

ROI Analysis:

A Guide from the Medication Optimization Technology Toolkit

Description

A guide for considering return on investment (ROI) analysis for technology-enhanced medication reconciliation, adherence, and monitoring interventions to optimize medication use. Elements include the importance of ROI related to the use of patient-centered technologies in optimizing medication use, drivers of ROI for a medication optimization intervention, and approaches to completing an ROI analysis for interventions that use patient-centered technologies.

Audience

For organizations that want to understand the potential ROI from a technology-enhanced medication optimization program and develop a business case for doing so.

Helpful Tips

- Conduct an ROI analysis of multiple scenarios to find the best balance of benefits vs. costs and the areas of opportunity that have the best investment yield.
- Plan for an ROI analysis at the start of the program by identifying and collecting appropriate baseline data as needed.

1 Importance of ROI of Medication Optimization

Why calculate the potential (or actual) ROI of a program involving the use of patient-centered technologies in optimizing medication use?

2 Drivers of ROI of Medication Optimization

What variables typically drive profitability of medication optimization programs?

1 Importance of ROI of Medication Optimization

When resources are limited, organizations naturally want to focus them where they will provide the greatest benefit. Before investing in a program involving the use of technology-enhanced medication optimization (MedOp), most organizations will want assurances that the benefits of the investment will outweigh the costs. ROI analysis is a benefits-to-costs test.

A formula for calculating ROI:

$$\frac{\text{Gains from tech-enhanced MedOp} - \text{Costs of tech-enhanced MedOp}}{\text{Costs of tech-enhanced MedOp}}$$

An ROI ratio greater than one means that every dollar invested in the program yields an amount greater than that invested.

Benefits of technology-enhanced medication optimization: Improving medication use among patients with chronic diseases often results in reduced disease exacerbations and hospitalizations which often translate into lower healthcare costs.

Costs of technology-enhanced medication optimization: Key cost contributors are labor costs to create and maintain the medication optimization program, including patient recruitment and support, and the costs to lease or purchase technology.

Note that the above discussion focuses on benefits and costs to a health care organization. Benefits to patients and their families are just as important but are outside the scope of this particular ROI discussion.

2 Drivers of ROI of Medication Optimization

The balance of benefits vs. costs is very sensitive to certain factors. When planning a technology-enhanced medication optimization program, it is helpful to do an ROI analysis of multiple scenarios to find the best balance and the areas of opportunity that have the best investment yield.

Patient Volume – Organizations need to find the “sweet spot” in terms of the number of patients served by medication optimization programs. With too few patients, the start-up costs and overhead costs must be amortized (or spread) over a smaller N. This makes it more difficult to yield a positive ROI. Too many patients may mean that benefits will be derived for some but not for all. This is an issue of patient selection.

Patient Selection – Focusing medication optimization resources on those patients that are most likely to respond to medication management support will improve the ROI of the program. Patient factors include a history of poor medication adherence; readiness for change, such as patients that are in the “commitment to action” stage rather than the “pre-contemplation” stage; functional abilities, such as having the cognitive and physical ability to interact with technology; and, the patient’s risk of utilizing high-cost, acute care services that could be avoided via closer monitoring and control.

Timing of Benefits –A technology-enhanced medication optimization may need a year or two to yield an attractive ROI. The timing is dependent upon the technology, program scale, and ability to manage the intervention’s start-up costs and ramp-up.

Other Factors – Many factors can raise the cost of a medication optimization program. Friction slows the program’s pace and raises costs. For example, lack of program champions and resistance to change often slow the process of recruiting and enrolling patients in a medication optimization program and raise the program cost per enrollee. False starts and poor planning also raise costs because program resources are not used efficiently.