

# Medication Optimization Use Case

NORTH CAROLINA AND ARKANSAS TELEHEALTH PRIMARY CARE CLINICS	
<b>Focus Area</b>	Telehealth comprehensive medication management (CMM) model that incorporates provision of services by a clinical pharmacist via telehealth to patients with uncontrolled diabetes as part of rural and underserved primary care clinics. Although the project focused on patients with uncontrolled diabetes, the service was whole-person centered.
<b>At-a-Glance</b>	<ul style="list-style-type: none"> <li>■ <b>Organization Type:</b> Primary care clinics in rural and underserved communities in North Carolina (NC) and Arkansas (AR)</li> <li>■ <b>Project Launch Date:</b> September 2019</li> <li>■ <b>Payment and Funding Sources:</b> University of North Carolina Eshelman Institute for Innovation</li> <li>■ <b>Sustainability Strategy:</b> An advisory committee of payers and an accountable care organization (ACO) created three potential reimbursement pathways with a goal to extend the service beyond the duration of the Eshelman School of Pharmacy Institute for Innovation project.</li> </ul>
<b>Organization Details</b>	The clinics represented four healthcare systems—including three private healthcare practices in NC as a part of an ACO and four federally qualified health centers (FQHC) in AR—located in rural and underserved communities. Clinic sizes varied, although all had multiple practitioners, including providers (e.g., physicians, physician assistants, nurse practitioners), clinic support staff (e.g., medical assistants, health educators) and clinic administrators. None had worked with a clinical pharmacist prior to this project.
<b>Brief History of CMM Program</b>	None of the clinics had any history of providing CMM services to their patients. However, clinics had a recognized need for these services and a willingness to work with a clinical pharmacist remotely. The service was delivered by two part-time remote clinical pharmacists (0.5 FTE each) that offered CMM to patients in their homes. The eligible patients had to meet the following criteria as a trigger to bring them into a more comprehensive medication management program (HbA1c over 9%, at least one comorbidity, five or more medications and at least 18 years of age).
<b>Results &amp; Achievements</b> <b>Focus on the Quadruple Aim:</b> <ul style="list-style-type: none"> <li>■ <i>Better Outcomes</i></li> <li>■ <i>Cost Savings</i></li> <li>■ <i>Patient Satisfaction &amp; Engagement</i></li> <li>■ <i>Clinician Satisfaction</i></li> </ul>	<p>The preliminary data reported was collected and analyzed approximately three months into implementation. The sample size included 22 healthcare professionals and 95 unique patients across seven clinics. Final results to be compiled once the study is concluded.</p> <p><b>Better Outcomes</b></p> <ul style="list-style-type: none"> <li>■ The resolution rate of medication therapy problems (MTP) was 88%.</li> <li>■ Based on available clinical data, there was a significant decrease in A1c from 9.8 to 8.8 in patients who had received the teleCMM service.</li> </ul> <p><b>Patient Satisfaction and Engagement</b></p> <ul style="list-style-type: none"> <li>■ Patients surveyed in North Carolina (N=10) reported the highest possible satisfaction rating with the clinical pharmacist, using a 5-point scale from “very poor” to “excellent”.<sup>1</sup> They also reported a positive experience with the teleCMM visits, including the quality of information they were provided, the level of support for self-care and their level of involvement with decisions made about their medications.<sup>1,2</sup></li> <li>■ Patients in North Carolina (N=10) with diabetes who received teleCMM reported significant increases in patient-reported diabetes quality of life using a 5-point scale.<sup>3</sup></li> </ul> <p style="text-align: right;"><i>continued</i></p>

<p><i>continued</i> <b>Results &amp; Achievements</b></p>	<p><b>Clinician Satisfaction</b></p> <ul style="list-style-type: none"> <li>■ Clinic staff and providers (N=22) across participating clinics expressed high levels of satisfaction and perceived benefits with teleCMM.<sup>4</sup> Based on significant increases in levels of service acceptability, appropriateness, feasibility and high levels of intent to sustain use from baseline to three months post-implementation, the clinic staff and providers found the teleCMM program to be successfully implemented.<sup>5,6</sup></li> </ul>
<p><b>Patient Success Story</b></p>	<p><b>Patient Story from North Carolina Clinic:</b></p> <p>A 49-year-old woman was referred to the teleCMM program by the patient’s primary care physician for assistance with A1c reduction. The patient’s past medical history included type 2 diabetes, hyperlipemia, breast cancer in remission, hypercoagulable state and vitamin D deficiency. Upon initial review her labs included an A1c of 14.2%. Her diabetes medications included pioglitazone 45mg daily, Basaglar 25 units daily and Trulicity 1.5mg weekly. On the initial phone visit, the NC clinical pharmacist discovered that the patient was not taking Basaglar and Trulicity because she could not afford these medications and did not want to take them. The pharmacist educated the patient of the importance in taking her medications to help reach A1c goals and provided coupons for Basaglar and Trulicity to help make them more affordable. The pharmacist also recommended that the physician lower the dose of Trulicity to the starting dose of 0.75mg weekly to help prevent side effects such as nausea and vomiting. This recommendation was then implemented by the attending physician. Additionally, the patient was not checking blood glucose readings at home, so the clinical pharmacist had a new glucometer prescription sent in, educated the patient on how and when to check blood glucose and discussed the importance of diet and exercise.</p> <p>One month later, the clinical pharmacist followed up with the patient by phone. The patient reported no hypoglycemia or other side effects since starting the two medications. Fasting blood glucose readings now averaged around 130 mg/dL. The patient had gained some weight with the start of the insulin, so the pharmacist recommended that the physician increase the dose of Trulicity to 1.5mg weekly to help with weight loss. This recommendation was accepted.</p> <p>Lab work was obtained 4 months after the previous A1c was drawn. The patient’s new A1c was found to be 6.7%.</p>
<p><b>Team-Based Care Strategy</b></p>	<ul style="list-style-type: none"> <li>■ <b>Interprofessional Team Roles:</b> <ul style="list-style-type: none"> <li>■ CMM training was provided to all involved in the CMM care delivery process, with sheets identifying workflows and role-specific responsibilities distributed.</li> <li>■ The NC clinical pharmacist created a brief video to educate the physicians about the services and facilitate a positive working relationship.</li> </ul> </li> <li>■ <b>Role of the Clinical Pharmacist:</b> <ul style="list-style-type: none"> <li>■ Although formal collaborative practice agreements were not used, the clinical pharmacists were responsible for conducting CMM visits, obtaining patient-buy in, making therapy initiation and titration recommendations, following physician/physician assistant approval of medication changes, providing education and following up with patients. In whole, they worked collaboratively with the clinic providers.</li> </ul> </li> <li>■ <b>Care Delivery Modality:</b> <ul style="list-style-type: none"> <li>■ All patient visits were conducted via telehealth (either phone and/or video) by the remote clinical pharmacists.</li> </ul> </li> </ul>

<p><b>Patient Referral Criteria</b></p>	<ul style="list-style-type: none"> <li>■ <b>Eligibility Criteria:</b> To be eligible for the service, patients need to be assigned to one of the participating providers and meet the following inclusion criteria: HbA1c over 9%, at least one comorbidity, five or more medications and at least 18 years of age.</li> <li>■ <b>Study Design:</b> The mixed methods data reported in this case study spanned the first three months of service implementation and are part of a broader effectiveness-implementation hybrid type 2 study.</li> <li>■ <b>Population of Focus:</b> Complex patients with uncontrolled diabetes in rural and underserved communities.</li> </ul>
<p><b>Size of CMM Program</b></p>	<p><b>Number of:</b></p> <ul style="list-style-type: none"> <li>■ <b>Number of Clinical Pharmacists:</b> Two part-time pharmacists and one resident who joined midway through the implementation phase</li> <li>■ <b>Practice Sites:</b> Seven sites included in data reported for this case study (preliminary results)</li> <li>■ <b>Participating Providers:</b> 17 physicians across the clinics during the first three months of implementation</li> <li>■ <b>Support Staff:</b> Nurses, medical assistants, care managers, office managers and health educators</li> <li>■ <b>Unique patients and number of visits:</b> Clinical pharmacists conducted 136 visits with a total of 95 patients over the first three months of implementation</li> </ul>
<p><b>Program Success Factors</b></p>	<ul style="list-style-type: none"> <li>■ Establishing effective collaborative relationships across multiple levels of the healthcare ecosystem (e.g., clinics, clinical pharmacists, providers, project team, administration, patients).</li> <li>■ Obtaining buy-in from clinic leadership and providers.</li> <li>■ Facilitate service integration into clinics through implementation science strategies and ongoing support (e.g., defined “usable” service, development of customizable implementation roadmap, translating “usable” service into workflow, attending to site readiness and fit, provision of customized technical assistance).</li> <li>■ Continually attending to and revising patient outreach and engagement strategies.</li> <li>■ Emphasizing flexibility and continuous quality improvement to optimize service delivery in terms of delivery mode (e.g., phone, video, technology).</li> <li>■ Collecting and sharing data with clinics to demonstrate the value of the teleCMM and support future service reimbursement.</li> </ul>
<p><b>Next Steps, Future Goals</b></p>	<ul style="list-style-type: none"> <li>■ Strategies customized to each clinic are being identified to facilitate sustainability of the service beyond the grant period. For instance, one of the clinics is interested in further testing reimbursement options to facilitate continued delivery of the service with Medicare patients.</li> <li>■ Some of the participating clinics have expressed interest in broadening the service to include additional disease states as triggers into the teleCMM program.</li> <li>■ The project team is planning to obtain additional funding to conduct a large implementation trial to refine implementation strategies for full scalability.</li> </ul> <p style="text-align: right;"><i>continued</i></p>

<p><b>References</b></p>	<ol style="list-style-type: none"> <li>1. Shin J, Moczygemba LR, Barner JC, Garza A, Linedecker-Smith S, Srinivasa M. Patient Experience with Clinical Pharmacist Services in Travis County Federally Qualified Health Centers. <i>Pharmacy Practice</i>. 2020; 18(2): 1751.</li> <li>2. Blanchard C, Xu J, Roth McClurg M, Livet M. Reliability and Validity of a Patient Responsiveness Survey for Comprehensive Medication Management. <i>Pharmacy Practice</i>. 2020; 18(2): 1751. <a href="https://doi.org/10.18549/PharmPract.2020.2.1751">https://doi.org/10.18549/PharmPract.2020.2.1751</a>.</li> <li>3. Burroughs T, Desikan R, Waterman B, Gilin D, McGill J. Development and Validation of the Diabetes Quality of Life Brief Clinical Inventory. <i>Diabetes Spectrum</i>. 2004; 17: 41-49. 10.2337/diaspect.17.1.41.</li> <li>4. Livet M, Levitt J, Cardenas A, Thomas JL, Lee A, Pathak S, Curran GM. Feasibility of a CMM Telepharmacy Service for Patients with Diabetes in Rural and Underserved Communities: Preliminary Results. <i>JACCP</i>. 2021; 4: 947-958.</li> <li>5. Livet M, Blanchard C, Richard C, et al. Measuring Implementation of Medication Optimization Services: Development and Validation of an Implementation Outcomes Questionnaire. <i>Res Soc Adm Pharm</i>. 2021. doi:10.1016/j.sapharm.2021.01.001.</li> <li>6. Venkatesh V, Bala H. Technology Acceptance Model 3 and a Research Agenda on Interventions Subject Areas: Design Characteristics, Interventions. <i>Decis Sci</i>. 2008; 39(2):273–315.</li> </ol> <p>For those interested in learning more, below are papers and posters that came out of the North Carolina and Arkansas Telehealth Primary Care Clinics project:</p> <ul style="list-style-type: none"> <li>▪ Livet M, Levitt J, Lee A, Easter J. The pharmacist as a public health resource: Expanding telepharmacy services to address social determinants of health during the COVID-19 pandemic. <i>Exploratory Research in Social and Administrative Pharmacy</i>. 2021.</li> <li>▪ Livet M, Kuhn M, Easter J. Aligning Provider and Payer Incentives through a Telepharmacy Program: Key Insights for Uptake. Presentation at the 2021 PQA Online Annual Meeting, Virtual. 2021.</li> <li>▪ Levitt J, Lee A, Easter J, Livet M. Expanding Pharmacist Services through Telehealth to Address Patients' COVID-19 Social Determinants of Health Concerns in Rural and Underserved Communities. Poster at the 2021 PQA Online Annual Meeting, Virtual. 2021.</li> <li>▪ Livet M, Levitt J, Richard C, Pathak S, Thomas J, Lee A, Curran G. CMM via telehealth: Is it feasible and effective? Poster at the American College of Clinical Pharmacy Annual Meeting, Virtual. October 2021.</li> </ul>
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