RESEARCH LETTER

Association of Stratified Benchmarks With Financial Penalties in the ESRD Treatment Choices Model

Dialysis facilities serving higher proportions of patients with social risk factors were more likely to receive penalties in the Centers for Medicare & Medicaid Services' End-Stage Renal Disease (ESRD) Treatment Choices (ETC) model, a pay-for-performance program incentivizing home dialysis and kidney transplant waitlisting.[1,2] Stratified benchmarks, whereby organizations are compared with those serving similar populations, have been shown to lessen penalties to safety-net hospitals.[3] The ETC model implemented stratified benchmarks in 2022 whereby groups of dialysis facilities with higher (≥50%) vs lower (<50%) proportions of patients dually eligible for Medicare and Medicaid or low-income subsidy recipients (DE/LIS) are graded on different benchmarks.[4] The effect of these stratified benchmarks is unknown.

Supplemental content

Methods | We merged publicly available ETC model aggregation group-level data with 2021 facility-level characteristics in Dialysis Facility Compare and Dialysis Facility Reports.[4,5] Aggregation groups were dialysis facilities located within a hospital referral region owned by the same company.

Table. Dialysis Facility–Level Characteristics Associated With Receiving Penalties in the ETC Model Before and After Implementation of Stratified Achievement Benchmarks

Characteristics	No.	Received penalty, %		*P* value[a]	Adjusted OR of receiving a penalty in 2021 (95% CI)[b]	*P* value[b]	Adjusted OR of receiving a penalty in 2022 (95% CI)[b]	*P* value[b]
		In 2021, before stratified benchmarks	In 2022, after stratified benchmarks					
Overall	2259	13.8	20.7	<.001				
Profit status								
For profit	2079	11.9	20.7	<.001	1 [Reference]	<.001	1 [Reference]	.005
Nonprofit	180	35.6	20.6	<.001	2.74 (1.83-4.08)		0.50 (0.31-0.81)	
Chain owned								
Yes	2158	12.4	19.6	<.001	1 [Reference]	<.001	1 [Reference]	<.001
No	101	42.6	43.6	.87	3.16 (1.93-5.18)		4.83 (2.93-7.97)	
Size[c]								
Large	1216	13.0	19.7	<.001	1 [Reference]	.14	1 [Reference]	.82
Small	1043	14.7	21.8	<.001	1.22 (0.94-1.59)		1.03 (0.82-1.28)	
Area Deprivation Index[d]								
Most disadvantaged quintile	401	13.0	11.5	.45	0.79 (0.55-1.13)	.19	0.50 (0.36-0.71)	<.001
Less disadvantaged quintiles 1-4	1738	13.8	22.6	<.001	1 [Reference]		1 [Reference]	
DE/LIS patient proportion								
Highest quintile	451	16.9	16.9	.99	1.13 (0.82-1.58)	.46	0.81 (0.59-1.10)	.17
Quintiles 1-4	1808	13.0	21.6	<.001	1 [Reference]		1 [Reference]	
Black patient proportion								
Highest quintile	447	18.3	17.7	.75	2.16 (1.48-3.15)	<.001	1.12 (0.79-1.57)	.53
Quintiles 1-4	1790	12.7	21.6	<.001	1 [Reference]		1 [Reference]	
Hispanic patient proportion								
Highest quintile	447	15.2	22.2	<.001	1.23 (0.87-1.74)	.25	1.16 (0.87-1.55)	.32
Quintiles 1-4	1790	13.5	20.5	<.001	1 [Reference]		1 [Reference]	

Abbreviations: ETC, End-Stage Renal Disease Treatment Choices; DE/LIS, patients dually eligible for Medicare and Medicaid or low-income subsidy recipients; OR, odds ratio.

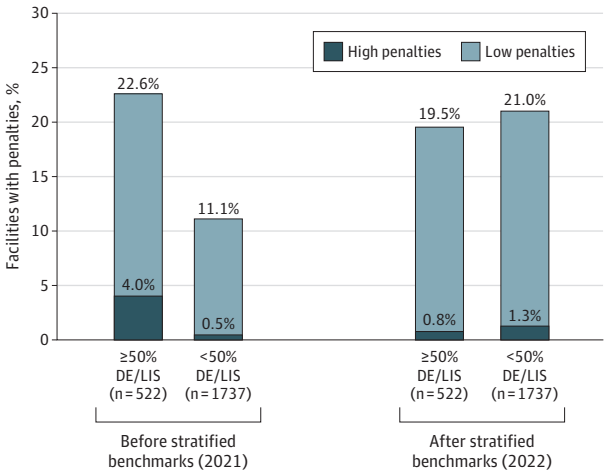
[a] McNemar tests were used to compare the percentages of facilities receiving financial penalties in 2021 and 2022, before and after the implementation of stratified benchmarks.

[b] Multivariable logistic regression models were used, adjusting for facility characteristics (profit status, chain ownership, large vs small size, offering peritoneal dialysis, and offering home hemodialysis training), ≥50% vs <50% DE/LIS patients in the facility's aggregation group, and facility-level patient characteristics (percentage aged ≥65, percentage female, highest vs lower 4 quintiles for proportions of Black patients, highest vs lower 4 quintiles for proportions of Hispanic patients, average number of comorbid conditions, and percentages with hypertension as the primary cause of end-stage kidney disease, with cancer, with cardiac dysrhythmias, with cerebrovascular disease, with chronic obstructive pulmonary disease, with congestive heart failure, with ischemic heart disease, and with peripheral vascular disease) as of December 31, 2021. Missingness was 2.1% for comorbidity covariates, and complete case analysis was used (n = 2211). An $\alpha < .05$ was considered statistically significant.

[c] Size was determined by having equal to or greater than the median of 17 dialysis stations (large) or less than the median of 17 dialysis stations (small).

[d] Area Deprivation Index data were missing in 120 facilities (5.3%). National Area Deprivation Index percentiles were classified into quintiles, where quintile 5 indicates the most neighborhood disadvantage and quintiles 1 to 4 reflect less neighborhood disadvantage.

Figure. Percentage of Facilities Receiving Financial Penalties Before and After Implementation of Stratified Achievement Benchmarks



Stratified benchmarks were assigned based on the aggregation group-level percentage of patients who were dually eligible for Medicare and Medicaid or were low-income subsidy recipients (DE/LIS). Facilities in an aggregation group with 50% or more DE/LIS patients were assigned lower (ie, more lenient) benchmarks vs those with less than 50% DE/LIS patients, who were assigned higher (ie, more stringent) benchmarks. High penalties were −5% in 2021 and −6% in 2022. Low penalties were −2.5% in 2021 and −3% in 2022.

Binary outcomes were a facility's receipt of a penalty in 2021 or 2022.

We used McNemar tests to compare the proportion of facilities receiving penalties, stratified by facility profit status, chain ownership, size, quintiles of Area Deprivation Index (ADI, based on facility address), and quintiles of percentages of facility-level DE/LIS, Black, or Hispanic patients. We then examined the association of facility characteristics with receiving penalties using multivariable logistic regression analyses, controlling for other facility characteristics and facility-level patient demographics and comorbidities (eAppendix in Supplement 1). Race and ethnicity were self-reported via the CMS-2728 form and ESRD Quality Reporting System. Stata version 15 (StataCorp) was used for statistical analysis, considering an $\alpha < .05$ to be statistically significant.

Results | Among 2259 dialysis facilities, the percentage of facilities receiving penalties increased from 13.8% in 2021 to 20.7% in 2022. The percentage of facilities receiving penalties increased among for-profit and nonprofit facilities, large and small facilities, and those serving the highest vs lower quintiles of Hispanic patients ($P < .001$ for all comparisons) (**Table**). Chain-owned facilities and those in the less disadvantaged ADI quintiles and with lower quintiles of DE/LIS or Black beneficiaries were more likely to be penalized in 2022 vs 2021. There was no increase in the percentage of penalized facilities among non-chain-owned facilities, those in the most disadvantaged ADI quintile, and those with the highest quintile of DE/LIS or Black beneficiaries.

A total of 522 facilities (23.1%) were assigned to 50% or higher DE/LIS aggregation groups, of whom 227 (43.5%) belonged to the highest quintile of facility-level percentage of DE/LIS beneficiaries. Before stratified benchmarks were implemented, a higher percentage of facilities in the 50% or higher DE/LIS aggregation groups were penalized compared with the less than 50% DE/LIS aggregation groups (22.6% vs 11.1%; $P < .001$), and the magnitude of penalties was higher (4.0% vs 0.5% receiving high penalties; $P < .001$). After stratified benchmarks were implemented, penalties were similar among the 50% or higher and less than 50% DE/LIS aggregation groups (19.5% vs 21.0%; $P = .47$) (**Figure**).

In multivariable-adjusted analyses, nonprofit status was associated with a higher likelihood of receiving penalties than for-profit status (adjusted odds ratio [aOR], 2.74; 95% CI, 1.83-4.08) before stratified benchmarks but a lower likelihood of penalties after stratified benchmarks (aOR, 0.50; 95% CI, 0.31-0.81) (Table). Facilities with the highest quintile of Black patients were more likely to receive penalties (aOR, 2.16; 95% CI, 1.48-3.15) before stratified benchmarks than those with lower quintiles, but there was no longer an association observed after stratified benchmarks (aOR, 1.12; 95% CI, 0.79-1.57). Facilities located in the most disadvantaged ADI quintile were not associated with penalties (aOR, 0.79; 95% CI, 0.55-1.13) before stratified benchmarks, but were less likely to receive penalties than those in less disadvantaged quintiles (aOR, 0.50; 95% CI, 0.36-0.71; $P < .001$) after stratified benchmarks.

Non-chain-owned facilities were more likely to be penalized both before (aOR, 3.16; 95% CI, 1.93-5.18) and after (aOR, 4.83; 95% CI, 2.93-7.97) stratified benchmarks. Facility size and facility-level percentage of DE/LIS or Hispanic patients were not associated with penalties either before or after stratified benchmarks.

Discussion | In the ETC model, financial penalties increased over time, but not for dialysis facilities serving greater proportions of low-income or Black patients after the implementation of stratified benchmarks. Limitations of our study include a lack of patient-level covariates and potential residual confounding. Policymakers should consider stratified benchmarks as one strategy to reduce penalties to safety-net facilities.

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