

Economic Evaluation of Healthcare Point Solutions Versus Standard Care to Supplement Benefit Plans for Behavioral Health Adults Patients Using Real-World Synthetic Data: A Doubly Robust Causal Analysis

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BACKGROUND

- Per the National Alliance on Mental Illness, mental health statistics in the US show that in 2021, nearly 57.8 million adults experienced some form of mental illness, with women experiencing mental illness at a higher rate than men.^{1,2}
- Anxiety disorders are the most reported mental health issue, with 42.5 million Americans affected.^{1,2}
- 1 in 7 children ages 3 to 17 have a diagnosed mental or behavioral health condition.^{1,2}
- Increasing demand for healthcare services addressing specific conditions, tailored to meet individual needs.
- Over 30+ healthcare Point Solutions (PS) marketed are used for behavioral health.
- Support adoption of PS as supplement to benefit plan programs.
- Demonstrate real-world value using simulated synthetic data is critical.

OBJECTIVE

To assess the cost-effectiveness of PS in behavioral health adult patients.

METHODS

- Data were simulated using patients' clinical and demographic characteristics, disease onset prevalence, drug and digital solutions utilization for 50,000 patients.
- Patients were covered by public or private health plans from January 2021 to January 2023.
- Comprehensive data analysis was conducted, including descriptive, matching strategies for three-groups samples.
- Of the three matching approaches, the generalized propensity scores matching weights method was retained to generate a matched retrospective cohort with standardized characteristics.
- Difference-in-difference generalized regression model were performed.
- Cost-effectiveness analysis was performed to assess incremental cost, effect, and ICER.³⁻⁵

RESULTS

- Out of the matching analysis the patient samples were N=4310 for control group, N=26206 for SoC group, and N=13029 PS group.
- Study determined total costs, disease prevalence yield (DPY), and incremental cost-effectiveness ratio (ICER) adjusted for selection bias and right censoring.
- Sensitivity analyses explored the robustness of ICER through bootstrapping.
- DPY resulted in for PS of 10.92% (p = 0.0022; QALY = 2.16) while standard of care (SoC) was 9.07% (p = 0.0543; QALY = 1.79).
- PS resulted in a mean saving per person of \$967 (SD = 1,516, p < 0.001).
- PS resulted in total saving of \$12.6 Million for 13,029 patients from matched sample.

LIMITATIONS

- Synthetic data might not fully capture real-world patient behaviors, leading to biases.
- Findings generalizability issues, as synthetic data often reflects population-specific.
- Doubly robust methods reduce bias but still depend on assumptions.
- Indirect costs like productivity losses and long-term effects were not accurately quantified.
- Transparency, reproducibility, and ethical considerations remain challenges in healthcare decision-making.

CONCLUSIONS

Point Solutions supplement for health plans in behavioral health adult patients is a dominant strategy.

Table 1: Cost-effectiveness analysis results for a microsimulation cohort model in a 50,000-person mental health patients.

	Total Costs (\$)	Total QALYs	ΔCosts (\$)	ΔQALYs	ICER (\$) vs. baseline (QALYs)	ICER (\$) vs. ΔQALYs
Standard of Care (SoC)	\$2,242	1.79	-	-	-	-
Healthcare Point Solutions (PS)	\$1,275	2.16	-\$967	0.36	Dominating	Dominating

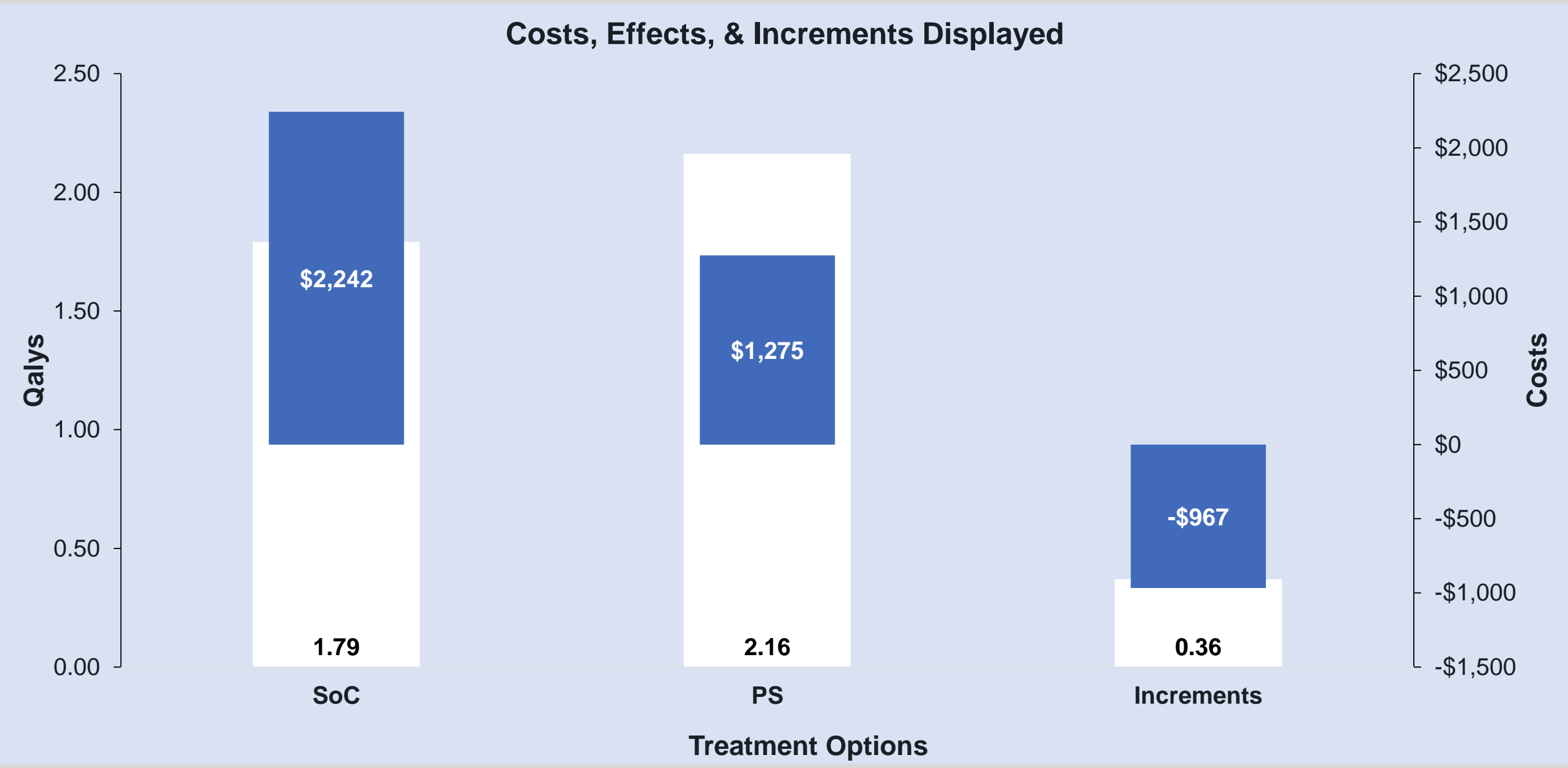


Figure 1: Display of costs, effects, the Incremental differences from the analysis PS vs. SoC

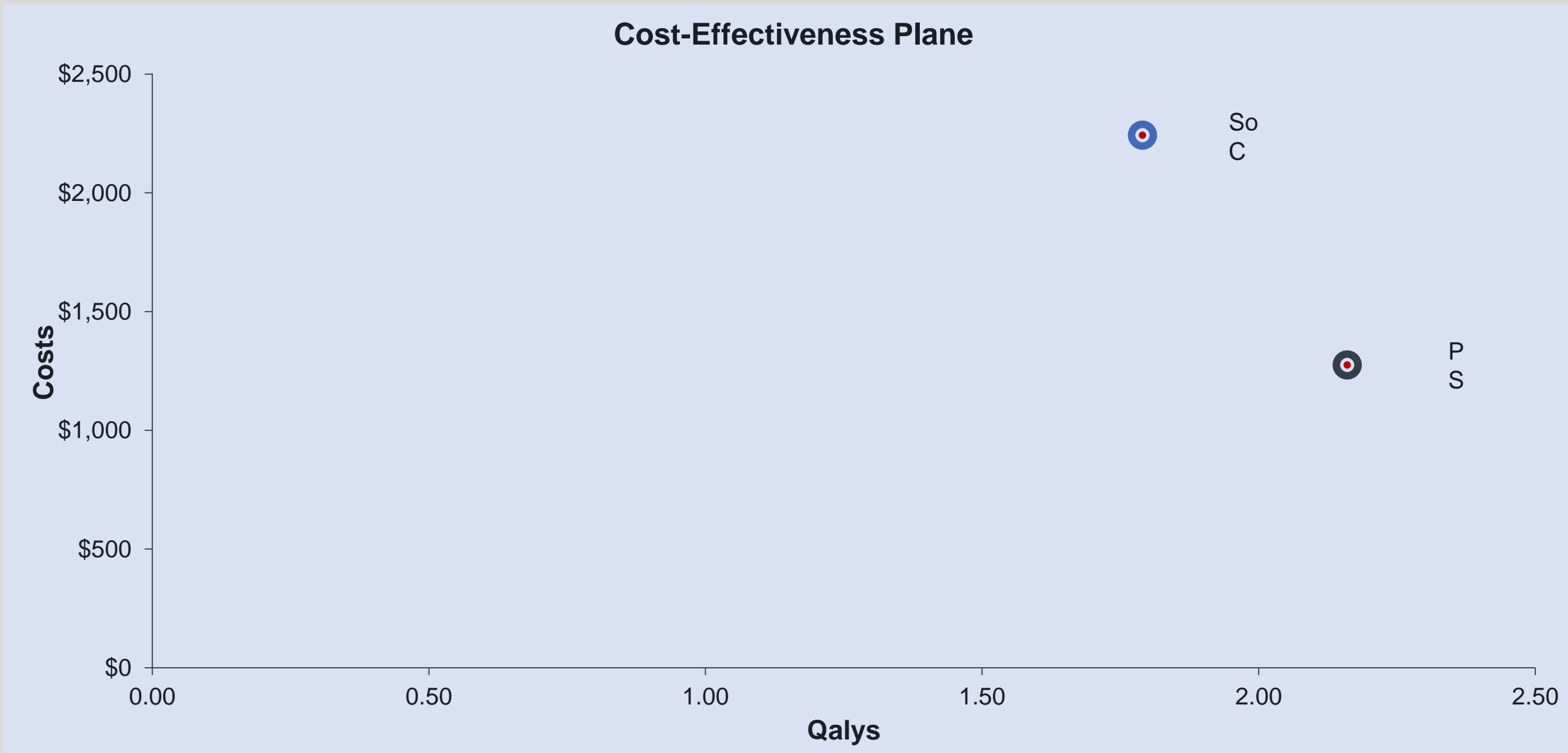


Figure 2: Point Solutions dominate SoC in this cost-effectiveness analysis

