



## COMPLETED GRANT SYNOPSIS

### Tracking Performance in a Contemporary Community Pharmacy Practice

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#### Objectives

- 1) Describe the CoMM process and documentation system at Towncrest Pharmacy.
- 2) Analyze the assessments, interventions, and outcomes of the CoMM process
- 3) Conduct financial analyses of the CoMM activities

#### Methods

Design

##### Methods

##### Objective 1

Description of the CoMM process using Towncrest Pharmacy as a case study.

##### Objective 2

##### *Study Design, Population, and Data Source*

This retrospective cross-sectional study was performed by reviewing pharmacy dispensing and clinical records for patients filling at least one prescription and receiving at least one CoMM intervention at Towncrest Pharmacy from April 1, 2014 through March 31, 2015. If a patient did not fill a prescription at Towncrest Pharmacy during the 12-month study period, the patient was not included in the analyses, even if the patient received a CoMM intervention. Patients were included in the study regardless of age, which was calculated as age on April 1, 2014. Patients were considered elderly if they were  $\geq 65$  years old on April 1, 2014. To count the number of medications for a patient, the unique number of Generic Product Identifier codes dispensed to the patient during the study period was summed. Codes were truncated at the eight-digit level, allowing identification of the dispensing of two different agents (e.g. simvastatin and atorvastatin) but not the dispensing of two different salts (e.g. paroxetine hydrochloride and paroxetine mesylate) or strengths (e.g. warfarin 1mg and warfarin 5mg). Patients dispensed eight or more medications were considered high medication users. Eight was chosen as the threshold because that is the largest minimum number of medications plans are allowed to use for Medication Therapy Management eligibility in Medicare Part D.

##### *Pharmacist Interventions*

Each time a pharmacist at Towncrest Pharmacy performs CoMM, he or she documents interventions in PharmClin, their proprietary clinical software. For the purposes of this study, intervention is defined as an action taken by the pharmacist in response to viewing the patient's medication profile or speaking with the patient, the patient's caregiver, or the patient's provider. Documentation includes the intervention date, a patient identifier, the intervention type, and a brief summary of the intervention written by the pharmacist. All documented CoMM

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interventions for eligible patients are included in this study. Interventions were assigned an intervention type by the pharmacist performing CoMM. Interventions were further categorized into three main types: drug therapy problem identified, patient counseling and education, and other medication management activities. Drug therapy problem identified includes nonadherence, therapeutic duplication, drug-drug interaction, receipt of high risk drug by patient  $\geq 65$  years old, and notification about the rescheduling of hydrocodone-containing products to Schedule II. Drug therapy problem identified includes actual and potential drug therapy problems, which cannot be distinguished until after the pharmacist intervenes and gathers additional information. Patient counseling and education includes counseling on new prescriptions and informing the patient about substitution of a product. Other medication management activities includes updating patient allergies, comprehensive medication reviews, gauging patient interest in medication synchronization program, medication reconciliation, blood pressure measurement, insurance questions, responding to drug information requests, vaccinations, administration of depot injections, over-the-counter medication consultations, and prescriber consultations.

### *Statistical Analysis*

Descriptive statistics for all patients and patient subgroups were generated. Frequency distributions of intervention types were produced. SAS 9.3 was used to perform all analyses. The University of Iowa Institutional Review Board determined the study was not human subjects research.

This study was conducted at Towncrest Pharmacy, an innovative community pharmacy in Iowa City that has implemented a new CoMM process, which allows their pharmacists to document any drug therapy problems at the time of dispensing and actions to address them within an electronic documentation system. They are being paid for CoMM services by a local payer. Towncrest Pharmacy in Iowa City is staffed with 4.5 FTE pharmacists and 1 FTE resident, and 4.5 certified pharmacy technicians.

### **Objective 3**

Four analyses were conducted from the pharmacy perspective, using information from Towncrest Pharmacy to explore financial models of costs and profitability of operating a CoMM process and documentation system. Two cost analyses calculated the start-up costs and the average incremental cost of dispensing (COD) a prescription when CoMM is provided (i.e. additional costs beyond usual COD when CoMM is performed). Two profitability analyses estimated net profit under two different approaches for reimbursing for CoMM (fee for service and capitation).

Analysis 1 estimated the start-up costs to create the capacity to deliver CoMM. It initially was assumed that the pharmacy had a tech-run dispensing process, but had to purchase new software to improve its documentation system. Sensitivity analyses also were included for options in which the pharmacy only needed to add a documentation system or none of the aforementioned updates (no new software or documentation system needed). The pharmacy added one additional workstation including a desktop computer. Labor costs included staff training to conduct CoMM and the manager's time to plan the CoMM system/processes. It was assumed that two hours of training were needed for each pharmacist to be familiarized with the new CoMM process and it would take 10 hours of the owner's time to plan the system. No new staff were hired, though workflow was adjusted to accommodate CoMM. The cost of materials included labels for messaging of pharmacists' interactions. Equipment costs included a pill counter with a camera or a robot. Analysis was also conducted for no additional equipment needed.

	<p>Analysis 2 calculated the average incremental cost for a pharmacy to conduct CoMM. We estimated the incremental costs of CoMM beyond typical dispensing costs. Labor costs were based on salary amounts provided by the pharmacy; they included more time for drug utilization review, communication with providers to resolve identified drug therapy problems, documentation of CoMM activities, and additional patient-pharmacist interactions for CoMM. Materials costs included additional bag labels used in the CoMM. Equipment costs were the straight-line depreciation of additional workstations and any other additional equipment. Marketing expenses included advertisements on television, radio, newspapers. Overhead costs were the allocated cost for utilities, rent and telephone for the space used for CoMM.</p> <p>Analysis 3 assessed the profitability of CoMM under a professional fee per prescription model. For costs, we used incremental cost of dispensing for CoMM from Analysis 2. As for the revenue, we did the initial analysis with an \$8 professional fee per prescription on 40,000 prescriptions. A sensitivity analysis conducted using 30,000 and 50,000 prescriptions and \$4 and \$6 professional fees.</p> <p>Analysis 4 evaluated the annual profitability of CoMM under a capitation fee (per member per month) approach. We ran this analysis initially for 1,500 patients for 12 months multiplied by \$10 per member per month (PMPM). Sensitivity analyses were conducted by using 500, 1000 patients and \$5 and \$15 for capitation fee. The PMPM cost was calculated by using the incremental total cost of dispensing for CoMM from Analysis 2.</p>
Study endpoints	<ul style="list-style-type: none"> <li>• Assessments, interventions, and outcomes of the CoMM process</li> <li>• Financial analyses of the CoMM activities</li> </ul>

## Results

### Results

#### **Objective 1: Describe the CoMM process and documentation system at Towncrest Pharmacy**

#### **Description of Continuous Medication Monitoring (CoMM) in Community Pharmacy Practice**

CoMM is an ongoing and thorough patient care process focused on medications being dispensed or assessed. In order to be effective, CoMM should be done consistently with each and every patient encounter. It is important that pharmacists learn how to optimize their time with their patients, collecting relevant clinical information, and making interventions that ensure that their patients are achieving therapeutic outcomes by receiving safe and effective drug therapy. This requires that pharmacists' therapeutic knowledge is current and relevant. Pharmacists need to use their critical thinking skills to evaluate their patients' drug therapy effectively and efficiently to identify potential or actual drug-related problems. Once the problems have been identified, pharmacists can use their problem-solving skills to develop the intervention that will resolve the DRP. Additionally, pharmacists should have adequate interpersonal communication skills to effectively communicate with patients through empathetic responding, feedback, and motivational interviewing techniques. Pharmacists also can use their communication skills with other providers so that they can communicate DRPs effectively, provide clinical communications, and help develop collaborative working relationships. Under CoMM, these activities typically are done with each patient encounter within the workflow of a busy community pharmacy.

Pharmacists need to be prepared to provide CoMM. In many community pharmacies this may require a shift in focus from just final verification to engaging patients in a therapeutic discussion to ensure that therapeutic outcomes are being met and that their drug therapy is both safe and effective. This means pharmacists will need to be practicing at the top of their license. The pharmacists providing CoMM will be identifying and resolving drug therapy problems, communicating with patients, caregivers, prescribers, and other health care providers, and documenting their clinical activities. Delivering CoMM means that pharmacist become “interventionists”. In other words pharmacists are clinically assessing their patients’ drug therapy and making clinical recommendations to patients and prescribers. A practice engaged in CoMM may decide that another pharmacist needs to be staffed at certain times as a “slack resource” to complement the CoMM services and provide other clinical services such as medication therapy management (MTM), point of care services, immunizations , disease state management (DSM), or medication adherence programs.

It is important that pharmacists document their CoMM clinical activities. Pharmacists may approach their pharmacy dispensing system vendors to discuss how their system can be used to document clinical interventions. Similar to electronic prescription workflow solutions offered by various vendors whereby the workflow platform is integrated and communicates with pharmacy dispensing systems, clinical documentation software can be developed and integrated within the dispensing system. Most dispensing systems are not ideal for documenting CoMM services as that was not their intent. Newer clinical documentation systems will need to emerge that pull information “real time” from the dispensing system and reformat the information into a clinical record that is easy and efficient for pharmacists to assess when performing CoMM activities. Pharmacists may need to invest in a new pharmacy system that allows clinical documentation.

### **Towncrest Pharmacy: A Case Study of CoMM**

Towncrest Pharmacy first started their CoMM process in 2006. The owners made the decision to move in this direction given their belief and vision that health care was moving towards a performance-based system and their desire to improve the patient care experience during the dispensing process. During this time, Medicare Part D was being implemented and the owners had developed a medication therapy management (MTM) service. Initially, they termed the CoMM process as “Quick Clinical” or “MTM on the Run” to reflect the clinical review they were performing with each and every patient encounter. As the owners planned the CoMM process, they realized that a clinical documentation system was needed that would be easy to use, efficient, and integrate with their pharmacy dispensing system. Since this type of clinical documentation system did not exist in the marketplace, they decided to create their own system that they named “PharmClin”<sup>Patent Pending</sup>.

The owners of Towncrest Pharmacy made a commitment to change the paradigm of their practice. Their goal was to change the focus of the pharmacy from a traditional independent pharmacy focused mostly on dispensing to a patient care focus with an emphasis on helping patients achieve their therapeutic outcomes with safe and effective therapy. This paradigm shift required an investment in the practice in terms of human resources, practice site reengineering, adoption of technology, and workflow solutions. For example, Towncrest Pharmacy added two full time equivalents (FTEs) pharmacists and technicians over the past several years. Additionally, Towncrest Pharmacy added a community pharmacy resident. The purpose of the hiring of new pharmacists (including the resident) and technicians was to provide the “slack resources” needed for the clinical functions and to enhance

the technician-driven dispensing functions respectively. The owners of Towncrest Pharmacy purchased two dispensing robots and an automatic pill counter for the practice to help in streamlining the practice and increasing the efficiencies of the dispensing functions. Also, Towncrest Pharmacy has been involved with a pilot study to determine the benefits of a Tech-Check-Tech program in community pharmacies. Lastly, Towncrest Pharmacy has implemented medication synchronization services at the practice. The effects of these investments have helped Towncrest Pharmacy create the capacity to provide CoMM. Automation, technology, technician driven dispensing, Tech-Check-Tech, and medication synchronization have improved the dispensing efficiencies of the practice with the net result that the pharmacists are freed up to provide CoMM.

Workflow was also assessed and changed at Towncrest Pharmacy. Technicians were now the drivers of the dispensing functions including data entry, prescription filling, and triaging patients. Filled and labeled prescriptions are sent down the count to the pharmacist who does the final verification of the products and then provides their CoMM services. As discussed previously, the pharmacists at Towncrest have access to the clinical documentation program PharmClin<sup>Patent Pending</sup> which allows them to effectively and efficiently review patient clinical information and make assessments regarding the patients' medications. At this point, pharmacists will determine if they have sufficient information to make a clinical assessment or if they need more information from the patient and/or prescriber. If more information from the patient is needed, then the pharmacists will print out their questions (using an auxiliary printer specifically designated for this use) and attach it to a laminated counseling placard which is included with the prescriptions. When the patients pick up their prescriptions, the pharmacists who are staffing at the time, can ask the questions and then write a follow-up note in the PharmClin patient record to complete the patient encounter. If a recommendation needs to be made to the prescriber, the pharmacists can write a quick SOAP note with clinical recommendations and fax it to the prescriber. Once it is received back and if the prescriber agrees with our recommendations, this becomes a new order and the patients' drug therapy is changed accordingly.

## **Objective 2: Analyze the assessments, interventions, and outcomes of the CoMM process**

### **Results**

Over the year, 2,481 patients received 16,986 CoMM interventions. The average age of the patients receiving the interventions was 59.1 years, 53.0% were females, and they filled a mean of 8.0 unique medications. On average, 6.8 interventions were delivered to each patient. Of the CoMM interventions, 49.7% were for drug therapy problem identified. One patient subgroup, those filling eight or more unique medications over the year, received 71.8% of all the interventions. On average, 11.8 interventions were delivered to each of the patients filling eight or more medications. The greatest number of interventions per patient was delivered to patients filling warfarin, with 14.2 interventions on average.

Of the full sample, 75.1% had a patient counseling and education intervention. The pharmacists delivered 3.0 patient counseling interventions on average per patient. Of the full sample, 63.1% had a drug therapy problem identified. The pharmacists identified 3.4 drug therapy problems on average per patient. While patients filling a diabetes medication received the most patient counseling and education interventions and other medication management activities per patient on average (4.8 and 0.9, respectively), the most drug therapy problems per patient were identified in patients filling warfarin (9.1).

### **Objective 3: Conduct financial analyses of the CoMM activities**

The study showed that the start-up costs vary primarily due to dispensing system and equipment costs, with a robot being the greatest start-up cost. Start-up costs were as low as \$5,408, which included only labor costs and a new workstation, assuming a pharmacy does not need additional equipment or a new documentation system. A new dispensing system along with a robot increased the cost substantially to \$173,408. The incremental cost of CoMM, above the usual cost of dispensing, had a range of \$4.29 - \$4.67 per Rx. Similarly, the per member per month incremental cost of the CoMM ranged from \$7.42 - \$8.07. The sensitivity analyses show that the CoMM service would be profitable at a \$6 and \$8 fee per prescription, but not at a \$4 fee. Finally, the CoMM service would not be profitable at a capitated fee of \$5, but would be profitable at capitated fees of \$10 and \$15

### **Conclusion**

- Continuous medication monitoring (CoMM) is a process that can fit with all community practices. It changes the focus of the dispensing process from product to patient. Community pharmacists are in a key position to ensure that their patients are achieving their therapeutic outcomes with safe and effective therapy. CoMM does require change in the practice environment with the ultimate goal of freeing up pharmacists to provide clinical services. This means utilizing technicians, technology, and improved efficiencies in workflow by utilization of medication synchronization services. Most importantly, CoMM ensures that pharmacists are working at the top of their licenses. By identifying and resolving drug therapy problems during the dispensing process, pharmacists will improve patient outcomes, which will improve their practice performance measures, which can lead to new revenues through bonus incentives and pay for performance. Better clinical documentation of interventions and reform of current reimbursement models can help shift community practice to focus on delivering quality health care.
- Continuous medication monitoring provides many opportunities for pharmacists to interact with patients and prescribers to improve medication use. CoMM is a promising approach that can be used in community pharmacies to improve the safety and effectiveness of medications. Further adoption and study is needed to evaluate the CoMM model in terms of the medications most often involved in interventions and its impact on patient outcomes (e.g. health status, healthcare utilization, total cost of care) compared to a distribution-focused model of community pharmacy practice.
- Our analyses show that the costs of creating a capacity to deliver Continuous Medication Monitoring depends on technology needed to free up the pharmacist from distributional tasks and the need for software for documenting CoMM interventions. The incremental costs of the CoMM services ranged from \$4.29 to \$4.67 per prescription, while the PMPM costs ranged from \$7.42 to \$8.07. Payments above these amounts would be profitable for the pharmacy that participated in this study. Continued trial of Continuous Medication Monitoring is encouraged to address payer and patient perspectives.