infarction/ischemic bowel (44).
- **Cardiovascular:** Cardiac and Vascular causes combined
- **Infection:** Septicemia due to internal vascular access (33); Septicemia due to vascular access catheter (34); Peritoneal access infectious complication, bacterial (45); Peritoneal access infectious complication, fungal (46); Peritonitis (complication of peritoneal dialysis) (47); Central nervous system infection (brain abscess, meningitis, encephalitis, etc.) (48); Septicemia due to peripheral vascular disease, gangrene (51); Septicemia, other (52); Cardiac infection (endocarditis) (61); Pulmonary infection (pneumonia, influenza) (62); Abdominal infection (peritonitis (not comp of PD), perforated bowel, diverticular disease, gallbladder) (63); Genito-urinary infection (urinary tract infection, pyelonephritis, renal abscess) (70).
- **Malignancy-related:** Malignant disease, patient ever on Immunosuppressive therapy (82); Malignant disease (not 82) (83).