

# Managed Care Program Improves Hospitalization Rate in ESKD Patients

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#### Introduction

- End-stage kidney disease (ESKD) patients are at increased risk of care fragmentation due to the complex collection of conditions that often accompany ESKD (i.e., diabetes, hypertension, etc.) and require care from multiple healthcare providers. 1,2
- Recently, managed care programs have started to defragment care for ESKD patients through collaboration across healthcare organizations in order to improve clinical outcomes.

## Objective

 To estimate the comprehensive impact of an integrated kidney care model of care program on hospitalizations accounting for a few key population differences.

#### Methods

- This was a retrospective observational study that included adult dialysis patients with commercial or Medicare Advantage insurance treating with a United States dialysis provider from June 2021- June 2022.
- The primary exposure was enrollment in a managed care program
- All patients received the standard level of care consistent with industry best practices and regulations.
- Patients in the managed care program were offered additional care services (e.g., telephonic health programs, case management, health screens, resource navigation) as deemed necessary by the clinical care teams.
- Indirect standardization was used to estimate the impact of the managed care program on hospitalization rates.
- Standardization factors were selected by comparing demographic and clinical characteristics between exposure groups (Table 1) and assessing differences in observed hospitalization rates between categories of patient characteristics within the non-enrolled population (Table 2).
- Expected hospitalization rates for enrolled patients were estimated by applying the stratum specific rates from the non-enrolled patients (Table 3).
- The impact of enrollment in the managed care program was estimated as the difference between the expected and observed hospitalization rates for these patients (Table 3).

#### Results

Table 1: Study Participant Characteristics

	Non-Enrolled Enrolled		
	N = 968,720 pt-months	N = 106,835 pt-months	SMD <sup>a</sup>
Age, years			0.32
<65	498,703 (51.5%)	38,546 (36.1%)	
65-75	288,444 (29.8%)	39,442 (36.9%)	
>75	181,573 (18.7%)	28,847 (27.0%)	
Race			0.19
Black	331,816 (34.3%)	46,321 (43.4%)	
Non-Black	636,904 (65.7%)	60,514 (56.6%)	
Female	415,366 (42.9%)	46,189 (43.2%)	-0.01
Diabetes	258,317 (26.7%)	20,031 (18.7%)	0.19
Insurance Type			0.38
Commercial	252,845 (26.1%)	12,245 (11.5%)	
Medicare Advantage	715,875 (73.9%)	94,590 (88.5%)	
Etiology of ESKD			0.07
Diabetes	350,636 (36.2%)	38,299 (35.8%)	
Hypertension	237,256 (24.5%)	29,171 (27.3%)	
Other/Unknown/Missing	380,828 (39.3%)	39,365 (36.8%)	
Dialysis Vintage			0.05
≤6 months	164,261 (17.0%)	17,454 (16.3%)	
7-12 months	88,114 (9.1%)	11,413 (10.7%)	
12+ months	716,345 (73.9%)	77,968 (73.0%)	
Quintile of State Hospitalizations	b		0.59
1 (lowest risk)	260,681 (26.9%)	7,496 (7.0%)	
2	293,787 (30.3%)	45,590 (42.7%)	
3	132,662 (13.7%)	24,122 (22.6%)	
4	184,363 (19.0%)	19,405 (18.2%)	
5 (highest risk)	97,227 (10.0%)	10,222 (9.6%)	

Time period: 01 June 2021 - 30 June 2022

#### Table 3: Primary Analysis - Impact of Programs

	Observed Non-Enrolled Rate	Expected Rate of Enrolled <sup>a</sup>	Observed Rate of Enrolled	Enrolled Effect on Hospitalization Rate	Hospitalization Avoided
Medicare Advantage	1.54	1.60	1.49	-0.11	851
Commercial	1.04	1.08	0.97	-0.11	110
Overall	1.42	1.54	1.43	-0.11	961

In a sensitivity analysis utilizing a multi-variable model accounting for age, race, diabetes, state hospitalization rate, and insurance type showed a similar impact of managed care programs on hospitalization rate.

#### Table 2: Hospitalization Rates by Patient Characteristics

Characteristic	<b>Hospitalization Rate</b>
Category	Admits / Per Patient-Year
Age, years	
<65	1.36
65-75	1.49
>75	1.43
Race	
Black	1.47
Non-Black	1.39
Female	1.58
Male	1.29
Diabetes	1.30
Non-diabetic	1.46
Insurance Type	
Commercial	1.04
Medicare Advantage	1.54
Etiology of ESKD	
Diabetes	1.50
Hypertension	1.33
Other/Unknown/Missing	1.39
Dialysis Vintage	
≤6 months	1.48
7-12 months	1.28
12+ months	1.42
Quintile of State Hospitalizations	
1 (lowest risk)	1.14
2	1.35
3	1.47
4	1.66
5 (highest risk)	1.81

Based on the eligible non-enrolled patient population dialyzing at a dialysis organization 01 June 2021 - 30 June 2022.

### **Conclusions and Limitations**

#### Conclusions

- Patients who are enrolled in model of care programs tend to be older, reside in geographies with higher hospitalization rates, are less likely to be diabetic, and are more likely to be on Medicare Advantage insurance.
- Accounting for these differences, the model of care programs resulted in an overall 0.11 per-patient peryear reduction in hospitalization rate (or 9%) from June 2021 – June 2022.

#### Limitations

- This is a retrospective, observational study.
- Causality cannot be determined or inferred.
- These analyses were limited to patients with Commercial and Medicare Advantage insurance.
- These results should not be generalized to patients with other insurance types, such Medicare Fee for Service.
- The magnitude of the overall and insurance type specific estimates will likely change as model of care programs evolve and are expanded to more geographies and to patients with other insurance types.

#### References

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<sup>&</sup>lt;sup>a</sup> Standardized mean differences (SMD) ±0.10 are indicative of potential imbalance between groups.

<sup>&</sup>lt;sup>b</sup> Patient assigned by state of residence; rankings based on the eligible non-enrolled population. Emboldened rows are variables that were used for standardization.

<sup>&</sup>lt;sup>a</sup> Standardized based on age (categories), diabetes, state hospitalization rates for non-enrolled dialysis patients (quintiles), and insurance type (overall only).