

Medication Optimization Use Case

CLEVELAND CLINIC —Cleveland, OH	
Focus Area	Team-based interprofessional comprehensive medication management (CMM) services led by the clinical pharmacist, through primary care consultation with advanced practice providers and physicians. The care model focuses outcomes on common chronic conditions such as diabetes, hypertension, heart failure, etc.
At-a-Glance	<ul style="list-style-type: none"> ■ Organization Type: Integrated Enterprise Health System ■ Launched: 2002 ■ Payment and Funding Sources: <ul style="list-style-type: none"> ▪ Funding is provided by Cleveland Clinic as a part of its Accountable Care Organization (ACO) quality strategy
Organization Details	Cleveland Clinic Health System is a nonprofit organization and academic medical center based in Cleveland, Ohio. With over 68,000 caregivers worldwide, Cleveland Clinic employs a multidisciplinary care team of over 4,600 physicians and 2,900 advanced practice providers. In 2021, they treated over 2.4 million unique patients and provided 8.7 million outpatient visits and 1.2 million virtual visits.
Brief History of CMM Program	Ambulatory practice began in 2002 with one clinical pharmacist practicing at a single primary care site. Over the past twenty years, with increased prevalence on pay-for-performance models and accountable care organizations, the organization made an intentional increase in strategic funding for services impacting key quality measures. Senior leadership and medical directors recognized the clinical pharmacist as a critical component to the health care team and an asset in expanding value-based practice given strong performance on diabetes and hypertension care. Continued strong performance and improved clinical endpoints has reinforced the presence of pharmacy in all primary care services. Clinical pharmacists are embedded at 19 different practice sites and provide CMM through collaborative practice agreements for patients identified with multiple chronic conditions. While these conditions serve as a trigger to identify patients, all patients' medications are reviewed per CMM standards.
Results & Achievements Focus on the Quadruple Aim: <ul style="list-style-type: none"> ■ <i>Better Outcomes</i> ■ <i>Cost Savings</i> ■ <i>Patient Satisfaction & Engagement</i> ■ <i>Clinician Satisfaction</i> 	<p>Better Outcomes:</p> <ul style="list-style-type: none"> ■ Collaborative management of hypertension significantly reduced systolic and diastolic blood pressure (BP) and resulted in improvements of BP control observed in 82% of patients in a small cohort of 66 patients followed for 1 year after CMM intervention. ■ Pharmacist-led CMM services resulted in an average HbA1c reduction of 2.1% in a cohort of 65 patients with poorly controlled type 2 diabetes. The proportion of patients with HbA1c less than 9% improved—from 14% to 65%. <p>Cost Savings:</p> <ul style="list-style-type: none"> ■ Support has been driven by annual health plan expenditure savings from the Asheville Project of \$629/person/year in hypertension and \$1,200/person/year in diabetes.^{1,2} <p style="text-align: right;"><i>continued</i></p>

<p><i>continued</i> Results & Achievements</p>	<p>Patient Satisfaction & Engagement:</p> <ul style="list-style-type: none"> ■ No formal patient satisfaction evaluation has been conducted; however, patients continue to provide outstanding informal reviews of the service: <ul style="list-style-type: none"> ▪ “My primary care pharmacist is one of the best things that has happened to my medical care in years. She is thorough, patient and caring. She has helped me lower my bad stats and reduced my medications as she did it.” ▪ “The recommendations and plan developed specifically for me have been right on target. I am very pleased with my results! I have been struggling with my blood sugars for a long time, and it feels wonderful to have lowered them.” <p>Clinician Satisfaction:</p> <ul style="list-style-type: none"> ■ Value of services frequently acknowledged in quality and panel management meetings. Physicians consider clinical pharmacists an integral and core part of their interdisciplinary team.
<p>Patient Success Story</p>	<p>At the request of the patient’s primary care physician, a clinical pharmacist had twice monthly phone calls with a 63-year-old female struggling with persistently elevated A1c levels from December 2020 through March 2021. By reviewing home blood sugar readings and diabetes medication adjustments within the clinical pharmacist’s collaborative practice agreement, A1c was lowered from 12.3% in December 2020 to 7.5% in March 2021. CMM review also identified a need for a statin medication, which improved LDL from 103 mg/dL to 58 mg/dL and triglycerides from 858 mg/dL to 208 mg/dL in that same time frame. The patient was successfully transitioned back to usual follow-up with the primary care physician following this period of enhanced collaboration.</p>
<p>Team-Based Care Strategy</p>	<p>■ Interprofessional Team:</p> <ul style="list-style-type: none"> ▪ Advanced practice providers (APP) as well as physicians, physician assistants, clinical nursing specialists, certified nurse–midwives and certified nurse practitioners have formal collaborative practice agreements with clinical pharmacists for CMM of referred patients. ▪ Clinics are structured such that APPs support multiple physicians (often 2 physicians but this number varies); clinical pharmacists support multiple physicians (often 6–10 or more depending on patient panel size and overall needs). APP partners serve as a shared resource improving patient access and cadence of follow up. ▪ These groups evaluate practice-level quality outcomes at panel management meetings where specific patients are reviewed based on meeting their clinical goals or not. Patients with needs that would benefit from CMM are scheduled to follow-up with a clinical pharmacist to initiate work under the collaborative practice agreement. This meeting style allows all members of the team to contribute to goals and plans of care and for follow-up needs to be assigned to the most appropriate clinical resource. <p style="text-align: right;"><i>continued</i></p>

<p><i>continued</i> Team-Based Care Strategy</p>	<ul style="list-style-type: none"> ■ Role of the Clinical Pharmacist within the CMM Care Team: <ul style="list-style-type: none"> ▪ With CMM, pharmacists are authorized to: <ul style="list-style-type: none"> - Start, modify or discontinue medications treating common chronic conditions - Order and evaluate tests related to drug therapy management ▪ In addition to patient specific activities, clinical pharmacists are also involved in: <ul style="list-style-type: none"> - Practice level discussions (panel management meetings) - Collaboratively coordinating a program focusing on proactive outreach to address symptoms of worsening chronic diseases - Contributing to STAR measures through patient counseling and disease management encounters - Enhancing population health management through criteria driven referrals and expansion of telemedicine to support reaching patients in remote locations ■ Care Delivery Modality: <ul style="list-style-type: none"> ▪ In-person or virtual (telephone or video based)
<p>Patient Referral Criteria</p>	<p>Eligible Patients:</p> <ul style="list-style-type: none"> ■ Patients can be referred to CMM via: <ul style="list-style-type: none"> ▪ Physician and APP referrals for conditions covered within the collaborative practice agreement ▪ Criteria driven referrals where patients are directed to pharmacy services based on involvement in participating programs or based on disease state markers (e.g., A1c >9%, BP >140/90 mmHg)
<p>Size of CMM Program</p>	<p>Number of:</p> <ul style="list-style-type: none"> ■ Pharmacists: 26 <ul style="list-style-type: none"> ▪ Pharmacist FTE: 24.5 ■ Practice Sites: 19 ■ Resident Pharmacists: 2 ■ Advanced Practice Providers: <ul style="list-style-type: none"> ▪ Physician assistants ▪ Clinical nursing specialists ▪ Certified nurse-midwives ▪ Certified nurse practitioners ■ Unique Patients and Visits: 46,064 annual visits serving 26,604 unique patients
<p>Program Success Factors</p>	<ul style="list-style-type: none"> ■ Support and buy-in from organizational leadership ■ Sustained patient accessibility of pharmacy services (including appropriate appointment lengths) ■ Strong quality data for key outcome measures

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<p>Next Steps, Future Goals</p>	<ul style="list-style-type: none"> ■ Acknowledgement and recognition for payment of CMM services by commercial and government payers in support of expansion of services that meet societal needs. ■ Addition of four clinical pharmacist FTEs in 2022 due to high patient volumes for existing practice locations. ■ For some areas, looking to integrate clinical pharmacist CMM practice through criteria-based referrals (anticipating greater efficiency than current physician-based process).
<p>References</p>	<p>Bunting BA, Smith BH, Sutherland SE. The Asheville Project: clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia. <i>J Am Pharm Assoc.</i> 2003;48(1):23-31.</p> <p>Cranor CW, Bunting BA, Christensen DB. The Asheville Project: long-term clinical and economic outcomes of a community pharmacy diabetes care program. <i>J Am Pharm Assoc.</i> 2003;43(2):173-184.</p>
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