*ADOPT*toolkit
Accelerating Diffusion of Proven Technologies

Center for Technology and Aging

Evaluation and Performance Improvement:

A Guide from the Medication Optimization TechnologyToolkit

Description

A guide for designing and implementing an evaluation of a technology-enabled program to optimize medication use.

Audience

For organizations that want to evaluate technology-enabled medication optimization programs in order to assess and improve program impact on health outcomes, costs, and experiences of care.

1   A framework for Program Evaluation

What framework can be used to guide the design of the program evaluation?

2   Evaluating Care Effectiveness

What approaches can be taken to evaluate effectiveness of technology-enabled medication optimization programs?

3   Evaluating Costs of Care and ROI

What approaches can be taken to evaluate costs and return on investment of technology-enabled medication optimization programs?

4   Evaluating Care Experiences

What approaches can be taken to evaluate experiences with the program, including satisfaction with care and acceptability of technologies utilized in the medication management process?

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1 A Framework for Program Evaluation

Evaluation Framework

A conceptual framework helps to identify the variables that are thought to contribute to a program's success or failure and serves as the foundation for program evaluation design.

Approaches to creating a program evaluation framework include:

- A logic model is a graphical approach for articulating presumed cause and effect relationships among program variables. Logic models illustrate the relationships among the resources that are invested, the activities that are planned, and the benefits or changes that are expected to occur as a result. Logic model examples and templates can be found in the ADOPT Toolkit.

- Donabedian's structure-process-outcome framework is another approach for designing a program evaluation. Structure refers to the physical and organizational characteristics of the care setting. Process refers to the treatment or service being provided and outcomes are the results of the treatment.

- The Centers for Disease Control and Prevention program evaluation framework emphasizes the steps and standards in carrying out a program evaluation.
http://www.cdc.gov/eval/framework/index.htm

Common variables that are measured or tracked in a health improvement program can be grouped into three categories: program effectiveness, program costs or ROI, and program experiences. These are discussed in the following pages.

2   Evaluating Program Effectiveness

Evaluation questions to consider:

Was the program associated with differences in the use of health services (e.g., physician office visits, hospital admissions and readmissions, emergency department (ED) visits, length of hospital stay) compared to alternatives?

Was the program associated with differences in the quality, amount, or type of information available to clinicians or patients?

What were the effects of the program on immediate, intermediate, or long-term health outcomes compared to the alternative(s)?

Was the program associated with differences in physical signs or symptoms and/or differences in morbidity, mortality, or quality of life?

Was the program associated with differences in physical, mental, or social functioning?

Utilization data points to consider:
Hospitalizations, readmissions and lengths of stay, medication refills, home health nurse visits, and visits to the ED or doctor.

Clinical Outcomes data points to consider:
Weight, blood pressure, falls, HbA1C, and other condition specific outcomes

Survey instruments to consider:
Morisky Medication Adherence Scale
OASIS ADL/IADL measures

Examples of customized surveys related to program effectiveness can be found on the ADOPT Toolkit website.

3   Evaluating Program Costs and ROI

Evaluation questions to consider:

Was the program associated with differences in costs for patients, private or public payers, providers, and other affected parties compared to the alternative(s)?

Were cost differences attributable to increases/decreases in labor costs associated with patient care?

Were cost differences attributable to increases/decreases in service utilization (e.g., hospital admissions and readmissions, emergency department visits, length of hospital stay)?

Did the incremental benefits of the program outweigh the incremental costs of the program (i.e., resulting in a positive return on investment (ROI)?

To whom did the costs and benefits accrue (e.g., patients, private or public payers, providers)?

To what degree was there alignment between stakeholders that bore the costs and stakeholders that received the benefits?

To what degree is ROI sensitive to patient selection and volume of patients served by the program?

Evaluation approaches to consider:

Cost-benefit analysis—provides a monetary value to the program's effects, e.g., using a ROI calculation or a net present value calculation.

Cost-effectiveness analysis—is a ratio of the cost associated with the intervention compared to the gain in health from an intervention, e.g., the ratio of the cost associated with adding a medication optimization intervention compared to the number of avoided hospital readmissions associated with that intervention.

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4   Evaluating program Experiences

Evaluation questions to consider:

Was the program associated with differences in satisfaction of care for patients, caregivers, or providers compared to alternative(s)?

Was the program associated with differences in patients' knowledge, skills, and confidence in assessing their health status and taking appropriate actions to maintain or improve their health?

Was use of the technology acceptable to patients, caregivers, or providers?

If given the choice, would patients, caregivers, and/or providers continue to use the intervention?

If appropriate, would patients, caregivers, and/or providers recommend the intervention to a family member or friend?

Was the program associated with differences in timeliness of care, helpfulness in decision making, sense of control, or ease of use compared to alternative(s)?

Survey instruments to consider:
SF-12® Health Survey and SF-36® Health Survey
Zarit Caregiver Burden Interview
Quality of Well-Being Scale
London Handicap Scale
Patient Activation Measure®
Chronic Disease Self-Efficacy Scale
Medical condition-specific surveys include the Living with Heart Failure and the COPD Assessment questionnaires
Self-Care Heart Failure Index Survey
Telehealth Patient Satisfaction Survey
Medical Outcomes Survey
Kansas City Cardiomyopathy Questionnaire

For general-purpose patient experience surveys, see: Consumer Assessment of Healthcare Providers and Systems
https://www.cahps.ahrq.gov/default.asp

Reference: National Research Council. Telemedicine: A Guide to Assessing Telecommunications for Health Care. Washington, DC: The National Academies Press, 1996.