Supplemental Tables for the Following Manuscript:

CKD-Mineral and Bone Disorder and Risk of Death And Cardiovascular Hospitalization in Patients on Hemodialysis

Additional Methods:

Time-to-event models were constructed to estimate each patient's non-CKD-MBD risk of each of the two endpoints. Predicted probabilities of each outcome over the 16 month follow-up period were estimated using the baseline function in SAS Proc PHREG. Each predicted probability was included as a covariate in the corresponding CKD-MBD risk model of risk for each outcome, along with the CKD-MBD exposure groups.

Description of Additional Tables and Figures:

The two tables in this supplement show the results for a model identical to the one published by Liu, et al. for describing comorbidity burden in dialysis patients using claims data and data from the Medical Evidence form. In addition, the tables show the results for the same base model and patient cohort, after adding additional risk factors that were available from the DaVita, Inc data. The models with the additional risk factors are the disease models used to estimate the 16-month probability for each outcome. These probabilities were used to estimate the background risk of each outcome, ignoring CKD-MBD parameters (PTH, calcium, and phosphate). These probabilities were then used in the second stage of modeling along with the CKD-MBD phenotypes.

The figures show the distribution of the predicted probabilities for each outcome for all patients in the cohort.
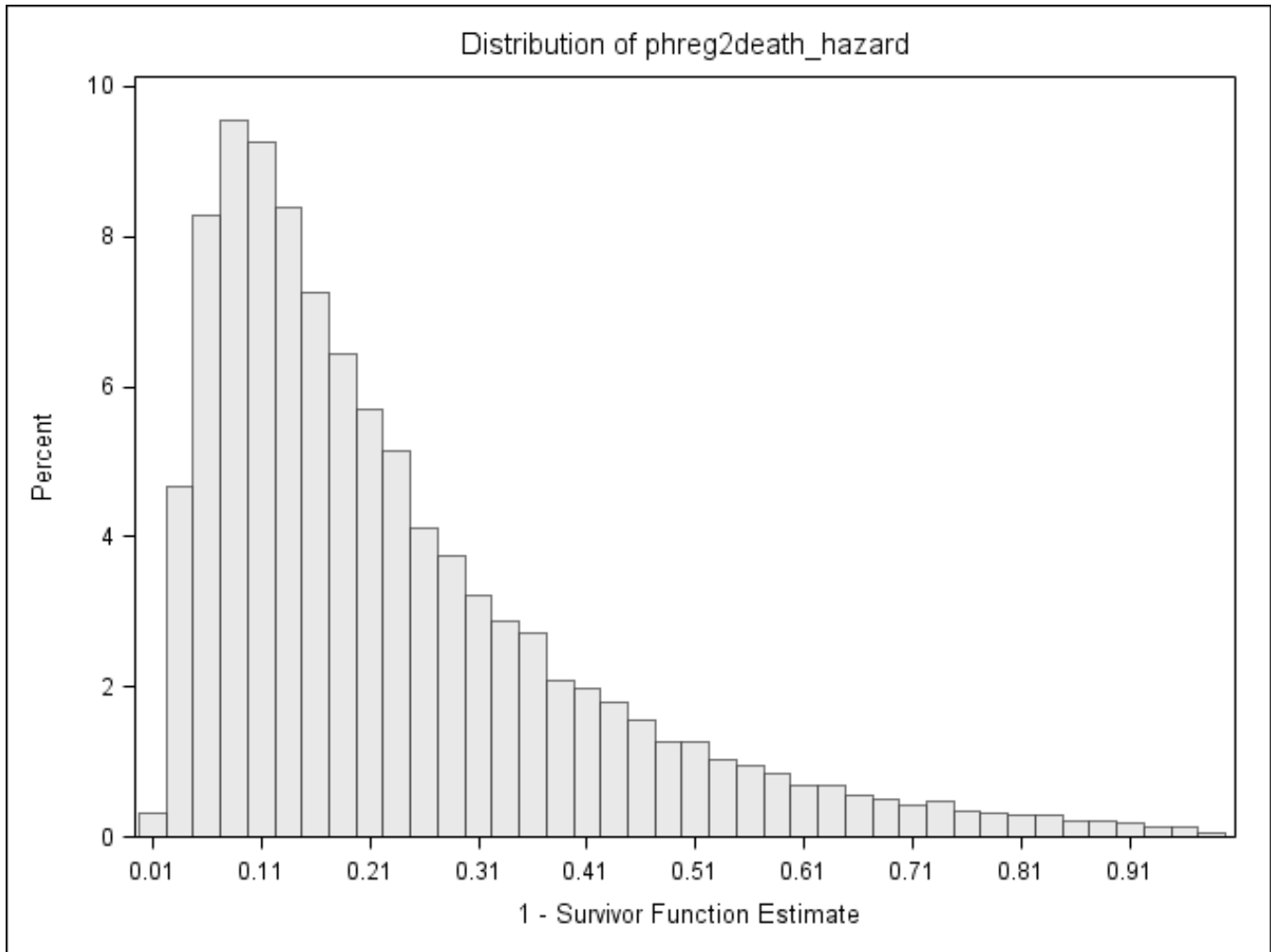
Supplemental Table 1: Model by Liu, et al., for Mortality With and Without Additional Risk Factors

Variable		Results Based on Model by Liu, et al.			Results After Adding Additional Risk Factors		
		Hazard Ratio	95% Confidence Limits	p-value	Hazard Ratio	95% Confidence Limits	p-value
Age, group, years (vs. ≥ 80)	0-29	0.20	0.14	0.28	<.0001	0.24	0.17	0.35	<.0001
	30-39	0.21	0.17	0.26	<.0001	0.26	0.21	0.31	<.0001
	40-49	0.34	0.30	0.38	<.0001	0.40	0.36	0.45	<.0001
	50-59	0.41	0.38	0.45	<.0001	0.48	0.44	0.52	<.0001
	60-64	0.46	0.42	0.51	<.0001	0.54	0.49	0.59	<.0001
	65-69	0.54	0.49	0.59	<.0001	0.62	0.57	0.68	<.0001
	70-79	0.68	0.63	0.73	<.0001	0.75	0.70	0.81	<.0001
Sex (vs. Male)	Female	0.97	0.92	1.02	0.24	1.03	0.97	1.08	0.34
Race (vs. White)	Asian	0.84	0.74	0.96	0.01	0.82	0.72	0.93	0.00
	African American	0.84	0.80	0.89	<.0001	0.76	0.71	0.80	<.0001
	Native American	0.92	0.78	1.07	0.27	0.87	0.74	1.02	0.09
	Other/Unknown	0.97	0.76	1.22	0.77	0.91	0.72	1.15	0.42
ESRD primary cause (vs. GN/PKD)	Diabetes	1.16	1.05	1.29	0.00	1.22	1.10	1.36	0.00
	Hypertension	1.08	0.99	1.19	0.10	1.16	1.06	1.28	0.00
	Other	1.18	1.05	1.31	0.00	1.15	1.03	1.28	0.02
Comorbid conditions (vs. Absence of condition)	ASHD	1.05	0.98	1.11	0.15	1.04	0.98	1.10	0.21
	CHF	1.43	1.35	1.52	<.0001	1.36	1.28	1.44	<.0001
	CVA	1.27	1.19	1.35	<.0001	1.15	1.08	1.22	<.0001
	PVD	1.26	1.19	1.33	<.0001	1.13	1.07	1.19	<.0001
	Other cardiac	1.19	1.12	1.27	<.0001	1.09	1.02	1.15	0.01
	COPD	1.34	1.26	1.42	<.0001	1.29	1.22	1.38	<.0001
	GI	1.20	1.11	1.30	<.0001	1.04	0.96	1.13	0.38
	Liver disease	1.20	1.06	1.37	0.00	1.02	0.89	1.15	0.82
	Dysrhythmia	1.20	1.13	1.27	<.0001	1.13	1.06	1.20	0.00
	Cancer	1.19	1.09	1.29	<.0001	1.13	1.04	1.23	0.00
	Diabetes	1.11	1.03	1.19	0.01	1.11	1.03	1.20	0.01
Vintage, month (vs. 12-24)	25-48					1.04	0.97	1.12	0.23
	≥49					1.23	1.15	1.31	<.0001
Albumin, g/dl	continuous					0.30	0.28	0.33	<.0001
Hemoglobin, g/dl	continuous					0.89	0.87	0.92	<.0001
Kt/V	continuous					0.48	0.43	0.54	<.0001
BMI, kg/m^2	continuous					0.96	0.96	0.97	<.0001
Hypertension	continuous					0.89	0.76	1.04	0.14
Current smoking (vs. No)						1.11	0.98	1.25	0.10

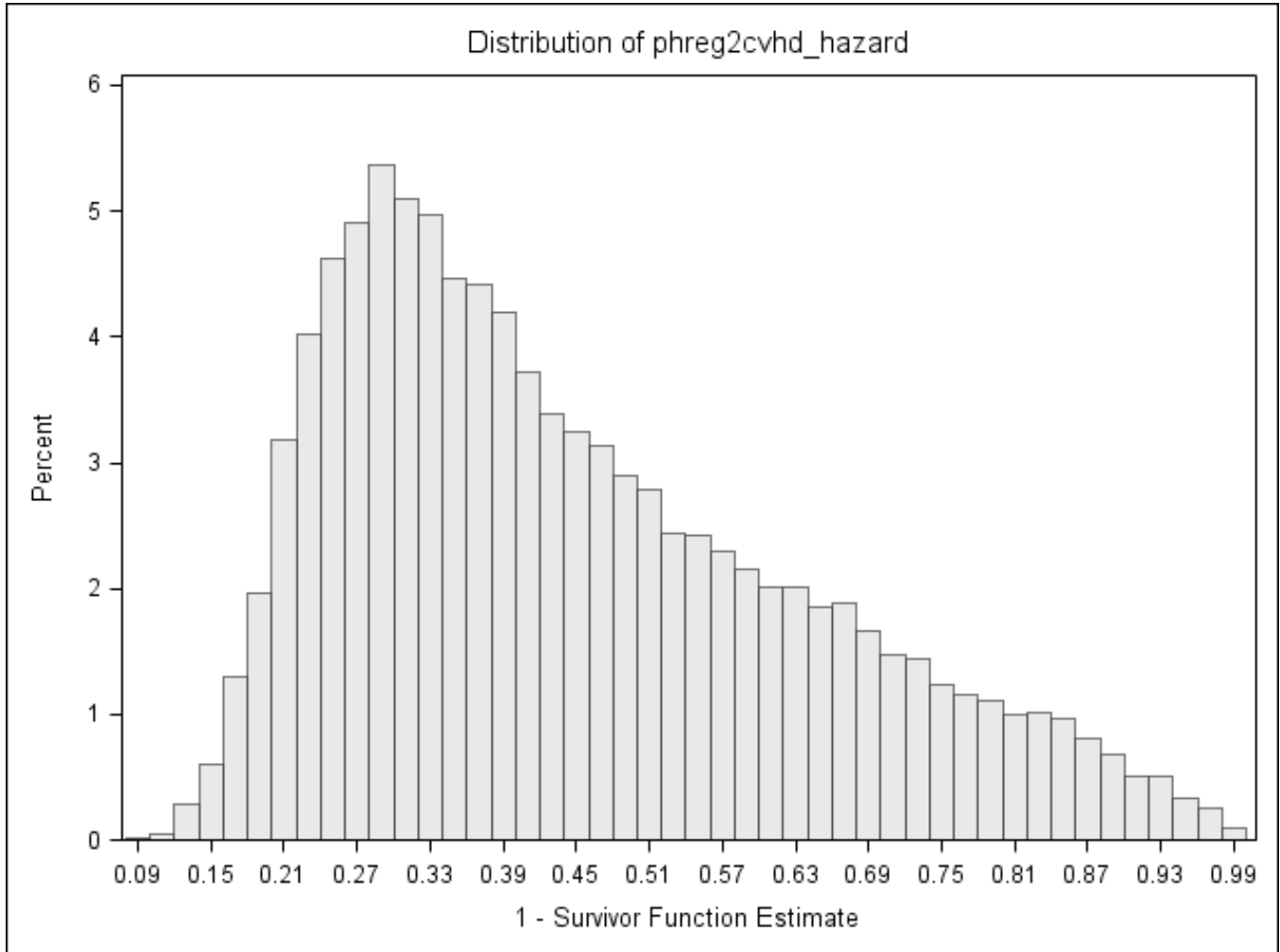**Supplemental Table 2: Model by Liu, et al., for the Composite Endpoint, With and Without Additional Risk Factors**

Variable		Results Based on Model by Liu, et al.				Results After Adding Additional Risk Factors			
		Hazard Ratio	95% Confidence Limits		p-value	Hazard Ratio	95% Confidence Limits		p-value
Age, group, years (vs. ≥80)	0-29	0.70	0.59	0.82	<.0001	0.78	0.66	0.93	0.00
	30-39	0.58	0.52	0.64	<.0001	0.64	0.57	0.71	<.0001
	40-49	0.69	0.64	0.74	<.0001	0.75	0.69	0.81	<.0001
	50-59	0.68	0.64	0.73	<.0001	0.74	0.70	0.79	<.0001
	60-64	0.74	0.69	0.79	<.0001	0.80	0.74	0.86	<.0001
	65-69	0.75	0.70	0.81	<.0001	0.81	0.76	0.87	<.0001
	70-79	0.81	0.76	0.86	<.0001	0.86	0.81	0.91	<.0001
Sex (vs. Male)	Female	1.03	0.99	1.06	0.19	1.08	1.04	1.12	0.00
Race (vs. White)	Asian	0.92	0.84	1.01	0.07	0.90	0.82	0.99	0.02
	African American	1.04	1.00	1.09	0.04	0.98	0.94	1.02	0.38
	Native American	0.89	0.79	1.00	0.05	0.89	0.79	1.00	0.05
	Other	0.81	0.68	0.98	0.03	0.79	0.66	0.96	0.01
ESRD primary cause (vs. GN/PKD)	Diabetes	1.03	0.96	1.11	0.47	1.04	0.97	1.12	0.26
	Hypertension	1.03	0.97	1.10	0.36	1.06	0.99	1.13	0.11
	Other	1.02	0.94	1.10	0.71	1.00	0.92	1.08	0.97
Comorbid conditions (vs. Absence of condition)	ASHD	1.27	1.21	1.32	<.0001	1.25	1.20	1.31	<.0001
	CHF	1.42	1.36	1.48	<.0001	1.38	1.32	1.44	<.0001
	CVA	1.21	1.15	1.26	<.0001	1.15	1.10	1.21	<.0001
	PVD	1.19	1.14	1.24	<.0001	1.12	1.08	1.17	<.0001
	Other cardiac	1.35	1.29	1.41	<.0001	1.28	1.22	1.34	<.0001
	COPD	1.31	1.25	1.37	<.0001	1.29	1.23	1.35	<.0001
	GI	1.19	1.11	1.26	<.0001	1.10	1.03	1.17	0.00
	Liver Disease	1.11	1.00	1.22	0.04	1.02	0.93	1.13	0.67
	Dysrhythmia	1.22	1.17	1.28	<.0001	1.19	1.14	1.25	<.0001
	Cancer	1.11	1.04	1.18	0.00	1.08	1.01	1.16	0.02
	Diabetes	1.11	1.05	1.17	0.00	1.12	1.06	1.18	<.0001
Vinatage, month (vs. 12-24)	25-48					1.11	1.06	1.17	<.0001
	≥49					1.16	1.10	1.21	<.0001
Albumin	continuous					0.61	0.58	0.65	<.0001
Hemoglobin	continuous					0.90	0.88	0.92	<.0001
Kt/V	continuous					0.62	0.57	0.67	<.0001
BMI	continuous					0.98	0.98	0.98	<.0001
Hypertension	continous					1.39	1.22	1.58	<.0001
Current smoking (vs. No)						1.17	1.07	1.27	0.00

Supplemental Figure 1: Distribution of the Predicted Probability of Death

Note: Results reflect the 16-month predicted probability of death from the Cox proportional hazards model for each patient using the baseline command in SAS Proc PHREG.

Supplemental Figure 2: Distribution of the Predicted Probability of the Composite Endpoint of Cardiovascular Hospitalization or Death

Note: Results reflect the 16-month predicted probability of the composite event from the Cox proportional hazards model for each patient using the baseline command in SAS Proc PHREG.