

Characteristics of Patients Most Likely to Have a Missed Dialysis Session

J Rubin, MA;¹ TC Bond, PhD;^{*1} S Wang, MS;¹ A Yang, MD²

¹DaVita Clinical Research, Minneapolis, MN, USA; ²Affymax, Inc., Palo Alto, CA, USA

Introduction

- Missed dialysis sessions can have detrimental effects on patient morbidity and mortality, and can increase the risk of hospitalization. 1-3
- Missed sessions can also have a direct impact on facility costs under the current Medicare bundled Prospective Payment System (PPS), introduced in 2011.⁴
- Understanding which patients are most likely to miss dialysis sessions may be helpful to the development of strategies to improve attendance.

Objective

 We sought to identify patients who frequently and systematically missed dialysis sessions and conducted an analysis to determine predictive characteristics of these patients.

Methods

- Data from adult (> 18 years old) hemodialysis patients (HD) receiving in-center dialysis ≥ 3 times/week between January 1, 2010 and December 31, 2010 who had 6 months or more of data were analyzed.
- A missed session was defined as an expected dialysis session that the patient did not attend and did not make up before their next session.
- A frequent misser was defined as a patient who missed > 2 sessions per month in at least 1/3 of the months for which they had data.
- Stepwise logistic regression was employed to determine variables predictive of frequent missing and included demographics, end-stage renal disease (ESRD)-related data, comorbidities, lab values, and mean hospitalized days, as well as relevant interactions between these variables.
- Frequent missers were compared to non-frequent missers to assess the predictability of the final logistic model.

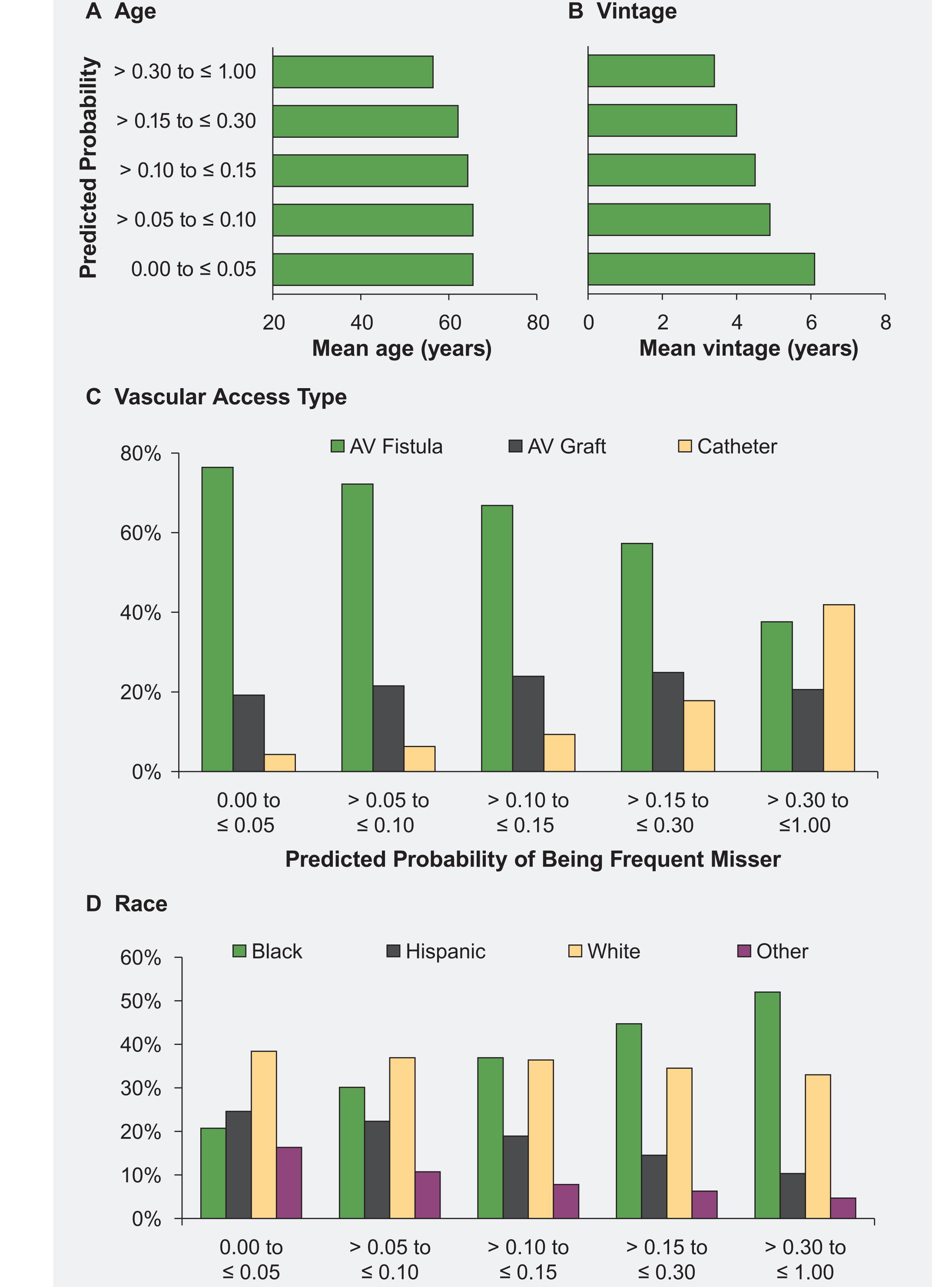
Results

- Analysis of frequent missers (n = 8,421) compared to non-frequent missers (n = 64,712) showed that patients were more likely to be frequent missers if they were younger (mean age 56.4 yrs) and had a lower overall dialysis vintage (Table 1; Figure 1, A and B).
- The probability of being a frequent misser was higher for those dialyzing with a central venous catheter (CVC), compared to those using an arteriovenous (AV) fistula or graft (Figure 1C).
- A greater than expected percentage of frequent missers were Black, while Hispanics were less likely to be frequent missers (Figure 1D).

Table 1. Characteristics of Frequent Missers

	Mean ± SD	Frequent Missers	Non-Frequent Missers
	N	8,421	64,712
	Age (yr)	56.42 ± 15.10	63.04 ± 14.56
	Female (%)	45.81%	43.34%
	Vintage (yr)	3.63 ± 3.24	4.43 ± 3.91
	Race (%)		
	White	32.35%	35.75%
	Black	49.02%	38.4%
	Hispanic	12.58%	17.47%
	Other	6.05%	6.05%
	Access Type (%)		
	AV fistula	54.38%	60.24%
	CVC	24.82%	16.97%
	AV graft	20.79%	22.78%
	Labs		
	Albumin (g/dL)	3.83 ± 0.40	3.88 ± 0.35
	Corrected Ca (mg/dL)	8.97 ± 0.52	9.04 ± 0.47
	PTH (pg/ml)	418.32 ± 373.11	341.54 ± 268.65
	Phosphorus (mg/dL)	5.53 ± 1.34	5.01 ± 1.06
	nPCR	0.86 ± 0.22	1.01 ± 0.22
	Hospital Days	1.21 ± 1.96	0.82 ± 1.55
	Missed Sessions per Month	2.96 ± 1.54	0.52 ± 0.69

Figure 1. Predicted Probabilities of Being a Frequent Misser



Predicted Probability of Being Frequent Misser

Conclusions

- We have identified characteristics of patients likely to miss dialysis sessions:
- Patients who miss dialysis sessions are more likely to be younger and newer to dialysis.
- Patients using CVCs for vascular access are more likely to miss sessions than patients using fistulas or grafts.
- Patients who miss sessions frequently are more likely to be Black, and less likely to be Hispanic.
- Our findings may enable the development of focused interventions to improve attendance and, potentially, patient outcomes.

References

- 1. Anderson AH, Cohen AJ, Kutner NG, Kopp JB, Kimmel PL, Muntner P. Missed dialysis sessions and hospitalization in hemodialysis patients after Hurricane Katrina. *Kidney Int.* 2009;75:1202–1208.
- 2. Leggat JE, Jr., Orzol SM, Hulbert-Shearon TE, et al. Noncompliance in hemodialysis: predictors and survival analysis. *AJKD*. 1998;32:139–145.
- 3. Saran R, Bragg-Gresham JL, Rayner HC, et al. Nonadherence in hemodialysis: associations with mortality, hospitalization, and practice patterns in the DOPPS. *Kidney Int*. 2003;64:254–262.
- 4. Centers for Medicare & Medicaid Services End-Stage Renal Disease Prospective Payment System. *Fed Regist.* 2010;75:49029–49214.

Acknowledgments

Our sincere appreciation is extended to the teammates in more than 1,600 DaVita clinics who work every day to take care of patients but also to ensure the extensive data collection on which our work is based. We thank DaVita Clinical Research® (DCR®), and specifically acknowledge Karen M Spach, PhD and Abigail E Hunt, PhD of DCR for editorial contributions in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

This analysis was funded by Affymax Inc. and Takeda Pharmaceutical Company Limited.

*Correspondence: t.christopher.bond@davita.com

Poster available at www.davitaclinicalresearch.com/directory.asp

National Kidney Foundation Spring Clinical Meetings, May 9–13, 2012, Washington, DC