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Title

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Permalink

<https://escholarship.org/uc/item/26r8h2m6>

Journal

JAMA Internal Medicine, 179(8)

ISSN

2168-6106

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Publication Date

2019-08-01

DOI

10.1001/jamainternmed.2019.0431

Peer reviewed

Letters

RESEARCH LETTER

A Comparison of Payments to a For-Profit Dialysis Firm From Government and Commercial Insurers

Between 1996 and 2016, the number of people receiving dialysis in the United States increased by 4.3% annually.¹ Dialysis is expensive, but typical cost analyses focus on Medicare^{1,2} and ignore the contributions of commercial insurers. The national dialysis market is controlled by 2 for-profit organizations, one of which—DaVita—operates 37% of the market.³ Because this company generates revenues almost exclusively from dialysis and itemizes revenues by payer, we are able to assess differences in payments from government and commercial insurers to dialysis clinics through analysis of this company's financial records.

Methods | Annual financial statements of DaVita Inc from January 2010 through December 2017 were retrieved online.³ These reports are mandated by the US Securities and Exchange commission, undergo independent audit, and are verified by the chief executive officer. Analyses were limited to the “US dialysis and related lab services” segment, representing 86% of the company's net revenue. This segment includes outpatient hemodialysis (representing 79% of the segment's revenue), outpatient peritoneal dialysis (16%), and inpatient dialysis (5%). The company itemizes revenues and expenses for the segment but not for the subsegments.

Volume and financial data were extracted and summarized. Volume measures included the number of clinics, estimated annual number of patients, and annual number of treatments. Financial data included net revenue (ie, actual reimbursement), expenses, and operating income, and were updated to 2017 US dollars using the medical component of the consumer price index. Revenues were stratified as government-based (primarily Medicare and Medicaid) or commercial. Revenue to the company represents costs to payers, expenses are costs to the company of delivering the service, and operating income (revenue minus expenses) is the pretax profit.

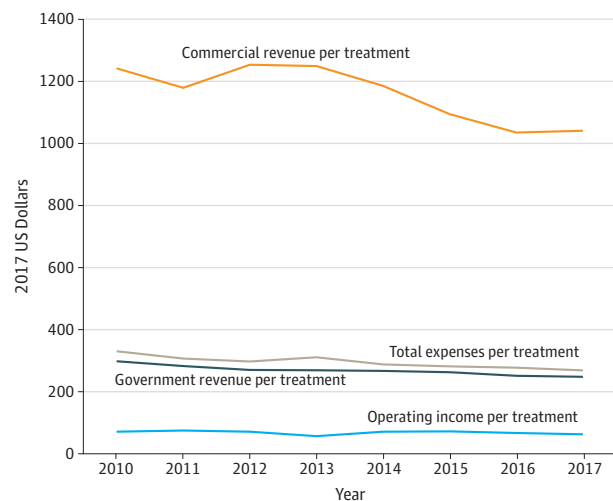
Results | As of December 2017, the company owned and operated 2510 clinics throughout the United States. In 2017, total estimated patient volume was 197 800 and annual treatments were 28.3 million. Total revenue for the dialysis and laboratory services segment was \$9.36 billion, equating to \$47 321 per patient-year or \$331 per treatment (Table). Commercial payers represented 10.5% of volume but generated 33% of revenue. As a result, government revenues averaged \$35 424 per patient-year or \$248 per treatment, whereas commercial revenues averaged \$148 722 per patient-year or \$1041 per treatment. Reported mean expenses were \$269 per treatment, resulting in a mean pretax operating income of \$63 (19%) per treatment.

Table. DaVita Inc Revenue, Expenses, and Operating Income for Dialysis Services, Including per Patient and per Treatment, in Calendar Year 2017

	Total, \$	Per Patient, \$	Per Treatment, \$
Revenue			
Total net	9 360 000 000	47 321	331
Government	6 271 200 000	35 424	248
Commercial	3 088 800 000	148 722	1041
Total expenses	7 592 000 000	38 382	269
Operating income	1 768 000 000	8938	63

Revenue for government and nongovernment payers was estimated by multiplying total net revenue by 67% and 33%, respectively, whereas the patient and treatment denominators were generated by multiplying the total number of patients and treatments by 89.5% and 10.5%, respectively. These proportions were provided in the text of the 2017 financial statement.

Figure. Changes in Per-Treatment Revenue, Expenses, and Operating Income Between 2010 and 2017



All values were updated to 2017 US dollars using the medical component of the consumer price index. Expenses and operating income were taken directly from the financial statement. Revenue stratified by payer (commercial vs government) was calculated using proportions provided in the financial statement related to volume and revenue from each payer.

Between 2010 and 2017, patient volume increased from 125 000 to 197 800 (6.8% annual growth), and annual treatments increased from 18.0 million to 28.3 million (6.7% annual growth). Over this period, the company's revenue mix remained relatively stable (34% commercial in 2010 and 33% in 2017), mean payments declined from both government and commercial payers; however, operating income showed little variation owing to comparable decreases in mean expenses (Figure).

Discussion | In 2017, commercial insurers paid one of the largest dialysis suppliers 4 times the rate of their government peers.

Compared with their nonprofit analogs, for-profit dialysis clinics have been criticized for engaging in practices aimed to reduce costs or increase revenue, such as using shorter treatments, less use of home dialysis, and encouraging fewer transplantations, which may lead to patient harm.^{4,5} This study demonstrates an additional mechanism through which for-profit companies increase revenue.

There are several limitations. One or a handful of commercial insurers may reimburse disproportionately, skewing the payment difference identified. Second, there may be errors in cost allocation. Using Medicare cost reports, Medicare's Payment Advisory Committee estimated average treatment costs across dialysis providers at \$243 in 2016.² The higher expenses reported by DaVita (\$269) may reflect inaccuracies in the Medicare cost reports or this company's financial statements. Finally, analyzing 1 company limits generalizability. The other major for-profit dialysis provider, Fresenius, does not itemize revenue by payer, but in 2017 their mean North American revenue per treatment was \$353, per treatment cost was \$282, and operating margin was 19%—similar to DaVita.⁶

Reducing payments from commercial insurers, perhaps through increased competition or fixing charges at a percent of Medicare reimbursement, may help alleviate excess spending on dialysis.

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Published Online: May 13, 2019. doi:[10.1001/jamainternmed.2019.0431](https://doi.org/10.1001/jamainternmed.2019.0431)

Author Contributions: Dr Childers had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Childers, Dworsky.

Acquisition, analysis, or interpretation of data: Childers, Kominski, Maggard-Gibbons.

Drafting of the manuscript: Childers.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Childers, Dworsky.

Obtained funding: Childers.

Study supervision: Maggard-Gibbons.

Conflict of Interest Disclosures: Dr Childers reported grants from the Agency for Healthcare Research and Quality (AHRQ) during the conduct of the study. No other disclosures were reported.

Funding/Support: Dr Childers is funded by AHRQ grant number F32HS025079.

Role of the Funder/Sponsor: The AHRQ had no role in the design or conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; or the decision to submit for publication.

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