

A Comparative Analysis of Vascular Access and Immunization Between For-Profit and Nonprofit Dialysis Facilities Using Medicare Claims Data

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Introduction

Prior analytic studies have sought to compare metrics of care for various provider types. Such comparisons have included for-profit versus nonprofit dialysis providers and comparisons between small, medium, and large dialysis providers. To further elucidate the differences between industry comparisons of vaccination rates and vascular access reporting, a comparative analysis was performed between several different dialysis provider types using 2010 Medicare claims data.

Objective

The objective of the study was to perform a comparative analysis of patient outcomes regarding vascular access and immunization rates between for-profit and nonprofit dialysis providers.

Results

For-profit dialysis facilities reported better outcomes in percent of vaccination rates for influenza than nonprofit facilities (54.8% for-profit versus 52.3% non-profit). These trends continued for Pneumococcal pneumonia immunization at 26.1% for-profit versus 21.3% nonprofit and Hepatitis B immunization at 25.2% for-profit versus 21.1% nonprofit (Table 2).

Table 2: Industry Comparison of Vaccination Rates from 2010 Medicare Claims Data

Provider Type	Influenza, %	Pneumococcal Pneumonia, %	Hepatitis B, %
All dialysis facilities	53.7	24.8	24.0
Nonprofit facilities	52.3	21.3	21.1
For-profit facilities	54.8	26.1	25.2
Hospital-based units	46.9	17.0	18.7
LDOs	57.4	28.3	25.2
Other freestanding facilities	48.0	18.8	23.9

Abbreviations: LDOs, large dialysis organizations (DaVita Inc., Fresenius Medical Care, Dialysis Clinic, Inc.)

For-profit dialysis facilities showed better outcomes for vascular access than non-profit dialysis facilities, as measured by the difference in percent of catheter use at 17.5% and 20.1%, respectively (Table 3).

Table 3: Industry Comparison of Vascular Access Modalities from 2010 Medicare Claims Data

	Fistula, %	Graft, %	Catheter, %	Multiple, %
All hemodialysis months	58.4	22.4	18.2	0.9
Nonprofit facilities	58.4	19.9	20.1	1.6
For-profit facilities	58.7	23.0	17.5	0.8
Hospital-based units	53.9	18.9	24.9	2.3
LDOs	59.0	23.4	16.8	0.8
Other freestanding facilities	57.9	20.7	20.1	1.2

Abbreviations: HD, hemodialysis; LDOs, large dialysis organizations (DaVita Inc., Fresenius Medical Care, Dialysis Clinic, Inc.)

Methods

Table 1: 2009–2010 Number of Dialysis Units Categorized by Provider Type

Provider Type	Number of Units
All dialysis facilities	5,642
Nonprofit facilities	943
For-profit facilities	4,691
Hospital-based units	560
LDOs	3,708
Other freestanding facilities	5,082

Abbreviations: LDOs, large dialysis organizations (DaVita Inc.®, Fresenius Medical Care, Dialysis Clinic, Inc.®)

Population and Provider Group

Data from prevalent end-stage renal disease (ESRD) patients were collected from the 2010 Medicare Standard Analytic Files (SAFs; Table 1, Figures 1, 2). Beneficiaries who had not been on dialysis for at least 3 months and patients who were unavailable for follow-up were excluded from the analysis. Beneficiaries were identified as having received dialysis services at for-profit and nonprofit dialysis providers based on the provider numbers on dialysis claims in 2010.

Patients were grouped by provider types at which they received care during the calendar year. Patients receiving care at multiple providers were counted once with each applicable provider subgroup. These providers were classified based upon their Medicare provider number and public records of provider-profit status.

Vascular Access

Prior to the second half of 2010, the vascular access type could not be determined without the physician claims, which were unavailable for 95% of ESRD fee-for-service Medicare patients. Beginning in January of 2010, providers were permitted to report modifiers on claims to indicate the type of dialysis received. In July of 2010, this reporting became mandatory. Therefore, the vascular access analysis was conducted from July to December of 2010. Hemodialysis patients who received dialysis services prior to July of 2010 were included in the analysis. Patient months were identified by the presence of modifier type: V5 (catheter), V6 (AV graft), or V7 (AV fistula). Patient months with more than 1 modifier type were

Vaccination

Beneficiaries were identified as having received an influenza vaccine if at least 1 of the following procedure codes was present in the outpatient SAFs between September and December of 2010: 90724, 90657, 90658, 90659, 90660, G0008.

Beneficiaries were identified as having received a pneumococcal pneumonia vaccine if at least 1 of the following procedure codes was present in the outpatient SAFs in 2009 or 2010: 90669, 90732, J6065, G0009.

Beneficiaries were identified as having received a Hepatitis B vaccine if at least 1 of the following procedure codes was present in the outpatient SAFs in 2010: 90636, 90740, 90743, 90744, 90748, 90731, 90723, G0010.

Patients were grouped with providers types where they received care during the calendar year. Patients receiving care at multiple providers were counted once with each applicable provider subgroup. These providers were classified based upon their Medicare provider number and public records of provider-profit status.

Methodologies used to compare vaccination rates were based on the 2010 and 2011 United States Renal Data System Annual Data Reports.^{1,2}

Conclusions

- For-profit providers had superior vascular access and vaccination outcomes compared with nonprofit providers.
- Intense focus on care processes such as vaccination and vascular access can significantly augment population-based and patient-based goals, improving population health and constraining healthcare costs.
- Sufficient infrastructure support and scaling capabilities, however, are needed as well as high prioritization, as seen in for-profit dialysis facilities.

References

- 1. United States Renal Data System: USRDS 2010 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States, ed 2010, Bethesda, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2010.
- 2. United States Renal Data System: USRDS 2011 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States, ed 2011, Bethesda, National Instituties of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2011.

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