Evaluation of Enhanced Community Pharmacy Services

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BACKGROUND

- A Community Pharmacy Enhanced Services Network (CPESN) was first formed in 2014 in order to improve the quality of care and patient outcomes related to optimal medication use.
- CPESN defines enhanced services as "services that transcend conventional requirements of an outpatient pharmacy program contract that are focused on improving clinical and global patient outcomes."[1-2]
- There is a push to form multiple CPESNs across the country; however, to date, there is no published literature in peer-reviewed journals evaluating the utilization and cost data for patients using a community pharmacy that provides these enhanced services.

OBJECTIVES

- The primary objective of this project was to evaluate the impact enhanced community pharmacy services has on clinical and economic outcomes.
- The second objective was to evaluate the impact of a value-based payment model for a community pharmacy that offers enhanced services.

METHODS

Participants and Study Design:

- Study period: Jan 1, 2017 through December 31, 2017
- The treatment group was patients served by an enhanced services pharmacy (ESP).
- The control group was selected from independent pharmacies not offering enhanced services during the study period.
- Patient demographic information, health care utilization and cost were collected from paid claims.
- The treatment and control groups were matched using propensity scoring, controlling for potential confounding factors of age, sex and family status.

Statistical Analysis:

- Paired t-tests were used to compare healthcare utilization and costs
- Negative binomial regression analyses were used to assess the impact of enhanced services on health care utilization.
- A General Linear Regression (GLM) model with a log-link and gamma distribution was used to assess the impact on costs, controlling for age, gender, and patients' comorbidities as measured by the Charlson Comorbidity Index (CCI).

RESULTS

- Patient characteristics after propensity matching are shown in Table 1.
- The average utilization rates and costs were lower in the ESP group (Table 1).
- Patients in the ESP group had 15.6% lower average medical costs and used 14% lower prescriptions compared to the traditional pharmacy cohort during the study period (Table 2).

Table 1. Characteristics after propensity matching

	Control (n = 1,003)	ESP (n = 722)	P-value
Age (years)			0.2032
0-17	13.66%	16.34%	
18-25	7.68%	8.17%	
26-44	15.95%	17.59%	
45-64	34.50%	34.07%	
65+	28.22%	23.82%	
Gender			0.3706
Female	61.42%	59.28%	
Male	38.58%	40.72%	
CCI: Charlson Comorbidity Index (higher score indicates greater comorbidity) - Percentage			0.4235
0	70.59%	73.13%	
1	16.95%	14.40%	
2	5.78%	6.51%	
3+	6.68%	5.96%	
Healthcare Utilization (Mean ± SD)			
Ancillary services	0.65±2.69	0.58±1.96	0.5463
Emergency department	0.32±0.84	0.32±1.01	0.8609
Hospitalization	0.53±2.56	0.55±4.00	0.9468
Physician office	13.04±15.31	12.76±13.73	0.6962
Pharmacy	**18.50±20.09**	**15.31±19.09**	**0.0009**
Healthcare Cost (Mean ± SD, $)			
Medical	3,916.47±16,472.17	3,230.74±10,695.75	0.2953
Pharmacy	2,407.72±5,028.46	2,301.23±6,127.52	0.7016
Total	6,324.19±17,523.44	5,531.98±12,474.98	0.2729

Cost-Effectiveness Analysis

- The ESP has the potential to extend patient survival time by 0.12 years/person and reduce hospitalizations by 6.9/person over a 10-year period. This results in a $19,994 savings per person over 10 years.[3]

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Table 2. Regression analysis of utilization and Costs

Health Care Utilization[a]	Incident Rate Ratio	95% CI	
Ancillary services	0.80	0.59	1.10
Emergency department	1.02	0.80	1.29
Hospitalization	0.62	0.38	1.01
Physician office	0.99	0.90	1.08
Pharmacy	**0.86**	**0.79**	**0.94**

Health Care Cost[b]	Estimate	95% CI		% Change
Medical	**-0.1697**	**-0.3075**	**-0.0320**	**↓ 15.6%**
Pharmacy	-0.0451	-0.1777	0.0875	↓ 4%
Total	**-0.1030**	**-0.2213**	**0.0153**	**↓ 9.8%**

[a]Negative Binomial Regression Analysis
[b]Generalized linear model (GLM) with a log link and a gamma distribution

CONCLUSIONS

- Enhanced pharmacy services reduce prescription utilization and medical costs.
- If a payor offered ESPs a per-member-per-month fee of $100, the potential return on investment would be 1.6 over 10 years.
- Additional research needs to be conducted using more patients from multiple pharmacies offering enhanced services to determine the value proposition of enhanced pharmacy services to payors.

REFERENCES

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Disclosures
Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
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