Medication therapy management

Intervention in brief

High risk:	**Medication therapy management** encompasses a range of services (e.g., medication reconciliation) provided by pharmacists to help manage complex pharmaceutical regimens. The goal is to ensure patients are taking the right medication to achieve the best clinical and therapeutic outcomes and reduce errors.
Strength of evidence	 Medium Although the intervention has been well studied for decades, results are inconsistent over time.
Impact	• **Decreased cost (wide range):** $100-$2,000 decreased costs per patient per year; $31.7M projected total cost savings over three years; $70-154K earned in medication therapy management billing codes annually • **Decreased utilization:** 2-37.8% decreased ED use; 2-13.1% decreased hospitalizations; insignificant to 53.7% decreased readmission rates; 50% decreased observation visits • **Improved quality, clinical outcomes:** 0.8-1.4% decreased HbA1c levels; insignificant to 5% increased medication adherence; 36% increased rates of asthma action plans; 3.6-5.6mmHg reduced blood pressure; 64.3-66.7% greater probability of medication reconciliation; 62.9-69.7% greater probability of understanding medication and dosing instructions; improved medication appropriateness; insignificant change in knowledge of drug indications • **Increased access:** Not demonstrated • **Improved stakeholder satisfaction:** 90% of participants would recommend services
How to succeed	To succeed with medication therapy management: • Establish a pharmacy support role • Leverage comprehensive risk stratification criteria to identify patients • Institute mechanisms for interdisciplinary collaboration between pharmacists and PCPs • Use standardized intervention templates to track and coordinate activities • Select, monitor, and report clinical and quality outcomes • Measure program impact on total cost of care and downstream utilization To learn more about developing an evidence-based approach, check out our Integrated Pharmacy Models in Primary Care brief here.

Demonstrated impact

Literature review summary

Title: Post-Discharge Pharmacist Medication Reconciliation: Impact on Readmission Rates and Financial Savings
Publication: Journal of the American Pharmacists Association
Date: 2013
Type: Randomized controlled trial
Study population: 243 patients identified as high-risk for readmission by Group Health Cooperative
Major findings: Patients received medication therapy management between three and seven days post-discharge, resulting in:
- Decreased costs ($100 per patient per year)
- Reduced utilization at 7 days (50%), 14 days (44%), and 30 days (14%)

Source: Full article here.

Source: Population Health Advisor research and analysis.

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Title: Integrated Pharmacy Models in Primary Care
Publication: Advisory Board
Date: 2014
Type: Case study compilation
Study population: Mix of participants across five case studies include Medicaid beneficiaries with at least one chronic condition and taking three of more medications for chronic illnesses
Major findings: Care from providers and pharmacists participating in the University of Connecticut's medication therapy management program resulted in:

- Improved cost savings: $1,595-$2,000 per patient annually; an estimated 2:5 ROI; $31.7M projected total cost savings over three years; $70-154K earned in medication therapy management billing codes annually
- Decreased inpatient admissions (13.1%), ED (37.8%), observation visits (50%), and 30-day readmission rates (3.4%)
- Decreased HbA1c levels (0.8-1.4%)
- Improved satisfaction (90% of participants would recommend services to family or friends)

Source: Full article here.

Title: Optimizing Medication Use with a Pharmacist-Provided Comprehensive Medication Management Service for Patients with Psychiatric Disorder
Publication: Pharmacotherapy
Date: 2014
Type: Case study
Study population: 154 patients with psychiatric disorders who were referred to the comprehensive medication management program between April 2011 and July 2013
Major findings: Improved cost savings ($587 per patient)
Source: Full article here.

Title: The Asheville Project: Long-Term Clinical, Humanistic, and Economic Outcomes of a Community-Based Medication Therapy Management Program for Asthma
Publication: Journal of the American Pharmacists Association
Date: 2006
Type: Randomized controlled trial
Study population: Patients with asthma covered by two self-insured health plans across 12 pharmacy locations
Major findings: Over five years, the program resulted in:

- Decreased indirect costs (10.8 missed workdays a year to 2.6)
- Increased direct cost savings per patient per year ($725) and indirect cost savings per patient per year ($1230)
- Decreased emergency department visits (1.3-9.9%)
- Decreased hospitalizations (1.9-4.0%)
- Increased rates of asthma action plans (63% to 99% of patients)

Source: Full article here.

Source: Population Health Advisor research and analysis.

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Title: Impact of Comprehensive Medication Management on Hospital Readmission Rates
Publication: Population Health Management
Date: 2018
Type: Retrospective cohort study
Study population: 43,711 patients receiving care in the Fairview Health System
Major findings: Compared to usual care, comprehensive medication management offered by dedicated pharmacists within 30 days post-discharge resulted in:

- Reduced 30-day readmission rates overall (8.6% vs. 12.8%, a 32.8% change) and across different risk groups
    - Average (7.1% vs. 9.5%, a 25.3% change)
    - Elevated (9.9% vs. 21.4%, a 53.7% change)
    - High (18.3% vs. 35.9%, a 49.0% change)
    - Extreme (36.4% vs. 77.7%, a 53.2% change)
- Insignificant change in 60-day readmission rates

Source: Full article here.

Title: Medication Therapy Management Interventions in Outpatient Settings
Publication: Journal of the American Medical Association
Date: 2015
Type: Systematic review and meta-analysis
Study population: Patients across 44 studies with a range of chronic conditions (e.g., CHF, hypertension, diabetes) across a variety of settings (e.g., outpatient clinics, pharmacies, home visits)
Major findings:

- Significantly improved medication appropriateness (4 points higher on a valid 10-item index that measures prescribing quality)
- Improved adherence (4.6%)

Source: Full article here.

Title: Effect of Electronic Health Record–Based Medication Support and Nurse-Led Medication Therapy Management on Hypertension and Medication Self-Management
Publication: JAMA Internal Medicine
Date: 2018
Type: Randomized controlled trial
Study population: 794 patients (68.6% female, average age of 52.7 years) with hypertension using three or more medications in Chicago, Illinois randomized to three groups
Major findings: Compared to usual care:

- EHR-based medication management tools only (e.g., medication review and information sheets) resulted in:
    - Reduced systolic blood pressure (3.6mmHg)
    - Improved probability of medication reconciliation (64.3%)
    - Insignificant hypertension medication adherence and knowledge of chronic drug indications
- EHR-based tools in addition to nurse-led medication therapy management resulted in:
    - Improved probability of medication reconciliation (66.7%)
    - Improved probability of understanding medication instructions and dosing for hypertension medications (69.7%) and all medications combined (62.9%)
    - Insignificant change in systolic blood pressure, though greater reduction compared to EHR tools alone (5.6mmHg)
    - Insignificant change in hypertension medication adherence and knowledge of chronic drug indications

Source: Full article here.

Source: Population Health Advisor research and analysis.

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Appendix

- Kilcup M, "Postdischarge Pharmacist Medication Reconciliation: Impact on Readmission Rates and Financial Savings," *Journal of the American Pharmacists Association*, 53, no. 1 (2013): 78-84, https://www.ncbi.nlm.nih.gov/pubmed/23636160.
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Source: Population Health Advisor research and analysis.