COMPLETED GRANT SYNOPSIS

Development of an Economic Model and Return-on-Investment (ROI) Tool to Support Sustainable Community Pharmacy Programs

David M. Jacobs, PharmD, PhD & Christopher Daly, PharmD, MBA
University at Buffalo School of Pharmacy & Pharmaceutical Sciences| Buffalo, NY

Objectives

Our overall goal was to develop an economic justification for SDoH screening programs in community pharmacies and design a ROI tool assisting pharmacies (and pharmacy networks) in developing a sustainable program. We accomplished this goal through the following objectives.

Objective 1: To develop an economic model using a stakeholder driven building approach to support SDoH screening programs in community pharmacy.

Objective 2: To develop a return-on-investment (ROI) tool designed to assist community pharmacies (and pharmacy networks) and their payer partners in developing sustainable financial arrangements for delivering social needs screening and referral programs.

Methods

Design	**Objective 1:** We adapted the approach developed by Cidav et al. integrating the Proctor framework for implementation strategy with the information needed for a time-driven activity-based costing (TDABC) analysis. The Proctor et al. framework provides a guideline for naming, defining, and operationalizing the implementation of clinical programs or practices. TDABC is a process-based micro-costing methodology providing detailed cost data using process maps. This approach is particularly useful when costs are driven mainly by personnel time, which is characteristic for pharmacy-based services. We evaluated a SDoH community pharmacy model applying the TDABC and Proctor frameworks for cost implementation strategies. The economic analysis was conducted from the pharmacy network perspective, as the goal was to provide data on the costs of replicating the delivery of the intervention at the pharmacy level. **Objective 2:** The objective's goal is to develop a tool that could be used by any community pharmacist or pharmacy network in determining costs and ROI scenarios for implementing a social needs screening and referral program. This will help pharmacies and their payer partners develop sustainable financial arrangements to fund these services. We designed and developed the tool using the following approach. We iteratively designed and developed a tool based on our findings from Objective 1. The tool provides visual representations that can help pharmacies understand resource allocation and associated costs. This can then support the identification of strategies with less value, causes for cost variation, and how changing a specific component would change costs and the ROI scenario. Detailed resource composition and potential cost savings will enable pharmacies and their payer partners to look for strategies that achieve sustainable financial arrangements. The tool was developed using an online platform and can be made publicly available.
Study endpoints	• For objective 1, the endpoint was the development of a cost-benefit model using the Proctor framework. • For objective 2, the endpoint was the development of an online return-on-investment (ROI) tool based on the findings from Objective 1.

Results

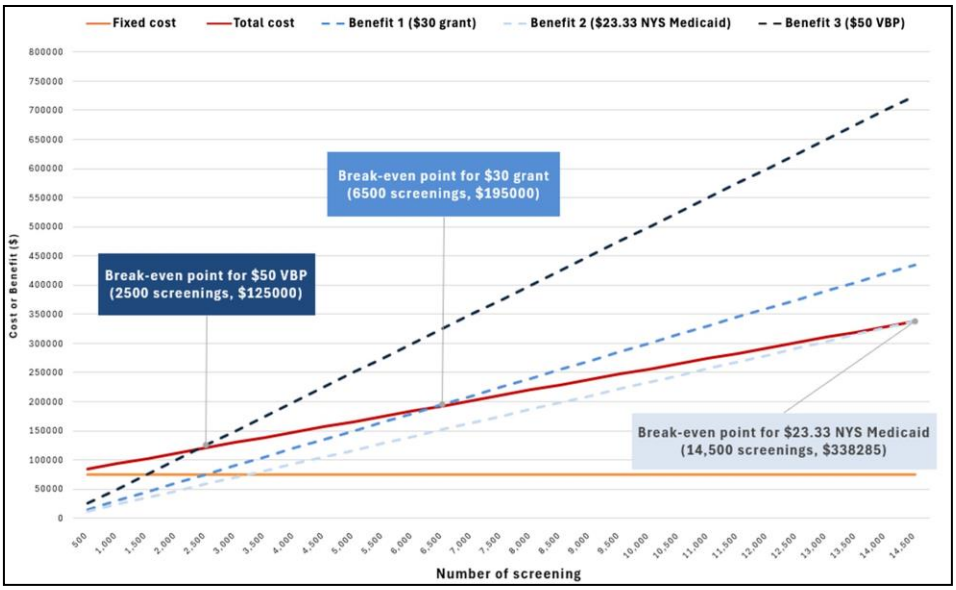
- A total of 1,122 screenings were completed over the study period, resulting in 523 referrals, and 134 resolutions to date. The average intervention time was 36.67 minutes. **Cost:** Total program cost was $102,685.30 consisting of pre-implementation ($16,789.87), ongoing activities ($31,644.60), training ($29,429.32), intervention ($16,369.86), and operational ($8,451.65) costs. **Benefit:** Total benefit was calculated as $720,048.47, based on savings for specific services reported in literatures. **Overall finding:** The program generated a net benefit of $617,363.17, achieving a

Benefit to Cost Ratio (BCR) of 7.01 and a Return on Investment (ROI) of 601%.

- The table below provides a breakdown of the cost and benefit inputs.

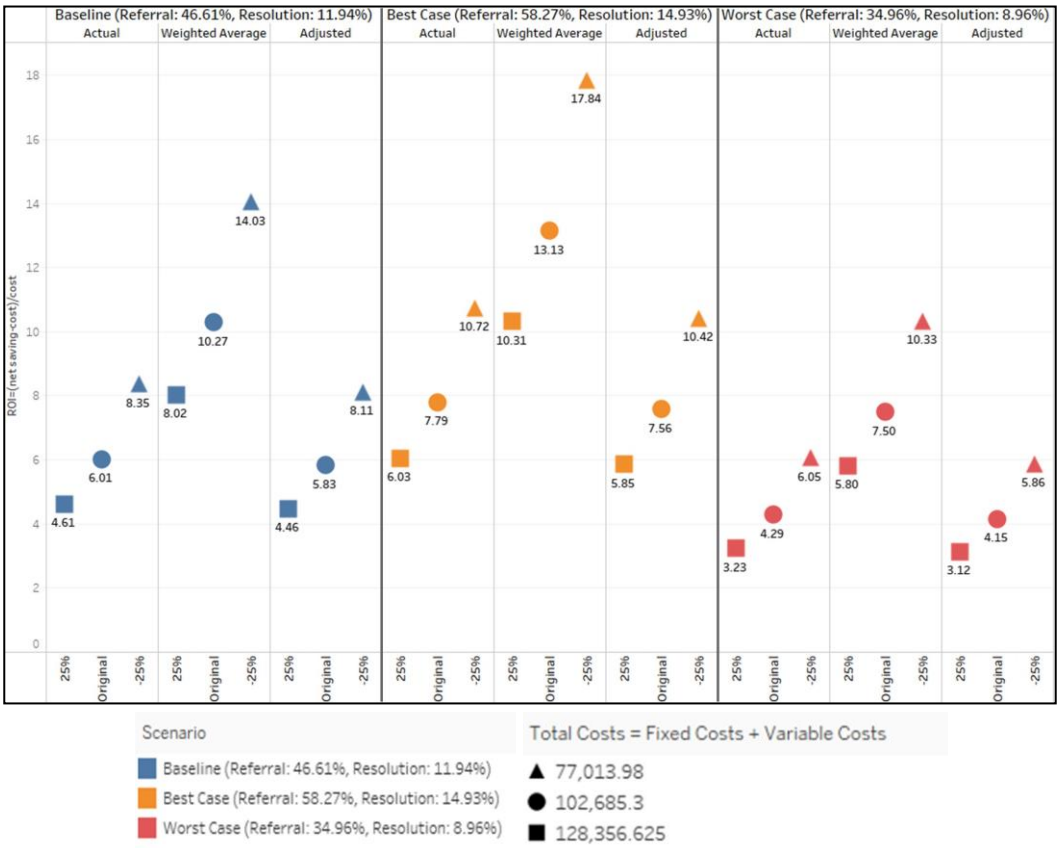
Categories	Types	Sources	Description
Cost			
Fixed Costs	Pre-implementation	UB research team / CPESN NY leadership / pharmacies	Costs incurred before program start
	Personnel Training		Training pharmacy personnel for SDoH screening and referrals
	Fixed Training		Non-recurring training cost
	Leadership team		Ongoing program costs
	Healthy Alliance Initial Payment	Healthy Alliance	Initial platform integration fee for referral system
Variable Costs	Intervention	15 CPESN pharmacies	Screening and referral costs during implementation
	Healthy Alliance Monthly	Healthy Alliance	Recurring platform costs
Benefit			
Referral/ Resolution rate	46.61%/11.94%	Program Data	% of screenings resulting in a referral; % of referrals successfully resolved
Benefit per Screening	$23.33 (Medicaid), $30 (Grant), $50 (VBP)	IPRO grant, Medicaid[1], VBP[2]	Benefit per screening varies depending on reimbursement source
Benefit per Resolution	$5,373.50	Literature[3]	Benefit calculated based on resolved referrals as per literature

- A breakeven analysis was completed indicated the number of screening needed to cover costs at different reimbursement rates.



- A sensitivity analysis on ROI across baseline, best-case, and worst-case scenarios examined the impact of varying referral and resolution rates, as well as cost and savings methods, with observed ROI ranging from 3.12 to 17.84.

X-Axis (Upper)
Scenarios based on baseline, best case (+25%), and worst case (-25%) referral & resolutions rates
Actual: Based on study's estimated savings
Weighted Average: Estimated savings based on equal weight for all services.
Adjusted: Estimated winsorized savings with 5% and 95% caps to limit extreme values.
X-Axis (Lower)
Cost variation including the original costs, +25% costs and -25% costs.



- In Objective 2, we worked with a software engineer to develop an online Community Pharmacy ROI Tool. The tool is available at the following link: https://lifeline.invisiblenemo.com/ The tool includes a Home page that provides a Welcoming to the user and questions regarding the length of the program and expected number of screening per year. Based on the information an initial estimate of Costs, Referrals, Resolutions and Savings is provided based on the findings and estimates included within Objective 1. Initial visuals are provided to the user including: 1) Costs vs. Benefits; 2) Cost Distribution, and 3) Benefits Grouped by Type. A user can input more detailed information around their program and estimates using the Costs Management, Teams Management, and Benefits Management tabs. The information and data loaded into the tool is based on the findings within this project.

Conclusion

This grant-funded clinically integrated network screening and referral program achieved solvency and delivered a positive ROI from both network and societal perspectives. The substantial BCR and ROI highlighted the economic feasibility and positive impact of SDoH screening in community pharmacies. The break-even analysis demonstrates how the program reaches financial sustainability at various reimbursement rates based on different sources. A sensitivity analysis on ROI across baseline, best-case, and worst-case scenarios examined the impact of varying referral and resolution rates, as well as cost and savings methods, with observed ROI ranging from 3.58 to 18.47. **Limitation:** Literature-based estimates were used to calculate the benefits due to the lack of access to patient utilization data. This may introduce some uncertainty into the accuracy of the calculated benefits. To improve accuracy, we applied our study-specific ratio to better reflect actual benefits.