Embedded Ambulatory Care Pharmacists: A Novel Approach to Patient Care Management

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Background: In response to the evolving healthcare landscape, innovative strategies in primary care are essential for enhancing patient outcomes and ensuring efficient healthcare delivery. One example of innovation is redefining the composition and roles of the primary care team, such as embedding pharmacists as core members. Within this model, pharmacists collaborate with primary care clinicians, nurses, and medical assistants, optimizing medication regimens and resolving medication-related problems. Additionally, pharmacists can enhance chronic disease state management, either during patient care visits or through collaborative efforts with the care team. Pharmacists' expertise has been shown to reduce emergency room visits, hospital admissions, and healthcare costs.[1] Amidst ongoing primary care shortages in the US, pharmacists on the care team are integral to reducing physician and overall team burnout.[2]

Objective of Program: To demonstrate how embedded ambulatory care pharmacists play a critical role in patient care, clinician and nurse job satisfaction, and efficiency of primary care clinics.

Planning/Research Methods: The research methodology involved a mixed-methods approach examining patients who had at least one encounter with an embedded ambulatory care pharmacist in 2023 and incorporated quantitative data analysis and qualitative feedback from healthcare clinicians. The primary outcomes measured were diabetes control, hypertension control, appropriate statin therapy use, aspirin use, and tobacco cessation. Secondary outcomes included clinician and nursing satisfaction surveys of clinic-embedded pharmacists, data on pharmacist utilization, and a cost-effectiveness analysis.

Implementation Methods: In June 2021, a pharmacist was embedded to support the primary care team and its patients. By November 2023, Mayo Clinic Arizona (MCA) now has three embedded pharmacists across four Family Medicine clinics and one Women's Health Internal Medicine clinic, enhancing patient care, research, and education.

Results: Preliminary results indicate that the integration of embedded pharmacists significantly optimized clinical outcomes and improved clinician and nursing satisfaction. Patients (n=235) who met with a pharmacist averaged an improvement in hemoglobin A1c (HbA1c) by 1% (8.2% to 7.2%). A larger HbA1c reduction of 2.1% was seen when patients met with the pharmacist three or more times, with a baseline HbA1c 9.0% or higher. Over 60% of patients who met with the pharmacist were meeting D5 quality care metrics, representing the gold standard of diabetes management: HbA1c reduction, blood pressure control, appropriate statin therapy use, aspirin therapy, and tobacco cessation. The survey results demonstrated 85% of clinicians and 85-90% of nurses agreed that embedded pharmacists improved their workload, the clinic's ability to meet healthcare quality measures, and their patients' ability to achieve their health goals. Additionally, 60% of clinicians and 77% of nurses agreed pharmacists created more time for staff to focus on self-identified professional development opportunities such as engaging in research and educational endeavors.

Of the pharmacists' tasks that can be quantified in EPIC, the annual composite utilization for the embedded pharmacists averaged 136% – far beyond a full FTE of expected productivity. The composite utilization of a pharmacist includes the number of patient visits and in-basket messages; however, it does not incorporate the number of curbside consultations which provide clinicians personalized answers to potentially urgent patient inquiries. Pharmacists alleviate clinician burden by contributing to the optimization of medication management, improving healthcare outcomes, and serving as clinical pharmacotherapy experts. This generates increased revenue streams by allowing clinicians to see more complex patients with higher acuity billing. Finally, a cost-effectiveness analysis detailed a positive return on investment (ROI) to the institution for the embedded pharmacists given their revenue generation, access created for clinicians, and improved clinical outcomes for patients.[1]

Conclusions: This research supports the finding that the integration of pharmacists into primary care at MCA helped to improve healthcare outcomes and value-based care metrics. Our study provides valuable insights for healthcare administrators aiming to optimize primary care services in an increasingly complex healthcare environment. Future research should be conducted to examine if the beneficial impact can be replicated in other ambulatory care departments such as endocrinology, rheumatology, neurology, and cardiology.

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References:
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