APPENDICES

Appendix A: Sensitivity analyses in missed treatments not attributed to illness

Reason for missed treatment	Odds ratio of event (95% CI) after a missed tx (vs. received tx)		
	Hospitalization	ER visit	ICU-CCU admission
Missed ride or car breakdown (n=1264)	11.3 (6.0-21.3)	8.1 (5.4-12.0)	26.9 (10.6-68.3)
Personal-family reason (n=654)	11.9 (4.5-31.6)	10.8 (4.0-29.1)	24.2 (1.5-38.7)
Clinic shutdown (n=147)	5.4 (0.6-49.0)	7.1 (0.8-63.6)	*
Patient left waiting room before treatment (n=816)	21.4 (5.7-34.2)	5.8 (2.9-11.4)	30.0 (8.9-98.6)

ER emergency room; ICU-CCU intensive or coronary care unit; CI confidence interval; tx treatment
*too few events for the model to converge

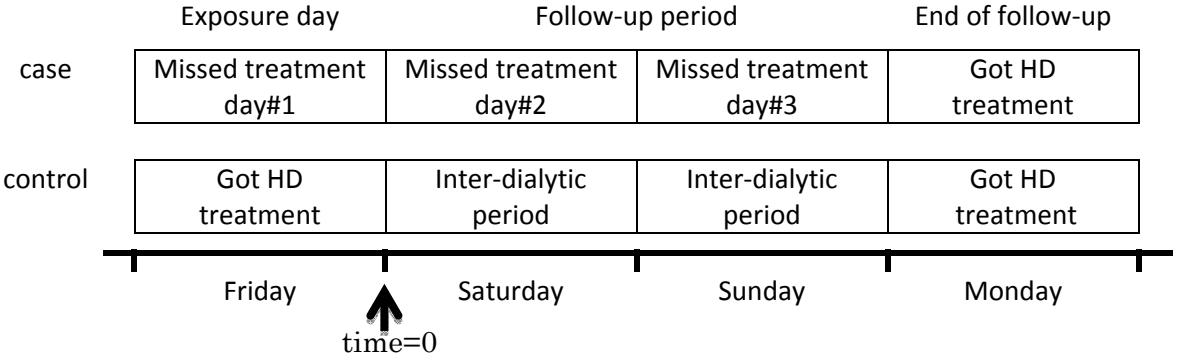
Appendix B: Definition of primary outcome events per USRDS standard analytic files

Primary outcome	Definition
Hospitalization	Inpatient institutional claim
Emergency room visit	ER visit without hospital admission: outpatient institutional claim with revenue code 0450-0459 or 0981; ER visit with hospital admission: inpatient institutional claim with revenue code 0450-0459 or 0981, where the charge amount >$0
ICU-CCU admission	Inpatient institutional claim with revenue code: 200-219, 233-234

Appendix B: Definition of secondary outcome events per USRDS standard analytic file

Secondary outcome	Definition
Urgent inpatient dialysis	Physician claim with: a) CPT code 90935, 90937; AND b) date of service that corresponds with the date of hospital admission or emergency room visit
Hyperkalemia	Hospitalization or emergency room visit with the primary ICD9 discharge diagnosis code 276.7x
Congestive heart failure	Hospitalization or emergency room visit with the primary ICD9 discharge diagnosis code 276.6, 398.1, 402.01, 402.11, 402.91, 404.0x, 404.10, 404.11, 404.l3, 404.9, 404.91, 404.93m 416, 416.8, 416.9, 425, 425.x, 428.x, 506.1, 514, 518.4, 674.5x, 785.51

Appendix C: Schematic flow diagram of the study describing the exposure and follow-up periods among case and control subjects



Exposure day: Patients were classified as a case or control depending on whether the patient missed or received their scheduled hemodialysis treatment. If the case or control was hospitalized, seen in the ER, or admitted to the ICU-CCU on the exposure day, then the patient was excluded from the analysis.

The outcome of the patient was determined by a hospitalization, ER, or ICU-CCU event that occurred in the follow-up period. The follow-up period ended when a patient received their next scheduled hemodialysis treatment.

Appendix D: Adherence barrier definitions

Adherence barrier	Definition
Marital status	Abstracted from the FMCNA Database
Employment status	Abstracted from the FMCNA Database
English speaking	Abstracted from the FMCNA Database
Ambulatory status	Inability to transfer or ambulate per Medical Evidence form (2728)
GI upset	Physician claim within the previous week with ICD9 code 00x.x, 078.82,127.x, 307.54, 536.x, 555.x, 556.x, 558.x, 564.x, 779.3x, 787.x, 789.x
Depression	Physician claim within the previous 90 days with ICD9 code 290.13, 290.2, 290.21, 290.43, 293.83, 296.x, 300.4, 308.3, 308.4, 308.9, 309.x, 311.x, 313.1, E95x.x, V6282, V6284
Drug or alcohol abuse	Alcohol or drug dependence per Medical Evidence form (2728)
Chronic pain	Physician claim within the previous 90 days with ICD9 code 300.5, 307.8x, 327.5x, 333.9x, 337.2x, 338.x, 346.x, 350.x, 353.x, 355.1,388.7x, 625, 711.x-716.x, 719.x, 720.x-724.x, 733.x, 780.x
Transportation to dialysis	Abstracted from the FMCNA Database
Driving time to dialysis	We used the combination of CDX-Zipstream and Microsoft MapPoint 2012 software to calculate the driving time for each patient. To do this, we provided the software the address of dialysis facility and the address of patient's home.[11,12] The software then calculated the expected driving time between two points which was used as a parameter in the final logistic model on Figure 2.
Daily snow fall	We downloaded weather data from the Global History Climatology Network daily reporting system, which included snowfall readings at 1218 weather stations across the United States for everyday between January 2005 to December 2009.[10] For each patient, we assigned them a snowfall number (inches of snow) from the closest weather station to the dialysis facility (by longitude-latitude). This calculated parameter was included in the final logistic model on Figure 2.
Holidays*	Scheduled treatment on a date corresponding to Valentine's Day, Memorial Day, Independence Day, Labor Day, or the patient's birthday

*Fresenius Medical Care reschedules hemodialysis treatments so that patients do not have to dialyze on Thanksgiving, Christmas, and New Year's Day. For this reason, these major holidays were not classified as a oliday for purpose of this analysis.