

# Pharmacy Management Improves Facility Performance

Richard Mutell, MBA, MA\*<sup>1</sup>; Steven M. Wilson, PhD<sup>1</sup>; Carey Colson, MBA<sup>1</sup>; Tracy Mayne, PhD<sup>1</sup>; Josh Golomb<sup>1</sup>  
(1) DaVita Inc., Denver, CO

## INTRODUCTION

ESRD patients take an average of 8-11 oral medications per day. Research has shown that pharmacy management can improve patient outcomes, but this has been largely unexplored in ESRD patients. The purpose of this study is to assess the impact of pharmacy management on the facility-level DaVita Quality Index (DQI), a measure previously shown to predict hospitalizations and mortality.

## METHODOLOGY

- This was retrospective analysis of 1945 HD dialysis facilities from 1/1/09 to 4/30/10 at a US dialysis organization.
- Demographic characteristics are shown (Table 1).
- Pharmacy management included insurance management, prescription fulfillment, adherence support, and coordination of care with physicians and facility staff.
- DQI is a composite variable of weighted phosphorus (P), calcium (Ca), parathyroid hormone (PTH), albumin, hemoglobin, KT/V, vaccination rates, and vascular access.
- The mineral and bone disease (MBD) component includes weighted P, PTH and Ca measures.
- The independent variable in all analyses was the percent of facility patients enrolled in pharmacy management.
- The primary outcomes were facility-level DQI and MBD scores, and percent of patients with P, PTH and Ca in KDOQI recommended ranges.
- Analyses were conducted using a Generalized Linear Mixed Model.

## RESULTS

Table 1. Patient Demographics at Facilities offering DaVita Rx

Mean ± SD	All Patients (1/09)	DaVita Rx Pts (1/09)	DaVita Rx Pts (4/10)
N	78,974	22,212	24,452
Age (yr)	61.8 ± 15.1	55.4 ± 14.4	56.0 ± 14.4
% Male	56.3%	52.0%	52.0%
<i>Race and Ethnicity</i>			
% African American	35.3%	44.5%	44.6%
% Hispanic	13.3%	29.1%	28.8%
% Asian, Pacific Islander	4.0%	3.9%	4.0%
% Native American	1.7%	0.7%	0.7%
% Unknown	0.1%	0.1%	0.1%
% Diabetic	71.6%	71.6%	71.2%
Vintage (yr)	3.8 ± 3.6	4.3 ± 3.7	5.1 ± 3.8
BMI	27.4 ± 6.9	28.3 ± 7.5	28.2 ± 7.5
Medications Prescribed (Orders Started)	3.2 ± 3.5	2.8 ± 3.0	2.7 ± 3.0
Prescriptions Filled	ND	5.2 ± 4.0	5.4 ± 4.0

Table 2. Influence of % of Patients Enrolled in DaVita Rx on Indicators of Clinical Outcomes

	Beta (SE)	p-value
DQI score	0.05 (0.007)	<0.001
MBD score	0.01 (0.003)	<0.001
% P ≤5.5 mg/dL	0.07 (0.015)	<0.001
% PTH 150-300 pg/ml	0.06 (0.018)	<0.001
% Ca ≤9.5 mg/dL	-0.01 (0.012)	0.27

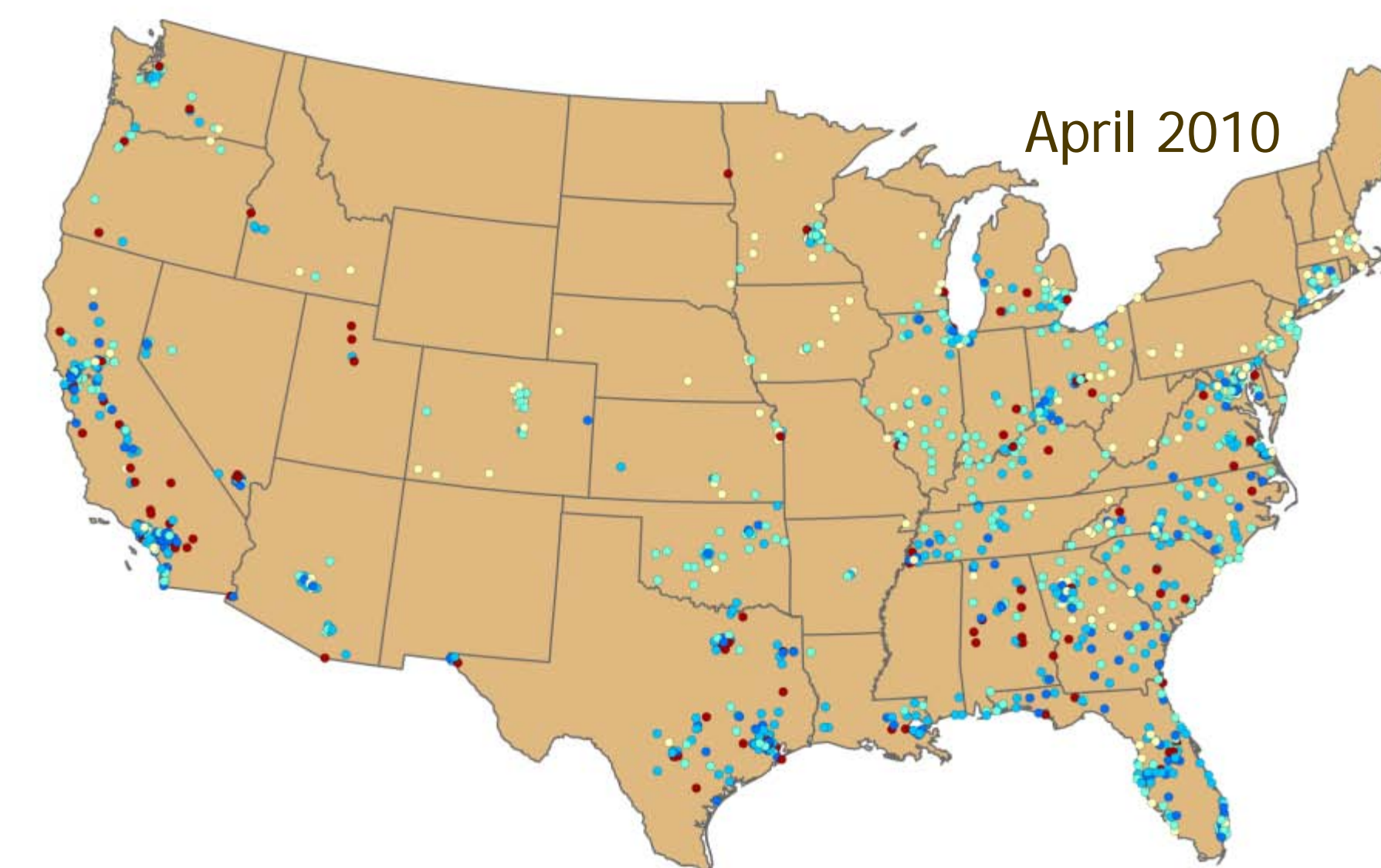
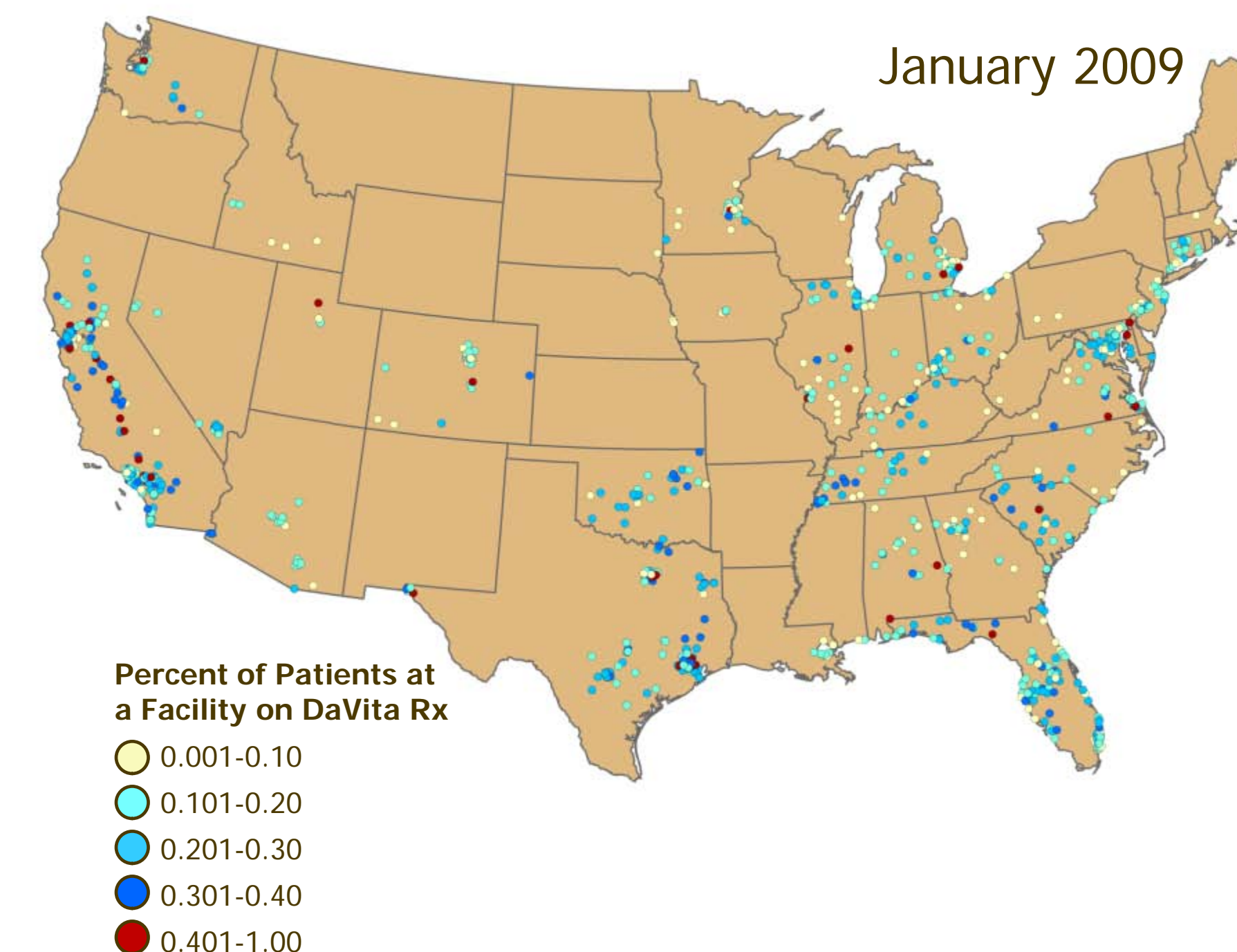


Figure 1. Facilities using DaVita Rx in January 2009 (top) and April 2010 (bottom)

## SUMMARY of RESULTS

- Over the course of the study, mean pharmacy management enrollment increased from 11.9% to 19.0% (Table 1 and Figure 1).
- We found a positive and statistically significant relationship between proportion of patients enrolled in pharmacy management, on the one hand, and facility-level improvement in overall DQI scores, MBD scores, and patients in KDOQI range for P and PTH (Table 2), on the other.
- We found no significant effect on percent of patients with Ca ≤9.5 mg/dL.

## KEY LEARNINGS

- ✓ The burden of treatment, including a high number of medications and daily pill consumption, creates a high potential for inadequate compliance and persistence on important medications.
- ✓ Pharmacy management that focuses on access and adherence can improve important outcomes in dialysis care.

We express our sincere appreciation to the teammates in our nearly 1600 clinics who work every day not only to take care of patients but also to ensure the extensive data collection on which our work is based. We thank DaVita Clinical Research® for support in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

\*Correspondence: rich.mutell@davita.com  
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